

Catalog ⁰⁸/₀₉

University of North Texas Health Science Center at Fort Worth



UNIVERSITY of NORTH TEXAS
HEALTH SCIENCE CENTER

AT FORT WORTH

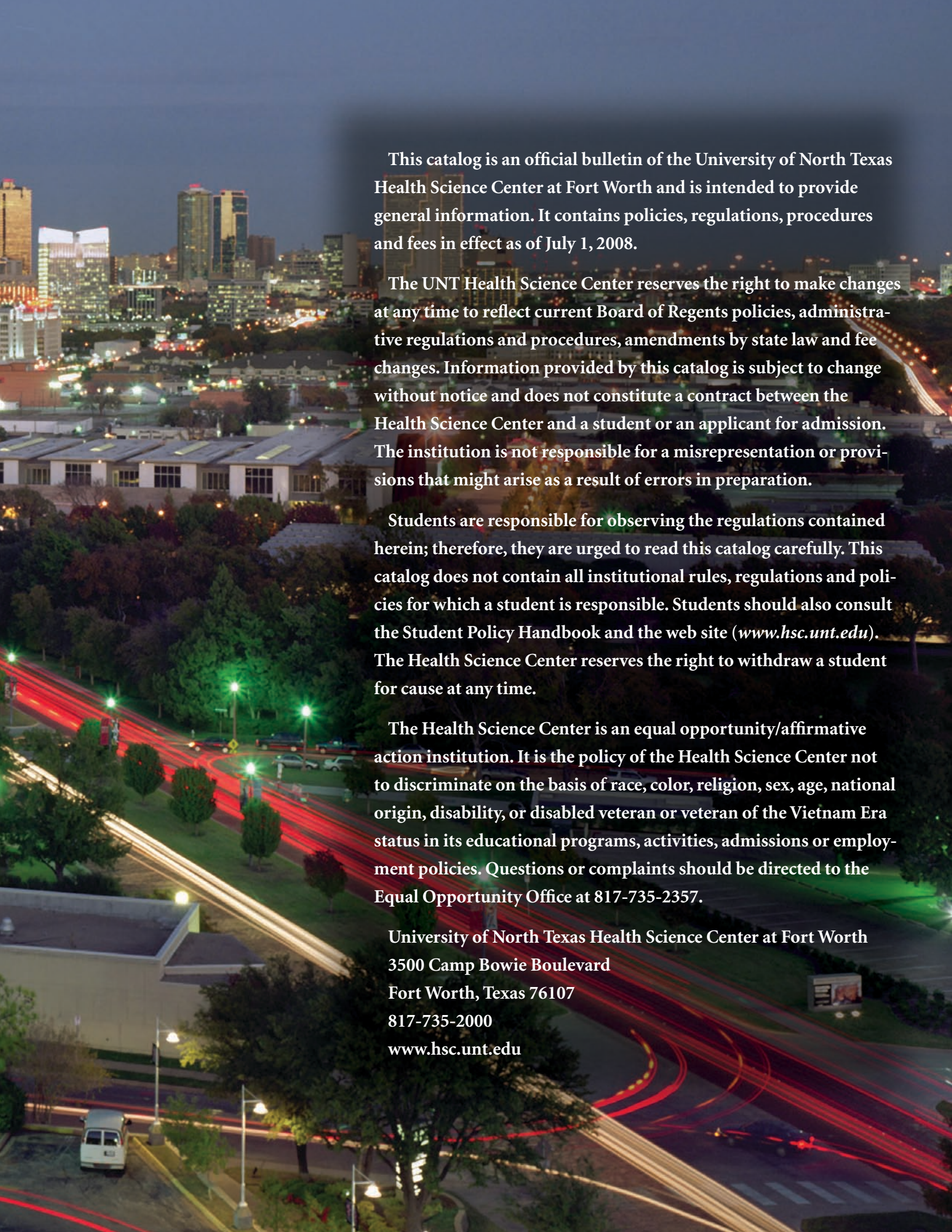
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This catalog is an official bulletin of the University of North Texas Health Science Center at Fort Worth and is intended to provide general information. It contains policies, regulations, procedures and fees in effect as of July 1, 2008.

The UNT Health Science Center reserves the right to make changes at any time to reflect current Board of Regents policies, administrative regulations and procedures, amendments by state law and fee changes. Information provided by this catalog is subject to change without notice and does not constitute a contract between the Health Science Center and a student or an applicant for admission. The institution is not responsible for a misrepresentation or provisions that might arise as a result of errors in preparation.

Students are responsible for observing the regulations contained herein; therefore, they are urged to read this catalog carefully. This catalog does not contain all institutional rules, regulations and policies for which a student is responsible. Students should also consult the Student Policy Handbook and the web site (www.hsc.unt.edu). The Health Science Center reserves the right to withdraw a student for cause at any time.

The Health Science Center is an equal opportunity/affirmative action institution. It is the policy of the Health Science Center not to discriminate on the basis of race, color, religion, sex, age, national origin, disability, or disabled veteran or veteran of the Vietnam Era status in its educational programs, activities, admissions or employment policies. Questions or complaints should be directed to the Equal Opportunity Office at 817-735-2357.

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President's Message

As one of the nation's most distinguished graduate academic institutions, the University of North Texas Health Science Center is bringing together the power of the right people, the right programs, and the right place to deliver unlimited possibilities for our students, faculty, and staff, along with a healthier tomorrow for our community.

Located in Fort Worth's Cultural District, our 33-acre campus is home to the Texas College of Osteopathic Medicine, the Department of Physician Assistant Studies, the Graduate School of Biomedical Sciences, the School of Public Health, and the School of Health Professions.

As of July 2008, our student body exceeded 1,200, in addition to 370 full-time faculty and 234 physicians/clinicians. UNT Health, our clinical practice, treats more than a half-million people and delivers over 7,500 babies annually across Tarrant County. We are pursuing innovative strategies to find solutions for today's most important health care concerns through interdisciplinary collaboration and research that is supported by the National Institute of Health, National Science Foundation, Department of Defense, and many foundations.

We are training a new generation of health professionals who are passionate about solving health care issues with innovative approaches that deliver real results. We invite you to join us today as we blaze new trails that hold the promise of a stronger, healthier community.



Scott B. Ransom, DO, MBA, MPH
President
University of North Texas Health Science Center





UNT HEALTH SCIENCE CENTER

The UNT Health Science Center is home to several prestigious academic programs, including: the Texas College of Osteopathic Medicine, Department of Physician Assistant Studies, Graduate School of Biomedical Sciences, and the School of Public Health.

The **Texas College of Osteopathic Medicine** is Texas' only college of osteopathic medicine, and one of only 25 accredited colleges of osteopathic medicine in the nation.

The **Physician Assistant Studies Program** offers a master of physician assistant studies degree, one of the growing number of PA programs educating these mid-level medical professionals at the master's level.

The **Graduate School of Biomedical Sciences** offers master of science and doctor of philosophy degrees in the biomedical sciences, with specializations in cell biology and genetics, microbiology and immunology, pharmacology and neuroscience, integrative physiology, biochemistry and molecular biology, forensic genetics, clinical research management, biotechnology, and medical sciences.

The **School of Public Health** awards master of health administration, master of public health, doctor of public health, and dual degree options.

The **School of Health Professions** will soon offer a doctor of physical therapy degree, through its Department of Physical Therapy.

Our History

The University of North Texas Health Science Center, Fort Worth's medical school and more, is one of the nation's distinguished graduate academic health science centers, dedicated to education, research, patient care and service. It comprises the Texas College of Osteopathic Medicine (TCOM), the Physician Assistant Studies Program, the Graduate School of Biomedical Sciences, the School of Public Health, and the School of Health Professions. UNT Health is the clinical practice of the Health Science Center and supports our educational, research, and community service missions through its 234 physicians and other health care providers.

Housed on a 33-acre campus located in Fort Worth's Cultural District, the Health Science Center has a \$181 million annual budget and adds approximately \$600 million into Fort Worth's

economy annually. It has over 370 full-time and 565 adjunct faculty as well as a staff of 1,300 to support our students and our missions of excellence in academics, research, clinical care, and community engagement.

The Health Science Center began when TCOM accepted its first students in 1970. The first class of doctors of osteopathic medicine graduated in 1974. Under the leadership of TCOM's first president, **Marion E. Coy, DO**, the school earned full accreditation from the AOA Bureau of Professional Education and full recognition from the Texas State Board of Medical Examiners. Dr. Coy opened TCOM's first two community healthcare clinics – one urban, one rural. He also traveled constantly during his presidency, telling the TCOM story to the public and to legislators, and attending every meeting of the Texas Higher Education Coordinating Board. He successfully rallied statewide support, and in May 1975 the Texas Legislature passed Senate Bill 216, which made TCOM a state-assisted medical school under the jurisdiction of the North Texas State University Board of Regents.

Ralph L. Willard, DO, TCOM's second president, took the helm in 1981, leading the evolution of TCOM's physical presence from a renovated bowling alley and assorted leased facilities into a modern campus of significant impact in Fort Worth's renowned Cultural District. During Dr. Willard's tenure, TCOM issued goal statements that would permanently guide the school's areas of emphasis: education, research, and community service. The statements defined how the people and programs of TCOM should contribute to finding solutions to America's health care problems, to prevent disease, and to foster collaborative biomedical research initiatives.

TCOM's third and longest-serving president, **David M. Richards, DO**, took office in 1986 and led the transformation of the TCOM into the Health Science Center with the addition of the Graduate School of Biomedical Sciences in 1993, a Physician Assistant Studies Program in 1997, and the School of Public Health in 1999. Research also thrived and the Health Science Center developed the fastest growing academic research program in Texas. Five Institutes for Discovery were established to nurture groundbreaking programs in aging and Alzheimer's disease, cancer, cardiovascular disease, vision, and physical medicine. The DNA/Identity Laboratory, originally funded to reduce the backlog of paternity cases pending in state courts, opened in 1990.

In 2001, **Ronald R. Blanck, DO**, became the Health Science Center's fourth president after serving as the highest-ranking physician in the armed forces, Surgeon General of the United States Army, and commander of the U.S. Army Medical Command. Dr. Blanck led the expansion of all programs within the Health Science Center and created a fourth school, the School of Health Professions. During his tenure, enrollment increased from just over 700 to more than 1,000. He established several hospital partnerships, helped bring the first federally funded community health clinic to Fort Worth, and expanded biotechnology incubator activities with the city. In 2001, the national Osteopathic Research Center was founded and the Texas Missing Persons DNA Database was established on campus. In 2002, TCOM was ranked for the first time in the top 50 medical schools for primary care by U.S. News & World Report and the Graduate School of Biomedical Sciences received the National Science Foundation's Presidential Award for Excellence in Science Mentoring. In 2005, the physical growth of the Health Science Center was guaranteed when Dr. Blanck oversaw the purchase of the former Osteopathic Medical Center of Texas property, which increased the campus from 16 to 33 prime acres in the heart of Fort Worth's Cultural District.

Scott B. Ransom, DO, MBA, MPH, became the fifth president of the Health Science Center in 2006 after a career as a leading physician, NIH funded scientist, educator, author, and administrator at the University of Michigan. Dr. Ransom expanded the Health Science Center's capacity for growth and excellence by doubling the size of the full-time faculty from just over 200 to nearly 400 and doubling the clinical volume of UNT Health to nearly 600,000 patient visits. In 2007, the Master Facility Plan was approved by the Board of Regents which launched a building program that included an 118,000 square foot academic building and the completion of research laboratories in the Center for BioHealth. Several partnerships were developed including a combined academic pediatrics program with Cook Children's Medical Center. TCOM has received the top scores in the country on the osteopathic board examination (COMLEX) since 2006. Several new degree and research programs were established, including the master of healthcare administration and a doctoral degree in physical therapy, as well as the Physical Medicine Institute, the Institute for Cancer and Blood Disorders, the Primary Care Research Institute, the Center for Community Health, and the Health Institutes of Texas. Opened in 2008, the TECH Fort Worth Acceleration Lab was created to help promote the commercialization of research.

Educational Programs

As the sole source of an osteopathic medical education in Texas, the **Texas College of Osteopathic Medicine** is unique among the state's eight medical schools. TCOM is a state and national leader in training physicians skilled in comprehensive primary care. Approximately 65 percent of TCOM's medical students go on to practice primary care medicine, helping reduce the shortage of physicians in our Texas communities.

The **Graduate School of Biomedical Sciences (GSBS)** is committed to achieving excellence in education, research, and service. The GSBS offers students opportunities to earn advanced degrees in biomedical sciences. The graduate school provides an innovative educational environment that encourages rigorous investigation in areas of health science research, exemplary teaching skills, and service to the community.

The GSBS offers both MS and PhD level studies. The graduate school, in conjunction with TCOM, also trains students for DO/MS and DO/PhD degrees for future careers as physician scientists in academic medicine. Biomedical science graduates fill positions in health science centers, colleges and universities, community health centers, federal agencies and industry.

To further address the shortage of medical care providers in rural and underserved communities, the **Physician Assistant Studies Program** was established in 1997. These mid-level practitioners work under the guidance of physicians in providing preventive and primary health care services to patients.

The **School of Public Health**, founded in 1999 as a result of grassroots efforts of community leaders and public health officials, is now one of only 41 accredited schools of its type in the United States. The SPH has grown rapidly in terms of both student enrollment and amount of research dollars since its initial accreditation with the Council on Education for Public Health (CEPH) in June 2002, while maintaining strong and vital links with public health professionals in the community. In 2007, the School of Public Health was re-accredited for the maximum term of seven years.

The **School of Health Professions** will soon offer a Doctor of Physical Therapy (DPT) degree, through the Department of Physical Therapy. Physical therapy faculty will team up with Texas College of Osteopathic Medicine physicians and specialists to offer unparalleled training in musculoskeletal and orthopedic practices, and osteopathic manipulative therapy techniques. Students will have the unique opportunity to utilize the resources of the Health Science Center's Physical Medicine Institute. Physical therapy classes are scheduled to begin in 2010.

UNT Health has become Tarrant County's largest multi-specialty medical group practice with over 230 health care providers in 34 sites. UNT Health has doubled its clinical volume to nearly 600,000 patient visits in the past two years and includes over 7,500 obstetrical deliveries. The group's doctors practice in 24 medical and surgical specialties and subspecialties, including allergy/immunology, family practice, cardiology, neurology, gastroenterology, obstetrics/gynecology, oncology, orthopedics, otolaryngology, psychiatry, osteopathic manipulative medicine, pediatrics, psychology, sports medicine, general surgery, infectious disease, internal medicine, and other areas. While UNT Health's primary mission is to provide outstanding clinical services to Tarrant County citizens, it also supports the educational needs of our medical and physician assistant students.

The **Center for Human Identification** is a nationally recognized center in providing scientific and technical support to law enforcement agencies, medical examiners, and crime labs. Housed on the campus of the Health Science Center, it is the only academic DNA lab in the United States dedicated to identifying the remains of missing persons, with approval to submit DNA profiles directly to the FBI's CODIS database. The Center for Human Identification receives federal funding to analyze DNA samples from both unidentified remains as well as reference samples submitted by family members of missing persons to law enforcement agencies nationwide.

The Health Science Center also is home to the **TECH Fort Worth Acceleration Laboratory**, a business incubator designed to create alliances between innovators in the biotechnology field and businesses and investors who can not only help bring the research brought to them to fruition, but also provide valuable economic development opportunities to Fort Worth.

The Health Science Center is home to the **National Osteopathic Research Center (ORC)**. The central and primary mission of the ORC is to facilitate collaborative efforts across professions to investigate the mechanism of action and clinical efficacy of osteopathic manipulative therapies through multi-center clinical trials, teaching research skills, and promoting collaborative studies.

The Health Science Center proudly serves the community through a variety of community and school outreach programs. For example, the Health Science Center cofounded the annual **Hispanic Wellness Fair**, and founded our signature event, the annual **Cowtown Marathon**, which attracted an estimated 15,000 participants in 2008.

Research Centers and Institutes

The Health Institutes of Texas (HIT) was formed in 2006 in response to the increasing need of physicians, researchers and healthcare professionals in Texas. The purpose of HIT is to leverage the Health Science Center's growing expertise in public health, interdisciplinary scientific research, medical education, and health care delivery to provide an innovative way to translate information

and research into new models of patient care and provider training.

Currently the Health Science Center has 10 active research institutes and centers.

Cardiovascular Research Institute (CRI)

The Cardiovascular Research Institute is a multidisciplinary institute with a goal of promoting basic and clinical research, clinical advancement, and community outreach programs in the prevention, diagnosis, treatment, and rehabilitation of cardiovascular disease.

Center for Community Health (CCH)

This research center promotes and fosters interdisciplinary broad based partnerships to conduct policy-relevant health research and enhance community capacity for prevention ultimately leading to elimination of health disparities in the North Texas area.

Center for Commercialization of Fluorescence Technologies (CCFT)

The Center for Commercialization of Fluorescence Technologies goal is to efficiently transfer new technologies for commercialization and fast utilization of fluorescence technologies by the public.

FOR HER (Focused on Resources for Her Health, Education and Research)

FOR HER's mission is to improve women's health across the spectrum of ages and cultures through excellence in clinical care, research, and education.

Institute for Aging and Alzheimer's Disease Research (IAADR)

The Institute for Aging and Alzheimer's Disease Research promotes research into the basic mechanisms and clinical assessment of preventable brain aging and translates these results into application for the welfare of the citizens of Fort Worth, Texas, and the nation.

Institute for Cancer and Blood Disorders (ICBD)

The Institute for Cancer and Blood Disorders mission is to eliminate cancer through excellence in research, prevention, patient care, education, and service to rural and other citizens of Texas and beyond. This institute houses the Institute of Cancer Research (ICR) which serves as the focus for academic leadership in all aspects of cancer research and education within the Health Science Center and surrounding areas of Fort Worth and North Texas. ICBD was formed in partnership with The Center for Cancer and Blood Disorders as a unique academic and community-based collaboration.

North Texas Eye Research Institute (NTERI)

The North Texas Eye Research Institute is dedicated to preserving vision and curing eye disease through promotion of interdisciplinary research teams.

Physical Medicine Institute (PMI)

The mission of the Physical Medicine Institute is to promote basic and clinical research, education, clinical practice, and community outreach programs in the prevention, diagnoses, treatment, and rehabilitation of neuromusculoskeletal disease of human beings of all ages.

Primary Care Research Institute (PCRI)

Improving the health of Texas citizens through interdisciplinary primary care, public health research, and education is the mission of the Primary Care Research Institute.

The Texas Center for Health Disparities (TCHD)

The Texas Center for Health Disparities is an NIH-designated EXPORT center established in September of 2005 to prevent, reduce, and eliminate health disparities in our communities through research, education, and community relations.

Mission/Vision/Values

Mission:

To improve the health and quality of life for the people of Texas and beyond through excellence in education, research, clinical care, community engagement, and to provide national leadership in primary care.

Vision:

To become a top 10 health science center.

Our Values:

- Compassion
- Innovation
- Integrity
- Pride
- Teamwork
- Excellence

Current Facilities

The Health Science Center's 33-acre campus is located in Fort Worth's Cultural District and consists of many buildings designed to meet the needs of our faculty, staff, and students. These buildings which total just over 1.2 million square feet include: the Education and Administration Building, Research and Education Building, Center for BioHealth, Education Annex, Gibson D. Lewis Library, Patient Care Center, Founders' Activity Center, Geriatric Annex, General Services/Police Building, Facilities Management Building, Administration Annex 1, Renal Center, and Administration Annex 2. There are also two parking garages centrally located on campus along with various parking lots to facilitate accessibility.

Master Plan: Growing Facilities

In fall 2009 the first phase of our campus expansion will be realized with the opening of a new education building. This state of the art education center will support the expansion of our academic programs and the continued growth of our students, faculty, and staff. This building is part of a phased five-year plan that will

add more than 300,000 square feet to our campus and promises to take our legacy of innovation to an entirely new level.

Phase One includes "Building A" (112,000 square feet) and "Building B" (55,000 square feet): both are set for completion in 2011. These facilities include spacious new auditoriums and lecture halls, cutting-edge patient simulation labs, an osteopathic manipulative training center, a gymnasium with locker rooms, a food services center, a student activities center, an alumni center, and a club for faculty.

Phase Two will update much of the east end of campus and includes "Building H" (150,000 square feet), which will be dedicated to expanding and enhancing our research capabilities. Phase Two will also see the renovation of several existing campus buildings and should be completed by 2014.

The campus will also feature four open quads that will link clustered buildings and establish one large interconnected campus with 10 new energy-efficient buildings. Parking will be improved and integrated with the campus design to accommodate the growing campus population. Finally, a central "spine" walkway will unify the west and east ends of campus. At night, this spine will be transformed into a "Walk of Light," a metaphor for eternal health.

By creating a greener, more welcoming and integrated campus, the new structures will better serve the needs of students, faculty, and staff, and become a valued and desirable destination point in Fort Worth's already renowned Cultural District.

Accreditation

The University of North Texas Health Science Center at Fort Worth is approved by the Texas Higher Education Coordinating Board and is a member of the Alliance for Higher Education, the Association of Academic Health Centers, the Council for the Advancement and Support of Education, and the Council of Graduate Schools.

The University of North Texas Health Science Center at Fort Worth is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award master's and doctoral



degrees. The Texas College of Osteopathic Medicine has received accreditation from the Commission on Osteopathic College Accreditation, which is the recognized accrediting agency for the approval of colleges preparing osteopathic physicians. TCOM is approved by the Texas Medical Board and is a member of the American Association of Colleges of Osteopathic Medicine. The University of North Texas Health Science Center Physician Assistant Studies Program is accredited by the Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA). Program graduates are eligible to sit for national certifying examinations.

The University of North Texas Health Science Center School of Public Health is accredited by the Council on Education for Public Health (CEPH).

For further information regarding the institution's accreditation and state approval or to review related documents, contact the Office of Educational Affairs, Education and Administration Building, room 416B, 817-735-2510.

Accreditation Summary

Accreditation Group	Year Accredited	Expiration Date
Southern Association of Colleges and Schools-SACS (for UNTHSC) 1866 Southern Lane, Decatur, GA 30033, Phone: (404) 679-4500 www.sacscoc.org	2000	2010
Accreditation Council for Continuing Medical Education-ACCME (for PACE) 515 N. State Street, Suite 1801, Chicago IL 60654, Phone: (312) 527-9200 www.accme.org	2005	2011
Forensic Quality Services-International-FQS-I (for Center for Human Identification) 13575 58th Street North, Suite 153, Clearwater, FL 33760-3721, Phone: (727) 538-4134 www.accme.org	2006	2008
Joint Commission on Accreditation of Healthcare Organizations-JCAHO (for VA/CBOC Clinic) One Renaissance Blvd., Oakbrook Terrace, IL 60181 Phone: (630) 792-5000 www.jcaho.org	2006	2008
National Commission for Health Education Credentialing-NCHEC (for PACE) 1541 Alta Drive, Suite 303, Whitehall, PA 78752-4422, Phone: (888) 624-3248 www.nchec.org	2006	2010
Texas Department of Public Safety-DPS (for Center for Human Identification) 5805 North Lamar Blvd., Austin, TX 78752-4422 Phone: (512) 424-2000 www.txdps.state.tx.us	2006	2008
Accreditation Review Commission on Education for Physician Assistants-ARC-PA (for PA Program) 12000 Findley Road, Suite 240 Duluth, Georgia Phone: (770) 476-1224 www.arc-pa.org	2007	2014

American Association of Blood Banks-AABB (for DNA Identity Lab-Paternity Division) 8101 Glenbrook Road, Bethesda, MD 20814-2749 Phone: (301) 907-6977 www.aabb.org	2007	2009
American Osteopathic Association-AOA (for Continuing Medical Education for PACE) 142 East Ontario Street, Chicago, IL 60611 Phone: (800) 621-1773 www.osteopathic.org	2007	2010
Council on Education for Public Health-CEPH (for School of Public Health) 800 Eye Street, NW, Suite 202, Washington, DC 2001-3710 Phone: (202) 789-1050 www.ceph.org	2007	2014
Texas Nurses Association (for PACE) 7600 Burnett Road, Suite 440, Austin, TX Phone: (800) 862-2022 www.texasnurses.org	2007	2010
Association for Assessment and Accreditation of Laboratory Animal Care International-AAALAC (for Lab Animal Medicine) 5283 Corporate Drive, Suite 203, Frederick, MD 21703-2879 Phone: (301) 696-9626 www.aaalac.org	2008	2011
Clinical Laboratory Improvement Amendments-CLIA (for Pathology) 1600 Clifton Road, Atlanta, GA 30333 Phone: (800) 311-3435 www.cdc.gov/clia/regs/toc.aspx	2008	2011
Council on Osteopathic Postdoctoral Training Institutions-OPTI (for GME) 142 East Ontario Street, Chicago, IL 60611 Phone: (800) 621-1773 www.osteopathic.org	2008	2013
Commission on Osteopathic College Accreditation-COCA (for TCOM) 142 East Ontario Street, Chicago, IL 60611 Phone: (312) 202-8097 www.aoacoca.org	2004/ 2007	2011

Division of Student Affairs

The Division of Student Affairs is a full institutional partner dedicated to promoting student success. It supports co-curricular and extracurricular programming, activities, and services to facilitate students' academic training, professional growth, and personal development. Additionally, the division supports students' needs, creating an atmosphere that stimulates learning, and integrates extracurricular experiences into the formal learning programs.

Through its administrative office and the offices of the Center for Academic Performance (CAP), Financial Aid, Registrar, Student Life, the Founders' Activity Center, International Student Services, and Career Services, the following goals are defined in support of the Health Science Center's educational mission:

- Create a culture of caring, integrity, and excellence
- Promoting student success
- Engage students and staff
- Develop recourses through grant funding

Personal, academic, and career counseling are available to students in the Office of Student Affairs. Professional counseling and psychiatric care for students and their families are available through the Student Assistance Program (SAP).

In emergency situations, such as a death in the family, special assistance can be provided for notification of professors, medical withdrawal, etc. The office provides policy interpretation and rights adjustment upon request, handles disciplinary and social adjustment issues, and provides self-development opportunities and enrichment activities.

Office of Student Affairs

The Office of Student Affairs is dedicated to student success. The office provides the leadership and oversight for all the staff and offices within the Division of Student Affairs. Additionally, the staff encourages student participation in and contribution to all Health Science Center programs. The chief student affairs officer establishes and coordinates the system of student conduct and discipline, interprets institutional regulations on academic and nonacademic matters as related to students, and acts as a student advocate when appropriate.

For more information on the Office of Student Affairs, or any office within the Division of Student Affairs, please visit the website at www.hsc.unt.edu/departments/studentaffairs or contact the Office of Student Affairs at 817-735-2505.

Center for Academic Performance (CAP)

Academic support programs provide services designed to facilitate the academic success of all students. Working with faculty to provide and support students in periods of academic difficulty, the staff can aid in planning alternate programs and assist in reassessment of student priorities.

Students benefit from tutoring programs, tips on time management and basic academic counseling skills.

Available services include counseling in learning skills, time management skills, test-taking skills, and peer-tutoring programs.

Learning Strategies

People learn in a variety of ways. Each student needs to find the most effective learning strategy for their personal needs. A wide range of factors goes into determining what works best for a student. Some students learn being in a quiet, solitary environment, some need verbal interaction in a group, others need to be physically active or have an environment rich in sound or other stimuli. The staff can help you find and implement your best strategy through assessment, counseling, and academic support workshops.

Peer Tutoring Programs

Tutoring programs provide the opportunity to share strategies for organizing and learning the large volume of material required to succeed in graduate and professional schools. The following tutoring options are provided: limited individual tutoring, large group tutorials, and drop-in sessions.



For more information, to make an appointment for study skills counseling, or to request tutoring assistance, contact the Center for Academic Performance at: 817-735-2409 or 817-735-2407, or visit the website at: www.hsc.unt.edu/CAP/

Office of Financial Aid

The Office of Financial Aid offers scholarship and loan programs to assist students in meeting the costs of financing their education. Although financial aid is available for eligible students, it should be considered supplemental to a student's own financial resources. The Office of Financial Aid is dedicated to quality customer service and the prompt delivery of aid program funds. Counselors are available to assist students in the application process to ensure that students receive the information needed to make the best decisions regarding their financial aid options. While financial aid is subject to strict federal and state regulations, the staff strives to help students navigate this complex plan in a professional and courteous manner.

For more information about these services, please contact the Office of Financial Aid at 817-735-2505, or visit the website at: www.hsc.unt.edu/departments/financialaid.

Office of the Registrar

The Office of the Registrar manages and maintains the students' academic records, insures the integrity, security and confidentiality of academic records, and oversees the development and maintenance of student academic records. These services include transcript generation, grade processing, degree certification, the enrollment and registration process of all students, and verification of enrollment, academic standing, and completion of degrees. The Office of the Registrar coordinates reports for internal and external compliance, oversees functions related to Veteran's Affairs, Commencement, Convocation and State audit reports; coordinates compliance with the Family Educational Rights and Privacy Act (FERPA); and provides institutional data to support campus initiatives.

The Office of the Registrar can be reached at 817-735-2201. All Registrar-related forms can be obtained by visiting www.hsc.unt.edu/departments/Registrar and clicking on "forms".

Office of Student Life

The Office of Student Life supports the mission of the Division of Student Affairs and the Health Science Center. Its role is to address issues that are relative to all medical and graduate students, from pre-enrollment through graduation. This office coordinates programs and activities that promote the intellectual, professional, moral, social, physical, and emotional development of all students.

There are four student-elected government councils representing each educational program at the Health Science Center. They are the Medical Student Government Association (MSGA); Graduate Student Association (GSA); Public Health Student Association (PHSA); and the Physician Assistant Student Association (PASA).

The Office of Student Life oversees two lounge areas located on the first floor of the Education and Administration Building (EAD). The student lounge in EAD 116 has an office for the four student government associations, organizational storage, a computer room with computers and a networked printer, a copy machine, a telephone for on-campus and local calls, a fax machine, a big screen television, couches and chairs. It is a great place for students to relax, hang out, study, eat, and meet with faculty or friends. The lounge in EAD 110 has vending machines (coin operated), an ice machine, a sink, microwave ovens, restrooms, recreational equipment (pool table, ping-pong tables), and tables and chairs for relaxing.

Student Organizations

There are many student organizations on the Health Science Center campus that represent a variety of interests within the health professions community. In cooperation with the Office of Student Life, these organizations sponsor programs and activities that promote the intellectual, professional, social, physical, and emotional development of all students. Students are provided with leadership opportunities at the local, regional, and national levels through participation in these groups. The Office of Student Life coordinates the student organization calendar and registration process.

The Health Science Center recognizes the right of any group of students, faculty, or staff to form a voluntary organization for purposes not forbidden by the laws of the United States and the state of Texas. All campus organizations that include enrolled students as members must be registered with the Office of Student Life and the Division of Student Affairs. Policies regulating the functioning, sponsorship, and privileges of registered or recognized organizations are available in the Office of Student Affairs. For more information, please contact the Office of Student Life at 817-735-5006.

Scheduling Events

Student organizations are required to schedule events, seminars, programs, and lectures through the Office of Student Life. Please contact 817-735-5006 for more information.

Office of International Student Services

The Office of International Student Services conducts orientation programs for new international students and offers assistance with administrative concerns, immigration advisement, and personal counseling. It provides referral to other campus agencies, if required, and gives international students the opportunity to participate in programs designed to introduce students to various aspects of U.S. culture and history.

For more information about these services, please contact the Office of International Student Services at 817-735-2501.

Office of Career Services

The Office of Career Services offers assistance and tools needed to help students improve interviewing and networking skills, as well as resume/CV assistance, job fairs, career resources, and presentations on such topics as professional behavior, dressing for success, and much more. In coordination with other academic departments, Career Services provides opportunities for students to succeed further in their chosen profession. For more information, please contact the Office of Career Services at 817-735-2501.

Founders' Activity Center

The Founders' Activity Center, located on the north end of campus, is open seven days a week to students, faculty, and staff. The center features aerobics classes, regularly scheduled recreational sports, a multipurpose outdoor court, and recreational equipment. Cardiovascular exercise equipment is also available, as well as free-weights, and weight machines. Exercise and nutrition programs can be tailored to the individual by the center's staff. For more information and a current schedule of activities, please visit <http://www.hsc.unt.edu/fac/> or contact the health promotion manager at 817-735-2209.

Campus Resources

Health Services

Health care services are available to students through the UNT Health Science Center's Central Family Practice Clinic. The student is responsible for all appropriate fees and must provide proof of insurance. Referrals to specialty clinics must be approved by Student Health Services or the student's primary care physician. For more information, please contact the Central Family Practice Clinic at 817-735-2228.

Housing

The Health Science Center does not provide on-campus student housing. However, students will find a variety of housing opportunities in the area. Every student is responsible for making his or her own housing arrangement. Please visit <http://students.hsc.unt.edu> and click on "housing opportunities" to see a current list of possible housing options. The Health Science Center does not assume any responsibility in housing arrangements but does support the federal housing policies that housing owners not discriminate because of race, color, gender, age, disability, veteran status, or national origin. For more information about these services, please contact the Office of Student Life at 817-735-5006.

Food Service

Snack food is available from various on-campus vending machines. Lunch is served daily in the Stairwell Café, located on the first floor of the library.

Police Department

The Health Science Center Police Department operates 24 hours a day, seven days a week. Police officers are fully licensed peace officers vested with all the powers, privileges, and immunities of peace officers in the State of Texas. They are authorized to function as the local law enforcement authority in all counties in which property is owned, leased, rented or otherwise under the control of the Health Science Center. The non-emergency phone number for the Police Department is 817-735-2210. **For emergencies, please dial 2600 from any campus phone.**

Motor Vehicle Registration

Those who operate motor vehicles and bicycles on campus must comply with the Texas Uniform Traffic Code and the published regulations regarding vehicle and bicycle use, parking, display of permits, and penalties for violations. Details are available at <http://students.hsc.unt.edu>.

Veterans' Benefits

The Health Science Center is approved by the Texas Workforce Commission for the training of men and women who have served in the armed forces. Assistance is provided to students who are on active duty or are veterans. Veterans should contact the Office of the Registrar for the appropriate forms to establish eligibility for assistance. The completed forms and a copy of Form DD-214 must be forwarded to the Office of the Registrar.

Veterans must maintain the minimum passing grade for their academic program to remain eligible to receive veterans' benefits. The Office of the Registrar can answer questions on veterans' benefits.

Policies Pertaining to Students

General Administrative Policies

This catalog contains official academic and administrative regulations. General policies that apply to all programs are in this section of the catalog; specific policies for each program are in the respective sections of this catalog. Academic policies and scholastic regulations also are presented in other official Health Science Center documents and specific program publications. Each student enrolled at UNT Health Science Center is responsible for knowing current academic policies and scholastic regulations, general and specific requirements, and operational policies that apply to registration and instruction.

The Health Science Center reserves the right to amend or add to the academic policies and scholastic regulations at any time, provided that such changes or additions are intended to improve the quality of education and are introduced in a fair and deliberate manner with appropriate notice provided to all students affected by the changes.

ID Cards

Identification cards are issued after new student orientation. These must be worn at all times while the student is on campus or, if applicable, on preceptorships, internships, and clinical rotations or any other practical experience performed as a member of the UNTHSC community. The ID card is void upon termination or interruption of enrollment and when not properly encoded. Fraudulent use of an ID card subjects the user to a fine of \$2,000 and up to one year in jail (Class A Misdemeanor). Anyone who uses the ID card to give false information to a police officer is subject to a fine of \$2,000 (Class C Misdemeanor). Replacement ID cards may be purchased. Please contact Biomedical Communications at 817-735-2470 for more information. A lost or stolen card should be reported to Police immediately. To report a lost or stolen ID card, call the Police Department at 817-738-2210.

Immunizations

The Texas Department of Health requires all students in higher education institutions to show proof of immunizations before registration. Any validated document of immunization presented by a student is acceptable provided that it shows the day, month and year when each immunization was received. Proof of required immunizations must be submitted prior to matriculation. Proof of immunization is not required for individuals who submit an affidavit or certificate signed by a physician licensed to practice in the United States stating that, in the physician's opinion, the required immunization would be injurious to the health and well-being of the student or any member of his or her family or household. Unless a lifelong condition is specified, the affidavit or certificate is valid for one year from the date signed by the physician and must be renewed every year for the exclusion to remain in effect. The Texas Department of Health requires that certain immunization conditions be met. All students born after January 1, 1957, who are enrolled in health-related courses in medical care facilities, must show proof of two doses of measles vaccine, one dose of mumps vaccine, or proof of immunity to these diseases; and two doses of chicken pox vaccine. Students who have had chicken pox may provide a written statement from their physician or a parent. (This is the only disease where a written statement from a parent can be considered proof of immunity.) All students enrolled in health-related courses must show proof of one dose of tetanus/diphtheria vaccine within the past 10 years. All students enrolled in

health-related courses must show proof of either one dose of rubella vaccine administered on or after the first birthday or serologic proof of rubella immunity. All students, residents and interns will receive a complete series of hepatitis B vaccine or show proof of serologic immunity. All students will be skin tested for tuberculosis using the two-step testing procedure in accordance with Section X of the Tuberculosis Control Plan Policy 96.001.26 of the Health Science Center. This test will be done during the first month of classes. Prospective students may be given provisional enrollment of up to one semester to attend classes while getting the required immunizations or documentation as long as no direct patient care is involved. Student health care providers cannot be provisionally enrolled without the receipt of at least one dose of the MMR vaccine if direct patient contact will occur during the provisional enrollment period.

Student Health Insurance

It is compulsory for all students to carry medical and hospitalization insurance while enrolled at the Health Science Center. Proof of insurance in the form of a signed verification form must be completed prior to initial registration and enrollment. Insurance coverage must remain in effect throughout the duration of enrollment. Although insurance may be purchased from any insurance carrier, a group student health insurance plan is offered by a non-university-affiliated carrier for enrolled students. Application forms are available in the Office of Student Affairs.

Liability: Personal Property on Campus

The Health Science Center is not responsible for and does not assume any liability for loss or damage of personal property. Students may want to purchase personal insurance coverage for their possessions on campus.

Student Rights and Consumer Rights

The institution will consider the impact of a caregiver's personal cultural values, ethics and religious beliefs as related to all services provided. However, in no instance will the mission of the institution be compromised. In accordance with applicable laws, treatment and care of our consumers will be provided to persons in need without regard to disability, race, creed, color, age, gender, religion or national origin. For the complete policy as it pertains to students of the Health Science Center, please see Human Resource Policy 5.13 under Policies and Procedures on the institution's home page at www.hsc.unt.edu or in the Human Resources Services' policy manual.

Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act (FERPA), 20 U.S.C. 1232G, grants students in institutions of higher education the right of access to their educational records with the exception of confidential letters and statements of recommendation that the student has waived the right to inspect. Before disclosing any personally identifiable information, except directory information, the Health Science Center must obtain written consent from the student unless the disclosure is allowed by law. The Family Educational Rights and Privacy Act consider certain information to be "directory information," which is subject to disclosure without prior consent from the student. Directory information relating to students includes the following: the student's name, address, telephone listing, date and place of birth, hometown, major field of study, participation in officially recognized activities and sports, classification, degrees and awards received, the most recent educational agency or institution attended by the student,

and dates of attendance. Students who do not want all or part of their directory information to be released must submit a written request to the Office of the Registrar during the first 12 days of the semester. Forms for submitting the written request to withhold directory information are available in the Office of the Registrar. Students have a right to request amendments to their educational records to ensure their accuracy. Students also have the right to file a complaint with the U.S. Department of Education concerning alleged failures by the Health Science Center to comply with the requirements of the Family Educational Rights and Privacy Act.

Student Conduct

The Health Science Center's primary concern is the student. It attempts to provide an environment that is conducive to academic endeavor, social growth, and individual self-discipline for all students. Enrollment at the Health Science Center is considered implicit acceptance of the rules, regulations, and guidelines governing student behavior promulgated by the institution, and the student is responsible for being aware of these requirements. In addition, all students are expected to know and obey the requirements of all federal, state, and local laws. Any student who violates a provision of those laws is subject to disciplinary action, including expulsion, notwithstanding any action taken by civil authorities because of the violation. The Health Science Center reaffirms to each student the privilege of exercising the student's rights of citizenship under the Constitution of the United States. Special care is taken to ensure due process and to identify the defined routes of appeal when students feel their rights have been violated. For complete policy information, consult the Student Code of Conduct in the Student Policy Handbook.

Respect for Diversity

The Nondiscrimination/Equal Employment Opportunity and Affirmative Action policy affirms the requirement for every member of the UNTHSC community to comply with existing federal and state equal opportunity laws and regulations. The Health Science Center is committed to the philosophy of a multicultural environment. The institution prohibits harassment based on race, gender, disability, age, national origin, religion, veteran status or lifestyle. The Health Science Center has long been an open, tolerant, and democratic institution, proud of its commitment to personal and academic excellence, but unpretentious in the atmosphere of its campus in its willingness to accept all members of the UNTHSC community on their value as human beings. The increasing diversity of the UNTHSC community is one of the institution's greatest strengths. Differences of race, religion, age, gender, culture, physical ability, language, nationality, and lifestyle make it a microcosm of the nation as a whole, reflecting the values of our pluralistic society. As an educational institution, the Health Science Center is committed to advancing the ideas of the human worth and dignity by teaching respect for human beliefs and values and encouraging open discussions. Hatred, prejudice or harassment of any kind is inconsistent with the center's educational purpose. The Health Science Center is strongly committed to the ethical principle that every member of the community enjoys certain human and constitutional rights, including the right to free speech. As a community of scholars, the health science center also is dedicated to maintaining a learning environment that is nurturing, fosters respect, and encourages growth among cultures and individuals represented here. Individuals who work, study, live, and teach within this community are expected to refrain from behaviors that threaten the freedom and respect every individual deserves.

Sexual Harassment

A primary objective of the Health Science Center is to provide an environment in which faculty, staff, and students may pursue their careers and studies with a maximum of productivity and enjoyment. Harassment of students on the basis of gender is a violation of Section 106.31 of Title IX of the Education Amendments of 1972. Harassment of UNTHSC employees on the basis of gender is a violation of Section 703 of Title VII of the Civil Rights Act of 1964 and the Texas Commission on Human Rights Act. Sexual advances, requests for sexual favors and/or other verbal or physical conduct of a sexual nature constitute sexual harassment. It is the policy of the Health Science Center to maintain a workplace and a learning environment free of sexual harassment and intimidation. Behavior or conduct that interferes with this goal is not condoned or tolerated.

Americans with Disabilities Act

The Health Science Center does not discriminate on the basis of an individual's disability and complies with Section 504 and Public Law 101-336 (Americans with Disabilities Act) in its admissions, accessibility, treatment and employment of individuals in its programs and activities. The Health Science Center provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law, who are otherwise qualified to meet the institution's academic and employment requirements. For assistance contact the Equal Employment Opportunity Office at the Health Science Center at 817-735-2357.

Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act

The Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (formerly the Campus Security Act) is a federal law that requires institutions of higher education in the United States to disclose campus security information including crime statistics for the campus and surrounding areas. It was first enacted by Congress in 1990 and amended in 1992, 1998, and 2000. In 1986, Jeanne Clery, a freshman at Pennsylvania's Lehigh University, was murdered and sexually assaulted in her campus residence hall room by another student she did not know. Lehigh University had not informed students about 38 violent crimes on campus in the three years preceding her murder. Clery's parents led the crusade to enact the original Campus Security Act. Congress formally named the law in memory of Clery in 1998.

The law was amended in 2000 to require schools to notify the campus community where public "Megan's Law" information about registered sex offenders on campus could be obtained. The information for the Health Science Center is available on the Campus Police website: http://www.hsc.unt.edu/departments/police/crime_stats.htm

Substance Abuse & Self Reporting

The Health Science Center does not condone the abuse of alcohol or illegal drugs. Its administrative policies, in accordance with Texas state law, provide the penalty of suspension or dismissal for any student who abuses alcohol or uses illegal drugs on property owned or affiliated with the Health Science Center.

However, the Health Science Center recognizes that students may develop substance abuse problems that can be treated successfully before critical incidents occur (e.g., arrests, usage on campus property, or intoxication in the classroom or health professions setting). Therefore, the Health Science Center encourages students who have developed substance abuse problems to voluntarily identify themselves and

to seek immediate treatment. Complete listings of all UNTHSC policies related to substance use or abuse can be found on the institution's web page www.hsc.unt.edu on the Human Resource Services Policy page and in the **Student Policy Handbook**.

Institutional Support Services

Biomedical Communications

The Department of Biomedical Communications is an educational service unit that supports development and implementation of UNTHSC programs. Composed of medical arts, photography, print services, audio-visual/television, and electronic engineering, the department's primary functions are the design and production of various forms of learning materials and the repair of equipment used by faculty, staff, and students.

Videotaping of procedures, patients or lectures, as well as production of specialized educational or promotional programs, is available both in the studio and on location. Video conferencing technology links the campus with University of North Texas in Denton to teach courses and conduct meetings. The department also receives programs on a variety of medical and policy issues via satellite.

Classroom playback of instructional videos, setup of audiovisual equipment for classroom use, student equipment checkout, maintenance of biomedical and electronic equipment, audio-visual systems design, and duplicating and offset printing are additional services offered by the department.

Graphic arts personnel create charts, graphs, illustrations, posters, brochures, newsletters, and magazines for the various educational, research, and community service endeavors of the institution. Photographers provide the prints and slides to complete these instructional and promotional materials, as well as on-site photography of campus events.

Gibson D. Lewis Health Science Library

The Gibson D. Lewis Health Science Library supports the educational, patient care, research, and community service missions of the Health Science Center by meeting the information needs of faculty, students, staff, and the local health sciences community. Featuring the latest information technology, this spacious and attractive facility provides the physical and intellectual resources needed for study, instruction, and research. All UNTHSC faculty and students receive a full complement of library services, including borrowing privileges, use of individual and group study areas, photocopying, document delivery/interlibrary loan, expert instruction in the use of information resources, and access to professionally trained librarians for reference and search assistance. The library collection consists of books, journals, and electronic resources in the basic biomedical sciences, clinical medicine, public health, and affiliated fields. Access to a variety of crucial electronic resources is provided through the Lewis Library web page at <http://library.hsc.unt.edu>. All electronic resources are available to UNTHSC students, staff, and faculty 24 hours a day, 7 days a week from anywhere in the world.

Lewis Library uses an online system from Innovative Interfaces, Inc. (III) to acquire, process, and provide access to its collections. Book and journal literature not owned by the library may be obtained through interlibrary loan from many sources. Lewis Library has been a resource library in the National Network of Libraries of Medicine (NNLM) since 1991. The library is also a member of the South Central Academic Medical Libraries Consortium (SCAMEL), which provides

access to 14 academic medical/health science center libraries in Texas, Arkansas, Louisiana, Oklahoma, and New Mexico. Additionally, the library participates in TexShare, a state of Texas cooperative library program. TexShare allows students, staff, and faculty physical access to and borrowing privileges from all public libraries and a variety of public and private institutions of higher education in Texas. As a member of the University of North Texas System, the library is able to provide access to a wide array of electronic resources. The library's participation in NNLM, SCAMEL, TexShare, and the UNT System ensures that students have access to the entire world of information beyond the walls of Lewis Library.

Information Technology Services

Information Technology Services provides quality computer and telecommunication services to all academic and administrative areas of the Health Science Center.

Systems and Programming Services designs and implements computer systems and programs for academic and administrative areas of the institution.

Network and Microcomputer Services is responsible for the design, installation and maintenance of academic and administrative local-area networks (LANs) on campus. Computer users connected to the LAN have access to a variety of software programs and are able to exchange data and e-mail with users across the institution and off-campus. Dial-in access is available for both PC and Macintosh platforms.

The division provides consultation and user assistance to computer users relative to hardware and software use, communications, printing, and planning a computer purchase.

Telecommunication Services operates and maintains the campus-wide telephone system with state-of-the-art equipment and software. This division also manages the voice mail system, as well as all pagers

and answering services, and advises users about cellular telephones.

Records Management maintains a program for the economical and efficient management of institutional records. The division is responsible for the preparation and maintenance of the records-retention schedule and reviews all requests for the disposal of state records.

Center for Research Management

The Center for Research Management coordinates all basic and applied research, clinical trials, and biomedical technology programs. Programs that promote these activities include seminars and workshops, faculty research programs, collaborative, and community outreach activities, and a variety of programs to encourage students to pursue careers in research.

The office develops policies and administers programs to enhance research and scholarly activity and to assure institutional compliance with all mandated requirements related to research. The office assists in proposal development, identification of and negotiations with potential sources of support and post-award management of research funds. The office manages intellectual property (patents and copyrights), institutional policies, and research contractual matters.

Fiscal & Financial Aid Policies

Tuition and Mandatory Fees

The amounts shown in this catalog are subject to change without notice by action of the Texas Legislature or the UNT System Board of Regents.

The Board of Regents has been granted the authority, within established guidelines, to set tuition rates by program.



The Health Science Center is a state-supported institution subject to state laws. Extension of credit is prohibited and all financial obligations to the Health Science Center must be cleared prior to registration in the next subsequent semester.

Residency Regulations for Tuition Purposes

Rules and regulations for determining residency status are specified under Title III of the Texas Education Code and are available in the Office of the Registrar. In general, students must physically reside in Texas for the 12-month period immediately preceding their initial registration in an educational institution in Texas. Other factors may be considered for residency determination for tuition. Students who are not legal residents of Texas must pay nonresident tuition including the statutory tuition charges and standard fees approved by the Board of Regents. Certain residency exceptions do not affect actual residency status but do allow for a non-resident tuition exemption. Refer to “Tuition and Fee Waivers” section of this chapter for further information.

Responsibility of the Student

The student is responsible for knowing their residence status and for registering under the proper status. Any questions concerning residency must be discussed with the Admission Office in TCOM, SPH, and GSBS Programs before registration. Any student erroneously classified as a resident will be reclassified and will be required to pay all out-of-state tuition due. Attempts to evade non-resident fees may subject the student to the statute penalty and to possible disciplinary action.

Change of Status: Non-Resident to Resident

A student who is at any time classified as a non-resident retains non-resident status until reclassification as a resident is applied for and is official approved.

Change of Status: Resident to Non-Resident

Students who are classified as residents but become nonresidents by virtue of any change of domicile must notify the Office of Registrar of such change immediately. Students who believe they have been erroneously classified have the opportunity for appeal by requesting review from whom the original classification was assigned or in the Office of the Registrar.

Tuition and Fee Waivers

Several exemptions and waivers are available to qualifying students. Brief descriptions of these are listed below. Waiver refunds must be requested during the semester application is made. Such requests must be made before the audit enrollment date in any given term. Audit enrollment dates are published in the **Academic Calendar**. Requests for retroactive refunds cannot be honored. Additional information and applications are available in the office of each program.

Exemptions and Waivers

1. Certain veterans, dependents, etc. of the U.S. Armed Forces who are Texas residents are exempted from payment of tuition.
2. Certain orphans of members of the U.S. Armed Forces, Texas National Guard and Texas Air National Guard are exempted from payment of tuition.
3. Deaf or blind students are exempted from payment of tuition.
4. Children of disabled firemen, peace officers, employees of the Texas Department of Corrections, and game wardens are exempted from payment of tuition.

5. Children of U.S. prisoners of war or persons missing in action are exempted from payment of tuition.
6. Resident rather than non-resident tuition is applied to certain students from other nations of the American hemisphere.
7. Resident rather than non-resident tuition is applied to teachers and professor of Texas state-supported institutions of higher education, their spouses and their dependent children.
8. Resident rather than non-resident tuition is applied to a teaching or research assistant provided the student is employed at least one-half time by the Health Science Center in a position that relates to the degree sought.
9. Resident rather than non-resident tuition is applied to a non-resident holding a Health Science Center competitive academic scholarship of at least \$1,000 for the academic year for which the student is enrolled.
10. Students who are concurrently enrolled in more than one program at the Health Science Center are not charged duplicate fees.
11. Certain Health Science Center fees are waived for students enrolled only in off-campus courses.
12. Certain Health Science Center fees are waived for UNT students concurrently enrolled in courses at both UNT and UNTHSC.

Tuition and Fee Refunds

A student who drops a course or withdraws from school within certain time periods may be entitled to a partial refund of tuition and fees. These refunds are calculated according to the category and time schedule listed in the Academic Calendar. Application fees, late registration charges, fee for student identification card, delinquent payment fees, and installment handling fees are non-refundable. Any financial obligation to the Health Science Center must be resolved before any refunds will be made.

Class Drop Policy

Refunds are made for any course dropped through the audit enrollment date (see Academic Calendar for dates). The semester's first class day is always the first official day of classes rather than the first day of an individual class. To calculate the refund for a class dropped, take the fee paid for the original hours and subtract the fee shown in the Tuition and Fee Register for the new number of hours. The difference between the two is the amount of the refund. Note: If all classes for the semester are dropped, see “Withdrawal Refund” in this catalog.

Class Drop Refunds

The Health Science Center shall refund a percentage of tuition and mandatory fees to students dropping a course or multiple courses as long as enrollment is maintained in at least one course (see Academic Calendar for dates).

Withdrawal Policy and Procedure

If a student leaves the Health Science Center through withdrawal, dismissal or leave of absence, the following procedure should be followed:

1. Inform the Office of the Registrar which will direct the student to the appropriate form(s).
2. Complete required forms according to established deadlines (when applicable).
3. Students receiving financial aid are required to schedule exit interviews to process the paperwork for repayment. A student who leaves the Health Science Center without completing the appropriate exit process or leave of absence will be dismissed.

It is not always possible to complete the clearance process in one day. Until a student is cleared in all areas, a hold will be in force on his/her transcript. Withdrawal refunds are determined by the number of enrolled semester credit hours at the time of withdrawal. Withdrawal percentages are applied to the total amount of tuition and fees as prescribed by state law, not the amount paid. The withdrawal schedule and percentages of refund shown below pertain to total withdrawal for the semester. The withdrawal schedule and the percentages of refund are mandated by the Texas Legislature. The semester's first class day is always the first official day of classes for the semester rather than the first day the individual attends class. A withdrawal refund is based on the day of withdrawal, regardless of the date the class first meets. See the Academic Calendar for dates.

Withdrawal Refunds

The Health Science Center shall refund a percentage of tuition and mandatory fees to students withdrawing from the institution during a fall or spring semester according to the following withdrawal schedule.

Fall or Spring Semester:

- Before the first day of class 100%
- During the first 5 class days 80%
- During the second 5 class days 70%
- During the third 5 class days 50%
- During the fourth 5 class days 25%
- After the fourth 5 class days 0%

Summer Semester:

- Before the first day of class 100%
- During the first - third class days 80%
- During the fourth - sixth class days 50%
- Seventh day of class and thereafter 0%

Any financial obligation to the Health Science Center must be resolved before any refunds will be made.

Correction of Errors

Students are responsible for any additional amounts due the Health Science Center resulting from auditing and correction of records after registration fees have been paid, including all registration assessment errors, change from off-campus to on-campus classes, invalid employment waivers, etc.

Payments by Third Party

Checks issued by a third party in payment of a student's tuition, fees or other charges should be made payable either to the student or to both the student and the Health Science Center. Arrangements may be made with the Office of Student Financials where cash amounts should not be made available to the student.

Returned Checks

A returned check is defined as any check returned to the Health Science Center unpaid due to no fault of the bank or the institution. Upon receipt of a returned check, notification is mailed to the issuing party or the individual in whose behalf the check was issued. The address on the check and/or the address in the official record is used. An additional \$25 fee is charged for each returned check.

Financial Aid Information

The University of North Texas Health Science Center offers scholarship and loan programs to assist students in meeting the costs of financing their education. Although financial aid is available for eligible students, it should be considered a supplement to a student's own financial resources.

The Office of Financial Aid is dedicated to quality customer service and the prompt delivery of aid program funds. Counselors are available to assist students in the application process to ensure that students receive the information needed to make the best decisions regarding their financial aid options. While financial aid is subject to strict federal and state regulations, the staff strives to help students navigate this complex path in a professional and courteous manner.

Student Eligibility

To be considered for financial assistance, a student must meet the following eligibility criteria:

- Certify that he/she does not owe a refund on any grant or loan, is not in default on any loan or has made satisfactory arrangements to repay any defaulted loan, and has not borrowed in excess of the loan limits on any federal programs
- Register with the Selective Service if required to do so
- Maintain satisfactory academic progress
- Use all funds received as financial aid for educational purposes only
- Must be a U.S. citizen or eligible non-citizen
- Must be admitted to an eligible degree program

Applying for Financial Aid

To be considered for financial aid, students should complete a Free Application for Federal Student Aid (FAFSA) electronically at www.fafsa.ed.gov. A computer with access to a printer and the previous tax year's information are required. For continuing students you can complete a renewal application with your pin number. Students must complete a new FAFSA annually to be considered for financial aid.

The Office of Financial Aid does not have an application deadline. However, it is highly recommended that applications be submitted as early as possible as some funding is limited. Applications should be received no later than April 1 to facilitate the delivery of aid funds prior to payment deadlines. Students are ultimately responsible for the payment of their tuition and fee charges by stated deadlines and will receive a reimbursement upon receipt of any eligible financial aid funds.

Students selected for verification will be required to provide additional documentation and financial aid forms. If the selected data is incorrect, the processing time may increase.

Take adequate time to complete the FAFSA. Read and answer all questions carefully and accurately. The additional time spent will enhance and ensure a successful application process.

Students may schedule an appointment with a financial aid counselor to discuss eligibility requirements, verification, problems, budgeting of resources, or loan applications by calling (817) 735-2505 or (800) 346-8266.

The Office of Financial Aid is located in the Division of Student Affairs on the second floor of the Educational and Administration building (EAD-247).

Student Financial Aid Counseling

Individual student counseling is available and encouraged. Counselors are available to discuss budgeting and types of financial aid awards. Students receiving federal loans are required to complete electronic loan entrance counseling before the release of the first disbursement of their first loan.

Student Budgets

Student budgets are developed within federal and state guidelines. These budgets are evaluated annually and may or may not change depending on requirements by federal and state law. Student budgets are based on the following expenses for the student only (does not include spouse or other dependents) and may vary by college and/or degree program:

- Tuition and fees
- Books and supplies
- Room and board
- Transportation
- Personal or Miscellaneous expenses
- Health Insurance

Allowances for those students with dependents requiring dependent care and allowances for handicapped students may be permitted for students meeting specific requirements. In addition, students with unusual or extenuating educationally-related expenses that require special consideration should contact the Office of Financial Aid promptly. Students may be required to supply additional information for consideration of such requests. Regardless of the source, the total financial aid received by a student cannot exceed their cost of attendance budget.

Financial Aid Programs

Students who complete the FAFSA and meet eligibility requirements will be considered for federal, state, and/or institutional financial aid. In addition to financial criteria, most aid programs require the recipient meet academic standards in order to maintain eligibility. Some programs have limited funds, so early completion of the FAFSA is encouraged. The following are programs that eligible students may apply for:

- Texas Public Education
- Texas College Work Study
- College Access Loan
- Health Education Loan Program
- Federal College Work Study
- Federal Perkins Loans
- Scholarships for Disadvantage Students
- Loans for Disadvantaged Students
- Federal Stafford Subsidized Loans
- Federal Stafford Unsubsidized Loans
- Graduate PLUS Loans
- Various Institutional Loan Programs

We encourage all students to apply early since funding for some financial aid programs is limited. Students may also apply through the Health Science Center's Office of Financial Aid for various state, institutional and private scholarship programs. Students may also apply directly to private foundations for scholarship opportunities. Students are encouraged to contact the Office of Financial Aid for more information or questions they might have regarding financial aid and scholarships. For questions related on financial benefits

associated with armed forces service, students should contact their local military recruiter.

Credit Eligibility

Due to the demanding course schedule, holding a part-time job may not be possible. This creates a greater dependence on financial aid to cover living expenses. Some students discover a need to borrow additional funds beyond what the Stafford programs will allow. The source of these additional funds is usually a private alternative educational loan.

Unlike Stafford loans, the government does not guarantee alternative or private loans. Therefore, lenders usually review a student's credit history before granting an alternative or private loan. Educational loan defaults, bankruptcies, charge-offs, foreclosures, judgments, liens or an excess of slow payments could damage the chances of receiving the alternative or private loans necessary to cover all educational and living expenses that a student is responsible for while attending medical school.

A good credit history is important to ensure that any student is able to take full advantage of all funding options available through financial aid.

Insurance for Alternative Loans

Unlike Stafford loans, most alternative loans do not include a death/disability clause. This means that most alternative loans are not forgiven in the event of death or total disability. We recommend that any student planning to borrow money from an alternative loan program consider securing adequate insurance coverage for the loan.

Immigration Documents and Budget

When applying for a new visa document, international students may need to demonstrate sufficient financial support. This will usually be the case if:

- The student is requesting an I-20 upon admission;
- The student is asking for an extension of his/her stay;
- There is a change in funding;
- The student is asking for documentation for the first time for immediate family members and/or;
- Documents in the student's file are more than 12 months old.

The amount of financial support required will vary depending upon the number of dependents the student is supporting. Consult with the International Student Advisor for further information.

Scholarships

The University of North Texas Health Science Center offers several competitive scholarships. Awards are open for competition on departmental/degree plan basis. Students should contact the Scholarship Coordinator in the Office of Financial Aid for subject specific scholarships.

Scholarships are awarded on the basis of a student's academic qualifications. Generally, scholarships range in value from \$500 to \$5,000. Out-of-state and international students who are recipients of university competitive academic scholarships in the amount of \$1,000 or more may also receive a waiver of out-of-state tuition.

Applications for general academic scholarships and most special scholarships are available through the Office of Financial Aid or on the department web site at <http://www.hsc.unt.edu/departments/financialaid>.

Satisfactory Academic Progress

To maintain eligibility for consideration of all forms of financial aid, students must meet satisfactory academic progress as determined by their individual schools for all students. Academic progress is monitored by the Registrar's Office in conjunction with individual school personnel on a term by term basis. The minimum academic performance to remain enrolled in any program is equal to or exceeds the Federal standard of a minimum average grade of an overall "C" or grade point average of 2.0 and 75% completion of attempted hours. Furthermore, students can not continue enrollment in a course of study to the point that they would attain 150% of the required hours for that course of study. The minimum academic standards for each school within the Health Science Center are published in their individual catalogues and can be located at the following links:

- Texas College of Osteopathic Medicine and Master of Physician Assistant Studies: <http://www.hsc.unt.edu/education/tcom/documents/Catalog>
- School of Public Health: <http://www.hsc.unt.edu/education/sph/documents/Catalogs>
- Graduate School of Biomedical Sciences: <http://www.hsc.unt.edu/education/gbs/documents/GraduateCatalog.pdf>

Withdrawing from the University

If you officially withdraw, drop/stop-out, or are administratively withdrawn from the Health Science Center, any refund of tuition and fees and other University charges will be assessed for return to programs from which you were originally paid. An additional "repayment" calculation will be performed to determine if you must repay a portion of the assistance paid directly to you for living expenses. Office of Financial Aid personnel will apply the federally mandated formula for the return of financial aid funds. Funds will be returned to the programs from which the money was paid to you in the following order:

- Federal Stafford Loan Program
- Federal Perkins Loan Program
- Graduate Parent Loan Program (PLUS)
- Other Title IV Programs

Other Federal, State, Private or Institutional Student Aid

In addition, it is likely you will owe a repayment of unearned financial aid funds if you cease enrollment prior to the sixty percent (60%) completion point of any payment period for which you received financial aid funds. The completion point is based on the total number of class days in a payment period.



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TEXAS COLLEGE OF OSTEOPATHIC MEDICINE

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Rynn Ziller, EdD, Director of Academic Affairs

Office of Admissions & Outreach

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Mike Kennedy, Associate Director

Lynn Scott, Senior Assistant Director

Catherine Boney, Admissions Committee

Caroline Albert, Document Management Coordinator

Caroline Gourley, Admissions Interview Coordinator

Amy Babb, Administrative Assistant

Our Mission

“Educating the Physician and Physician Assistant of Tomorrow Through the Quest for Knowledge Today.”

Our Vision

“To be a recognized academic leader in primary care and rural medicine for the state of Texas and the nation.”

To achieve this vision we will be:

- An international leader in medical education and curricular design.
- Nationally renowned for focused research and unique programs.
- The preeminent multi-specialty medical practice in Tarrant County.
- An institution with high student, faculty, and staff career satisfaction.

Academic Calendar

	Fall 2008	Spring 2009	Summer 2009
Year 1 DO Students			
Electronic registration	July 1	---	---
Orientation	July 21-25	---	---
First day of classes	July 28	Jan. 5	
Last day to register for classes	Aug. 1	---	---
Last day for students to withdraw with partial refund	Aug. 22	Jan. 30	---
White Coat Ceremony (mandatory)	Sept. 12	---	---
Last day of classes	Dec. 19	June 26	---
Electronic submission of grades due to registrar	Dec. 25	July 3	---
Year 2 DO Students			
Electronic registration	July 1	---	---
First day of classes	July 28	Jan. 5	---
Last day to register for classes	Aug. 1	---	---
Last day for students to withdraw with partial refund	Aug. 22	Jan. 30	---
Last day of classes	Dec. 19	May 22	---
Electronic submission of grades due to registrar	Dec. 25	May 29	---
First day of Correlative Basic Science and Clinical Medicine Review	---	May 4	---
Year 3 DO Students			
Clinical Skills Clerkship begins	June 23	---	---
Clinical Clerkships begin	July 7	---	---
Last day of rotations	---	June 19	---
Year 4 DO Students			
Clinical Clerkships begin	July 7	---	---
Last day of rotations	---	April 24	---
Semester 8 classes	---	May 12-14	---
Commencement	---	May 16	---

	Fall 2008	Spring 2009	Summer 2009
Holidays and Special Events: (Please note that holidays may vary for students on rotation and for members of the faculty and staff)			
Labor Day	Sept. 1	---	---
Thanksgiving	Nov. 27-28	---	---
Winter Break	Dec. 22 - Jan. 2	---	---
MLK Day	---	Jan. 19	---
Spring Break	---	March 16-20	---
Research Appreciation Day	---	March 6	---
Commencement	---	May 16	---
Memorial Day	---	May 25	---
Independence Day	---	---	July 4
COMLEX			
COMLEX Level 1 Online registration and information for Level 1: Comprehensive Osteopathic Medical Licensing Examination (COMLEX) is available at www.nbome.org . Please check website for available dates. Registration several months in advance is recommended.			
COMLEX Level 2-CE and COMLEX Level 2-PE Online registration and information for Level 2: Comprehensive Osteopathic Medical Licensing Examination (COMLEX 2) is available at www.nbome.org . Please check website for available dates. Registration several months in advance is recommended.			
COMLEX Level 3 Online registration and information for Level 3: Comprehensive Osteopathic Medical Licensing Examination (COMLEX 3) is available at www.nbome.org . COMLEX Level 3 is generally taken after the first year of residency is completed. Please check website for available dates. Registration several months in advance is recommended.			

Texas College Of Osteopathic Medicine

The Texas College of Osteopathic Medicine is the founding college of the UNT Health Science Center, one of the nation's distinguished academic medical centers dedicated to education, research and patient care. As the only institution in Texas that grants degrees in osteopathic medicine, the Texas College of Osteopathic Medicine is unique among the state's eight medical schools. TCOM is a state and national leader in training physicians skilled in comprehensive primary care. Over 65 percent of TCOM's medical students go on to practice primary care medicine, helping reduce the shortage of physicians in our Texas communities.

Our graduates are physicians well prepared to practice all phases of medicine, whether your goal is to be the only family doctor in a small Texas town or one of the nation's top heart transplant surgeons. TCOM graduates already do both.

In fact, TCOM graduates earn spots in some of the most demanding residency programs in the nation, including the Mayo Clinic, Kennedy Memorial Hospital, Yale, The Cleveland Clinic, Baylor College of Medicine, and Scott & White Hospital.

Founded in 1970 as a private medical college, TCOM became a state-supported school under the University of North Texas jurisdiction in 1975. TCOM is now one of four schools within the Health Science

Center, which includes a Graduate School of Biomedical Sciences, the School of Public Health, and the School of Health Professions.

TCOM's faculty are practicing physicians, educators, and researchers, allowing them to keep abreast of the latest advances in medical science and patient care. This knowledge feeds directly into the ongoing curriculum development process. Faculty members have always drawn upon their extensive real world experience to illustrate concepts and enliven their teaching. This experience is also indispensable in TCOM's development of new, innovative teaching methods.

Academic Programs

The Texas College of Osteopathic Medicine is dedicated to the principles of academic excellence and constantly strives to improve the quality of its academic program. A primary goal is helping each student develop skills in self-learning and self-evaluation that will be necessary during formal education and throughout a professional career. Emphasis is placed on learning activities that help each student interact effectively with peers and promote cooperative relationships with others in the health professions. Teaching critical thinking and helping each student develop the skills required to make decisions in the clinical setting are central to all educational activities in the curriculum.

Doctor of Osteopathic Medicine Degree Program

The Texas College of Osteopathic Medicine curriculum is a four-year program leading to the degree of doctor of osteopathic medicine. Emphasis is placed on the identification and treatment of illnesses, promotion of health and wellness in patients, and treatment of each patient in the context of a wide variety of factors that influence health.

TCOM's curriculum is designed to help students integrate the basic and clinical sciences, further develop their ability to diagnose illness, and increase their understanding of the context within which medicine is practiced. Instruction in the first two years is presented according to organ systems of the body. TCOM is also dramatically increasing the use of instruction based on clinical cases. Instructors use an audience response system to quiz students on their understanding of diagnosis and pathophysiology in clinical cases. The instructional program also contains computer-assisted instruction, small-group teaching, state of the art robotic simulators, specialized workshops, and simulated clinical experiences.

Evaluation of student performance is based on objective, structured clinical examinations, competency-based assessments, observational techniques, and standard written tests.

Beginning with the first semester, students are placed in a variety of clinics and agencies to help them become familiar with the many facets of community health care and the health problems that will play a role in their lives as health care providers. These assignments provide a gradual transition from classroom to clinical settings.

Rural Osteopathic Medical Education of Texas (ROME)

The University of North Texas Health Science Center at Fort Worth, and the Division of Rural Medicine, Texas College of Osteopathic Medicine, offers a special medical school curriculum, Rural Osteopathic Medical Education of Texas (ROME). The purpose of this new, innovative rural educational program is to prepare students for the practice of medicine in a rural environment. This rural medicine curriculum includes academic activities and clinical experiences beginning before matriculation and continuing throughout all four years of predoctoral medical education. Students accepted to ROME complete this curriculum in addition to the courses in the regular medical school curriculum.

The overall goals of this curriculum are:

- To provide a foundation for life and practice in a rural community.
- To provide an educational curriculum that will prepare the graduate for acceptance into premier graduate medical education programs.

The ROME curriculum provides students with a real world experience of living and working in rural Texas as well as knowledge and skills relevant to being a physician in a rural environment. Throughout the ROME curriculum, students work with faculty preceptors across the state. In addition, students participate in coursework on campus designed to convey relevant knowledge and skills. Clinical experiences include interaction with doctors and hospitals from the rural communities of Texas as well as urban tertiary centers.

Joint and Accelerated Programs

The Health Science Center offers several joint and accelerated programs to meet the wide range of student needs and career goals.

The DO/PhD Medical Scientist Training Program and DO/MS dual-degree program are offered in conjunction with the Health Science Center's Graduate School of Biomedical Sciences. Students may choose to conduct research in a wide range of basic science disciplines

to complement their medical interests, including cell biology and genetics, biochemistry and molecular biology, microbiology and immunology, physiology, and pharmacology and neuroscience.

A joint DO/MPH degree program offered in conjunction with the School of Public Health provides future osteopathic physicians with specialized training to develop, integrate, and apply culturally competent social, psychological, and biomedical approaches to the promotion and preservation of health.

TCOM also offers an accelerated baccalaureate/osteopathic physician program with the University of North Texas in Denton (UNT), and the University of Texas at Dallas (UTD) where students can earn both their baccalaureate and DO degrees in seven years instead of the usual eight.

Qualified students earn a bachelor's degree after successfully completing three years at UNT or UTD and the first year at TCOM. Upon completion of the final three years in the TCOM curriculum and all graduation requirements, students earn their doctor of osteopathic medicine degree.

Students in any of the seven-year combined Bachelor's/DO programs may select the option of also completing the MPH degree by adding one additional year to their program.

Postgraduate Training

TCOM firmly endorses the completion of at least three years of postgraduate training following the doctor of osteopathic medicine degree program. All internship and residency programs sponsored by TCOM are affiliated with the Texas Osteopathic Postdoctoral Training Institutions (OPTI), a consortium of hospitals working with TCOM to provide quality osteopathic graduate education opportunities within the state.

Admissions

E-mail: TCOMAdmissions@hsc.unt.edu
 Phone: 817-735-2204 or 800-535-TCOM
 Fax: 817-735-2225
 Website: www.hsc.unt.edu

Admission into the Texas College of Osteopathic Medicine is selective. Each year, TCOM admits approximately 175 new students from a pool of well-qualified applicants. The Office of Admissions and Outreach, located in Education and Administration Building room 247, provides advising, tours, application processing, and other related assistance. TCOM encourages future applicants to use these services in order to assist them in making informed decisions about pursuing a career in osteopathic medicine.

Admission Requirements

To be considered for admission to the DO degree program at TCOM, an applicant must meet the minimum academic and entrance examination requirements.

A minimum of three years of college (90 semester hours or the equivalent number of quarter hours) from a regionally accredited U.S. college or university (or Canadian equivalent) is required. Strong preference will be given to applicants who earn a bachelor's degree before matriculation. The following college-level prerequisite course work is required for admission:

- **Biology:** (at least 12 credits of course work and 2 credits of laboratory course work) Includes all Biology courses applied toward a baccalaureate degree in a traditional science field. This includes courses in General Biology, Zoology, Botany,

Microbiology, Anatomy and Physiology, Entomology, Pathophysiology, Marine Biology, and Herpetology. Courses for non-science or health career majors (Nursing, Pharmacy or Allied Health) are not acceptable towards the prerequisite requirements. Courses in Human Physiology and Anatomy, Cellular and Molecular Biology, and Microbiology are highly recommended.

- **Chemistry:** (a minimum of 6 credit hours work and 2 credits of laboratory course work) These must be courses that are applied toward a baccalaureate degree in any traditional science field. These courses should provide familiarity with analytic and volumetric techniques. Inorganic courses include: General Chemistry, Physical Chemistry, and Quantitative Analysis. Courses for non-science or health career majors (Nursing, Pharmacy or Allied Health) are not acceptable towards the prerequisite requirements.
- **Organic Chemistry:** (a minimum of 6 credit hours work and 2 credits of laboratory course work) These must be courses that are applied toward a baccalaureate degree in any traditional science field. Organic courses must have “Organic” in the course title. Courses for non-science or health related career majors (Nursing, Pharmacy, or Allied Health) are not acceptable towards the prerequisite requirements.
- **Physics:** (a minimum of 6 credit hours of course work and 2 credits of laboratory course work) This includes all physics courses applied toward a baccalaureate degree in any traditional science field. Courses for non-science or health career majors (Nursing, Pharmacy or Allied Health) are not acceptable toward the prerequisite requirements.
- **Mathematics:** One semester course of math-based Calculus or Statistics is required. Pre-calculus is not acceptable in meeting this requirement.
- **English:** (two 3-credit courses) Any course accredited (approved) by the English Department that fulfills the general education English requirement of a baccalaureate degree will meet this requirement. Remedial or developmental courses or “English As a Second Language” courses are not acceptable.
- **Foreign Coursework:** Applicants must complete at least 90 undergraduate credit hours at a regionally accredited U.S. college or university (or Canadian equivalent). Transfer credit from a school outside the U.S. or Canada may apply to this requirement only if the individual courses appear on the transcript of an accredited U.S. or Canada college or university – lump sum credit is not allowed. Transfer credit from a school outside the U.S. or Canada will not apply to the prescribed course requirement. State law requires that academic work taken at foreign colleges, universities or preparatory schools be excluded from the calculation of the grade point average for students seeking admission to graduate or post-baccalaureate professional school.

The Medical College Admissions Test (MCAT)

While any MCAT taken within the past five years will be considered, the Admissions Committee places greater weight on those taken within the past three years. The MCAT is administered nationwide throughout the year.

To register for the MCAT, visit:

<http://www.aamc.org/students/mcat/start.htm>

Admission Procedures

TCOM requires both a primary and secondary application. Only completed applications are considered for admission. Applicants should carefully read all of the information about the process.

Primary Application

TCOM participates in the Texas Medical and Dental Schools Application Service (TMDSAS) located in Austin, Texas. TMDSAS accepts applications between May 1 and October 1 of the year prior to matriculation. Early applications are strongly encouraged. The primary application can be completed and submitted electronically through the TMDSAS web site at: <http://www.utsystem.edu/tmdsas/>.

The processing of an application may be delayed if either the grades from prerequisite courses or the MCAT scores are not included at the time of application.

Official transcripts from all prior college-level course work and MCAT scores must also be submitted to the application service. In addition, TMDSAS requires that an applicant’s premedical/health professions advisory committee submit a written evaluation directly to the service. Letters from two (2) people who are familiar with an applicant may satisfy this requirement if no advisory committee is available. The letters should be from faculty members and/or an advisor who can assess the applicant’s suitability for medical school.

For more information, please contact:

Texas Medical and Dental Schools Application Service
702 Colorado, Suite 6.400
Austin, TX 78701
Phone: 512-499-4785
Fax: 512-499-4786
<http://www.utsystem.edu/tmdsas/>

Secondary Application

TCOM requires completion of its own web-based secondary application that is completed and submitted electronically through a link on the website at <http://www.hsc.unt.edu>. There is no additional fee for processing this application.

Letter of Evaluation from an Osteopathic Physician

Applicants are also strongly encouraged to submit a letter of evaluation from an osteopathic physician familiar with the applicant (please note – this is recommended but NOT required). The physician may submit this letter of evaluation directly to TCOM if it is not already included in the advisory committee evaluation.

Interviews

Only selected applicants will be invited to interview. Interviews are conducted at the Health Science Center located in Fort Worth. Applicants will tour the school and have lunch with current medical students. Interviewees may also sit in on medical school classes held that day.

Applicant Selection

Each year, the Admissions Committee looks for students who demonstrate the greatest promise of becoming skilled osteopathic physicians. Applicants will be evaluated on their personal integrity, compassion, maturity, interpersonal and communication skills, creativity, motivation for and interest in a medical career, the ability to work cooperatively, and dedication to serving others. These qualities and attributes are evaluated by several means, including letters of evaluation, the scope and nature of extracurricular activities, the breadth of education, and personal interviews. All aspects of the academic record, including trends in scholastic performance, are examined. Personal experiences, job history (if applicable), and motivation to become an osteopathic physician are considered.

There is no prejudice for or against any applicant who reapplies for admission. If possible, such applicants are encouraged to identify any deficiencies and rectify them before reapplying. Applicants who are not accepted have the opportunity to review their application with an admissions officer in an effort to identify ways to become more competitive.

Admissions Committee Evaluation

Applicants who meet the qualifications for admission are forwarded to the Admissions Committee for evaluation. Committee scores are assigned to each application that is accepted or placed on an alternate list to be reviewed again at a later meeting. Because this score affects the ultimate status of the applicant, careful consideration is given to each applicant when assigning a score.

The score is derived by assessing both the cognitive and non-cognitive values of the applicant. Committee members will submit an individual score for each applicant at the meeting. The applicant's score is the mean among those members who scored the application. Applicants accepted by the committee will be submitted to the Dean for final approval. Scores range from 1 to 10, with 10 being the highest (Cognitive values: 5, Non-cognitive values: 5). Decimal values may be given. The following variables are assessed when an applicant is scored.

Admissions Criteria for DO Admissions	
Cognitive Values	Academic performance as an undergraduate student; academic performance as a graduate student; academic performance while attending high school; scores on the Medical College Admission Test (MCAT)
Non-cognitive Values	Interview scores; geographic diversity; socioeconomic background; commitment to the field of study; availability of members of the osteopathic profession while the applicant attended elementary and secondary school; first generation to go to college; letters of evaluation; contributes to the diversity of the class*

**contributes to the diversity of the class includes race, ethnicity, or any other unique personal life experience(s), including but not limited to experience abroad, foreign language skills, hardships and adversities overcome, community service, or previous career experience that will enrich the educational environment of the Texas College of Osteopathic Medicine.*

Selection Process Timeline

TCOM processes applications based on procedures agreed upon by the participating medical schools in the Texas Medical and Dental Schools Application Service (TMDSAS). Texas resident applicants, who are not applying through the Early Decision Program (EDP) or DO/PhD Medical Scientist Training Program (MSTP), will be notified of their admission through one of three periods:

Pre-Match Admissions

Selected applicants will be notified between November 15-December 31 on a rolling basis.

Match Admissions

Applicants who interviewed, but did not receive an offer of admission through Pre-Match Admissions, may be considered for the February 1 Medical School Admissions Match.

Rolling Admissions

Applicants who were not admitted on or before February 1 may be placed on the wait list and considered for admission as seats in the class become available.

Medical Science Program Students

Applicants who are participating in the Master of Science in Medical Sciences Program in the Graduate School of Biomedical Sciences will be considered for admission at the end of the Fall or Spring semester.

Notification of Non-Resident Applicants

Non-resident applicants may be admitted on a rolling basis on or after October 15.

Notification of DO/PhD Applicants

Applicants for the DO/ PhD Medical Scientist Training Program may be admitted on a rolling basis on or after October 15.

Early Decision Program

Applicants who have outstanding credentials and have a preference for TCOM may apply through the Early Decision Program (EDP), which can greatly reduce the financial costs and psychological burdens of applying to several schools. To apply for the EDP, simply check "yes" for the UNTHSC-TCOM Early Decision Program and "no" for all other schools on the TMDSAS application. The deadline for EDP applications is August 1. All EDP decisions are made by September 15. Any applicant that is accepted through the EDP process must attend TCOM. An applicant that is not accepted through the EDP is free to apply to other schools for regular admission consideration.

Deferment

Any accepted applicant may request a deferment of entry for one academic year. The applicant must make the request prior to June 1, sign a deferment assurance statement, and submit a non-refundable deposit of \$1,000.00 to hold a seat in the next class.

Admission in Advanced Standing (Transfer)

Students currently enrolled in fully accredited colleges of osteopathic medicine may be considered for advanced standing admission to the third year of medical studies at TCOM. Students must demonstrate both the completion and equivalency of a medical school curriculum equivalent to the first two years of medical education at TCOM. The applicant must have valid reasons for transfer, have maintained good academic standing, be qualified in every respect, including academic performance, met all other requirements for admission, and be eligible for continuation. Admission is competitive and depends upon space availability.

Guidelines for Eligibility

- An applicant who has been dismissed from or has withdrawn from another medical college for academic reasons will NOT be considered for advanced standing.
- An applicant who previously applied to TCOM for admission as a first year student and was not accepted will be considered for advanced standing only if academic performance in medical school has been distinguished as determined by the Admissions Committee.
- An applicant who has taken all premedical or medical studies at foreign institutions, including the medical schools located in the Caribbean region, will NOT be considered for admission in advanced standing.

- Applicants from related professions, such as dentistry, or those who have completed the related basic sciences as a graduate or health professional student are considered for admission only to the first year medical class, regardless of the degree held.

Preliminary Requirements

Before any application for admission in advanced standing is processed, an applicant must first submit the following information:

- A letter explaining their reason(s) for requesting admission into the third year;
- Official transcripts of all medical school coursework;
- The dates and outcome of any previous applications to TCOM. Applicants must demonstrate that they have or will have completed the same two-year curricular content required of third year medical students at TCOM, including clinical science and osteopathic clinical courses. If any of these requirements are not met, the application will be denied and further processing will be terminated.

Prospective transfer students should submit their preliminary requirements no later than October 1 of the year prior to matriculation.

Requirements

Applicants who meet all preliminary requirements and the stated guidelines for eligibility will be invited to submit all of the following

required materials and information for full consideration as an applicant for admission in advanced standing:

- A completed application obtained from the Office of Admissions and Outreach and filing fee of \$100. The deadline for receipt of applications is January 15 of the year of proposed matriculation. All necessary supporting documents must also be received by January 15. Incomplete applications will be withdrawn from further consideration. No exceptions will be made.
- Official transcripts from all undergraduate colleges, graduate schools, and medical colleges. Copies of transcripts or hand-carried transcripts are not acceptable.
- A letter of evaluation from the dean of students at the medical school the applicant currently attends. This letter must indicate that the dean of the school has given full approval for the application for transfer.
- Scores on all external medical examinations taken (COMLEX, USMLE). Official test results should be sent directly to the Office of Admissions and Outreach from the testing boards. Applicant should indicate when examinations are to be taken if no scores are available.
- A personal statement of reasons for applying for admission in advanced standing. This statement should be addressed to the Admissions Committee.
- A personal interview. Applicants who are under consideration are invited to the Health Science Center for personal interviews at the discretion of the Admissions Committee.



The Admissions Committee will consider only applications that are complete in every aspect and that are received on or before January 15.

Curriculum

TCOM's administration and faculty are committed to a curriculum that prepares graduating physicians to increasingly transfer their clinical efforts from:

- therapy to prevention; that is, from remedial medicine to prophylactic medicine.
- late-stage disease to early departure from health; pathologic medicine to physiologic medicine, in order to help patients achieve and continue on their best physiologic path.
- treating disease to teaching healthful living, especially by example.
- intervention in the biologic processes to the search for optimal operation by improving the conditions in which they function.
- a focus on parts of the body to a focus on the total person as the context in which the parts operate.
- the physician to the patient as the source of health and the agent of cure.
- a preoccupation with disease processes to concern about disease origins; that is, from causes of diseases to the factors that permit them to become causes.
- specificity and multiplicity of diseases to susceptibility to illness in general.
- acute, crisis, and episodic treatment to long-term treatment.
- addressing acute, episodic problems in isolation to dealing with them in the context of the total life and health of the patient.
- an emphasis on depersonalized technology to a heightened awareness of human values and individual uniqueness.

These transfers of emphasis are not an abandonment of one kind of clinical objective for another. In the face of existing and accumulating disease and disablement, it is essential to adequately prepare students for acute, crisis, and episodic care, as well as prevention.

The goals of TCOM's educational program are broad, and implementation of these goals in the curriculum is a continual process. Fundamental changes are being made in curriculum design and teaching-learning processes, composition and roles of the faculty, student selection, educational facilities and resources and most important, the attitudes and professional qualifications of TCOM graduates.

Semester Credit Hours

One semester credit hour (SCH) is assigned to each 16 hours of scheduled student activity, including examinations. Students receive four semester credit hours for each four-week rotation.

Course Numbers

The three or four digits of a course number assist in identifying the type of course, course series and semester in which it is taught.

The first number 7 indicates a required core clinical clerkship rotation; 8, an elective clerkship rotation; and 9, an interdepartmental or other special course. The second digit indicates the semester the course begins, from 1 for the first semester of the first year to 8 for the second semester of the fourth year. The third and/or fourth digits are sequential numbers for course identification.

Curriculum Overview

The curriculum at TCOM is presented using an application based/organ systems approach in which basic science topics pertinent to a particular organ system of the body are presented in an integrated fashion. For instance, in a course such as Cardiopulmonary System 1, Gastrointestinal System 1, or Nervous System 1, presentations include the physiology, anatomy, histology, embryology, and introductory pathophysiology of that organ system. In year 2 courses, the pathophysiology, pharmacology, medical microbiology, radiology, surgery, and clinical medicine topics are again integrated into courses focused on major organ systems. Throughout the four-year curriculum, the emphasis is on developing the student as an independent thinker capable of life-long learning. Lectures are de-emphasized in favor of directed student self-study assignments followed by interactive sessions with faculty where the emphasis is on application of learned concepts to case-based clinical problems.

Semesters 1 and 2 courses focus primarily on basic science topics, but also include significant integration with clinical science instruction and are devoted to learning the preclinical sciences in the context of patients' clinical problems. The first several weeks address basic knowledge in cell and molecular biology, and biochemistry. Students then move through a sequence of organ system courses, in which the content of the basic sciences is organized around normal human structure and functions with an introduction to key clinical problems affecting each organ system. The final two courses of the first year curriculum focus on the study of the mechanisms of disease. These courses introduce students to the basic principles of pathophysiology and clinical microbiology. Courses during semesters 3 and 4 focus on pathophysiology and clinical science in each of ten organ systems. Review materials that help students prepare for their board examinations are provided throughout year 2 and a comprehensive review course is provided during the final three weeks of semester four.

Courses devoted to osteopathic manipulative medicine and clinical medicine run in parallel to the systems courses throughout both years 1 and 2 of the curriculum. The Osteopathic Manipulative Medicine courses introduce students to the principles of osteopathic medicine and the diagnostic and therapeutic applications of manipulative medicine. The aim of the Clinical Medicine courses is to introduce the students to the proper approach to the patient to obtain a thorough history and physical examination. In year 2, students are introduced to the hospital-based, team approach and hone their skills of focused history and physical examination, order writing, interpretation of laboratory data, and retrieval of evidence-based information using electronic resources. In addition, students are exposed to actual clinical instruction by participating in hospital rounds, by working alongside community physicians, and by participating in required community service assignments and observing various health-related services in the community.

Medical Ethics forms a core element of the Clinical Medicine series in Years 1, 2, and 3. In this series of lectures, small group discussions, and plenary sessions, students are asked to critically examine key issues related to awareness of cultural, ethnic and religious diversity, death and dying, patient rights, and other major real life scenarios that impact the physician-patient relationship.

The last 23 months of the curriculum consist of clerkship rotations and preceptorship assignments. Each student rotates through a series of core clinical clerkships. These clinical rotations are scheduled in TCOM-affiliated teaching hospitals, TCOM clinics and physicians' offices in or near the Fort Worth/Dallas area, or at other affiliated hospitals throughout the state of Texas. The remaining time is spent

in elective clerkships. Please note: the length, distribution and sequencing of courses and clerkships are subject to change from what is listed in this catalog. The most current clerkship information is available in the Office of Clinical Education. Semester 8 includes an amount of time immediately prior to graduation of on-campus clinical and classroom activities to round out each student's education.

Special elective courses, including honors electives, may be offered from time to time. Students may be invited to take an elective course by the Office of Academic Affairs.

Sequence of Courses

Year 1, Semester 1

Cellular Science
Musculoskeletal and Skin System 1
Nervous System 1
Cardiopulmonary System 1
Clinical Medicine 1
Osteopathic Manipulative Medicine 1
Medical Informatics
Community Medical Resources 1

Year 1, Semester 2

Gastrointestinal System 1
Renal System 1
Endocrine System 1
Reproductive System 1
Fundamentals of Treatment
Hematopoietic System 1
Immunology
Mechanisms of Disease 1
Mechanisms of Disease 2
Clinical Medicine 2
Osteopathic Manipulative Medicine 2
Medical Informatics
Community Medical Resources 2

Year 2, Semester 3

Renal System 2
Cardiovascular System 2
Respiratory System 2
Hematopoietic System 2
Gastrointestinal System 2
Clinical Medicine 3
Osteopathic Manipulative Medicine 3
Medical Informatics/Research
Community Medical Resources 3

Year 2, Semester 4

Endocrine System 2
Reproductive System 2
Nervous System 2
Musculoskeletal and Skin System 2
Fundamentals of Behavioral Science
Correlative Basic Science and Clinical Medicine
Clinical Medicine 4
Osteopathic Manipulative Medicine 4
Medical Informatics/Research
Community Medical Resources 4

Year 3, Semesters 5 and 6

Core Clerkships
Clinical Skills (2 weeks)

Family Medicine (8 weeks)
Internal Medicine (8 weeks)
Manipulative Medicine (4 weeks)
Obstetrics and Gynecology (6 weeks)
Pediatrics (6 weeks)
Psychiatry (4 weeks)
Surgery (8 weeks)
Selective (4 weeks)

Year 4, Semester 7

Emergency Medicine (4 weeks)
Geriatrics (4 weeks)
Primary Care Partnership selective (4 weeks)
Subspecialty Internal Medicine (4 weeks)
Elective Clerkships (6 X 4 weeks)

Year 4, Semester 8 (1 week)

Graduation Preparation and Documentation

Course Descriptions

Year 1

9150. Clinical Medicine 1

This course is taught longitudinally during semester 1 with the course content being integrated with that of the systems courses. The goal of this course is to ensure that the student develops essential interviewing and physical examination skills. The skills are taught primarily in a small group lab setting with practical hands-on learning experiences. In addition to specific skills, the student will be introduced to issues of culture, ethics, faith, and community as important factors that impact the physician-patient relationship. During this course the student is introduced to prevention in clinical practice and will learn appropriate use of medical diagnostic instruments. (5 SCH, Year 1, Semester 1)

9100. Osteopathic Manipulative Medicine 1

This course is an introduction to osteopathic medicine and philosophy, the osteopathic model, somatic dysfunction, palpation, and direct and indirect treatment methods. (4 SCH, Year 1, Semester 1)

9191. Rural Medicine 1

This Rural Osteopathic Medical Education (ROME) course is the first of four (4) preclinical courses in a special medical school curriculum designed to train future physicians for rural practice. This course is comprised of four (4) components of activities: Classroom Learning Modules, Rural Clinical Correlations, Skills Labs, and Clinical Activities. To enroll in this course you must be a ROME participant. (4 SCH, Year 1, Semester 1)

9290. Clinical Medicine 2

This course is taught longitudinally during semester 2, with integration occurring during the systems courses. The goal of this course is to provide educational experiences that will help the student develop additional interviewing and physical examination skills. This course builds on the concepts learned in Clinical Medicine 1. Like Clinical Medicine 1, this course is taught in a small group lab setting with emphasis on hands-on learning experiences. In addition, students will participate in health promotion and ethics small group discussions and observe how community agencies support the health care

system. During this course the student will have the opportunity to observe and participate in health care in one of our family practice community preceptor offices. (3 SCH, Year 1, Semester 2)

9200. Osteopathic Manipulative Medicine 2

This course covers the diagnosis and treatment of the pelvis, the sacrum and lumbar spine, and the diagnosis of the thoracic and cervical spine. (3 SCH, Year 1, Semester 2)

9292. Rural Medicine 2

This course is the second of four (4) preclinical courses in a special medical school ROME curriculum designed to train future physicians for rural practice. This course is comprised of four (4) components of activities: Classroom Learning Modules, Rural Clinical Correlations, Skills Labs, and Clinical Activities. Prerequisite: have successfully completed Rural Medicine 1. (4 SCH, Year 1, Semester 2)

9103 9203. Community Medical Resources

This course is designed to introduce the student to the community-wide system of health care and support services in an urban or rural setting. Experiences allow student physicians to observe and/or participate in a variety of health and social services with diverse groups in the community. Students are given opportunities to develop an understanding of the roles and skills of other professionals as members of the health care team (2 SCH, Year 1, Semesters 1&2)

System 1 Courses

The overall goal of each of the following system 1 courses is for students to gain the knowledge and skills necessary to understand the normal structure and function of the organ system and selected common and/or important illnesses associated with that organ system. Emphasis is placed on biological processes with an introduction to the signs and symptoms associated with diseases affecting the system.

9110. Cellular Science

Students learn to understand the structure and function of the human body's most basic constituents and the role of these components in normal body function and pathological processes. Major elements of the course include key concepts in biochemistry and cell and molecular biology. (8 SCH, Year 1, Semester 1)

9120. Medical Informatics

Students acquire the knowledge to recognize when information is needed and the ability to efficiently and effectively locate, evaluate, and apply the information for a specific purpose and gain the knowledge and skills needed to locate, synthesize, and present current best evidence in a clinical setting. (1 SCH, Year 1, Semester 1&2.)

9130. Musculoskeletal and Skin System 1

The integrated program presents the gross and microscopic anatomy, cell biology and physiology of the basic tissues and organ systems in the musculoskeletal/skin system and correlates these structures with various functions. (8 SCH, Year 1, Semester 1)

9140. Nervous System 1

This course is intended to provide students with an integrated approach to understanding the normal structure and function of the human nervous system. (8 SCH, Year 1, Semester 1)

9215. Cardiopulmonary System 1

This course is intended to provide a foundation of knowledge of the lungs, the heart, the blood and circulatory systems that is essential for understanding, diagnosing, and treating disease processes of the respiratory system, cardiovascular system, and blood. (6 SCH, Year 1, Semester 1)

9240. Gastrointestinal System 1

This course is intended to provide a foundation of knowledge of the normal structure and function of the human gastrointestinal system. (5 SCH, Year 1, Semester 2)



9250. Renal System 1

This course is intended to provide a foundation of knowledge that is essential for understanding, diagnosing, and treating disease processes of the kidney and urinary tract. (2 SCH, Year 1, Semester 2)

9260. Endocrine System 1

This course is intended to provide students with an integrated approach to understanding the normal structure and function of the human endocrine system. (3 SCH, Year 1, Semester 2)

9270. Reproductive System 1

The teaching program of this course/system has been designed to encompass the overall goals of the institution in assisting the students to acquire competency in the biochemistry, physiology, histology, embryology, and anatomy of the human reproductive system. (3 SCH, Year 1, Semester 2)

9310. Fundamentals of Treatment

The teaching program of this course has been designed to encompass the overall goals of the institution in assisting the students to acquire competency in fundamental concepts in pharmacology. (2 SCH, Year 1, Semester 2)

9220. Hematopoietic System 1

Broad topic areas to be emphasized include peripheral blood cell morphology, bone marrow and spleen histology, biochemistry of hemoglobin, red cell membrane, and cytoplasmic enzymes; leukocyte morphology and physiology, hemostasis and coagulation. Throughout the courses, the language of medicine is emphasized in conjunction with morphology, clinical features and differential diagnoses, where appropriate. In addition, important pathologic aspects of clinical laboratory involvement and data utilization in the diagnosis of disease are discussed. (3 SCH, Year 1, Semester 2)

9160. Immunology System 1

Broad topic areas to be emphasized include immune system function and dysfunction. Throughout the course, the language of medicine is emphasized in conjunction with morphology, clinical features and differential diagnoses, where appropriate. In addition, important pathologic aspects of clinical laboratory involvement and data utilization in the diagnosis of disease are discussed. (5 SCH, Year 1, Semester 2)

9280. Mechanisms of Disease 1

Broad topic areas to be emphasized include neoplasia, medical microbiology and infectious diseases (including the basis of antimicrobial pharmacologic intervention), environmental, nutritional disorders, and an overview of diseases of infancy and childhood. Throughout the course, the language of medicine is emphasized in conjunction with morphology, clinical features, and differential diagnoses, where appropriate. In addition, important pathologic aspects of clinical laboratory involvement and data utilization in the diagnosis of disease are discussed. (3 SCH, Year 1, Semester 2)

9285. Mechanisms of Disease 2

Continuation of Mechanisms of Disease 1. (10 SCH, Year 1, Semester 2)

Year 2**9370. Clinical Medicine 3**

This course is taught longitudinally during semester 3, with integration occurring within each system course. The goal of this course is to provide educational experiences that will help students develop

diagnostic reasoning concepts and enhance the interviewing and physical skills learned in earlier clinical medicine courses. Small group sessions involving practical application of knowledge learned are an integral part of this course. In addition, students will participate in health promotion and ethics small group discussions and observe how community agencies support the health care system. During this course students will have the opportunity to participate in the delivery of health care in one of our family practice community preceptor offices. (6 SCH, Year 2, Semester 3. Prerequisite: Clinical Medicine 2)

9300. Osteopathic Manipulative Medicine 3

Treatment of the thoracic spine, cervical spine, and the OA joint; diagnosis and treatment of the ribs. (4 SCH, Year 2, Semester 3)

9393. Rural Medicine 3

This ROME course is the third of four (4) preclinical courses in a special medical school curriculum designed to train future physicians for rural practice. This course is comprised of four (4) components of activities: Classroom Learning Modules, Rural Clinical Correlations, Skills Labs, and Clinical Activities. Prerequisite: Must have successfully completed Rural Medicine 1 and Rural Medicine 2. (6 SCH, Year 2, Semester 3)

9450. Clinical Medicine 4

This course is taught longitudinally during semester 4, with integration occurring within each system course. The goal of this course is to provide educational experiences that will help students develop diagnostic reasoning concepts and enhance the interviewing and physical skills learned in earlier clinical medicine courses. Small group sessions involving practical application of knowledge learned are an integral part of this course. In addition, students will participate in health promotion and ethics small group discussions and observe how community agencies support the health care system. During this course students will have the opportunity to participate in the delivery of health care in one of our family practice community preceptor offices. (6 SCH, Year 2, Semester 4. Prerequisite: Clinical Medicine 3)

9400. Osteopathic Manipulative Medicine 4

Advanced osteopathic treatment methods. (3 SCH, Year 2, Semester 4)

9494. Rural Medicine 4

This ROME course is the fourth of four (4) preclinical courses in a special medical school curriculum designed to train future physicians for rural practice. This course is comprised of four (4) components of activities: Classroom Learning Modules, Rural Clinical Correlations, Skills Labs, and Clinical Activities. (2 SCH, Year 2, Semester 4)

System 2 Courses

The overall goal of the following system 2 courses is for students to gain the knowledge to understand the pathophysiology of common and important clinical problems in each of the organ systems. In addition the basic clinical knowledge and skills necessary for diagnosis and management of common and important diseases and clinical problems is emphasized. The pharmacological approach to treatment is included in each system course.

9380 Renal System 2

The goal of the Renal System 2 course is for the student to gain the proficiency needed to understand and explain normal function, pathophysiology, and disorders of the renal system. A second goal is for the student to gain the knowledge needed to recognize, manage, and treat clinical problems and diseases most relevant to the renal system. (5 SCH, Year 2, Semester 3)

9330. Cardiovascular System 2

The course presents a multidimensional approach to the understanding of the seven most common clinical entities in cardiovascular disease. Additional topics are physical examination principles and biopsychosocial aspects of cardiovascular disease. Several of these sections are conducted in workshops/laboratories format, allowing maximum participation and interaction of students and faculty. (7 SCH, Year 2, Semester 3)

9340. Respiratory System 2

The goal of this course is to support student acquisition of an integrated knowledge base consisting of key concepts related to the normal functions of the respiratory system, the pathophysiology of respiratory disease, differential diagnosis and clinical manifestations of common and important clinical respiratory problems, and specific intellectual skills; all serving as precursors to the development of clinical competencies in respiratory and ear, nose, and throat (ENT) related patient care problems. (6 SCH, Year 2, Semester 3)

9420. Hematopoietic System 2

The teaching program of this course has been designed to encompass the overall goals of the institution in assisting the students to acquire competency in disorders of red blood cells, white blood cells, hemostasis, transfusion medicine, and oncology. (5 SCH, Year 2, Semester 3)

9440. Gastrointestinal System 2

The teaching program of this course has been designed to encompass the overall goals of the institution in assisting the students to acquire competency in disorders of the gastrointestinal system, exocrine pancreas, liver, and biliary tract. (5 SCH, Year 2, Semester 3)

9360. Endocrine System 2

The teaching program of this course/system has been designed to encompass the overall goals of the institution in assisting the students to acquire fundamental understanding of the physiology and pathophysiology of the endocrine system. (4 SCH, Year 2, Semester 4)

9430. Reproductive System 2

The overall goal is to gain the knowledge needed to recognize and treat clinical problems and diseases most relevant to the female reproductive systems and associated pathophysiology relevant to areas of women's healthcare. (6 SCH, Year 2, Semester 4)

9410. Nervous System 2

The course presents a multidimensional approach to the understanding of the most common clinical disorders of the Nervous System. Additional topics are physical examination and principles of nervous system disorders. Attention will be given to diagnosis, pathophysiology, treatment, and outcome measurement. Several of these sections are conducted in workshops/laboratories format, allowing maximum participation and interaction of students and faculty. (7 SCH, Year 2, Semester 4)

9350. Musculoskeletal and Skin System 2

The teaching program of this course/system has been designed to encompass the overall goals of the institution in assisting the students to acquire competency to understand, recognize, diagnose, and treat the common and important diseases of the musculoskeletal system and skin. (5 SCH, Year 2, Semester 4)

9370 Fundamentals of Behavioral Science

The course presents a multidimensional approach to the understanding of the most common clinical disorders of psychiatry. Additional

topics are physical examination principles and bio-psychosocial aspects of psychiatric disorders. Attention will be given to diagnosis, pathophysiology, treatment, and outcome measurement. (5 SCH, Year 2, Semester 3)

9450. Correlative Basic Science and Clinical Medicine

The teaching program of this course has been designed to encompass the overall goals of the institution in assisting the students with a review of medical curriculum content in preparation for licensing examinations. (6 SCH, Year 2, Semester 4)

Years 3 & 4**Family and Community Medicine****701. Core Clinical Clerkship in Family Medicine**

This course is a required 8-week clinical rotation that must be completed during the third year. Although emphasis is on ambulatory care, students may have the opportunity to follow their assigned patients when inpatient care is required. Students are assigned to faculty family practice clinical practices where they experience continuity of care in family practice. The student is exposed to health care systems (managed care), office management concepts, and practice guidelines, with emphasis on clinical application of disease prevention. Weekly small group sessions with selected faculty require students to work as teams to study, discuss, and present clinical topics. Emphasis is placed on evidence-based medicine and its application to clinical practice. Rural Track students are assigned to a designated rural community. (8 SCH)

703. Core Clerkship in Emergency Medicine

This is a required four-week rotation in Emergency Medicine. (4 SCH)

714. Core Primary Care Partnership

This course is a four-week clinical clerkship completed during the third or fourth year. The goal of this course is to provide educational experiences within the private sector emphasizing the totality of community-based family practice. This course utilizes community adjunct faculty offices for training sites. (4 SCH)

801. Clinical Clerkship in Family Medicine

This course is a four-week elective that is completed during the fourth year. The goal of this course is to provide educational experiences within the private sector emphasizing the totality of community-based family practice. The student is allowed considerable flexibility in choosing the preceptor for this course. (4 SCH)

803. Clinical Clerkship in Emergency Medicine

An elective four-week rotation in emergency medicine. (4 SCH)

805. Clinical Clerkship in Public Health and Preventive Medicine

An elective four-week rotation in public health/preventive medicine. (4 SCH)

806. Clinical Clerkship in Occupational Medicine

An elective four-week rotation in occupational medicine. (4 SCH)

819. Clinical Clerkship in Sports Medicine/Rehabilitation

An elective four-week rotation in sports medicine and rehabilitation emphasizing the role of the primary care physician in the care of athletes. (4 SCH)

838. Clinical Clerkship in Physical Medicine and Rehabilitation

An elective four-week rotation in sports medicine and physical therapy clinics emphasizing the principles of rehabilitation of musculoskeletal, neurologic, and orthopedic conditions. (4 SCH)

725. Core Geriatric Medicine

A required four-week clerkship in geriatric medicine designed to provide the foundation for competent, compassionate care of the older patient. (4 SCH)

Internal Medicine**704. Core Clinical required Clerkships in Internal Medicine**

The clerkship is an eight-week program divided into two four-week sessions. One session is served in the general internal medicine ward service. Under rigorous audit, the clerk is responsible for the care of hospitalized patients. This care includes collection of data from initial evaluation to final disposition. An emphasis is placed on the skills of problem solving (data collection), management, planning, and proper record keeping (criteria of evaluations) using thoroughness, reliability, efficiency, and logic. Manual skills are learned and reinforced. The second four-week session is an ambulatory internal medicine rotation. The clerk is exposed to the multiple aspects of outpatient and ambulatory medicine including, but not limited to, rheumatology, neurology, diabetes management, general internal medicine, geriatrics (extended-care facility visits), public health, outpatient hemodialysis, and outpatient endoscopy. This session also includes case presentations and lectures on specific topics. Off-campus clerkships are served at affiliated hospitals and are generally based on the classic preceptor/clerkship format. The clerk spends eight weeks in a combined ambulatory and hospital-based program that has responsibilities and goals similar to the on-campus program. (4 SCH each session)

706. Core Clinical Clerkship in Subspecialty Internal Medicine

A required four-week clerkship in subspecialty internal medicine, including one of the following: pulmonary medicine, gastroenterology, cardiology or rheumatology. The clerk solves problems of actual patients using the data-gathering and processing methods learned in the core medicine clerkship. Physiologic, biochemical, and anatomic principles are re-examined within the framework of problem solving. (4 SCH)

711. Core Primary Care Partnership

A four-week clinical clerkship completed during the fourth year. The goal of this course is to provide educational experiences within the private sector that emphasize the totality of a community-based internal medicine practice. (4 SCH)

804. Clinical Clerkship in Internal Medicine

An elective four-week rotation in internal medicine. (4 SCH)

812. Clinical Clerkship in Dermatology

An elective four-week rotation in dermatology. (4 SCH)

821. Clinical Clerkship in Rheumatology

An elective four-week rotation in rheumatology. (4 SCH)

822. Clinical Clerkship in Cardiology

An elective four-week rotation in cardiology. (4 SCH)

823. Clinical Clerkship in Endocrinology

An elective four-week rotation in endocrinology. (4 SCH)

824. Clinical Clerkship in Gastroenterology

An elective four-week rotation in gastroenterology. (4 SCH)

825. Clinical Clerkship in Geriatrics

An elective four-week rotation in geriatrics. (4 SCH)

826. Clinical Clerkship in Hematology/Oncology

An elective four-week rotation in hematology/oncology. (4 SCH)

827. Clinical Clerkship in Infectious Disease

An elective four-week rotation in infectious disease. (4 SCH)

828. Clinical Clerkship in Nephrology

An elective four-week rotation in nephrology. (4 SCH)

829. Clinical Clerkship in Neurology

An elective four-week rotation in neurology. (4 SCH)

830. Clinical Clerkship in Pulmonary Medicine

An elective four-week rotation in pulmonary medicine. (4 SCH)

840. Clinical Clerkship in Hyperbaric Medicine

An elective four-week rotation in hyperbaric medicine. (4 SCH)

842. Clinical Clerkship in Hospital Medicine

An elective four-week rotation consisting of two, two-week rotations to be taken consecutively at the same hospital site. With the concurrence of the hospital and appropriate Health Science Center approval, the rotation could consist of any of the following: anesthesiology, dermatology, pathology, or radiology. (4 SCH)

Manipulative Medicine**715. Core Clerkship in Manipulative Medicine**

A required four-week rotation in the Department of Manipulative Medicine. The rotation includes an intensive didactic and hands-on review of Osteopathic Manipulative Medicine. Students see and treat their own patients in a faculty-supervised clinic and accompany faculty members during clinic hours. Students also participate in weekly literature discussions and case reviews. Students are responsible for an end-of-rotation written examination and a written case report. (4 SCH)

712. Core Primary Care Partnership

A four-week clinical clerkship completed during the fourth year. The goal of this course is to provide educational experiences within the private sector that emphasize the totality of a community-based manipulative medicine practice. (4 SCH)

815. Clinical Clerkship in Manipulative Medicine

An elective four-week rotation in manipulative medicine. (4 SCH)

Undergraduate Teaching and Research Fellowships

Students are selected each year to serve fellowships with the Department of Manipulative Medicine. The students' last two years of study are expanded to three to allow time for research, teaching, and clinical service in the department. The following courses are required for these fellowship programs:

901. Medical Education

A required course held in an independent study format that prepares osteopathic physicians for an academic career in osteopathic manipulative medicine. (Section A, Research Track, 4 SCH; Section B, Teaching Track, 12 SCH)

902. Clinical Field Studies

A required advanced program that prepares future physicians for clinical practice in osteopathic manipulative medicine. (12 SCH)

903. Advanced Clinical Clerkship

A required course that develops physicians to become instructors in the area of the clinical application of advanced osteopathic manipulative techniques and concepts. (8 SCH)

904. Research/Special Topics

A required course that teaches future osteopathic physicians about current research topics and opportunities in the field of osteopathic manipulative medicine. Students are expected to prepare an original research paper suitable for publication. (Section A, Research Track, 16 SCH; Section B, Teaching Track, 8 SCH)

905. Seminar

A required course that teaches future physicians about the varied topics and techniques in osteopathic manipulative medicine with emphasis on osteopathic philosophy and clinical case management. (8 SCH)

906. Health Administration and Education

A required course that provides the competencies necessary for a career in medical administration. (4 SCH)

Medical Education**700. Core Clerkship in Clinical Skills**

A required three-week rotation emphasizing preparation in clinical skills. (3 SCH)

813. Clinical Clerkship in Medical Humanities

An elective four-week rotation in medical humanities. (4 SCH)

900. Clinical Clerkship in Academic Medicine

An elective four-week directed study in Academic Medicine designed for the acquisition of test construction skills and for the review of essential concepts in the clinical sciences, prior to COMLEX II. (4 SCH)

9001. Literature and Medicine

Elective seminar series for medical students about the values from literature that enhance sensitivity to patients and encourages self-reflection on physician roles in health care.

Psychiatry**709. Core Clinical Clerkship in Psychiatry**

A required four-week rotation in psychiatry that serves as the clinical phase of the graduate curriculum in psychiatry and human behavior. Students will perform evaluations, develop diagnostic paradigms, develop treatment plans, provide supportive psychotherapy and summarize their findings under the supervision of both regular and affiliated faculty members. (4 SCH)

809. Clinical Clerkship in Psychiatry

An elective four-week rotation in psychiatry that can be tailored to meet the student's objectives. This is especially useful to students who want to pursue advanced training in psychiatry. (4 SCH)

Obstetrics and Gynecology**707. Obstetrics and Gynecology**

Core Clinical Clerkship in Obstetrics and Gynecology
The core clerkship in OB/GYN consists of six weeks of combined outpatient and hospital experience exposing the clerk to ambulatory prenatal care and gynecology. The hospital portion of the rotation consists of labor and delivery and gynecological surgery. The experience focuses on the primary care of women in the reproductive and menopausal years. (6 SCH)

807. Clinical Clerkship in Obstetrics and Gynecology

An elective four-week rotation in obstetrics and gynecology. (4 SCH)

Pathology**817. Clinical Clerkship in Autopsy Pathology**

An elective four-week rotation in pathology and forensic medicine. This occurs at the Tarrant County Medical Examiner's Office and emphasizes toxicology, medical investigation, scene evaluation, and forensic necropsy. All rotation approvals are at the discretion of the department chair. (4 SCH)

842. Clinical Clerkship in Hospital Medicine

An elective four-week rotation consisting of two, two-week rotations to be taken consecutively at the same hospital site. With the concurrence of the hospital and appropriate Health Science Center approval, the rotation could consist of any of the following: anesthesiology, dermatology, pathology, or radiology. (4 SCH)

Pediatrics**708. Core Clinical Clerkship in Pediatrics**

A required six-week rotation in pediatrics, both general and specialty pediatrics, that addresses issues regarding the recognition and treatment of common health problems of infants, children, and adolescents. Ambulatory clinics, nursery, and hospital ward service are included. This rotation will form a foundation for those students who elect to further their study in pediatrics. (6 SCH)

713. Core Primary Care Partnership

A four-week clinical clerkship completed during the fourth year. The goal of this course is to provide educational experiences within the private sector that emphasize the totality of a community-based pediatric medicine practice. (4 SCH)

808. Clinical Clerkship in Pediatrics

An elective four-week rotation in pediatrics. (4 SCH)

Radiology**818. Clinical Clerkship in Radiology**

An elective four-week rotation in radiology. (4 SCH)

842. Clinical Clerkship in Hospital Medicine

An elective four-week rotation consisting of two, two-week rotations to be taken consecutively at the same hospital site. With the concurrence of the hospital and appropriate Health Science Center approval, the rotation could consist of any of the following: anesthesiology, dermatology, pathology, or radiology. (4 SCH)

Surgery

710. Core Clinical Clerkship in Surgery

A required eight-week clerkship in surgery in an affiliated hospital. Students spend time in the various surgical specialties. (8 SCH)

810. Clinical Clerkship in Surgery

An elective four-week clerkship in surgery in an affiliated hospital. (4 SCH)

811. Clinical Clerkship in Anesthesiology

An elective four-week rotation in anesthesiology. (4 SCH)

814. Clinical Clerkship in Ophthalmology

An elective four-week clerkship in ophthalmology. (4 SCH)

816. Clinical Clerkship in Otorhinolaryngology

An elective four-week rotation in otorhinolaryngology. (4 SCH)

832. Clinical Clerkship in Orthopedics

An elective four-week rotation in orthopedics. (4 SCH)

833. Clinical Clerkship in Thoracic Surgery

An elective four-week rotation in thoracic surgery. (4 SCH)

834. Clinical Clerkship in Neurosurgery

An elective four-week rotation in neurosurgery. (4 SCH)

835. Clinical Clerkship in Urology

An elective four-week rotation in urology. (4 SCH)

842. Clinical Clerkship in Hospital Medicine

An elective four-week rotation consisting of two, two-week rotations to be taken consecutively at the same hospital site. With the concurrence of the hospital and appropriate Health Science Center approval, the rotation could consist of any of the following: anesthesiology, dermatology, pathology, and radiology. (4 SCH)

Academic Policies

Each student enrolled at the Health Science Center is individually responsible for knowing current academic and administrative policies and the procedures and operational policies that apply to enrollment in his or her chosen degree program. This section of the catalog provides selected academic and administrative policies governing the DO degree program. Other general policies are stated elsewhere in this catalog. Academic policies and guidance also are presented in other official Health Science Center documents and specific program publications.

The Health Science Center reserves the right to amend or add to the academic policies and scholastic regulations at any time during the enrollment period. Such changes or additions are intended to improve the quality of education and are introduced in a fair and deliberate manner with timely notice provided to all students affected by the changes.

Registration

Registration is conducted annually during the summer for first-, second-, third-, and fourth-year TCOM students. Registration consists of paying tuition and fees and completing registration forms for the Office of the Registrar, Office of Financial Aid, and Office of Student Affairs. Students may register for and attend only those courses and clinical rotations listed on their official academic schedules of classes,

as approved by the dean of TCOM. Students may not be enrolled in two or more courses meeting at the same time.

Only students properly enrolled by the registrar may attend classes. Any examinations or other materials completed by an individual who is not officially enrolled will be destroyed. No record will be kept of examinations or other academic work done by individuals whose enrollment in a course has not been authorized by the registrar. Examinations or other course materials completed by a dismissed student who is attending classes while under an official appeal will not be scored and will be retained by the registrar pending outcome of the appeal.

Late fees are assessed for each day following the designated date of registration. A check returned because of insufficient funds will incur a penalty and also may result in a charge for late registration. (See Fiscal Policies for more information.)

Health and Technical Standards

All candidates must meet health and technical standards to be admitted and to participate in the medical education programs of TCOM. Because the doctor of osteopathic medicine (DO) degree signifies that the holder is a physician prepared for entry into the practice of medicine within postgraduate training programs, it follows that the graduates must have the knowledge and skills to function in a broad variety of clinical situations and be able to provide a wide spectrum of patient care.

A candidate for the DO degree must have abilities and skills in five areas: observation; communication; motor; conceptual, integrative, and quantitative; and behavioral and social. Reasonable accommodations will be made as required by law; however, the candidate must be able to meet all technical standards with or without reasonable accommodation. The use of a trained intermediary means that a candidate's judgment must be mediated by someone else's power of selection and observation and is not a permissible accommodation.

- **Observation:** The candidate must be able to observe demonstrations and experiments in the basic sciences including, but not limited to, physiologic and pharmacologic demonstrations in animals, microbiologic cultures and microscopic studies of microorganisms, and tissues in normal and pathologic states. A candidate must be able to observe a patient accurately at a distance and close at hand. Observation requires the functional use of the sense of vision and somatic sensations. It is enhanced by the functional use of the sense of smell.
- **Communication:** A candidate should be able to speak, hear, and observe patients in order to elicit information; describe changes in mood, activity, and posture; and perceive nonverbal communications. A candidate must be able to communicate effectively and sensitively with patients. Communication includes not only speech but also reading and writing. The candidate must be able to communicate effectively and efficiently in verbal and written form with all members of the health care team.
- **Motor:** Candidates should have sufficient motor function to elicit information from patients by palpation, auscultation, percussion, and other diagnostic and therapeutic maneuvers. A candidate should be able to do basic laboratory tests (urinalysis, CBC, etc.), carry out diagnostic procedures (endoscopy, paracentesis, etc.), and read EKGs and X-rays. A candidate should be able to execute motor movements reasonably required to provide general care, osteopathic manipulation, and emergency treatment to patients. Examples of emergency treatment reasonably required of physicians are cardiopulmonary resuscitation; the administration of intravenous medication; the application of pressure to stop bleeding; the opening of obstructed airways; the suturing of

simple wounds; and the performance of simple obstetrical maneuvers. Such actions require coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.

- **Intellectual:** Conceptual, integrative, and quantitative abilities, including measurement, calculations, reasoning, analysis, and synthesis. Problem solving, the critical skill demanded of physicians, requires all of these intellectual abilities. In addition, candidates should be able to comprehend three-dimensional relationships and understand the spatial relationships of structures.
- **Behavior and Social Attributes:** Candidates must have the emotional health required for full use of their intellectual abilities; the exercise of good judgment; the prompt completion of all responsibilities attendant to the diagnosis and care of patients and the development of mature, sensitive, and effective relationships with patients. Candidates must be able to tolerate physically taxing workloads and to function effectively under stress. They must be able to adapt to changing environments, display flexibility, and learn to function in the face of uncertainties inherent in the clinical problems of many patients. Compassion, integrity, concern for others, interpersonal skills, interest, and motivation are all personal qualities that will be assessed during the admission and education processes.

Attendance

During Years 1 and 2, medical students are expected to attend all lectures. Attendance is required at all laboratories and integrative and clinical experiences. Limited excused absences may be granted with permission of the director, assistant, or associate dean for academic affairs. The student is responsible for obtaining and learning subject materials presented during an absence. When the period of absence is known and may be planned, the student must confer with the appropriate course director and determine a plan of action for the absence. The student must then submit a completed excused absence request form at least two weeks before the requested date(s) of absence to the Office of Academic Affairs.

Throughout Years 3 and 4, because of the responsibility for patient care, as well as the expectations of clinical assignments, 100 percent attendance is required on all clinical clerkships.

It is recognized that situations beyond a student's control may arise that require absence from a clerkship. When approved by the clerkship director, a student may be absent at the rate of one-day absence per two weeks on a clerkship. These approved absences should be limited to instances such as: internship/residency interviews, personal and/or immediate family illness, physician appointment, or the death of a family member.

All absences require written documentation using the Request for Absence From Clerkship Form available through the Office of Clinical Education.

Unapproved absences or absences in excess of this policy will, at the discretion of the course director or associate dean for academic affairs, either require remediation of the time missed or result in the loss of points from the final clerkship grade.

Absences of five days or more on a four-week clerkship, or seven days or more on a six-week clerkship, will result in a grade of "incomplete," and will require that the clerkship be repeated in its entirety.

Absence(s) without notification of the clinic and/or clerkship director (i.e., failure to report) will be considered neglect of duty and may result in a failing grade for the clerkship.

Students may receive approved absences for certain Health Science Center-related activities. These absences require advance written

approval from the associate dean for academic affairs, and are subject to the above provisions for four- and six-week clerkships. Any exception to this policy may be made only with the approval of the assistant or associate dean for academic affairs.

Leave of Absence

A student may request or be required to take a leave of absence with the occurrence of a medical problem, substantial personal problem, or as recommended by the Student Performance Committee. Students requesting a leave of absence must apply to the dean of TCOM. In the event of a medical problem, the request must be accompanied by a letter from the treating physician or a licensed professional describing the nature of the disability for which the leave is requested and the estimated length of time needed for recovery.

After consultation with the student, the dean of TCOM will decide whether or not the leave will be granted and the conditions under which the student may return to school. Students must report to the Office of Student Affairs to obtain a Leave of Absence Form and complete it before they are officially placed on an approved leave. Before a student may be readmitted, a written request for readmission must be submitted by the student to the dean of TCOM. In the case of a medical leave, a letter from the treating physician or a licensed professional must accompany the readmission request stating that the student has recovered from the disability for which the medical leave was granted and is able to participate in a full academic program.

Grading

Course Syllabus

The course syllabus contains specific educational requirements, assignments, evaluations, grading, and other conditions of performance – that must be satisfactorily completed in order to receive a passing grade. Modifications to the requirements and procedures of a course may be made when judged necessary to improve instruction or to conform to the scholastic regulations of the college.

Numerical Course Grades

The grading standard for all TCOM courses will be a numerical system ranging from 0 to 100, with 70 as the lowest passing grade. A grade of 69 or less is defined as a failing grade. Numerical course grades will be rounded off to the nearest whole number (for example, 69.1 to 69.4 will be recorded as a 69; 69.5 to 69.9 will be recorded as a 70).

For purposes of promotion and graduation, a cumulative weighted average of 70 or better is required. The weighted average for a block or semester is determined by dividing the total number of grade points earned by the total number of hours attempted, excluding courses in which a "CR" or "P" grade is achieved.

Grade Symbols and Designations

W: Withdrawal in good academic standing, or Withdrawal, not in good academic standing. **WP:** Withdrawal passing. **WF:** Withdrawal failing. **NC:** No credit. **CR:** Credit. **P:** Pass. **I:** Incomplete. **AUD:** Audit. **IP:** In Progress.

Recording Grades

No grade will be removed or deleted from a student's official permanent record once properly recorded, except in the case of

inaccurate recording. It is assumed that faculty members exercise their best judgment in formulating grades. Changes are not permitted after grades have been filed with the registrar, except to correct clerical errors. A request for error correction must be initiated within 30 days after the close of the semester or term for which the grade was awarded. Requests for correction after 30 days require approval of the dean of TCOM.

Grades assigned during a period of instruction for which there are unpaid tuition and fees will be made available by the registrar for official college purposes, such as the review of academic performance. However, those grades (as well as any transcript) will not be released until appropriate payment is received by the Health Science Center.

Incomplete Grades

A grade of “I” (Incomplete) will be assigned only when a student has not completed all academic requirements and assignments, including regular examinations, due to documented illness or circumstances beyond a student’s control. A student may not advance to the next academic year until all failures and incomplete (“I”) grades are remedied. A student will not be promoted to clinical rotations with an incomplete grade without prior approval of the dean of TCOM. A grade of “I” will be recorded for any student who does not complete required course evaluations within the prescribed time limit.

Semester Grades

Grades are reported to the Office of the Registrar within five working days of the conclusion of a course. Grades are posted on the website as soon as officially posted by the course director. The semester grade report includes grades for the present academic term as well as the cumulative weighted average earned throughout the academic program. Grades will not be released over the telephone and will be kept in confidence. Students who fail an examination are required to consult with the course director within five working days following notification of the failed examination.

Remedied Grades

A student who receives a failing grade (69.4 or less) in a course will have to repeat that course in accordance with the promotion requirements and achieve either a grade of 70, “P,” or a “CR.” Failure to achieve either a grade of 70, “P” or better or a “CR” in a remedied or repeated course is grounds for dismissal.

When a course is repeated or remedied, all attempted credit hours and earned grade points are counted in computing the cumulative weighted average. An asterisk is placed next to these courses to indicate that the course has been repeated. Entries for the repeated course and the remedied grade are shown elsewhere on the transcript.

Course/Instructor Evaluation

Each student is responsible for providing constructive evaluation of each course, clinical rotation, and instructor in the curriculum. Year 1 and Year 2 course evaluations must be completed within five business days after each course ends. Evaluations for all clinical rotations must be completed within 30 calendar days following the end of the rotation. If this responsibility is not met for a given course, the grade for that course will be withheld until the evaluation is completed. All evaluations must be current before a student can register for the next semester. For clinical year students, no transcript will be released until course evaluations are up to date. For complete information, see policy number S/TCOM/Acad-36, Administrative Policy – Student Evaluation of Courses and Instructors.

Academic Honors

It is a tradition at the Health Science Center to recognize its highest scholars and promote academic excellence. Honors for medical students are determined at the end of the academic year at graduation. Academic honors are noted on the student’s official permanent record.

The Dean’s List for semesters one through four recognizes medical students whose weighted averages are 90 percent or greater and who make up the highest 10 percent of each class enrolled in the college. The distinction of President’s Scholar is awarded to graduating seniors who have been named to the Dean’s List for every semester of enrollment in TCOM.

Academic honors are awarded with the degree at graduation to medical students whose cumulative weighted average at the end of the fourth semester is 90 percent or greater and who make up the highest 10 percent of the graduating class. The students in this group shall be designated as graduating with honors.

No graduate will be named to the Dean’s List or receive a degree with honors who has failed a course, who has not been enrolled as a full-time student, or who has been placed on academic, disciplinary probation or suspension. Transfer students are not eligible for academic honors.

Advanced Placement/Waivers

Requests for advanced placement or waiver for any course must be declared by the medical student on the first day of enrollment at the Health Science Center. The student must then present all supporting documents to the Office of the Registrar. The student is required to attend all classes and take all examinations until a decision is made regarding the advanced placement request.

To be placed in advanced standing, a student must have taken a course judged to be equivalent by the appropriate academic department or course director within two years before the first day of classes and awarded a minimum grade of “B,” or have completed a similar course and obtained a minimum grade of “B” in a written comprehensive examination given by the department or course director for this purpose before the student’s program begins at the Health Science Center.

The decision regarding a request for advanced standing will be transmitted in writing to the student by the dean of TCOM, who will also notify the registrar and the appropriate department or course director. Courses for which advanced standing is granted are assigned a transcript designation of “CR” and are not calculated in the cumulative weighted average.

Special Academic Programs

Under extenuating circumstances, a student may request the privilege of a special academic program. Requests to be considered for a special academic program will be directed to the dean of TCOM, who will act upon the request after consultation with the appropriate educational program, the Student Performance Committee, and the Office of Student Affairs. There is no assurance that requests will be granted. Guidelines for a special program are as follows:

Requests for a special program must be made three weeks before enrollment in the fall semester of the first year or within three weeks before the beginning of the first semester of each year of classes.

No request will be considered at any other time in the year unless there is documented evidence of a medical or serious personal problem that would prevent the student from completing the year with a full course load. Under no circumstances will special programs be granted to students only for the reason of poor academic standing,

or to students who have not applied themselves in studies at TCOM, including class attendance.

Furthermore, the student should have indicated by efforts at the college that he or she has the characteristics to be successful in the medical school curriculum. Any student (other than a transfer student) granted a special program will be placed on a standard five-year program. All of the academic and non-academic requirements of the college will apply to any student on a special program, and the student must meet the requirements for the class with which he or she will graduate.

The dean of TCOM may make exceptions to these requirements if it is determined that an extraordinary circumstance exists to warrant such an exception.

Auditing

Students may audit classes if they have obtained permission from the dean of TCOM. These students will be expected to meet the requirements as designated by the dean.

A grade designation of "Aud" will be assigned at the end of the course and will be shown on the academic transcript.

Transcripts and Ranking

The term "academic transcript" refers to a copy of the official permanent record of a student's approved academic course work, including academic marks, scholarships, and degrees. Class ranks are posted on the website at the end of the spring semester. Students may obtain copies of their transcripts by submitting written requests to the Office of the Registrar. The first copy of a TCOM transcript is free. A \$4 fee is charged thereafter for each official transcript. A \$1 fee is charged for each copy of an undergraduate transcript in a student's file. Alteration of academic records or transcripts with the intent to use such a document fraudulently is a crime punishable by law. The penalty is a fine of not more than \$1,000 and/or confinement in the county jail for a period not to exceed one year. Appropriate payment of tuition and fees must be made before a transcript is released.

Examinations

Administration

Examinations are administered at the time and date established by the course director and/or published in the course syllabus. They begin and end as scheduled and all answers must be recorded in the manner prescribed by the course director. No examinations will be distributed after the first student has turned in a completed examination. All written examinations will be scheduled in Luibel Hall as the first activity of the day. All other examinations (i.e. practical and lab) will be scheduled as the first activity of the day when possible. For complete information, see Policy No. S/TCOM/ Examinations-01 in the Academic Policy Manual available in the Office of Academic Affairs.

Secure Testing Policy

Test questions and keys used in written examinations that contribute to a course grade will not be retained by students. Following major written examinations, students may attend a post-examination review session to receive feedback on their examination performance. The intent of this policy is to facilitate the long-term development of a collection (bank) of questions with increasing number and quality that will permit improved assessment of students' knowledge and skills. For complete information, see Policy No. F/TCOM/ CurrMgmt-09 in the Academic Policy Manual available in each academic department and in the Office of Academic Affairs.

Final Examinations

No student may be exempt from sitting for final examinations at their scheduled time. In the case of unusual circumstances, the student may petition the course director. Each case of this type will be considered on its individual merits.

Make-Up Examinations

A make-up examination is defined as an examination administered to a student in lieu of a regular course examination when the student has (1) arranged in advance to take an examination early or late or (2) missed taking a regularly scheduled examination. Make-up examinations are given only in the case of an approved absence or a documented medical excuse.

Approval is required from the course director to authorize a make-up examination. If a make-up examination is not authorized by the course director, the student may appeal to the phase director. The phase director will meet with the assistant or associate dean for academic affairs and the course director to consider the appeal and render a decision to the student. The final decision on any appeal for a request for a make-up examination will be made by the associate dean for academic affairs.

A student who misses a scheduled examination without receiving approval by the associate dean for academic affairs, phase director, and the course director, either to take an early or late examination or to make up a missed examination, will receive a grade of zero for that examination.

A student who misses an examination is not permitted to participate in a post-examination review of that examination if they have not completed the make-up examination by the time the post-examination review takes place.

Procedure: Early/Late Examination

To request an early or late make-up examination, a student must obtain and complete an excused absence form requesting a make-up examination from the course director. In the case of an early examination, the completed form must be submitted to the course director at least five (5) days before the date of the examination. This form documents the reason for the absence and the date the student requested the make-up examination. A copy of the completed and signed request is sent to the phase director and forwarded to the Office of the Registrar.

Procedure: Making Up a Missed Examination

Within five business days after the missed examination, a student obtains and fills out an excused absence form requesting a make-up examination from the course director. If approved, a make-up examination must be administered within seven (7) days following the date of the approval, except when the course director determines that additional time is needed to arrange a laboratory or clinical practical examination.

Failed Examinations

Any student who fails an examination will be required to contact the course director within five (5) class days following notification of the failed examination in order to arrange for academic counseling and remediation. At the time of the meeting, an Academic Consultation Report must be completed indicating the remediation plan agreed to by the course director and the student. A copy of the completed Academic Consultation Report must be filed in the administrative offices of the Division of Student Affairs.

External Examinations

It is the policy of the Texas College of Osteopathic Medicine to promote measures that will ensure the security of testing materials from external examinations. To ensure the security of testing materials from external examinations, TCOM may require all of its medical students to sign a document whereby each student:

- Acknowledges awareness that external testing materials are owned and copyrighted by outside entities and that any form of copying these materials is prohibited.
- Acknowledges that they will not reproduce and distribute external testing materials that are owned and copyrighted by outside entities.
- Acknowledges that they will not distribute any external testing materials to students at other medical schools or to any other persons.
- The college may take any other reasonable action to ensure the security of testing materials from external examinations.

Subject Examination and Comprehensive Examination Policy

Subject Examinations

Subject Examinations from the National Board of Medical Examiners (NBME) will be administered in core clinical clerkships for which these examinations are available. Assigned students must sit for the appropriate subject examination administered at the completion of each of their rotations. Any student who is unable to sit for the subject examination at the scheduled time is referred to the course director for an excused absence and reassignment of test date. Core clerkship subject examinations must be taken within 60 days of the original scheduled date. The National Board of Osteopathic Medical Examiners (NBOME) subject examination for Osteopathic Principles and Practice will be administered at the end of the core rotation in Manipulative Medicine.

All students are required to take the subject examinations without prior determination that the course has been passed. Core Clerkship Subject Examinations will be graded and a scaled score based on national performance data. The course director will determine the weight of a subject examination for a core rotation. Upon failure of a subject examination the student must appear, in person, before the Student Performance Committee (SPC).

National Board Examinations

All medical students are required to take Level 1 of the Comprehensive Osteopathic Medical Licensing Examination (COMLEX), the examination administered by the National Board of Osteopathic Medical Examiners (NBOME), upon completion of the second year of the medical curriculum. To be eligible, a student must have been currently in "good academic standing" at the time of registration for the COMLEX Level 1 examination.

All students are required to pass Level 1 (per the minimums established by the National Board of Osteopathic Medical Examiners) for promotion to the third year. Students who do not pass Level 1 must appear before the Student Performance Committee (SPC). The SPC may recommend re-examination. If allowed to re-test, students will then continue in the third year classification on a provisional basis pending results of the second examination. Medical students must pass COMLEX Level 1 to continue in clinical clerkship rotations.

Students may audit appropriate basic science courses in order to prepare for re-examination with the approval of the dean of TCOM, phase director and course director. A student who does not achieve a satisfactory result on the second examination may be dismissed from

the University of North Texas Health Science Center.

All students are required to take and pass COMLEX 2-CE and COMLEX 2-PE in order to graduate. Students who do not pass Level 2 must appear before the SPC. Students may have a second opportunity to take the test. Students who are unsuccessful on the second try may be dismissed from the Health Science Center.

Approximately 80 percent of our students take the United States Medical Licensing Examination (USMLE) in order to compete for residency positions.

Physician Licensure

Physician licensing is the prerogative of individual states. In Texas, the Texas Medical Board currently grants licensure based upon factors including the applicant successfully passing the COMLEX Levels 1, 2 and 3, or the United States Medical Licensing Examination Steps 1, 2 and 3, plus the Medical Jurisprudence Examination.

COMLEX Levels 1, 2, and 3 are administered at private testing centers located throughout the state. In Texas, the Medical Jurisprudence examination is administered only in Austin. Information on dates and fees are available in the Office of the Registrar, along with registration forms. Information on the licensing requirements of other states may be found in the annual almanac issued as a supplement to the Journal of the American Osteopathic Association, or by writing to the state's medical licensing board.

The Health Science Center does not require that students take the United States Medical Licensing Examination.

Licensing Examination Review

All medical students will be required to participate in the Correlative Basic Science and Clinical Medicine course, which will be conducted during the spring of the second year. This review is intended to assist students in preparing for licensing examinations.

Promotion and Probation

Normal progression through the curriculum requires that a student achieve a cumulative average of at least 70 (or credit) in each academic year and that there be no failing grades (below 70 or no credit) that have not been corrected. Achievement of this standard in each academic year is required for promotion to the next academic year. It must also be met before a Year 3 student will be allowed to begin clinical rotations, and the same standard must be met in the fourth year in order to graduate. In addition, the graduating student must have passed Levels 1, 2, and 2 PE of the COMLEX administered by the National Board of Osteopathic Medical Examiners.

The academic standards for successful completion of each course or clinical rotation are determined by the department or interdisciplinary unit in which the course or rotation is administered. The student has the primary responsibility for acquiring knowledge and clinical proficiency and for meeting the academic standards set for each course or program. The Health Science Center in no way guarantees that any student will achieve academic or professional accomplishment.

Students must meet the minimum standards and requirements set by the institution in order to remain in good academic standing. Students will be placed on academic probation if they have a cumulative weighted average of less than 70 or if a failing grade is received in any course. Students on academic probation must achieve a passing grade on all deficient course work during that academic year. They will be removed from academic probation only after successfully correcting their particular deficiency and not receiving a failing grade for the following academic year. A student who does not remedy a failed grade(s) within the academic year will be subject to dismissal.

Academic standing is reviewed by the Student Performance Committee periodically throughout the year and includes consideration of a student's overall performance at the Health Science Center during any and all periods of enrollment. Academic probation or other actions may be recommended for students who have an incomplete course grade. In addition, students may be placed on academic probation for ethical, professional, and personal standards that fall below those established by the Health Science Center. Students who meet any of the above criteria will be required to appear before the Student Performance Committee when notified by the Office of the Registrar.

Students who do not meet the standards specified for promotion, for beginning clinical rotation, or for graduation may be given an opportunity to correct their deficiencies either at specified times during the academic year or by adding an additional period of time to their medical education.

The Student Performance Committee may recommend to the dean of TCOM that students may be offered an opportunity to correct their deficiencies within a requisite time period or be dismissed. Students will be notified of a final decision in writing by the dean of TCOM. It is recognized by the Student Performance Committee that each student's situation should be evaluated as an individual case.

Academic Probation

Academic probation is a serious matter and serves as official notice to the student that the quality of the student's performance during the probationary period must improve in order to remain eligible to continue at the Health Science Center. Any student who fails to improve his or her performance in the areas identified by the Student Performance Committee during the probationary period may be continued on probation, asked to withdraw, or be dismissed from the Health Science Center. Students on academic probation may not hold any elected or appointed office, institutional or external.

Students experiencing academic difficulty or on academic probation are expected to take full advantage of their educational experience by regularly attending classes and seeking assistance from faculty, course directors, and the Office of Student Affairs. Additionally, learning assessment, skill development, and tutoring services are available to mediate curricular deficiencies.

Remediation

The opportunity to remedy academic deficiencies at times other than when the course is regularly scheduled may be extended to medical students who do not fall into a dismissal category, provided they have made a serious effort to earn a passing grade and have sought assistance from the faculty during the regular offering of the course. Remediation is a privilege that must be earned by the student. Remediation may occur based upon the recommendations of the Student Performance Committee and the final approval of the dean.

A student is expected to take an active role in attempting to pass the course or rotation by adhering to the attendance policy of the course or rotation, attending help sessions, seeking help from the appropriate faculty, and seeking study skills help through the Office of Student Affairs. Remedial course work must be completed according to the following schedule:

- A deficiency in a Semester 1 or Semester 2 course must be remedied prior to Semester 3 or as specified by the Student Performance Committee.
- A deficiency in a Semester 3 or Semester 4 course must be remedied before clinical clerkships begin.
- A deficiency in a clinical clerkship must be remedied prior to graduation.

For successful completion of a remedied course the student must earn a final course grade of 70 "P" or "CR." Failure to earn at least a grade of 70 "P", or better, "P", or "CR" in a remedied course is grounds for dismissal from the Health Science Center.

When a course is repeated or remedied, all attempted credit hours and earned grade points are counted in computing the cumulative weighted average. An asterisk is placed next to these courses to indicate that the course has been repeated. Entries for the repeated course and the remedied grade are shown elsewhere on the transcript.

- The content, scope, and format of a remedial examination will be decided by the appropriate department or interdisciplinary unit, and this information will be forwarded to the Student Performance Committee. All examinations should be equivalent to the course's original examinations in level of difficulty. The final recorded grade for any course in which a student has been given a remedial examination will not exceed 70.
- Any student who earns a failing grade in a repeated course will be recommended for dismissal from the Health Science Center.
- Medical students in clinical rotations: A student who earns failing grades in clinical rotations must appear before the Student Performance Committee. The Student Performance Committee will make a recommendation to the dean. This may include remediation, a particular academic course of study, repeat of an academic year, or dismissal. If allowed to repeat a clinical rotation, students will have to add whatever time is necessary to their education to remove the failing grade, possibly delaying graduation. Eligibility for graduation will be achieved whenever the standards have been met and do not require an entire year's delay. Students who do not fulfill all graduation requirements may not participate in the commencement ceremony. In addition, they will not be considered graduates in any capacity until they have successfully completed all requirements. Any student who earns a failing grade in a repeated rotation will be recommended for dismissal from the Health Science Center.
- A student on an extended study plan will be evaluated on the total credit hours taken for that particular year. All requirements and recommendations cited in this document will apply to students on extended study plans. However, determination of options for correcting deficiencies and determination of recommendation for dismissal for the special schedule students will depend on how many total credit hours they are taking during the year.
- A student who is not promoted from one year to the next or who earns failing grades during any year will be placed on academic probation. No more than two years will be allowed for the completion of any one academic year and no more than six years will be allowed for completion of all requirements for graduation (exclusive of a leave of absence). A student may not advance to the next academic year until all failing and incomplete (I) grades are removed.

Withdrawal

Application of voluntary withdrawal from the Health Science Center must be made in writing to the dean of TCOM. Except in rare and special circumstances, the application will be accompanied with a personal interview by the dean of TCOM. Students who leave the Health Science Center without notifying the dean of TCOM and without completing the established withdrawal procedures within 30 days will automatically be terminated from the Health Science Center.

At the time withdrawal is granted, an entry will be made on the official permanent record indicating the academic standing of the student. "Withdrawal in good standing" will be recorded if the student is not on academic probation and has maintained a cumulative grade of 70 or above in each enrolled course during the semester in which

the withdrawal is requested. “Withdrawal not in good academic standing” will be recorded if the student is on academic probation or has maintained a cumulative grade of 69 or below in enrolled courses during the semester in which the withdrawal is requested.

In addition, students must report to the Office of the Registrar to obtain and complete a withdrawal form before they can officially withdraw from the Health Science Center. Students who do not complete this application for voluntary withdrawal will not be entitled to an official withdrawal and, consequently, will not be considered for re-admission at a later date.

Re-admission for students withdrawing in good academic standing is not assured unless it is part of the final decision and/or agreement made by the withdrawing student and the dean of TCOM. This final decision and/or agreement will be in writing. Students granted re-admission following withdrawal in good academic standing usually will re-enter at the beginning of an academic year and must register for all courses scheduled during the academic year of their withdrawal, including those previously completed and passed, unless otherwise stipulated in the agreement.

Students who withdraw while not in good academic standing may request re-admission through the admissions application process. The Admissions Committee will evaluate the student’s entire academic record and make a recommendation to the dean of TCOM.

The academic record of any student who has been dismissed and applies for re-admission will be part of the data reviewed for re-admission.

It should be clearly understood that the Health Science Center, after due consideration and process, reserves the right to dismiss any student at any time before graduation if circumstances of a legal, moral, behavioral, ethical, health, or academic nature justify such an action.

Any student who withdraws due to poor academic progress, re-enters the Health Science Center and receives a failing grade in any course will be recommended for unconditional dismissal with no opportunity for re-admission.

Dismissal

Dismissal from the Health Science Center may be recommended if:

- A student fails one course and does not maintain satisfactory academic progress in other courses.
- A student earns failing grades in two or more courses in any one academic year.

Dismissal from the Health Science Center will be recommended if:

- A student fails a course for the second time (no re-admission would be granted at a later date).
- A student exceeds the two-year limit for completing one academic course or the six-year limit for completing requirements for graduation, exclusive of a leave of absence or withdrawal in good standing.
- A student has not demonstrated continued academic and professional growth and achievement.
- A student has not passed the national board examinations as set forth in policies of the Health Science Center and by the National Board of Examiners for Osteopathic Physicians and Surgeons, Inc.

Requirements for Graduation:*

Class of 2012

Students who have satisfactorily completed all academic requirements and who have been recommended by the Health Science Center faculty may be awarded the doctor of osteopathic medicine degree, provided they are of good moral character and that they:

- have maintained a cumulative weighted average of at least 70, have successfully remediated any failing grades and have no grades of “I;”
- are at least 21 years of age;
- have been in residence for four academic years at an accredited college of osteopathic medicine or college of medicine, the last two years of which must have been at TCOM;
- have passed Level 1 and Level 2 of the Comprehensive Osteopathic Medical Licensing Examination; and taken and passed COMLEX Level 2 -PE.
- have complied with all legal and financial requirements of the college;
- have exhibited the ethical, professional, behavioral, and personal characteristics necessary for the practice of osteopathic medicine;
- have completed an Exit Questionnaire and the Clearance Check Form from the Office of the Registrar. The Clearance Check Form, which must be returned to the registrar before graduation, is placed with the student’s permanent record and serves as the final clearance from campus; and
- attend the commencement at which the degree is to be awarded (only in unusual circumstances and with approval of the president will a degree be awarded in absentia).

A student who completes the curriculum in four consecutive years is required to meet the graduation requirements listed in the TCOM Catalog published for the year entered and/or any subsequent or additional program requirements. In the event of an extension beyond the four years, the student must meet the requirements for the class with whom the individual graduates.

** Students who do not fulfill all graduation requirements by graduation day will not be allowed to participate in the commencement ceremony. In addition, they will not be considered graduates in any capacity until they have successfully completed all requirements.*

Postdoctoral Medical Training

TCOM encourages graduates to complete at least three years of approved postdoctoral training. All internship, residency, and fellowship programs affiliated with TCOM are approved by the American Osteopathic Association or the Accreditation Council for Graduate Medical Education.

Graduates of approved programs are eligible for certification by the corresponding specialty board. Interested candidates should contact the following sites for more information regarding admissions requirements and application procedures:

Bay Area Corpus Christi Medical Center

7101 S. Padre Island Dr.
Corpus Christi, TX 78412
(361) 761-3280
Steven L. Gates, DO, Director of Medical Education
Approved Programs:
Family Practice Residency
Traditional Internship

Texas A&M Health Sciences Center

1301 Memorial Dr. #200
Bryan, TX 77802
(979) 862-4465
David McClellan, MD, Director of Medical Education
Approved Programs:
Traditional Internship

Driscoll Children's Hospital

3533 South Alameda
Corpus Christi, TX 78411
(361) 694-5465
William Dirksen, MD, Director of Medical Education

Approved Programs:
Pediatrics Residency

JPS Health Network

1500 S. Main St.
Ft. Worth, TX 76104
(817) 927-1173
Gary D. Smith, EdD, Administrative Director of Medical Education

Approved Programs:
Obstetrics and Gynecology Residency
Orthopedic Surgery
Psychiatry Residency
Radiology Residency
Traditional Internship

Methodist Charlton Medical Center

3500 Wheatland Rd.
Dallas, TX 75237
(214) 947-5441
Thomas Shima, DO, Director of Medical Education

Approved Programs:
Family Practice Residency

Plaza Medical Center of Fort Worth

900 8th Avenue
Ft. Worth, TX 76104
(817) 347-5887
Bernard Rubin, DO, Director of Medical Education

Approved Programs:

Cardiology Fellowship
Family Practice Residency
Gastroenterology Fellowship
General Surgery Residency
General Vascular Surgery Residency
Internal Medicine Residency
Interventional Cardiology Fellowship
Neuromusculoskeletal Medicine Residency
Neuromusculoskeletal Medicine Plus One Residency
Rheumatology Fellowship
Traditional Internship

San Jacinto Methodist Hospital

4301 Garth Rd., Suite 400
Baytown, TX 77521
(281) 420-8745
Alphonse Mehany, DO, Director of Medical Education

Approved Programs:
Family Practice Residency

Texas Tech University Health Science Center-Lubbock

3601 4th Street
Lubbock, TX 79430
(806) 743-2770
Ron Cook, DO, Director of Medical Education

Approved Programs:
Family Practice Residency



University of Texas Medical Branch-Galveston

301 University Boulevard
Galveston, TX 77555-1123
(409) 772-0620

Lisa R. Nash, DO, Director of Medical Education

Approved Programs:

Family Practice Residency

TCOM and its affiliate hospitals are members of the Texas Osteopathic Postdoctoral Training Institutions (Texas OPTI), an educational consortium committed to assuring the availability of quality postdoctoral training in the State of Texas. For more information, please view the Texas OPTI website at: <http://texasopti.hsc.unt.edu>.

Don N. Peska, DO, MEd, Associate Dean for Educational Programs
Texas College of Osteopathic Medicine
3500 Camp Bowie Blvd., EAD 426
Ft. Worth, TX 76107
(817) 735-2149
dpeska@hsc.unt.edu

Dual Degree Programs

The Health Science Center offers several dual-degree programs within the institution. Because each degree program requires the student to follow a separate curriculum in two schools, each school will have administrative authority over its specific degree program.

Application Procedures

To apply to the DO/PhD, DO/MS or DO/MPH degree programs, students must first apply to the Texas Medical and Dental Schools Application Service according to the application procedures in this catalog. Applicants should indicate on the supplemental application the dual-degree program in which they are interested. Dual-degree applicants are reviewed by the Dual-Program Admission Committee. It is highly recommended that applicants for the dual-degree programs apply early in the application season.

For more information on the DO/MS or DO/PhD programs, please contact the Graduate School of Biomedical Sciences Office of Admissions and Services (GSBS). Contact the School of Public Health admissions office for more information on the DO/MPH program.

Dual Degrees with the Graduate School of Biomedical Sciences**DO/PhD (Medical Scientist Training Program) DO/MS**

The Graduate School of Biomedical Sciences participates in the DO/PhD and DO/MS programs with the Texas College of Osteopathic Medicine (TCOM). Typically, the DO/PhD program will be six to seven years in length. The DO/MS program is typically five years in length.

Students may pursue a DO/PhD through the Medical Scientist Training Program (MSTP), which guarantees funding from the Graduate School of Biomedical Sciences during Block 2 of the program, as well as payment of graduate tuition and fees. Support

may be available during other blocks of the program through TCOM.

Students may choose from a wide range of disciplines, including cell biology and genetics, biochemistry and molecular biology, microbiology and immunology, physiology, and pharmacology and neuroscience. Additional information on specific programs is available from the Graduate School of Biomedical Sciences.

Application Procedures

An applicant to the MSTP must first apply to the Texas Medical and Dental Schools Application Service. Applicants should indicate the dual degree program in which they are interested on the application. If invited for interview, applicants will participate in three interviews, rather than the standard two for applicants to the DO program. Applications are then processed through a dual program admissions committee.

Individuals who become interested in pursuing the DO/PhD after gaining acceptance into either TCOM or the Graduate School of Biomedical Sciences must make formal application to the school in which they are not already enrolled. Procedures are in place to streamline this process by sharing information already in institutional records. Applicants who decide to pursue the DO/PhD after gaining acceptance to either TCOM or the Graduate School of Biomedical Sciences may not be considered for the MSTP.

Applicants to the DO/MS program may apply either using the dual degree admissions process described above or by applying to each school separately. DO/MS applicants will not be considered for the MSTP.

Formats

The general formats of the dual degree programs are explained below. While the formats may be regarded as standard working formats, deviations from these formats that meet the curriculum requirements are also acceptable. A degree plan is established by the student's major professor and advisory committee and filed in the graduate office.

DO/PhD Format

Block 1 consists of the pre-clinical years for the DO degree program. During Block 1, students will complete the first two years of the DO curriculum and will pass Part 1 of the Comprehensive Osteopathic Medical Licensing Examination (COMLEX). During this block, students will register only in TCOM.

An exception to this rule can be made if students wish to register for graduate courses which are not part of the DO curriculum during this block. In this case, students will register for such graduate courses through the Graduate School of Biomedical Sciences. Students must have permission from the TCOM Associate Dean for Academic Affairs prior to applying for admission.

During Block 1, students will select a graduate advisory committee and will file an approved graduate degree plan of at least 90 semester credit hours (SCH) with the graduate school. DO/PhD students are credited 30 SCH of advanced standing toward a PhD for the basic science didactic course work required in the DO curriculum.

Block 2 consists of at least two years dedicated to graduate study. During Block 2, students are expected to complete all course work required for a PhD degree, complete the requirements for advancement to candidacy, file an approved dissertation research proposal and make significant progress toward the completion of their dissertation research. It is not uncommon for students to continue research and complete the dissertation during Block 3. Block 3 students will complete required clinical rotations and electives and will pass Part 2 of the COMLEX. During this block, students may also continue work

toward the doctoral dissertation.

At the end of Block 3, students are expected to have completed the curriculum required for a DO degree and 60 additional SCH of graduate courses under the Graduate School of Biomedical Sciences as required for the second degree, including the dissertation. Following completion of the curriculum required for both degrees, students are awarded a DO degree from TCOM and a PhD from the Graduate School of Biomedical Sciences.

DO/MS Format

Block 1 consists of the pre-clinical years for the DO degree. During Block 1, students will complete the first two years of a DO curriculum and will pass Part 1 of COMLEX. During this block, students will register only in TCOM. An exception can be made if students want to register for graduate courses that are not part of the DO curriculum during this block. In this case, the student will register for such graduate courses through the Graduate School of Biomedical Sciences. Students must have permission from the TCOM Associate Dean for Academic Affairs prior to applying for admission.

During Block 1, students will select a graduate advisory committee and will file an approved graduate degree plan of at least 30 semester credit hours (SCH) with the graduate school. DO/MS students are given up to 18 SCH of advanced standing toward an MS degree for the basic science didactic course work required in the DO curriculum.

Block 2 consists of at least one year dedicated to graduate study. During Block 2, students are expected to complete all course work required for the MS degree, file an approved thesis research proposal, and make significant progress toward the completion of their thesis research.

Block 3 students will complete the required clinical rotations and electives and will pass Part 2 of the COMLEX. During this block, students may also continue work toward their master's thesis.

At the end of Block 3, students are expected to have completed the curriculum required for a DO degree and to have completed at least 24 additional SCH of graduate courses in the Graduate School of Biomedical Sciences as required for the second degree, including the research thesis. Following completion of the curriculum required for both degrees, students are awarded a DO degree from TCOM and a MS from the Graduate School of Biomedical Sciences.

Costs, Financial Obligations, and Assistance

DO/PhD and DO/MS students pay standard medical school tuition and fees during each block that they are enrolled in TCOM. They also pay the hourly tuition rate and fees for all courses not required for the DO degree, i.e., the credit hours required for the graduate degree. Non-Texas residents pursuing both the DO/PhD degrees may be eligible for waiver programs that allows them to pay tuition at the in-state rate for both medical and graduate school.

The Health Science Center will provide financial support to students chosen for the MSTP by the dual program admissions committee to seek the DO/PhD. This includes a fellowship in an amount sufficient to pay all graduate tuition costs during Block 2 and a graduate assistantship during that block. Support may be available during other blocks, as well.

Students who are not selected to participate in the MSTP often receive funding during Block 2 from other sources, including research grants, departmental assistantships and other departmental funds. All dual degree program students are eligible to apply for financial aid.

Master of Science in Clinical Research and Education

The Master of Science in Clinical Research and Education is for students who have completed or are completing graduate level training in a clinical health care discipline who want to advance osteopathic medicine and medical principles through teaching and/or research. The degree is designed to build on students' clinical skills by fostering the development of additional skills in educational methodology and research techniques. While the degree can help any student planning a clinical career by helping them to be more sophisticated consumers of the latest research, it is designed to be of particular value to students planning a career in graduate medical education or in academic medicine.

Training focuses on producing clinicians who can enhance the resources of the osteopathic medical profession in the development of clinical research and teaching of osteopathic manipulative medicine (OMM). Therefore, these principles and techniques provide the focus and foundation of this program.

Applications are accepted from current students and from residents and clinicians who have already completed their primary training.

Dual Degree with the School of Public Health

DO/MPH Training Program

The primary goal of the DO/MPH program is to provide clinical professionals with specialized public health training to develop, integrate and apply culturally competent social, psychological and biomedical approaches to the promotion and preservation of health. Participation in this program is subject to approval by the TCOM Associate Dean for Academic Affairs.

There are two options in the DO/MPH program. The first option is to extend the period for completion of the public health and medical degrees to five years by registering for the majority of the public health courses between Year 2 and Year 3 of the medical school curriculum.

The second option is to complete the MPH degree requirements during the four years of medical education in TCOM. In order to receive an MPH degree at the time of medical school graduation, students must enter the MPH program and take courses (at least 9-12 semester credit hours) during the summer prior to matriculation into medical school and enroll in one School of Public Health evening course during each semester of Year 1 and Year 2 of medical school. Contact the School of Public Health at 817-735-2252 for more information on the MPH curriculum.



Physician Assistant Studies

Contacts

Hank Lemke, MMS, PA-C, Program Director and Chair
 Kimberly Williams, Senior Administrative Associate
 Joel Daboub, MBA, Director of Admissions and Outreach

Our Mission

To improve health and quality of life for the people of Texas, and provide an exemplary graduate-level education for physician assistant students, particularly those choosing to work in primary care and underserved clinical settings.

Master of Physician Assistant Studies

Admission Requirements

Physician Assistant Studies Admissions Office Phone:
 817) 735-2204 or 1-800-535-8266
 Email: www.hsc.unt.edu

To be considered for admission to the Master of Physician Assistant Studies degree program, an applicant must have participated in the competitive admissions process and previously earned a minimum of 90 transferable semester hours taken at a regionally-accredited college or university, or coursework deemed equivalent by the PA Studies Program. The minimum semester credit hour requirement cannot be waived. The minimum overall grade point average (GPA) required for

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Academic Calendar

	Fall 2008	Spring 2009	Summer 2009
Year 1 PA Students			
Registration for classes	July 3	Nov. 3	May 15
Orientation	July 21-25	---	---
First day of classes	July 28	Jan. 5	June 1
Last day for students to withdraw with partial refund	Aug. 22	Jan. 30	---
White Coat Ceremony (mandatory)	Sept. 12	---	---
Last day of classes	Dec. 12	May 15	July 10
Electronic submission of grades due to registrar	Dec. 19	May 22	July 17
Year 2 PA Students			
Registration for classes	July 3	Nov. 3	---
First day of classes	July 28	Jan. 5	---
Last day for students to withdraw with partial refund	Aug. 22	Jan. 30	---
Last day of classes	Dec. 12	May 15	July 10
Electronic submission of grades due to registrar	Dec. 19	June 12	July 17
Year 3 PA Students			
Registration for classes	July 3	Nov. 3	---
Last day of classes (graduating students)	---	May 15	---
Commencement	---	May 16	---
Holidays and Special Events: (Please note that holidays may vary for students on rotation and for members of the faculty and staff)			
Labor Day	Sept. 1	---	---
Thanksgiving	Nov. 27-28	---	---
Winter Break	Dec. 22 - Jan 2	---	---
MLK Day	---	Jan. 19	---
Spring Break	---	March 16-20	---
Research Appreciation Day	---	March 6	---
Commencement	---	May 16	---
Memorial Day	---	May 25	---
Independence Day	---		July 4

admission is 2.85 on a 4.0 scale. All enrolled students must meet the program's minimum Health and Technical Standards to participate in the program. A standardized entrance examination is not required.

Notice of Change to Admissions Requirements (2009-2010)

Effective in the 2009-2010 application cycle, applicants will be required to hold a bachelor's degree from a regionally accredited college or university which would be completed prior to matriculation to the Physician Assistant Studies degree program. Applicants will also be required to submit GRE scores (verbal, quantitative, and analytical writing sections) that were received no more than five years prior to application to the program. No minimum GRE score will be required; however, the candidate's scores will be taken into consideration as one potential indication of success. In addition, the prerequisite of six hours in the elective Psychology, Sociology, and/or Anthropology requirement will be reduced to three hours.

Prerequisite Coursework

The minimum prerequisite coursework requirements can not be waived and must be obtained by the posted deadline(s) from regionally-accredited U.S. colleges or universities or coursework deemed equivalent by the PA Studies Program. Exceptions are not permitted. Prerequisite course work must be satisfied with a grade of "C" or higher (2.0 on 4.0 scale). A single course can not be used simultaneously to meet more than one course prerequisite. All coursework completed by the applicant will be considered in the admissions process.

General Course Requirements

English Composition	6
U.S. History	6
U.S. Government	6
<i>(Applicants are exempt from the above requirements if they hold a Bachelor's Degree from an accredited U.S. university prior to the application deadline)</i>	
Psychology (General or Introductory)	3
Electives: Psychology, Sociology and/or Anthropology	6
Mathematics: College Algebra or higher	3
Statistics	3
Science Course Requirements:	
Anatomy & Physiology (with lab)	8
General Microbiology (with lab)	4
Organic Chemistry (with lab)	4
Immunology or Genetics	3
Biochemistry or Cellular Biology (Upper-Level)	3

Coursework is converted to semester credit hours when calculating GPA and when determining if minimum prerequisite requirements have been met. Meeting the prerequisite requirements generally calls for completion of courses designed for science majors; courses offered for non science majors do not typically satisfy the prerequisite requirements of anatomy, physiology, microbiology, organic chemistry, immunology, genetics, biochemistry, or cellular biology. A maximum of three (3) semester credit hours in each of the following categories, English, U.S. History, U.S. Government, and Psychology, may be obtained through advanced standing examination such as CLEP or its equivalent. The English, U.S. History, and U.S. Government prerequisites can only be exempted if the applicant has received

a bachelor's degree from a regionally accredited U.S. college or university by the posted completion deadline for of prerequisites. Prerequisite credit received through advanced standing examinations such as CLEP (or equivalent) is not acceptable for science coursework other than psychology. Credit for coursework obtained through correspondence or television courses will be recognized as meeting prerequisite requirements as long as course credit is awarded from a regionally-accredited U.S. college or university.

Foreign Coursework

An applicant with academic credentials from a college or university located outside the United States, who chooses to apply that study toward meeting prerequisite requirements, must follow all instructions posted in the Centralized Application Service for Physician Assistant (CASPA) application.

Applicants must follow application instructions when submitting coursework from foreign colleges or universities for U.S. equivalence through CASPA, and these courses must be deemed equivalent by the PA Studies Program. Upon satisfying all prerequisite requirements, applicants with academic credentials from non-U.S. colleges or universities are processed with the same consideration as all others.

Transcripts

Official transcripts used for evaluation in the admissions process must be submitted according to instructions published by the application service (CASPA). Upon acceptance of an offer of admission, applicants must request final official transcripts from each institution previously attended be sent directly to the TCOM Office of Admissions and Outreach. Final transcripts must list all courses including those that were in progress between initial application and final matriculation into the program.

Prerequisite Coursework Substitution

Prospective applicants seeking substitution for prerequisite coursework should submit their request via e-mail to: PAAdmissions@hsc.unt.edu or by regular mail to:

UNT Health Science Center
TCOM Office of Admissions and Outreach
Attn: PA Admissions
3500 Camp Bowie Boulevard
Fort Worth, TX 76107-2699

A catalog course description or course syllabus from the college or university where the course was completed must be submitted with the request. If a catalog course description is not available, a letter from the academic department that offered the original course describing the content and nature of the course may be substituted. Coursework substitutions and content hours must be equivalent or comparable to the prerequisite. Substitutions are approved on an individual basis. The program reserves the right to approve or deny any prerequisite course substitution requests.

Admission Procedures

In order to be considered for admission, a complete CASPA and Supplemental Application must be received for the year in which the candidate is applying. Early application is recommended. Applications can not be held over for subsequent years. Applications to the Master of Physician Assistant Studies Program are accepted through

the Centralized Application Service for Physician Assistants (CASPA) from May through November 1. Applicants will be considered for admission into the program as early as October of the year prior to matriculation; therefore, early application is recommended. To allow for timely receipt and processing, it is strongly recommended that all application materials, fees, transcripts, and reference forms be submitted at least 30 days prior to the posted deadline to allow for timely receipt and processing. Applications submitted after the posted deadline will not be considered.

Applicants are also required to submit a PA Supplemental Application. Supplemental Applications become available online on June 1, and can be accessed at my.hsc.unt.edu.

Applicants must submit the Supplemental Application by November 15. Applicants will not be reviewed until both the CASPA and Supplemental Application are received by the Admissions Office.

Applicants should not send application materials, transcripts, reference letters, or additional information to the Admissions Office unless specifically requested to do so. The program does not assume any responsibility for application materials sent to CASPA, and will not forward materials to the application service on behalf of applicants.

Applicant Selection

The Physician Assistant Admissions Committee seeks applicants who are academically qualified to progress through the curriculum. Although an applicant's entire academic record is considered, this alone does not ensure acceptance. Evidence of personal integrity, maturity, creativity, motivation, dedication, and the ability to work with others are additional factors that will be considered. These qualities and attitudes are evaluated by several means, including letters of reference, the scope and nature of extracurricular activities (including work and volunteer experience), the scope and breadth of prior education and through the interview process. Although prior experience in a health care setting is not required, this experience is considered a beneficial attribute and viewed positively by the Physician Assistant Studies Admissions Committee. Selected applicants will be invited to the Health Science Center in Fort Worth for an admissions interview prior to selection. The Senior Vice President for Health Affairs and Dean of the Texas College of Osteopathic Medicine has final approval for all admission decisions.

Transfer Policy

The program does not admit transfer students from other physician assistant programs.

Advance Placement/Course Waivers

Advance placement and/or course waivers may only be considered once the student is already enrolled in the Master of Physician Assistant Studies program and that student has: 1) successfully completed the exact or nearly exact same course as that listed in the current MPAS curriculum; 2) taken the exact or nearly exact same course within 3 years of enrollment into the MPAS curriculum; 3) completed the exact or nearly exact same course with a letter grade of "B" or better; and 4) has obtained written approval of the Chair of PA Studies. Advance placement/course waivers may not be offered or approved during the admissions process. Requests for advance placement or a course waiver must be initiated by the student in writing within 5 class days of enrollment into the MPAS curriculum. No requests for course exemption will be considered after that time. Approval of advanced placement and/or course exemption is determined on a case-by-case basis.

Academic & Administrative Policies

Each student enrolled at the Health Science Center is responsible for knowing current academic and administrative policies and procedures that apply to enrollment in their chosen degree program. This section of the catalog provides selected academic and administrative policies unique to the MPAS degree program. Other Health Science Center and TCOM policies also apply to PA students and are contained elsewhere in this catalog or in official Health Science Center publications. The Health Science Center reserves the right to amend or add to these policies and scholastic regulations at any time during an individual student's enrollment period provided that such changes or additions are intended to improve the quality of education and are introduced in a fair and deliberate manner.

Registration

Registration is conducted each semester and consists of paying tuition and fees as well as completing the appropriate registration forms and submitting them to the offices of the Registrar, Financial Aid and Student Affairs. Late fees are assessed for late registration for each day following the designated registration date. PA students are only permitted to attend courses and clinical practica listed on their official schedules and/or otherwise approved by the Chair of PA Studies. Students are not permitted to enroll in two or more courses scheduled to meet at the same time. Only properly enrolled students will be permitted to attend classes. No record will be kept of academic work done by individuals whose enrollment has not been duly authorized. A check returned because of insufficient funds will incur a penalty and may also result in additional charges for late registration.

Attendance

Classroom and Laboratory Attendance

Participation in class and laboratory sessions is essential to good academic performance. Courses are typically offered only once during a student's enrollment period, therefore students are expected to attend all scheduled educational activities. Attendance is required at all laboratories, small group sessions, and clinical experiences. The program and/or course director reserves the right to take attendance and students may be asked to sign attendance sheets. No student may sign an attendance roster on behalf of another student. Excessive absences can contribute to a failing grade and lead to dismissal. Each student is responsible for obtaining and learning subject materials presented during their absence. Instructors and/or course directors are not obligated to provide make-up sessions to students. The PA Student Performance Committee is permitted to consider attendance when reviewing a student's performance and making recommendations on probation, remediation and/or dismissal.

Clinical Practica (Rotations)

Clinical practicum experiences generally will require 40+ hours per week of attendance. Some practica may require students to be available for more than 40 hours a week in order to meet all educational and performance objectives; including taking call and attending to patient care experiences during non-regular hours. Other activities that may require additional attendance by the student include attending rounds and medical education activities; and researching and presenting case studies. Students who become ill or have an emergency which causes them to be absent from any portion of a clinical practicum are required to notify the attending preceptor and the Clinical Education Coordinator as soon as possible. Excused absences

are approved by the Vice Chair, Clinical Services, in accordance with school policy. Clinical preceptors are not authorized to approve excused absences. Students will usually be required to make up any missed time from a practicum experience, even if the absence was considered excused. Students who miss more than 4 days of a practicum may be required to repeat all of the affected clinical practicum and be subject to other sanctions, including dismissal.

Excused Absence for Special Activities

Excused absences from regularly scheduled activities are generally granted for emergencies (i.e., death in the family) or personal illness. Under certain circumstances, absences for special activities may also be approved by the Chair of the PA Studies. Such approval must be documented and approved prior to the absence. Students are cautioned not to confirm travel plans or purchase nonrefundable tickets until written approval for the absence had been obtained.

Leave of Absence

A student in good academic standing may request a leave of absence due to a medical or serious personal problem. Students seeking leave of absence should obtain assistance from the Office of Student Affairs. Requests for leave of absence must be submitted in writing. Leave can not be granted for reasons of poor academic standing. Requests for leave of absence submitted by a student on academic probation shall be considered on a case-by-case basis. A request for leave of absence due to medical reasons must be accompanied by documentation from a physician or licensed professional describing the nature of the disability and the estimated length of time for recovery. A request for leave of absence due to personal reasons may also require substantiating documentation. Students must submit a written request for an approved leave of absence through the Chair of PA Studies to the Registrar before they can be placed into an approved leave status. In addition, prior to readmission into the program the student must submit a request for readmission through the Chair of PA Studies to the Office of the Dean. The request for readmission must be accompanied by documentation (such as a letter from a physician) substantiating the student's ability to participate fully in the academic program upon their return. The student may also be required to reaffirm their compliance with the Health and Technical Standards of the program. Leave of absence will not be approved to extend beyond one calendar year.

Grading

Academic standards for successful completion of each course are contained in the course syllabi. Specific requirements for each course, including academic assignments, evaluation and grading schemes, and other conditions of satisfactory performance are contained in course syllabi. Modifications to course requirements and grading schemes may be made when judged necessary to improve instruction or to conform to scholastic regulations of the college. Students are expected to participate in all scheduled activities. Participation may be considered when assigning course grades.

Recording Grades

All course grades will be recorded on transcripts as pass/fail, letter grades, credit or no credit, or as numerical grades using a 4.0 scale. Course grades using the 100 point scale are converted as described below:

Letter Grade	Point scale	Scale
A	90 - 100	4.0
B	80 - 89	3.0
C	70 - 79	2.0
F	<70	0.0

A grade of "I" (incomplete) may be assigned when a student has not completed all course requirements and assignments due to special circumstances. Students must complete all requirements and assignments for courses and remedy incomplete grades by the end of the fifth class day of the next academic semester or according to a timeframe approved by the Chair of Physician Assistant Studies or the Dean. If the didactic course grade is not remedied within that time frame, the student cannot be promoted to the next semester or clinical practica without approval of the Chair of Physician Assistant Studies. Students who receive a grade of incomplete on any clinical practica course will have 12 months or less from the date of issuance to fulfill requirements. If all course requirements are not completed, incomplete course grades will automatically convert to "F" or failing for that course.

Evaluation of Student Performance

Successful completion of the curriculum depends upon the student's ability to demonstrate the knowledge, attitudes, and skills commonly held by the graduate physician assistant working in a primary care setting. The use of a trained intermediary by the student is not permitted. Technological compensation and/or reasonable accommodation can be made in certain areas, but the student should be able to demonstrate the competencies contained within the curriculum in a reasonably independent manner.

Frequency of examinations and evaluations is determined by course directors according to the volume and types of material covered. Primary methods used for evaluating student performance are by written examination, multiple choice, matching, true/false, short answer and essay-type questions. Evaluation of performance also may include demonstrations of particular skills: examples include identifying and naming anatomic structures, setting up and using a microscope to identify organisms and tissues, suturing of materials and tissues together, medical interviewing and physical examination, clinical problem-solving, and participating in group discussions. In some courses, research, self-learning and written reports are required. Evaluation of students in clinical and laboratory settings will often require students to demonstrate visual, somatic, communicative, analytical, behavioral and discriminatory skills. Participation at lectures and laboratory sessions may be used when evaluating student's performance in a course. Professionalism is also assessed and graded. Students will be required to successfully complete practical assignments that include technical skills, problem-solving skills, interactions with patients and other health care workers, and the use of research tools (textbooks, journals and sources of medical information). An overall performance grade based on the above factors is assigned for each course and clinical practicum. Students shall be informed of their progress through formal and informal feedback mechanisms and through grades. Course syllabi contain the value(s) of grade components during a course. Students are generally advised of their progress through interactions with instructors and preceptors.

Grade Appeals

Grades are assigned according to requirements contained in the course syllabus. Grade appeals must be submitted in writing and comply with the Student Grievance Policy found in the General Student Handbook. Disputes over individual grades within a course are handled at the course level by the course director and involve faculty members. Course grades may be appealed if: 1) The final course grade has been incorrectly assigned to the student (e.g., to miscalculation or failure to include points earned by the student but not credited towards the final grade); 2) The final course grade has been unjustly rendered (e.g., did not follow the procedures outlined in the course syllabus); or 3) The final course grade appears to have been assigned in a capricious manner. A student will first seek to resolve the academic problem or complaint through the appropriate administrative channels, entering at the lowest appropriate level and proceeding in the order contained in the Student Grievance Policy with the exception that the Chair of Physician Assistant Studies shall be inserted just ahead of the Associate Dean, who is then followed by the Dean of the Texas College of Osteopathic Medicine. Grade appeals must be submitted within five working days of their official posting. Appeals of decisions must be initiated by the student in writing within five (5) working days of receipt of the decision. The decision of the Dean on academic appeals is final.

Remediation of Failing Course Grades

Physician Assistant students must achieve a passing grade in each course listed in the Master of Physician Assistant Studies curriculum to progress and graduate. Students may be given an opportunity to remedy deficiencies contributing to a failing course grade. This opportunity is a privilege that must be earned by the student. The opportunity to remedy deficiencies often depends on whether the student has made serious efforts to earn a passing grade. These efforts will generally include:

- Attending help sessions
- Participation in each educational experience
- Participating in class, laboratories, and small group activities
- Seeking help with study skills through the Center for Academic Performance (CAP)
- Notifying the course director of problems before a failing grade occurs
- Seeking help from the Master of Physician Assistant Studies faculty during the regular offering of the course.

Any student who has failed a course or clinical practicum, or whose cumulative grade point average (GPA) falls below 2.5, will be placed on academic probation. In all cases, grading and learning requirements listed in the course or practicum syllabus will be used to determine a remedy plan for obtaining a passing grade. Subsequent failure of a course or any other course while on academic probation will result in dismissal, unless otherwise recommended for retention by the PA Student Performance Committee and approved by the Dean. Students may be permitted to continue in courses until all remediation opportunities have been completed.

Promotion/Probation and Dismissal

Each student must meet the minimum standards and requirements set by the PA Studies Program, the Texas College of Osteopathic Medicine, and the University of North Texas Health Science Center to remain in good standing. The PA Student Performance Committee (PASPC) may be called upon to evaluate an individual student's progress and/or performance in order to provide recommendations on matters of probation, dismissal, promotion, retention, graduation, and remediation. Normal progression through the curriculum

requires students to satisfactorily complete all course requirements to graduate. The program does not guarantee any student that they will accomplish all degree requirements once enrolled. Students who do not meet standards for promotion and graduation may be offered opportunities to correct deficiencies according to college guidelines and/or program policy. Remediation activities may include requiring the student to repeat any or all courses in the MPAS curriculum in order to graduate. Removal from academic probation will only be made upon approval of the Dean or his/her designee.

Non-Academic Probation

Enrollment at the Health Science Center is considered implicit acceptance of the rules, regulations, and guidelines governing student behavior and promulgated by the institution. The student is responsible for being aware of these requirements and posted changes. In addition, all students are expected to know and obey the requirements of federal, state, and local laws. Any student who violates a provision of those laws is subject to disciplinary action, including expulsion, notwithstanding any action taken by civil authorities on account of the violation. Special care shall be taken to assure due process and to identify the defined routes of appeal when a student feels their rights have been violated. PA students may be subject to misconduct penalties and placed on non-academic probation for breaches of conduct contained in the Student Code of Conduct and/or a course syllabus.

Academic Probation

“Good” standing requires maintenance of a cumulative grade point average of 2.50 or better in the MPAS curriculum. Any student whose academic performance falls below minimum standards may be placed on academic probation. A student who fails a course during their enrollment will be placed on academic probation, which serves notice to the student that their continued enrollment is subject to remedy of failing grades and satisfactory performance in all subsequent courses. A student who fails to meet minimum standards of academic performance or who fails to pass a course a second time will be recommended for dismissal. Students not in good standing or on academic probation are not eligible to hold office in sanctioned student groups and therefore may be required to resign from any elected or appointed positions held.

Marginal Performance

Any student whose overall GPA falls below 2.85 for a single semester will be considered as having marginal performance. First or second year PA students with marginal performance will be required to meet with the Chair of PA Studies (or designee) and the Vice President of Student Affairs (or designee) to develop a plan for improving their performance. If the student's overall GPA falls below 2.50 and based upon a recommendation by the Vice Chair, Academic Services or Vice Chair, Clinical Services for the PA program, the student may be considered for placement on academic probation.

Dismissal

- A student may be dismissed from the program if that student:
- Earns a failing grade in any course
 - Fails a course due to unprofessional behavior
 - Fails any course a second time
 - Fails to progress satisfactorily as outlined in an approved remediation plan
 - Fails to comply with the Student Code of Conduct

Failure to earn a passing grade for a course will be considered grounds for automatic dismissal unless otherwise approved for retention by the Dean. The PA Student Performance Committee

is not restricted from recommending PA students for probation or dismissal for reasons of unethical, unprofessional, and/or unacceptable behavior by the student. Failure due to poor class participation must be documented. Students who do not meet the standards specified for promotion and graduation may be given opportunities to correct deficiencies. Any student failing a course while on academic probation is subject to automatic dismissal, unless otherwise recommended for retention by the PA Student Performance Committee and approved by the Dean.

Re-Admission after Dismissal

Any student seeking re-admission after dismissal from the PA program must apply through the normal admissions process. The academic record of any student who applies for re-admission will automatically become a part of the data considered by the admissions committee. Any student who is re-admitted and subsequently receives a failing grade in any course will be automatically recommended for dismissal without an opportunity for subsequent re-admission.

Requirements for Graduation:*

Graduation requirements are listed in the catalog at the time of the student's entry into the Master of Physician Assistant Studies program. Normally, these requirements can be satisfied within 36 consecutive months. Students may be required to meet additional requirements in order to meet other Health Science Center, accreditation, state or national standards and/or regulations. Students who have met all requirements and been recommended for graduation may be awarded the Master of Physician Assistant Studies (MPAS) degree provided they meet the conditions listed below:

1. Have completed all academic requirements and achieved grades of C, Credit, Pass or better in assigned courses.
2. Have completed six academic years of credit at an accredited college or university, of which at least three were completed at the University of North Texas Health Science Center at Fort Worth.
3. Have complied with all legal and financial requirements of the University of North Texas Health Science Center at Fort Worth.
4. Have exhibited the ethical, professional, behavioral, and personal characteristics necessary for practice as a physician assistant.
5. Have completed an exit questionnaire and returned to the Office of the Registrar a clearance check form.
6. Have attended the commencement ceremony at which the degree is to be awarded.
7. Have met the following requisites and time limits: If a student withdraws, decelerates, or is dismissed and later re-enters the program, or if a student is granted an extension beyond 36 months, that student must meet the requirements listed for the class with whom he or she will graduate. A student who has been dismissed due to poor academic progress, and later is readmitted to the program, has no more than 36 months from the date of re-entry to pass any academic course(s) that was (were) failed and must also complete any subsequent incomplete courses. A student dismissed due to a failing grade in a clinical practicum course, who later is re-admitted to the program, has not more than 12 months from the date of re-entry to successfully complete the course that was failed and any subsequent incomplete courses. The maximum time limit for completing all graduation requirements is 72 months. If a student withdraws, decelerates, or is dismissed and later re-enters the program, or if a student is granted an extension beyond 36 months, that student must meet the requirements listed for the class with whom he or she will graduate. A student

who has been dismissed due to poor academic progress, and later is readmitted to the program, has no more than 36 months from the date of re-entry to pass any academic course(s) that was (were) failed and must also complete any subsequent incomplete courses. A student dismissed due to a failing grade in a clinical practicum course, who later is readmitted to the program, has not more than 12 months from the date of re-entry to successfully complete the course that was failed and any subsequent incomplete courses. The maximum time limit for completing all graduation requirements is 72 months.

** Students who do not fulfill all graduation requirements by the day of graduation will not be allowed to participate in commencement ceremonies without permission of the Dean (or designee). Only in unusual circumstances, and with approval of the Health Science Center President, will a degree be awarded in absentia. Students will not be considered graduates in any capacity until they have successfully completed all graduation requirements.*

Withdrawal

The Master of Physician Assistant Studies program adheres to the UNTHSC policy on course withdrawals. A student who withdraws from a course or fails to complete it within specified time periods will not be permitted to progress in the curriculum or to graduate.

Application for voluntary withdrawal must be made in writing. Except in rare and unusual circumstances, the application for withdrawal will be accompanied by a personal interview with the Program Chair, the Associate Vice President for Student Affairs, and the Dean. Students who withdraw or fail to attend classes or clinical experiences without notifying the Registrar and/or the Dean and without completing the established withdrawal procedures within 30 days, will automatically be dismissed.

At the time withdrawal is granted, an entry will be made on the official permanent record indicating the academic standing of the student. "Withdrawal in good standing" will be recorded if the student is not on academic probation and has maintained a passing grade in each enrolled course during the semester in which the withdrawal is requested. "Withdrawal not in good academic standing" will be recorded if the student is on academic probation or has maintained a cumulative grade below passing in enrolled courses during the semester in which the withdrawal is requested.

Students must obtain and complete a withdrawal form from the Registrar before they can officially withdraw from the educational program. Students who do not complete the withdrawal process will not be entitled to an official withdrawal and consequently, can not be considered for readmission at a later date. Re-admission is not assured unless it is a part of the final decision and/or agreement made by the withdrawing student, the Chair of the PA Program and the Dean. This final decision and/or agreement will be in writing. Students who are granted re-admission following withdrawal in good academic standing usually will re-enter at the beginning of the next academic year and must register for all courses scheduled during that academic year, including those previously completed and passed, unless stipulated otherwise in a written agreement with the Dean.

Students who withdraw, who are not in good academic standing may request readmission through regular the admissions process. The admissions committee will evaluate the student's entire academic record and make a recommendation to the Dean. Any student who withdraws due to poor academic progress, re-enters the Health Science Center and receives a failing grade in any course will be recommended for dismissal without opportunity for readmission.

Other Policies

Master's Project

All students enrolled in the Master of Physician Assistant Studies Program must successfully complete a master's project and receive a passing grade in order to graduate. Faculty will guide, monitor, and assess the quality of the work presented in this process. The Coordinator of PA Research Studies will determine and notify the student when successful completion of requirements has been achieved.

Scheduling of Examinations

Examinations are given at a scheduled time and date. Course directors determine examination formats. Students must take examinations at the time they are originally scheduled. Failure to do so will result in a grade of "zero" on the missed examination unless other arrangements have been made with the course director. No examinations will be distributed after the first student has turned in a completed examination. All students who arrive later than the scheduled start time for the examination must fill out a "Late for Examination" form and schedule a meeting with the Vice Chair, Academic Services immediately. Consistent patterns of late arrivals for examinations will be considered unprofessional conduct and could result in dismissal from the program. No students will be exempt from taking final examinations.

Make-up Examinations

A make-up examination is defined as an examination administered to a student in lieu of a regular course examination when the student has (1) arranged in advance to take an examination early or late, or (2) missed taking a regularly scheduled examination. Make-up examinations are given only in the case of an approved absence or documented medical excuse. Approval is required from the course director in order to authorize a make-up examination. Students who miss a scheduled examination without receiving approval by the course director either to take an early or late examination or to make up a missed examination will receive a grade of "zero" for that examination. Students who miss an examination are not permitted to participate in a post-examination review of that examination. To arrange for an early or late make-up examination, students must obtain and complete an excused absence form requesting a make-up examination. In the case of an early examination, the completed form must be submitted to the course director at least five (5) days before the date of the examination. This form documents the reason for the absence and the date the student requested for the make-up examination. In the case of a missed examination due to an emergency or illness, the student must obtain and complete an excused absence form to request a make-up examination within five business days after the missed examination. Approval of the excused absence and make-up examination is based upon the discretion of the course director and must be obtained from both the course director and Academic Coordinator. If approved, the make-up examination must be administered within seven (7) days following approval, except when the course director determines that additional time is needed.

Use of Examinations Obtained from External Sources:

- The Health Science Center takes reasonable actions to ensure the security of testing materials obtained from external sources. Measures include, but are not limited to notifying students that:
- External testing materials are owned and copyrighted by outside entities and that any form of copying is prohibited.
 - Students are not permitted to reproduce or distribute external

testing materials that are owned and copyrighted by outside entities.

- Students are not permitted to distribute any external testing materials (or portions thereof) to students at other schools or to any other persons.

Performance of Patient Care Related Activities

Achieving the educational goals of the program will call for students to become involved in activities at medical clinics and in hospital settings where direct patient care is provided. These activities typically include supervised direct patient care and access to patient care related information. Students are not permitted to take the responsibility or place of qualified professional staff. Involvement in patient care is permitted only when authorized or by an assigned clinical preceptor or a faculty member. Under no circumstances are students permitted to write patient care orders independently or be assigned patient care activities that exceed those of a graduate physician assistant. Students would otherwise be directed to perform. Students may be asked to obtain and provide documentation indicating that they do not have conditions that would endanger the health and well being of patients before starting clinical rotations, including a criminal background check and/or drug screen to complete all requirements for acceptance at a particular clinical site or hospital. Students must be able to demonstrate that their health and abilities enable them to meet the defined technical standards of the program, which are provided prior to admission. Students must be able to demonstrate their status related to infectious disease that could pose a threat to patient's well being. Students are required to obtain tuberculosis testing/screening annually.

Confidentiality

Students are bound to commonly held confidentiality principles, state regulations, and federal guidelines upheld in healthcare settings regarding patient information. Patient information MUST be maintained in confidence in accordance with federal guidelines, institutional policy and that of affiliate institutions. Students may not release patient information to anyone outside of their clinical preceptor or a qualified faculty member unless they are instructed to do so by their clinical preceptor or qualified faculty member. In those cases where students are required to collect or produce documents for the purposes of evaluating their performance, the student is required to remove or obliterate all potentially identifying patient information according to Federal HIPAA guidelines. Students may be required to sign a statement of understanding regarding patient confidentiality and complete additional training to insure compliance with affiliated institutional/hospital policies.

Patient Notification of Student Status

Students must take reasonable steps to disclose their status as a "physician assistant student" while performing patient care related activities. Except in the operating room or other location where it would pose an infection or safety hazard, students are required to wear an identification badge at all times while on clinical rotations and when involved in patient care.

Service Work

Students are not permitted to take the responsibility or place of professional or regular staff while serving in clinical experiences or clinical practica. Students may not accept payments, stipends, or other remuneration for services that they perform as a part of their educational program.

Menial Tasking

Students may be asked to perform menial tasks such as transporting patients, collecting laboratory specimens, answering telephones, paging team members, or filing reports as long as they are not paid for performing these services and as long as the activities do not conflict with the student's overall learning experience.

Supervision of Medical Services

PA students are prohibited from performing any medical services or function without appropriate supervision.

Employment

Students are expected to give attendance to completion of assignments and rotation requirements priority over employment. Some assignments may call for the student to attend patient care activities at unusual or irregular hours or at places that are geographically separate from the main campus and/or their primary residence. Failure to meet course expectations due to employment conflicts may be cause for dismissal from the program.

Weekends and Nights

Class learning activities during the didactic phase of PA education are typically conducted Monday through Friday during normal business hours. However, some courses may require your attendance during the evening hours or on weekends.

Off-Campus Educational Activities

Some clinical practica and educational experiences take place off-campus and outside the immediate vicinity of Fort Worth. Attempt is made to assist students in obtaining free or reduced-cost housing; however, students are not guaranteed its availability and can not be afforded special consideration due to employment concerns. Students should recognize that securing housing is a student responsibility. Assistance with locating housing is a service provided for students and is not a program obligation. At no time should the university or PA program be considered responsible for paying student housing at clinical rotation sites.

Course/Instructor Evaluation

Each student is responsible for providing constructive evaluation of each course, clinical practicum, and instructor in the curriculum within five (5) class days after each course ends. This responsibility is met by participation in the course evaluations and as defined in administrative policy S/TCOM/Acad-36; if the responsibility is not met, the student will be given an "I" (incomplete) for the course until such evaluation is completed. All evaluations must be current before students can register for the next semester or graduate.

Academic Honors

It is a Health Science Center tradition to recognize its highest scholars and promote academic excellence. Students may be awarded "Honors" upon graduation if their overall grade point average is greater than or equivalent to 3.51 on a 4.0 scale. No more than 20% of a single PA graduating class will be awarded "Honors" at graduation.

The Dean's List is established to recognize academic excellence when the student achieves a semester grade point average of 3.51 or greater for a semester that is primarily didactic. Due to the variable nature of clinical practica, Dean's List recognition is not awarded for clinical practica. A student who has been placed on probation for any reason during their enrollment is not eligible for Dean's List recog-

niton. Other special awards may be utilized by the PA program to recognize exceptional academic, clinical, and leadership performance by a student. Special awards are not annotated on the student's official transcript. No graduate who has failed a course or rotation, or who has not been enrolled as a full-time student, or who has been placed on academic or disciplinary probation during their enrollment can receive a degree with honors.

Transcripts

The term "academic transcript" refers to a copy of the official permanent record of a student's approved academic course work, including academic marks, scholarships, and degrees. Students may obtain copies of their transcripts by submitting written requests to the Office of the Registrar. The first copy of the TCOM transcript is free. A fee is charged thereafter for each official transcript. A fee is also charged for each copy of an undergraduate transcript in a student's file. Alteration of academic records or transcripts with the intent to use such a document fraudulently is a crime punishable by law. The penalty is a fine of not more than \$1,000 and/or confinement in the county jail for a period not to exceed one year. Appropriate payment of tuition and fees must be made before a transcript will be released.

Tuition, Fees and Other Charges – 2008-2009

Tuition

Texas Resident	\$26,720 (charged over the course of the program)
Non-Resident	\$67,030 (charged over the course of the program)

Fees

Medical Malpractice Fee:	\$600 (charged over the course of the program)
Student Service Fee:	\$1062 (charged over the course of the program)
Medical Service Fee:	\$600 (charged over the course of the program)
Library Use Fee:	\$450 (charged over the course of the program)
Activity Center Fee:	\$225 (charged over the course of the program)
Student Center Fee:	\$90 (charged over the course of the program)
Laboratory Fee:	\$75 (charged over the course of the program)
Clinic/Lab Coat Fee:	\$30 (one-time charge at matriculation)
Matriculation Fee:	\$25 (one-time charge at matriculation)
Anatomy Fee:	\$100 (charged over the course of Year 1 and Year 2)
Publication Fee:	\$12 (per academic year)
Graduation Fee:	\$100 (one-time charge at graduation)
Student Identification Card:	\$25 (one-time charge)
Course Fees:	\$2,539 Year 1; \$385 Year 2; \$435 Year 3

Other Charges

Late Registration Fee:	\$25
Late Tuition Fee:	\$15 per month, to be applied as of the first day of the month following each beginning semester date
Installment Payment Plan Fee:	\$15
ID Card Replacement Fee:	\$25
Transcript Fee:	\$4 per copy. The first TCOM transcript is free.
Special Examinations:	These are based on the charge of the examining body or agency at the time of the examination.
Parking Fee:	\$90 (Replacement permits will be issued at a charge of \$5 if the original is lost, stolen, or destroyed.)

Tuition and fees are subject to change by the Board of Regents, the Texas Legislature, and legal rulings of the Texas Attorney General.

Course of Study**Teaching Goals**

The overall goals of the Master of Physician Assistant Studies (MPAS) program are to:

- Educate physician assistants who are equipped through academic and clinical training to provide patient care services with the appropriate supervision of a licensed physician.
- Provide a course of professional study that provides graduates with appropriate knowledge of physical and mental disease and the skills to accurately and reliably perform the range of health care procedures and duties customarily ascribed to the PA profession.
- Foster development of the intellectual, ethical, and professional attitudes and behaviors that generate trust and respect from the patient population served by the physician assistant.
- Prepare physician assistants with the knowledge, technical capabilities, and judgment necessary to perform in a professional capacity.
- Prepare physician assistants to serve in expanded roles, which meet developing needs in society's health care environment.
- Prepare physician assistants through curriculum, clinical experiences, and role models to provide medical services to underserved patient populations where the supervising physician may be physically located at the practice site or at a site remote from the physician assistant.
- Provide instruction that stresses the role of the physician assistant in health maintenance and preventive medicine while also taking into consideration the social, economic, and ethical aspects of health care delivery.
- Provide didactic and clinical experiences that prepare the physician assistant for dealing with cultural diversity in the patient population.
- Provide educational experiences that promote understanding of the interdependence of health professionals and foster an interdisciplinary team approach to the delivery of primary health care.
- Prepare the physician assistant with the knowledge and skills

needed to perform clinical research activities and projects.

- Prepare physician assistants with the knowledge and skills needed to be life-long learners and design educational activities appropriate for patients, clinical students, and colleagues.
- Provide educational experiences that stimulate active learning in the science and art of medicine and that foster a desire for continued learning as a practicing professional.

Curriculum**PA Class of 2011**

YEAR 1: FALL (PA CLASS OF 2011)		HOURS
July 28, 2008 through Dec. 12, 2008		
PA 4110	Human Anatomy with lab	6
PA 4112	Human Physiology	5
PA 4211	Medical Interviewing	2
PA 4212	Physical Examination Skills with lab	4
PA 5107	Principles of Evidence-Based Medicine	2
PA 5201	Introduction to PA Master's Project	2
PA 5202	Introduction to PA Profession	<u>1</u>
		22

YEAR 1: SPRING (PA CLASS OF 2011)		HOURS
Jan.. 5, 2009 through May 15, 2009		
PA 4222	Physical Diagnosis with lab	3
PA 4450	Professional Issues for Medical Practice	3
PA 5212	Underserved Primary Care	3
PA 5301	Introduction to Disease	5
PA 5303	PA Master's Project	1
PA 5602	Fundamentals of Behavioral Science	3
PA 5603	Introduction to Pharmacology/ Clinical Therapeutics	<u>4</u>
		22

YEAR 2: SUMMER (PA CLASS OF 2011)		HOURS
June 1, 2009 through July 10, 2009		
PA 5303	PA Master's Project	1
PA 5304	Introduction to EKG	2
PA 5202	Emergency Medicine	<u>2</u>
		5

Total SCH 49

PA Class of 2010

YEAR 2: FALL (PA CLASS OF 2010)		HOURS
July 28, 2008 through Dec. 12, 2008		
PA 4441	Supervised Practice I with practicum	2
PA 4532	Health Promotion/Disease Prevention	2
PA 5303	PA Master's Project	1
PA 5609	Integrated PA Clinical Medicine I with Clinical Integration Labs	<u>18</u>
		23

YEAR 2: SPRING (PA CLASS OF 2010)		HOURS
Jan. 5, 2009 through June 5, 2009		
PA 4542	Supervised Practice II with practicum	2
PA 5303	PA Master's Project	1
PA 5702	Clinical Skills	2
PA 5712	Integrated PA Clinical Medicine II with Clinical Integration Labs	<u>9</u>

April 7, 2008 through May 5, 2009	
Clinical Practicum Begin	
PA XXXX Clinical Practicums Begin	8
	22
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Total SCH	45

PA Class of 2009

YEAR 3: (PA CLASS OF 2009)		HOURS
PA 650	Elective Practicum	4
PA 651	Underserved Practicum	4
PA 653	Internal Medicine (Outpatient and Inpatient)	8
PA 654	Pediatrics	4
PA 655	Family Medicine	8
PA 656	Psychiatry	4
PA 657	Surgery (General and Specialty)	8
PA 658	Obstetrics & Gynecology	4
PA 659	Emergency Medicine	4
PA 660	Selective Practicum	4
PA 690	Senior Seminar	1
		53
		<hr/>
Total SCH		147

Course Descriptions

PA 4110. Human Anatomy with Lab

The course is designed to study human anatomical structures and their correlations with normal function, as well as clinically-relevant observations made during physical diagnosis in disease states. The course is accomplished through lectures and laboratory-based studies using prosected human cadaver specimens. Anatomical structures are emphasized through the use of relational concepts and medical terminology. Regional and topographical findings are also correlated with the underlying structures.

PA 4112. Human Physiology

This course is an advanced study of the physiology of human organ systems and cellular function focusing on endocrine, nervous, cardiovascular, muscular, respiratory, digestive, reproductive, and excretory systems. Understanding of this material provides students the physiological principles to apply to clinical medicine, disease processes, and pharmacotherapeutics.

PA 4211. Medical Interviewing

This course is based upon a series of lectures and application exercises designed to teach medical interviewing techniques and communication skills. Learning activities focus on patient-centered and provider-centered interviewing processes useful in obtaining subjective information, defining symptoms, organizing data, and documenting the patient chart. The course will incorporate the use of medical terminology in medical understanding and documentation.

PA 4212. Physical Examination Skills

This is a lecture and laboratory course that focuses on the accurate acquisition of objective findings from a screening physical examination of the average patient. Psychomotor skills for performing examinations, as well as verbal descriptions of examination findings, are

equally emphasized. The course also includes the proper documentation of the physical examination and the use of appropriate medical terminology in the documentation.

PA 4222. Physical Diagnosis

This course is designed to expand on the Medical Interviewing and Physical Examination Skills courses taken previously in the curriculum. Physical diagnosis will focus on organizing medical information around prototypical common diseases, using the specific historical and physical findings typically encountered in practice with these problems. Disease scripting and clinical decision making will be introduced here.

PA 4532. Health Promotion and Disease Prevention in Practice

This is an interactive course that stresses the role of the physician assistant in health promotion and disease prevention in medical practice. Students are encouraged to consider the social, psychological, spiritual, economic, cultural, and ethical aspects of health promotion within the challenges of the modern health care delivery system. Emphasis on the practical application of health promotion and preventive medicine principles and goals is included.

PA 5107. Principles of Epidemiology and Evidence-Based Medicine

This is a course dedicated to the knowledge base and skills needed by clinicians for the critical analysis of clinically related journal articles and the practice of medicine as it relates to the evidence in the literature.

PA 5201. Introduction to PA Master's Project

This course is designed to introduce the requirements of the MPAS Master's project and to ensure PA students acquire the necessary research knowledge and skills to implement their projects. In this course, PA students will identify an area of interest and develop a feasible prospectus for their Master's projects.

PA 5202. Introduction to Medical Practice

This course provides an introduction of the history of medicine and the physician assistant (PA) profession. Students examine the historical development of the PA profession and the PA role in healthcare delivery. Discussions focus on professional and social issues, including ethics and professionalism.

PA 5212. Underserved Primary Care

This is a course designed to prepare the physician assistant for underserved primary care practice by examining issues specific to underserved patient populations, underserved health care delivery settings, and underserved community health needs.

PA 5301. Introduction to Disease

This course introduces the basic etiologies and pathogenesis that underlie all diseases. The course describes the mode of origin and development of most diseases, emphasizing pathophysiology in the areas of tissue inflammation, dysplasia, micro-organisms, immunity, genetics, and metabolism. The course also includes an overview of common laboratory tests and how the pathophysiology of disease may be manifested in lab test results.

PA 5303. PA Master's Project

The goals of this course are to initiate students' independent study attitude and to familiarize students with formats of scholarly activities by implementing their own Master's projects. In this course, PA students will be required to conduct, complete, and present their Master's projects for program completion. Program and institutional

faculty guide and monitor the student's progress and assess the quality of the work presented.

PA 5304. Introduction to Electrocardiography

A clinical medicine course designed to educate the Physician Assistant student on the utilization and interpretation of the electrocardiogram. This course will utilize lecture, reading assignments, and practice workshops. Course content includes an overview of the electrophysiology of the heart, basic approach to the evaluation of an electrocardiogram, obtaining a 12 lead electrocardiogram and rhythm strip, and the recognition of common cardiac abnormalities.

PA 4441. Supervised Practice I

This course is designed to introduce the student to direct patient care through supervised clinical experiences and provide a venue for the practice of medical interviewing and physical examination skills. The primary focus is to elicit and document a complete history and physical examination on actual patients.

PA 4450. Professional Issues for Medical Practice

This course is a series of lectures and small group discussions of current topics on professional, legal, and ethical issues in health care that affect Physician Assistant practice. Topics important to the Physician-PA health care team are included, such as PA professional credentials and marketing, medical jurisprudence, health care organizations, health care policy, reimbursement issues, and office management skills. The course will also focus on ethical situations and dilemmas

relevant to clinical practice and its relationship with the unique role of the Physician-PA team.

PA 4542. Supervised Practice II

This course provides supervised clinical experiences for the purposes of problem oriented patient data gathering and reporting on real or simulated patients. Clinical decision making and differential diagnostic skills, as well as disease scripting, are further refined in this course through practical experiences and case presentations in small group discussion settings.

PA 5502. Emergency Medicine

This course introduces the student to common problems encountered in emergency medicine. Attention is given to evaluation, diagnosis, and treatment of common conditions seen in emergency room settings. The course includes clinical integration labs (CILs) conducted in workshop formats that allow for learning patient management skills through case studies, patient presentations, and evaluation of outcomes. Effort is made to guide the students in developing skills of medical problem solving and self-directed patient management.

PA 5602. Fundamentals of Behavioral Science

This course is designed to introduce the student to common psychosocial disorders encountered in primary care practice. The focus of this course is the clinical presentation, differential diagnosis, clinical pharmacology, and opportunities for prevention of the most common presenting psychosocial disorders.

PA 5603. Introduction to Clinical Therapeutics

This course introduces the student to basic principles of pharmacology and focuses on the major drug classifications discussed in the Integrated PA Clinical Medicine courses, including mechanisms of action, side effects, and commonly prescribed medications in each category. Students also learn prescription writing skills and drug calculations to insure appropriate dosage.

PA 5609. Integrated Clinical Medicine I with Clinical Integration Labs

The course presents a multidimensional approach to the understanding of the most common clinical disorders in the following areas: dermatology, ophthalmology, otorhinolaryngology, the pulmonary system, the cardiovascular system, the musculoskeletal system, the neurological system, obstetrics and gynecology, and the endocrine system. Attention will be given to diagnosis, pathophysiology, treatment, and outcome measurement of common disease processes encountered in primary care. The course will include clinical integration labs, conducted in workshop/laboratory formats, allowing maximum participation. Attention in the labs will be given to learning patient management through case studies, incorporating patient presentations, the development of differential diagnoses, the clinical approach to patient diagnosis, treatment options, and outcome measurements. Effort is made to guide the students in the skills of medical problem-solving and self-directed patient management.

PA 5702. Clinical Skills

This course is designed to teach students the basic clinical skills utilized in primary care practice. Areas of focus include suturing, sterile technique, casting, venipuncture, injection technique, IVs, and intubation. Students will be certified by the American Heart Association in Advanced Cardiac Life Support.



PA 5712. Integrated Clinical Medicine II with Clinical Integration Labs

The course presents a multidimensional approach to the understanding of the most common clinical disorders in the following areas of clinical practice: the urinary/renal system, the gastrointestinal system, multisystem diseases, geriatrics, and pediatrics. Attention will be given to diagnosis, pathophysiology, treatment, and outcome measurement of common disease processes encountered in primary care. The course will include clinical integration labs, conducted in workshop/laboratory formats, allowing maximum participation. Attention in the labs will be given to learning patient management through case studies, incorporating patient presentations, the development of differential diagnoses, the clinical approach to patient diagnosis, treatment options, and outcome measurements. Effort is made to guide the students in the skills of medical problem-solving and self-directed patient management.

Clinical Practica

PA 650. Elective Practicum

This is a supervised clinical experience in an area chosen by the student, according to the student's individual clinical interest and approved by the Vice Chair, Clinical Services. Students are responsible for developing their own educational goals and objectives for this practicum.

PA 651. Underserved Primary Care Practicum

The focus of this practicum in the underserved primary care track will be on the unique relationship between the primary care provider and the patient population in an underserved setting. Students will learn the special aspects of providing care in these settings, as well as the health care resources available in underserved communities.

PA 653. Internal Medicine Practicum

This is a supervised clinical experience that focuses on the adult patient population by concentrating on the evaluation and ongoing treatment of patients with complex medical problems and/or chronic illness. This practicum contains experiences in both the outpatient and inpatient setting for the discipline.

PA 654. Pediatric Practicum

This is a supervised clinical experience that focuses on the patient population that includes infants, small children, and adolescents to age 18. Students will learn to evaluate, monitor, and manage common pediatric problems and emergencies and act as a guide and resource to patients and their families as they progress through the growth and development from infancy through childhood and adolescence.

PA 655. Family Medicine Practicum

This is a supervised clinical experience that encompasses the treatment of patients from pediatrics to geriatrics. It focuses on important aspects related to health maintenance and preventive care, and the traditional aspects of primary care as it relates to the patient, family and community. Students will develop the skills necessary to evaluate, monitor and manage common health problems.

PA 656. Psychiatry Practicum

This is a supervised clinical experience that focuses on the evaluation and management of patients with a variety of psychiatric problems. The practicum will provide students with the opportunity to develop an understanding of the role of physician assistants,

psychiatrists, psychologists, social workers, and nurses in the care of psychiatric patients. There will be opportunities for students to practice the skills necessary to perform a psychiatric interview and mental status examination and make referrals for specialized psychiatric treatment.

PA 657. Surgery Practicum

This is a supervised clinical experience that focuses on the evaluation and management of the pre- and post-surgical patient. Students gain experience in operating room, including proper sterile technique, the efficient use of surgical instruments, and surgical techniques. This practicum contains experiences in general surgery and specialty surgery settings in outpatient and inpatient areas of the discipline.

PA 658. Obstetrics & Gynecology Practicum

This is a supervised clinical experience that focuses on the impact of disease processes related to the reproductive system of female patients. Students will develop the skills and knowledge necessary to evaluate, manage, and educate patients in the areas of women's health, human sexuality, birth control, infertility, pregnancy, pre- and post-natal care, and menopause.

PA 659. Emergency Medicine Practicum

This is a supervised clinical experience that focuses on the skills and knowledge necessary to recognize conditions that have the potential to progress to life threatening or potentially disabling conditions. The student will learn to triage and stabilize patients with life threatening or potentially disabling conditions, utilize lab and imaging studies, and interact with other health care professionals and victims' families in times of extreme stress.

PA 660. Clinical Selective Practicum

This supervised clinical experience provides students with opportunities to hone patient care knowledge and skills in specialized settings, such as in federally sponsored community health clinics, rural-health clinics, geriatric-focused institutes, specialty-practice clinics, and specialized hospital services, to name a few. This unique practicum will also provide an additional focus on professionalism, practice-based learning, and business systems that support and facilitate healthcare delivery. Besides patient care experiences, students also learn through attendance at medical education lectures, by conducting research in the specialty area, through completion of on-line assignments, and by conducting reviews of jurisprudence and business-related issues.

PA 690. Senior Seminar

The senior seminar is a capstone course designed to assess the graduate competencies required for entry into the PA profession in the areas of knowledge base, patient management skills, written and oral communication skills, and professionalism, through the use of specifically designed assessment mechanisms and the review of comprehensive student portfolios. Presentations, lectures, and workshops are also provided during the course to assist students in preparing for the PA National Certifying Examination (PANCE) after graduation.



SCHOOL OF HEALTH PROFESSIONS

Office of the Dean

Warren Anderson, EdD, Dean
Clayton F. Holmes, EdD, PT, Physical Therapy Chair

Background

The Health Science Center's newest school, the School of Health Professions, was approved by the University of North Texas System Board of Regents on May 20, 2004 and subsequently approved by the Texas Higher Education Coordinating Board on July 8, 2004.

Our Mission

To provide state-of-the-art instruction for a diverse student body to obtain the knowledge, attitudes, and skills necessary to serve in the health care professions and to continue their development throughout their professional careers.

Our Vision

To be recognized within in the top 10 of institutions providing allied health professions education for the State of Texas and the nation.

Current Development

Initially, the School of Health Professions will include one academic department, the Department of Physical Therapy. Subsequent planning will consider development of additional programs in the health professions.

Efforts are underway to develop a Doctor of Physical Therapy program that is fully collaborative with existing programs such as TCOM's Department of Osteopathic Manipulative Medicine and its Physical Medicine Institute, while setting its sights on becoming a top 10 DPT program.

Currently, the School of Health Professions has received Preliminary Authority from the Texas Higher Education Coordinating Board to present final plans for offering a Doctor of Physical Therapy (DPT) degree. Contingent upon receiving final Coordinating Board approval, this program is planned to begin in summer or fall 2010.

Accreditation by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association (1111 North Fairfax Street, Alexandria, VA 22314; phone; 703 706-3245; accreditation@apta.org) is currently being sought. The program will submit an Application for Candidacy, which is the formal application required in the pre-accreditation stage. Submission of this document does not assure that the program will be granted Candidate for Accreditation status nor does it assure that the program will be granted accreditation.

Additional information regarding our progress in developing this program can be found on our website at: www.hsc.unt.edu/education/shp/PhysicalTherapy.cfm



GRADUATE SCHOOL OF BIOMEDICAL SCIENCES

Office of the Dean

Jamboor K. Vishwanatha, PhD, Dean
 Patricia Gwartz, PhD, Assistant Dean
 Peter Raven, PhD, Interim Assistant Dean
 Aleta Wheeler, Sr. Executive Assistant
 Carolyn Polk, Academic Curriculum Coordinator
 Annie Mathew, Administrative Specialist
 Pat Baker, Administrative Services Officer

Office of Admissions and Services

Carla J. Lee, Director
 Jan Sharp, Sr. Admissions Associate
 Amanda Griffith, Admissions Associate

Office of Outreach

Robert Kaman, JD, PhD, Associate Dean and Director of Outreach
 Elizabeth Davis, MEd, Associate Director of Outreach
 Minnie Zavala, Executive Assistant

GSBS Mission Statement

The Graduate School of Biomedical Sciences is committed to:

- achieving excellence in education, research, and service;
- offering students opportunities to earn advanced degrees in the biomedical sciences;
- providing an innovative and diverse educational environment that supports state-of-the-art research in areas of health science and technology;
- exemplary teaching skills;
- service to the community; and
- collaborating with other Health Science Center schools and programs to offer dual degrees for future careers as health science researchers.

Graduates in biomedical sciences fill positions in health science centers, colleges and universities, community health centers, federal agencies and industry.

Academic Calendar

	Fall 2008	Spring 2009	Summer 2009
ADMISSIONS			
Application deadline. All application materials must be submitted for consideration.			
Applications for PhD program to be considered for funding	Feb. 1	---	---
Applications for all degree-seeking programs EXCEPT Master of Science in Medical Sciences	March 1	Aug. 29	Jan. 9
Applications for Master of Science in Medical Sciences and Forensic Genetics	---	---	Mar. 13
International New Student Orientation (mandatory)	Aug. 6	Jan. 7	May 21
New Student Orientation (mandatory for all students, including international)	Aug. 7-8	Jan. 8	May 22
REGISTRATION			
Regular registration	July 7-18	Oct. 20-31	April 20 - May 1
Late registration	July 21-25	Nov. 3-7	May 4-8
New student registration	Aug. 8	Jan. 8	May 22
IMPORTANT CLASS DAYS			
Classes begin	Aug. 11	Jan. 12	May 26
Audit enrollment dates	Aug. 26	Jan. 28	May 29
Last day of the semester	Dec. 12	May 8	July 31
Grades Due	Dec. 17	May 13	Aug. 5
SCHEDULE CHANGES			
Last day to ADD a course	Aug. 15	Jan. 16	May 29
Last day to drop to prevent course from appearing on transcript	Aug. 26	Jan. 28	May 29
Last day to DROP a course or withdraw with a grade of W for courses that a student is not passing. After this date, a grade of WF may be recorded.	Sept. 5	Feb. 6	June 1
Beginning this date, instructors may drop student with a grade of WF for non-attendance.	Sept. 8	Feb. 9	June 2
Last day to drop a course with consent of the instructor	Dec. 1	May 1	July 20
Last day to withdraw. Process must be completed by 5 p.m. in the Office of the Registrar.	Dec. 4	May 2	June 20
TUITION/FEE PAYMENTS AND COURSE REFUNDS			
Last day to pay tuition and fees	Aug. 10	Jan. 11	May 25
Beginning this date, students will be dropped from courses for non-payment of tuition and fees	Aug. 11	Jan. 12	May 26

	Fall 2008	Spring 2009	Summer 2009
WITHDRAWAL REFUNDS			
Last day to withdraw for a 100% refund	Aug. 10	Jan. 11	May 25
Last day to withdraw for an 80% refund	Aug. 15	Jan. 16	May 28
Last day to withdraw for a 70% refund	Aug. 22	Jan. 23	N/A
Last day to withdraw for a 50% refund	Aug. 29	Jan. 30	June 2
Last day to withdraw for a 25% refund	Sept. 5	Feb. 6	N/A
GRADUATION			
Deadline to file Declaration of Intent to Graduate	July 25	Nov. 7	May 8
Last day to complete all graduation requirements (all major except Clinical Research Management and Forensic Genetics)	Dec. 5	May 1	July 25
Last day for Clinical Research Management and Forensic Genetics majors to complete all graduation requirements	Dec. 5	May 1	Aug. 7
Commencement	May 16, 2009	May 16, 2009	May 15, 2010
HOLIDAYS/SPECIAL EVENTS Classes will not be held on these days marked with an asterisk (*) due to holidays and/or special events.			
Labor Day	Sept. 1	---	---
Outstanding Graduate Faculty Seminar	Sept. 25	---	---
Thanksgiving	Nov. 27-28	---	---
Winter Break	Dec. 22-Jan. 2	---	---
Martin Luther King, Jr. Day	---	Jan. 21	---
Research Appreciation Day	---	March 6	---
Memorial Day	---	---	May 25

Outreach Programs

The Health Science Center has received prestigious recognition for its longstanding history of programs aimed at increasing diversity within the scientific community. These awards include the Award for Excellence in Minority Recruitment from the National Association of Graduate Admissions Professionals, designation as an NIH-Minority Access Role Model Institution, and the President's Award for Excellence in Science, Mathematics, and Engineering from the National Science Foundation.

The GSBS Office of Outreach administers programs whose principal goal is to increase the numbers of under-represented, disadvantaged, or first-generation college students entering the health professions and the biomedical sciences.

Primary School Outreach Programs

Schools Cooperative Opportunities for Resources and Education (Project SCORE)

Project SCORE is designed to train and support biomedical graduate students at the Health Science Center to serve as enhanced curriculum resources in collaboration with high school biology students and teachers in the Fort Worth Independent School District.

Designated as "fellows" and supported by a National Science Foundation initiative, eight graduate students enrolled in the Health Science Center's Graduate School of Biomedical Sciences work in pairs for 10 hours per week in one of four Fort Worth Independent School District high school biology classrooms and contribute their advanced knowledge and skills to develop more effective inquiry-based, hands-on science laboratory exercises. The fellows serve to

promote the general goals of Project SCORE: 1) to increase interest in and understanding of science and science processes in community public schools, and 2) to enhance the science learning and productive capabilities of teachers and their students.

In order to accomplish the goals, Project SCORE also provides advanced technological tools for the selected biology classrooms including digital, internet-ready ceiling mounted projectors capable of displaying internet website-derived, interactive science resources, along with live microscope images, to entire classrooms of learners, facilitating group participation.

More information on Project SCORE is available at <http://www.hsc.unt.edu/score/>

Minority K-12 Initiative for Teachers and Students (MKITS)

The Office of Outreach in the Graduate School of Biomedical Sciences is funded by the **National Heart Lung and Blood Institute (NHLBI)** to further the institution's efforts to interest underrepresented minorities in the biomedical sciences and public health through the More Knowledge In The Sciences (MKITS) program.

This five year program is geared to help students from Manuel Jara Elementary, J.P. Elder Middle School; and North Side High School in the Fort Worth Independent School District take advantage of educational opportunities in the biosciences and public health.

MKITS also is designed to train and support graduate students as resources for the district's elementary, middle, and high school students and teachers by placing graduate student fellows in the classroom to assist in teaching science concepts with modern day technology.

More information on MKITS is available at <http://www.hsc.unt.edu/education/mkits/>

Adopt-A-School with Fort Worth Independent School District

The Health Science Center has conducted an adopt-a-school partnership with the Fort Worth Independent School District since 1982, and is a charter member of the program. Its partnership includes seven schools in two high school pyramids, and enlists the support of faculty, staff, and student organizations in its implementation. School partners include Manuel Jara Elementary, J.P. Elder Middle, and North Side High Schools in the North Side pyramid, and Maude I. Logan Elementary, Dunbar Sixth Grade, Dunbar Middle and Dunbar High School in the Dunbar pyramid. It offers a variety of programming, tutoring, mentoring, advising, preceptorships and other activities to address low attendance rates, low academic achievement, low completion rates, and a need to improve cognitive development in science and leadership. Program activities are designed to expose students to the sciences and ensure that students acquire the knowledge and skills in science and leadership to enable them to enroll and succeed in post-secondary education.

Go Center Project with Fort Worth Independent School District

The Go Center is the physical hub of energy for college preparation activities. Students volunteer to be trained as peer educators regarding the career exploration, college preparation, and financial aid processes. This group of students is referred to as the Go Force team and is responsible for conducting campus outreach activities as well as working one-on-one with their peers in the Go Centers. Go Centers are located at Dunbar and Northside High Schools. In addition, Dunbar and Northside High Schools have formed their own Go Force teams to assist with their Go Centers.

Special Programs for Undergraduates

Summer Multicultural Advanced Research Training Program (SMART)

Each summer, the Graduate School of Biomedical Sciences hosts the SMART program. Designed to familiarize undergraduate students with the varied disciplines and methodologies used in biomedical research, the SMART program allows students to work with faculty scientists in state-of-the-art laboratories. SMART participants also attend classroom lectures to study the physiology sciences, general laboratory principles and safety practices. Acceptance into the SMART program includes a stipend and housing allowance. An application may be obtained by calling the Office of Outreach at (866) 21-REACH or (817) 735-0174. Download an application and learn more about the SMART program at <http://www.hsc.unt.edu/education/gsb/smart.cfm>

Ronald E. McNair Post-Baccalaureate Achievement Program

The Ronald E. McNair Post-Baccalaureate Achievement Program was established to prepare low-income students, first generation college students, and students from groups underrepresented in graduate education for doctoral study. It is a national program of the U.S. Department of Education, created in memory of Ronald E. McNair, PhD, an African American physicist killed in the Space Shuttle Challenger mission in 1986. Participants in the McNair program on the campus receive tutoring, counseling, assistance with securing graduate program admission and financial aid, preparation for the Graduate Record Examination, and various other support services. McNair Scholars also participate in summer internship programs in research laboratories with faculty mentors.

Participants from the SMART program are given preference for placement in the McNair program, but other students are encouraged to apply. Download an application and learn more about the program at <http://www.hsc.unt.edu/education/gsb/mcnair.cfm>

HBCU Undergraduate Collaborative Summer Training Program in Prostate Cancer

The HBCU Undergraduate Collaborative Summer Training Program in Prostate Cancer provides an excellent opportunity for undergraduate students to gain experience in a research laboratory under the supervision of faculty and senior graduate students.

Participants will be awarded faculty-mentored summer research internships funded by the U.S. Department of Defense Prostate Cancer Research Program. These internships are full-time ten-week commitments.

Download an application and learn more about the program at <http://www.hsc.unt.edu/education/gsb/HBCUSummer.cfm>

Summer Training Among Research Scientists Program (STARS)

The STARS program provides an excellent opportunity for undergraduate students to gain experience in a research laboratory under the supervision of faculty and senior graduate students. Participants are selected in open competition.

Participants will be awarded faculty-mentored summer research internships. These internships are full-time ten-week commitments.

Download an application and learn more about the program at <http://www.hsc.unt.edu/education/gsb/STARS.cfm>

Programs for Graduate Students

Post-Baccalaureate Research Education Program and Retention Enhancement (PREP)

The PREP program provides underrepresented minority individuals who have received undergraduate degrees in science, a challenging, focused post-baccalaureate experience that will prepare them for acceptance into doctoral programs and allow them to successfully complete the program, thus obtaining their PhDs. Participants must meet the following eligibility requirements:

- Hold a bachelor's degree from a regionally accredited institution
- Have minimum 2.5 GPA on the last 60 undergraduate semester hours
- Take the GRE (no minimum score)
- Major in the life sciences (biology, biochemistry, chemistry, biotechnology, etc.)
- U.S. citizenship or permanent resident
- Intention of pursuing a PhD

PREP program participants gain research experience under the supervision of a faculty mentor and receive a research assistant stipend. Additional support includes a review course for the Graduate Record Examination, assistance with study strategies, tutoring, training in research presentation and electronic research techniques, advice for choosing a graduate school, and financing graduate education. Additional information is available at <http://www.hsc.unt.edu/education/gpbs/prep.cfm>

Minority Opportunities in Research and Education (MORE)

The MORE program is designed to ease the transition from undergraduate to graduate studies through academic and financial support. The MORE program is funded by the National Institutes of Health (NIH). MORE Scholars receive full tuition and fees and a graduate assistantship. MORE Scholars participate in programs that offer academic assistance with study skills, exam taking skills, and introduction to laboratory research. Each MORE Scholar is paired with a senior student and a faculty advisor who serve as resources as the scholars adjust to graduate school.

MORE Scholars are selected each year from under-represented minority applicants accepted to the doctoral program in the Graduate School of Biomedical Sciences.

Faculty Development

Steps Toward Academic Research (STAR) Fellowship Program

The Texas Center for Health Disparities hosts the STAR Fellowship Program. The STAR program offers emerging faculty a full year of collaborative training and interaction with faculty from the Health Science Center and other institutions, directed toward fostering Health Disparities Research Initiatives.

Ten faculty members are selected to join the all-expense-paid STAR Fellowship Program each year, while maintaining their regular faculty positions. The STAR Fellowship Program provides a unique approach that combines on-site faculty development and education with distance learning techniques that include video conferencing, on-line digital meetings, and "store and forward" technology in order to provide the skills necessary to STAR Fellows to enter into new health disparities research initiatives.

Successful completion of the STAR Fellows Program will offer each Fellow the opportunity to apply for pilot community-based health disparities research project grants each year (\$25,000).

More information on the STAR Fellowship Program is available at: <http://www.hsc.unt.edu/HealthDisparities/starFellowshipHome.html>

Admissions

Application

First-time applicants must complete the online application for admission to the Graduate School of Biomedical Sciences (GSBS). Applicants reapplying or GSBS alumni applying for a second degree program should contact the Office of Admissions and Services for instructions.

Supporting documentation such as letters of evaluation and transcripts should be mailed or delivered to:

Office of Admissions and Services
Graduate School of Biomedical Sciences
UNT Health Science Center at Fort Worth
3500 Camp Bowie Boulevard
Fort Worth, TX 76107-2699

Questions may be directed by telephone to 817-735-2560 or 800-511-GRAD or by e-mail to gbsbs@hsc.unt.edu.

Applicants applying for the first time to the Graduate School of Biomedical Sciences must pay a non-refundable application fee of \$40. This application fee is valid for one year from the application date. An additional \$50 foreign transcript evaluation fee is assessed to all applicants who have attended universities outside of the United States. All fees must be paid in U.S. currency. Application fees are waived for McNair Scholars that provide documentation of participation in a McNair program.

Application Deadlines

The deadlines listed below are not postmark deadlines. All application materials must be received by 5:00 p.m. on deadline day. All application materials submitted become the property of UNT Health Science Center and cannot be returned.

	Fall 2008	Spring 2009	Summer 2009
Applications for PhD programs to be considered for funding	February 1	N/A	N/A
Applications for all degree-seeking programs and all non-degree seeking students except Medical Sciences and Forensic genetics	March 1	August 29	January 9
Applications for MS in Medical Sciences	N/A	N/A	March 13

Assistantships are awarded to entering doctoral students once each year. To be considered for this award, applications for admission in the Fall semester must be completed by February 1 of the same year.

It is highly recommended that international applicants apply well in advance of these deadlines to allow preparation of immigration documents.

Requirements for Admission

General Admission Requirements

All applicants for admission to the GSBS must meet the following requirements, whether or not admission to a specific degree program is sought.

1. Applicant must hold a bachelor's degree or its equivalent with a major in biology, biochemistry, chemistry, or equivalent field from a regionally accredited institution.
2. Specific grade point average (GPA) requirements for both non-degree and degree-seeking students follow. The GPA is calculated by dividing the total number of grade points earned by the total number of semester hours attempted. The applicant must have at least a 3.0 GPA on a 4.0 scale on the last 60 undergraduate semester hours of course work before receiving the bachelor's degree, or on all undergraduate work, in order to receive unconditional admission to the Graduate School of Biomedical Sciences. Applicants who have already completed a master's degree must have at least a 3.0 GPA on the master's or meet the undergraduate GPA standards listed above in order to be admitted unconditionally. Non-degree seeking students will be allowed to take a maximum of 12 semester credit hours.
3. All applicants seeking admission to a degree program are required to take the Graduate Record Examination (GRE). Applicants to the MS in Medical Sciences or to dual degree programs are allowed to substitute the Medical College Admissions Test (MCAT).
4. The applicant may be required to take entrance examinations, either oral, written, or both, before admission to the Graduate School of Biomedical Sciences is granted.
5. The Health Science Center requires an applicant from a foreign country to demonstrate satisfactory proficiency in oral and written English before being granted admission in addition to supplying official documentation of minimum scores for the Test of English as a Foreign Language (TOEFL) examination. Upon acceptance, if it is determined that a student is not proficient in English language, he/she will be required to complete an approved English as a Second Language (ESL) course at his/her own expense.
6. To be considered for admission, the applicant must file the following official credentials with the Graduate School of Biomedical Sciences:
 - an online application for admission
 - complete official transcripts from all colleges or universities attended
 - official scores on the required entrance test or tests
 - the \$40 application fee and a \$50 transcript evaluation fee (if applicable)
 - two letters of evaluation by individuals in positions to comment on the applicant's potential as a graduate student and future professional
 - a written statement of personal career goals
 - a personal essay describing one recent scientific discovery, explaining why or how it is of interest to the applicant

Admission to the Graduate School of Biomedical Sciences does not imply candidacy for a graduate degree.

Applicants for admission are furnished written notification of their admission status by the dean of the Graduate School of Biomedical Sciences. Statements by other

Health Science Center personnel concerning the applicant's admissibility are not valid until confirmed by the dean in writing.

Students who are admitted to a graduate degree program and do not enroll in the semester for which they have applied must contact the Graduate School of Biomedical Sciences to have their file re-evaluated.

Entrance Examination Requirements

All applicants seeking admission to a graduate degree program are required to take the Graduate Record Examination (GRE). Applicants to the DO/MS and DO/PhD degree programs may substitute an appropriate Medical College Admissions Test (MCAT) score. Applicants to the Master of Science in Medical Sciences are required to take the Medical College Admissions Test (MCAT). Only official score reports are acceptable.

The test score requirements may be waived by the graduate dean for the individual applicant only in exceptional cases and only on petition by the applicant to the Office of Admissions and Services.

Admission Requirements for International Applicants

Applicants who are not U.S. citizens or permanent residents should apply for admission at least six months before the anticipated enroll-



ment date. If transferring from a college or university, they must meet all the Health Science Center transfer admission requirements. Specific requirements are detailed below.

The Health Science Center will not issue immigration papers for student visas until all admission credentials have been received and approved. A \$40 application fee is required and must be submitted with the application for admission. These fees are subject to change at any time.

In addition to the General Admission Requirements listed above, applicants who are graduates of foreign colleges or universities must present the following for application:

- \$50 foreign transcript evaluation fee (if applicable). All fees must be paid in U.S. funds.
- official reports from ETS showing a minimum score of 213 on the computer-based Test of English as a Foreign Language (TOEFL) or evidence of successful completion of a non-credit intensive course in English
- official transcripts from each college or university attended, both in English and the native language as well as official degree certificates
- proof of available financial resources, filed with application for admission

Additional Admission Policies

Admission of Applicants to Non-Degree Status

The Health Science Center recognizes that some students may wish to be admitted to the Graduate School of Biomedical Sciences for the purpose of taking courses not necessarily leading to an advanced degree. Admission to the Graduate School of Biomedical Sciences may be granted, subject to the following provisions.

1. The applicant must meet all of the general admission requirements described above and must meet all application deadlines.
2. The student in this status is required to receive credit in all graduate courses taken, and must maintain a GPA of 3.0 on all such courses attempted.
3. A student who is admitted to non-degree status has no assurance that work completed under this status will be applicable toward degree requirements should he or she subsequently be admitted to a degree program at the Health Science Center. A maximum of 12 semester hours may be taken. Exceptions to this policy can be approved only by the graduate dean. Completion of departmental graduate courses by non-degree students does not obligate the Graduate School of Biomedical Sciences to grant admission to a degree program at a later date, unless all general and specific requirements for admission to that program have been met.
4. A student who wishes to change from non-degree status to degree status must have satisfactory GRE scores on file in the Graduate School of Biomedical Sciences.
5. International applicants are not eligible for non-degree admission.

Admission of Applicants to Probationary Status

The Health Science Center admits students on a probationary basis in cases where one of the credentials is below the average of the applicant pool, providing that all other admission criteria are met or exceeded. Students admitted on probation must earn a 3.0 GPA during the first semester of study. Students may be continued on probation for one semester should these requirements not be met at the discretion of the dean.

Admission of Continuing Students

A continuing student is defined as a student who enrolls one time during three consecutive semesters. Example: enrolls Summer 2009; no enrollment Fall 2009 or Spring 2010; re-enrolls Summer 2010.

Continuing students do not need to reapply to the Graduate School of Biomedical Sciences to enroll if they meet all of the following conditions:

1. The student has not received a degree from the Health Science Center since last enrollment.
2. The student does not have any current blocks on his or her record, i.e., fiscal or academic.
3. The student has not attended any other academic institution during his/her absence from the Health Science Center.

Students who are unsure that they meet all of the above conditions for re-enrollment should contact the Graduate School of Biomedical Sciences prior to the registration period.

Readmission of Former Graduate Students

Students who previously have been admitted to the Graduate School of Biomedical Sciences but have not enrolled here once during the last three consecutive semesters (i.e., Fall, Spring, and Summer) must follow these re-enrollment procedures:

1. File an admission application; and
2. Submit transcripts from all colleges attended (if any) since leaving the Health Science Center, showing eligibility to re-enroll at each institution. Former students who have not enrolled elsewhere since leaving the Health Science Center and are in good academic standing are required only to submit an admission application. The application will be processed in the same manner as first-time applications.

Courses Taken for Doctoral Credit by Students Completing the Master's Degree

Students completing the master's degree at the Health Science Center who plan to continue work toward the doctorate degree are required to submit application for admission to the Graduate School of Biomedical Sciences for the doctoral program. Those who wish to begin taking courses to be credited on the doctorate before receiving the master's degree must declare this intention in the Office of Admissions and Services at the time of registration for doctoral status, so that doctoral work may receive proper credit. Final acceptance of such work will not be granted until the student has secured full admission to a specific doctoral program of study.

Academic Policies

The general policies of the Graduate School of Biomedical Sciences are determined by the Graduate Council and administered by the dean.

Policies may be modified at any time by the Graduate Council. Students should review the Student Policy Handbook for additional policies and procedures concerning their roles as students.

Academic Misconduct

Cheating and plagiarism are types of academic misconduct for which penalties are described and assessed under the Code of Student Conduct and Discipline (see Student Policy Handbook).

The term "cheating" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations; (2) dependence upon the aid of sources specifically prohibited by the

instructor in writing papers, preparing reports, solving problems or carrying out other assignments; and (3) the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the Health Science Center.

The term “plagiarism” includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. Plagiarism also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Specific penalties can be assigned by a faculty member for certain cases of academic misconduct (including cheating and plagiarism). These penalties include: giving a failing grade for the test or assignment; reducing or changing the grade for the test, assignment or course; requiring additional academic work not required of other students; and assigning a failing grade in the course. Other specific penalties can be recommended by a faculty member to the appropriate administrative/academic authority, including denial of the degree, expulsion from the Health Science Center, or revoking of a degree already granted.

All graduate students are responsible for making themselves aware of the definitions and implications of academic misconduct. For further information on academic misconduct, penalties and appeal procedures, the student should refer to the Code of Student Conduct and Discipline in the Student Handbook.

Academic Standing of Student Officers

A student in the Graduate School of Biomedical Sciences must be in good academic standing to run for office in any student organization and must remain in good academic standing throughout the term of office, if elected.

Annual Performance Review

Every graduate student accepted into a degree program will undergo an annual performance review by the major professor which will be reported to the Graduate School of Biomedical Sciences through the discipline by the graduate advisor. The review process is designed to assist students in meeting discipline expectations and document students’ annual progress toward degree.

Appeal Processes

Specific policies and procedures have been established for students seeking to file academic or misconduct appeals. These policies and procedures appear in the Student Handbook.

Advice concerning how to pursue appeals on any other matter can be sought from the Division of Student Affairs.

Auditing

With the written permission of the instructor and the graduate dean, an individual fully eligible to enroll in the Graduate School of Biomedical Sciences may sit in a class as an auditor without receiving graduate credit. The auditor’s name will not be entered on the class roster and the instructor will not accept any papers, tests or examinations.

Attendance as an auditor may not be used as the basis of a claim for credit in the course. Students who are enrolled for credit may audit classes without payment of additional fees; others pay an auditor’s fee as shown in the Tuition and Fee Register.

A person 65 years of age or older may enroll as an auditor and observer without credit and without payment of an audit fee if space is available and if approved by the department chair and the graduate

dean. Such enrollment entitles the person to library privileges, but not the use of laboratory equipment and supplies, or health benefits.

Change of Discipline

Any student requesting a change of discipline must be in good academic standing and have approval of the major professor, graduate advisor and chair of both the original and the requested disciplines. Students on academic probation are not allowed to change disciplines. Request for Change of Discipline forms are available on the GSBS Forms and Guidelines site www.hsc.unt.edu/education/gsbs/forms.cfm.

Change of Degree Program

Any student requesting a change of degree program must be in good academic standing and have approval of the major professor, graduate advisor and chair of the disciplines. Request for Change of Degree Program forms are available on the GSBS Forms and Guidelines site www.hsc.unt.edu/education/gsbs/forms.cfm.

Class Attendance

Regular and punctual class attendance is expected. Although, in general, students are graded on intellectual effort and performance rather than attendance, absences may lower the student’s grade where class attendance and class participation are deemed essential by the instructor. In those classes where attendance is considered as part of the grade, the instructor should so inform students at the semester’s beginning by a written notice. Any instructor who informs students in writing about the necessity of class attendance may request of the Registrar that a student be dropped from the course with a grade of WF upon the accumulation of the stated number of absences.

If the instructor-initiated drop action falls within the time that the student is eligible to drop with instructor consent and without penalty, the Office of the Registrar notifies the student that a WF will be recorded unless the student initiates the drop procedure, in which case a W will be assigned.

Disciplines and similar academic units have authority to establish a discipline-wide or course-wide policy, providing that the policy is in accord with the above stipulations.

Concurrent Enrollment at Another Institution

Graduate students must secure written permission from the graduate dean before registering for any course or courses at another institution while registered for any courses at the Health Science Center.

Failure to secure the required permission for concurrent enrollment prior to registration at the second institution may cause the Health Science Center to refuse degree credit for the work taken elsewhere. In no case may the combined total of semester hours enrolled for at the two institutions exceed the maximum load permitted to graduate students.

Course Changes

Adding Courses

Graduate students are responsible for adding courses using the online registration system to complete the process. Consult the Academic Calendar for dates during which adds are allowed.

Dropping Courses

Students who wish to drop a course are responsible for using the online registration system to complete the process.

The grade of W is recorded for any course dropped with the instructor’s consent within the timeline listed in the Academic Calendar. After that time the student must have a passing grade

in order for the instructor to assign a grade of W for a dropped course; otherwise, the grade WF may be recorded.

Instructors may drop students with grades of WF from courses for non-attendance at any time after the date listed in the Academic Calendar. See "Class Attendance," above.

Drop procedures must be completed by 5 p.m. on the deadline dates specified in the Academic Calendar. After these dates, a student may not drop a course for any reason.

Course Deficiencies

A student whose undergraduate record does not show completion of the courses prerequisite to his/her discipline will be required to make up such deficiencies in a manner prescribed by the discipline or advisory committee.

Courses of Instruction

Normally, lectures meet one hour per week for each semester credit hour (SCH). For the exceptions, the Schedule of Classes will explain meeting times.

Individual courses of instruction are subject to change or withdrawal at any time and may not be offered each semester of every year. Any course may be withdrawn from current offerings if the number of registrants is too small to justify conducting the course.

Enrollment Verification

Enrollment verification and loan deferments are completed in the Office of the Registrar, based upon the student's registration and paid tuition and fees, according to the criteria listed under "full-time enrollment" below.

Final Examinations

If a final examination is administered, faculty members are expected to schedule it during the final class meeting.

If a final examination is not given in a particular course, the faculty member is expected to use the final examination period for summary, evaluation or other productive purposes.

Students who have as many as three final examinations scheduled on one day may appeal to the graduate dean to reschedule one of those examinations on another day during the final week of the semester.

Full-Time Enrollment

To be considered full-time in a long semester, MS students must enroll in 9 SCH while PhD students must enroll in 12 SCH. Enrollment in a total of 6 SCH is considered full-time for the summer.

The MS student who has completed all but the thesis requirements for the degree must enroll in a minimum of 6 SCH each semester including summer semesters. Doctoral students who have advanced to candidacy must enroll in a minimum of 6 SCH each semester, including summer semesters.

Graduate students may schedule as many as 16 SCH during any semester of the long semester or 7 SCH in a summer semester.

Grading System

Grade Scheme

Courses numbered 5000 or higher are ordinarily taken by students working toward master's and doctoral degrees; those numbered 6000 or higher are open principally to doctoral students.

The Graduate School of Biomedical Sciences' grade scheme is below:

A+ = 4.0
A = 4.0
A- = 3.7
B+ = 3.3
B = 3.0
B- = 2.7
C+ = 2.3
C = 2.0
C- = 1.7
F = 0
I = Incomplete; No Numerical Value
S = Satisfactory Performance; No Numerical Value
U = Unsatisfactory Performance; No Numerical Value
W = Withdraw; No Numerical Value
WF = Withdraw Failing = 0
Z = Incorrectly Recorded or Grade Not Recorded; No Numerical Value

A complete record of all previously used grades and grading systems is detailed on the official transcript.

Grade Point Average

The overall grade point average (GPA) is used to determine student class loads, eligibility to change disciplines and/or degree program and eligibility for graduation. It is calculated by dividing the total number of grade points by the total number of grade point hours attempted. All GPA calculations are subject to audit and correction by the Office of the Registrar.

The number of semester hours attempted includes all courses with grades of A+, A, A-, B+, B, B-, C+, C, C-, F and WF unless replaced by a later grade. Courses with grades of I, P, S, U, W or Z are not counted as grade point hours attempted and, therefore, are not calculated in the GPA.

Course Duplications

A student may enroll for a course a second time and have it counted as part of the semester's load. If a course is repeated, the last grade recorded will be considered in calculating the GPA and in certifying the student's eligibility for graduation.

The responsibility for initiating the official recording of a grade duplication lies entirely with the student. In the absence of such a request, the Office of the Registrar will include a repeated course in the student's cumulative record of hours attempted and grade points earned.

Graduate courses may only be repeated one time.

Quality of Work Required

Graduate students must maintain an overall 3.0 GPA. The student whose GPA earned at another institution is below 3.0 will be required to make up the deficiency either at the other institution or at the Health Science Center. This regulation applies not only to graduate work attempted elsewhere before the student was first admitted to the Graduate School of Biomedical Sciences, but also to graduate work attempted elsewhere after the student's admission at the Health Science Center.

Students must make satisfactory progress toward completion of degree requirements in order to remain in good standing within a specific degree program. Students whose progress is unsatisfactory may be removed from the program by the graduate dean on recommendation of the student's discipline.

Each student's semester grades and semester GPA will be reviewed at the completion of every semester. To remain in good academic standing, an overall GPA of 3.0 or better must be maintained. The student who does not maintain the GPA will be placed on probation and have one long semester to correct the deficient GPA. Failure to do so may result in dismissal from the Graduate School of Biomedical Sciences. Dismissals may be appealed in writing to the graduate dean within five working days of notification of dismissal. Students involved in an appeal continue to attend class and sit for examinations until final conclusion of the process.

Students receiving state-supported assistantships will remain on assistantship during the semester the student is attempting to correct the deficient GPA, unless otherwise specified by the dean.

A student earning an F in any graduate level course will be dismissed from the Graduate School of Biomedical Sciences. Dismissals may be appealed in writing to the graduate dean within five working days of notification of dismissal. Students involved in an appeal continue to attend class and sit for examinations until final conclusion of the process. If the student is allowed to continue in graduate school, his/her program discipline may have additional requirements/stipulations for continuation in the discipline. The course in which the student achieved an F grade must be repeated. No student may graduate with an unresolved F on his/her record.

Grade Requirements for the Integrated Core Curriculum

All students in the Graduate School of Biomedical Sciences must successfully complete the Integrated Core Curriculum. Integrated Core Curriculum refers to the following courses: Integrative Biomedical Sciences I: Principles of Biochemistry (BMSC 5600), Integrative Biomedical Sciences II: Molecular Cell Biology (BMSC 5610); Integrative Biomedical Sciences III: Physiology (BMSC 5700); Integrative Biomedical Sciences IV: Pharmacology (BMSC 5705) and Integrative Biomedical Sciences V: Immunology and Microbiology (BMSC 5710).

Master of Science Students

A Master of Science student may continue in his/her program in good standing with C grades in the core courses as long as the student's overall GPA is maintained at 3.0 or better. If the student's overall GPA falls below 3.0, he/she will be placed on academic probation and have one long semester to bring the overall GPA to at least 3.0.

Any MS student who has earned a C grade in a core course who then elects to apply for the PhD program after completing the master's degree must retake the core courses in which the C grade was earned and obtain a B or better in the repeated course. The student will only be allowed one opportunity to retake the course(s) in question.

Doctor of Philosophy Students

First year doctoral students must maintain an overall core GPA of 3.0 or better to remain in good academic standing.

A student failing to achieve an overall core GPA of 3.0 or better but only receiving one C+, C or C- grade, will be required to retake the course in question and will be on probation until a grade of B or better is earned in the particular core course. The student who does not receive a B or better in a repeated course will be immediately dropped to the master's program.

If a student has an overall core GPA of 3.0 or better after completing all core courses, but has earned one C+, C or C- grade for any core course, the student's discipline will decide if the student must retake the course in question and will be on probation until a grade of B

or better is achieved in the particular core course. The student who does not receive a B or better in a repeated course will be immediately dropped to the master's program.

A student receiving two or more C+, C or C- grades in core courses will be immediately dropped to the master's level. This student will not be re-admitted to a PhD program until successful completion of the master's degree and sufficient core courses are repeated with Bs or better to bring the student's core GPA to at least a 3.0 and to meet the requirements of the student's discipline. The student will only be allowed one opportunity to retake the courses in question.

Probation and Suspension

A student who fails to maintain the required overall GPA of 3.0 will be subject to academic probation. If the student's grades do not improve, the student may be subject to suspension for a period of up to one calendar year before becoming eligible to re-enroll for further graduate courses. Graduate work completed elsewhere during a period of suspension at the Health Science Center may not be counted for graduate credit at the Health Science Center.

The student whose graduate school GPA falls below 3.0 must make up the deficit, either by repeating courses in which the grades are low or by completing other graduate school courses with grades high enough to bring the graduate school GPA up to 3.0. Low grades made in graduate courses at the Health Science Center may not be duplicated at other institutions. A student who receives an Unsatisfactory (U) grade in Internship Practicum (BMSC 5920), Individual Research (BMSC 5930 or 6940), Thesis (BMSC 5950) or Doctoral Dissertation (BMSC 6950) will be placed on academic probation. If the student receives a subsequent U grade, he/she may be subject to suspension.

A student on academic probation as the result of performance in courses other than Internship Practicum (BMSC 5920), Thesis (BMSC 5950), or Dissertation (BMSC 6950) may not register for Internship Practicum (BMSC 5920), Thesis (BMSC 5950), or Dissertation (BMSC 6950).

Students may be dismissed from the program for failure to make academic progress.

See "Quality of Work Required" and "Grade Requirements for Integrated Core Curriculum" sections, above.

Grade Changes

No grade except "I" can be removed from a student's record once properly recorded. Changes are not permitted after grades have been filed except to correct clerical errors.

Requests for error correction must be initiated immediately after the close of the semester for which the grade was recorded.

An instructor who believes that an error has been made in calculating or recording a grade may submit a request for grade change to the discipline chair and the graduate dean using a Request for Change of Grade/Removal of Incomplete form available from the Office of the Registrar.

Grade Reports

Students may obtain their unofficial transcripts online at any time. Grades are typically posted one week after the end of each semester. If a grade or the academic status is believed to be in error, the student must contact the Office of the Registrar within 30 days.

Pass/Fail Grading

Any discipline may elect to assign pass/fail grades in graduate courses. The course director of any such course must identify it as a pass/fail course in the syllabus.

Removal of Incomplete

A student must remove a grade of “I” within one year of receiving the initial grade by completing the stipulated work, by obtaining a Request for Change of Grade/Removal of Incomplete form available from the Office of the Registrar, completing the student information section, and submitting it to the course instructor. The instructor then files the form in the GSBS Office of Admissions and Services. The form is approved by the dean and sent to the Office of the Registrar for grade entry. If a student does not complete the stipulated work within the time specified (not to exceed one year after taking the course), the instructor may change the grade of “I” to a grade of F, if appropriate, or the “I” will remain on the transcript and the student will be required to register for and repeat the course for it to count toward completing the requirements for the degree. The GPA is adjusted accordingly.

Graduate Advisor

The graduate advisor is the official representative of the graduate dean in matters affecting graduate students in the advisor’s discipline. There should be a close working relationship between the advisor and the staff of the Graduate School of Biomedical Sciences. The graduate advisor is the liaison between the graduate dean and the discipline. The graduate advisor should keep the discipline chair and faculty informed on matters pertaining to graduate education. The dean is dependent upon the experience and judgment of graduate advisors and upon their recommendations in matters requiring the dean’s action. The dean’s staff provides information to the advisors on a continuing basis and respond to requests for special assistance.

The graduate advisor is responsible for supervising graduate study in the discipline, ensuring that each graduate student is assigned an individual faculty advisor within the discipline, and representing the faculty of the discipline as a member of the Graduate Council.

Graduation

It is the responsibility of the student to stay abreast of progress toward the degree and to file the appropriate degree application in the GSBS Office of Admissions and Services. Consult the Academic Calendar for the deadlines. The student’s final cumulative grade point average must be at least a 3.0 to qualify for graduation.

Information concerning graduation fees is contained in the Tuition and Fee Register. Students anticipating graduation should consult the Academic Calendar for final dates for payment of fees and meeting other graduation requirements. All fines, fees, etc. must be cleared before the diploma will be issued.

Because of the time required to receive transcripts, students otherwise eligible for graduation who complete their last course or courses elsewhere will not graduate at the end of the semester in which the work is completed, but will receive their degrees at the close of the subsequent semester.

Commencement exercises are held each year on the third Saturday of May; however, degrees are conferred at the end of each semester. All information related to commencement exercises is available from the Office of the Registrar. Diplomas may be obtained from the Office of the Registrar after verification is received from the Graduate School of Biomedical Sciences that all requirements for the degree have been satisfied.

Leave of Absence

If a situation arises where a student must set aside his/her graduate studies for a period of time, a leave of absence (LOA) may

be requested. LOA may be requested for up to three semesters. If additional leave is needed, a new form must be submitted. The maximum amount of LOA is six semesters (two academic years). A student on LOA cannot receive funding as a graduate student. LOA status may affect student loans. Graduate advisors will be notified of any change to the LOA.

The student initiates the request by completing the LOA Request form, obtaining approval from his or her major professor, and submitting it to the graduate advisor. Upon approval by the graduate advisor, the form is submitted to the GSBS Office of Admissions and Services. Upon approval by the dean, an approved copy is sent to the student, major professor, and graduate advisor for their records.

Toward the end of a period of approved LOA, the student must take steps to resume studies at the beginning of the next semester, extend the LOA, or withdraw from the GSBS. To resume studies, the student obtains approval from the major professor and graduate advisor and registers for classes. To extend the LOA, the student completes and submits a new LOA Request. To withdraw from school, the student follows the normal procedures for withdrawal, including completion of the clearance process.

LOA Request forms are available on the GSBS Forms and Guidelines site.

Official Communications

E-mail is considered the primary means of communication for our campus; therefore, students are expected to read their e-mail messages regularly. All new students are assigned an e-mail account at orientation. Students who do not check their e-mail accounts regularly are at risk of missing vital information relative to their academic programs.

Although e-mail is the primary method of communicating information to students, mail may also be received at the campus mailing address. Any communication from a the Health Science Center office should be considered important and be given immediate attention. In addition, news, events and announcements of interest to students may be posted on the institution’s website.

Open Records Policy

Pursuant to the provisions and intent of Article 6252-17a, Texas Civil Statutes, known as the Open Records Act, and the Family Educational Rights and Privacy Act of 1974 as amended (known as the Buckley Amendment), the institution has established a policy relating to the accessibility of information in the custody of the Health Science Center.

Student records that include general information concerning the student and the student’s individual relationship to the educational institution are available upon request to personnel who have an educational interest in the records, the student, and the student’s parent or legal guardian if the student is a dependent for income tax purposes of the parent or legal guardian.

For information regarding the policy on access to records and to request accessibility to records, contact the designated Custodian of Public Records, Office of the Vice President and General Counsel, the Health Science Center.

Policies

Policies and regulations are explained or printed in the Student Policy Handbook or in the UNTHSC Policy Manual, available in Human Resource Services. All policies are subject to change throughout the year.

Student Grievances

Academic Issues

A student seeking to resolve any academic problem or complaint other than for misconduct as provided by the Student Code of Conduct and Discipline in the Student Handbook will first seek solution through the following administrative channels, entering at the appropriate level and proceeding in the order stated: course instructor, course director, graduate advisor, department chair, assistant dean. The dean, at his/her discretion, may convene an *ad hoc* committee to review the case to assist in the resolution of the complaint. Recommendations from the assistant or associate deans or *ad hoc* committee will be forwarded to the dean for consideration. All decisions by the dean concerning academic matters are final.

Conduct Issues

A student seeking to resolve any issue involving misconduct as provided for in the Student Code of Conduct and Discipline in the Student Handbook should follow the procedures outlined in said code.

Other Issues

A student seeking to resolve any problem or complaint other than for misconduct as provided by the Student Code of Conduct and Discipline in the Student Handbook or an academic issue, will normally seek resolution through the appropriate office on campus designated to address the particular student concern. Examples include: issues involving matters of sexual harassment, discrimination, disability, employment or mistreatment fall under institutional policies which are handled by specific offices such as Human Resource Services or the Equal Employment Opportunity Office.

Enrollment Status During Grievance/Appeal

Any student dismissed from the school who has filed an official appeal of any decision will be permitted to remain in classes, clinical clerkship rotations, and/or internships during the period of appeal until or unless one or more of the following circumstances is determined by the dean to exist:

1. **The appeal has not been made according to officially recognized procedures for appealing a dismissal decision;**
2. **The presence of the student in classes, clinical rotation, or internship constitutes a disruptive influence to the educational process or to patient care activities; or**
3. **The presence of the student potentially presents a threat or harm to the health, safety or welfare of patients, students, or anyone associated with the educational process.**

Summons

In the event a student's conduct or behavior is found to be in violation of a published policy or regulation, a summons may be issued. A summons is an official request that the student appear before an administrator. It is always important and must have the student's immediate attention. Failure to answer a summons may result in disciplinary action.

Syllabi

Students should receive a syllabus no later than the second class meeting of any course. Syllabi will not be distributed for courses in laboratory techniques, individual research, internship practicum, thesis, or dissertation. All other courses must provide students with syllabi that include the following information as appropriate to the course:

required texts, examination dates, lecture topics and assignments for each class meeting, attendance policy, course objectives, explanation of how grades will be determined, and information on contacting the course director. Syllabi must be on file with the Graduate School of Biomedical Sciences prior to the first day of the semester.

Temporary Visa Holders

Students holding temporary visas are responsible for maintaining status with the United States Citizenship and Immigration Service (CIS). All visa restrictions and regulations regarding enrollment, employment and visa renewal must be followed exactly as determined by the CIS.

Withdrawal from UNT Health Science Center

A student may withdraw from the Health Science Center at any time prior to the deadline published in the Academic Calendar by making a request in the Office of the Registrar. The student must complete the Withdrawal Clearance form. For withdrawals processed by the relevant deadline, the grade of W is recorded for each course in which a withdrawn student was enrolled. After this date a withdrawn student receives a grade of W only for those courses in which he/she was passing at the time of withdrawal; otherwise, the grade of WF is recorded.

Official dates and deadlines for withdrawing are specified in the Academic Calendar.

Degree Programs

The Graduate School of Biomedical Sciences offers both MS and PhD degrees in biomedical sciences. Students are encouraged to acquire a broad base of knowledge in those disciplines that flourish in the environment of a health science center and required to pursue specialized research and study in a particular area of biomedical and health science. The training students obtain equips them for professional careers in health science centers, universities, health care industry, pharmaceutical and biotechnology companies. Students obtain a degree in biomedical sciences, although they may choose to specialize in cell biology and genetics, biochemistry and molecular biology, integrative physiology, microbiology and immunology, clinical research and education, pharmacology and neuroscience, cancer biology, cardiovascular science, visual science, neurobiology of aging, physical medicine, and integrative biomedical sciences. Specialized master's degrees are available in biotechnology, clinical research management, medical sciences, and forensic genetics.

A student may only be enrolled in one degree program within the Graduate School of Biomedical Sciences at any given time. The only exception is to allow a Master of Science student in the last semester of study that has already gained acceptance into the Doctor of Philosophy degree program to enroll in course work to be applied to the doctoral program.

Core Curriculum Requirements

All graduate students, regardless of discipline, are expected to complete the core requirements described below. The integrative biomedical sciences curriculum is designed to provide a broad background in biochemistry, microbiology, molecular biology, cell biology, immunology, pharmacology, and physiology.

General MS Core Requirements

BMSC 5600	Principles of Biochemistry	4
BMSC 5610	Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research	2
BMSC 5960	Biomedical Ethics	1
BMSC 5950	Thesis*	3 to 6
BMSC 5940	Seminar in Current Topics**	1 to 3

PLUS at least two of the following courses:

BMSC 5700	Physiology	3
BMSC 5705	Pharmacology	2
BMSC 5710	Immunology and Microbiology	3

AND Advanced Courses and Electives

*For certain Master's programs, BMSC 5920 is substituted

** May substitute seminar courses from other disciplines.

General PhD Core Requirements

BMSC 5200	Biostatistics	4
BMSC 5600	Principles of Biochemistry	4
BMSC 5610	Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research	2
BMSC 5960	Biomedical Ethics	1
BMSC 6010	Grant Writing	3
BMSC 6940	Individual Research	3 to 40
BMSC 6950	Doctoral Dissertation	3 to 12
BMSC 5940	Seminar in Current Topics**	1 to 3

PLUS at least two of the following courses:

BMSC 5700	Physiology	3
BMSC 5705	Pharmacology	2
BMSC 5710	Immunology and Microbiology	3

AND Advanced Courses and Electives

** May substitute seminar courses from other disciplines.

In addition, PhD students must pass a qualifying examination prior to registering for BMSC 6010.

Master of Science Degree**General Requirements**

The candidate for a Master of Science degree must earn 30 or more semester credit hours (SCH), depending upon the specific degree requirements. These degree requirements are determined by the graduate catalog currently in force at the time the student's degree plan is approved by the graduate dean. For the traditional Master's degree, 17-20 SCH of the total 30 consist of core requirements and thesis. The use of special problems course numbers (5900, 5910) is limited to a maximum of six SCH.

The specialized Master of Science degrees in the disciplines of biotechnology, medical science, and clinical education and research are administered by the Department of Biomedical Sciences. The Master of Science degree in the discipline of forensic genetics is administered by the Department of Cell Biology and Genetics.

Consult subsequent sections of this publication for the specific course requirements for the traditional master of science degree and for the specialized master of science degrees.

Time Limitations

All requirements for the Master of Science degree must be completed within six years.

As individual courses exceed this time limit they lose all value for degree purposes. Credits that are more than six years old at the time of first registration for graduate work are not transferable from other institutions.

Time limits are strictly enforced. Students exceeding the time limit may be required to successfully complete a comprehensive examination, replace out-of-date credits with up-to-date work, and/or show other evidence of being up-to-date in their major fields. Students anticipating that they will exceed the time limit should apply for an extension before the normal time period to complete the degree expires. Holding a full-time job is not considered in itself sufficient grounds for granting an extension.

Time spent in active service in the U.S. armed forces will not be used in computing the time limit. However, career members of the armed forces should consult the graduate dean concerning the credit given to work completed before or during active military service.

Use of Transfer Credit

Depending on the student's previous preparation and degree plan, up to 6 SCH of graduate work completed elsewhere may be transferred toward a Master of Science degree. Only those courses with a grade of B or higher will be transferred. Courses to be transferred must be taken within 5 years of transfer.

Extension and correspondence credit earned at other institutions will not be counted toward a graduate degree at the Health Science Center. The Graduate School of Biomedical Sciences does not award credit for portfolio-based experiential learning.

It is the student's responsibility to insure that official transcripts of courses completed elsewhere are furnished to the office of the graduate dean, and that graduate credit has been assigned by the other institution or institutions to whatever courses are to be counted toward the Health Science Center degree. The student must provide the catalog description and/or syllabus from the semester the course was taken before transfer credit will be approved. Such courses, although listed on the degree plan, will not be counted toward the degree until official transcripts showing graduate credit have been received and the credit has been approved by the graduate dean. All transfer courses are subject to the time limitation described above.

In accordance with the rules of the Texas Higher Education Coordinating Board, at least one-third of the semester credit hours required for any graduate degree must be completed in course work registered through the Health Science Center.

Advisory Committee

Each student must select an advisory committee. Typically, the major professor and/or the graduate advisor assist the student in selecting members to serve on the advisory committee. The committee guides the student in selecting course work appropriate for the degree program and defining research goals and approves the research proposal. The advisory committee administers the final examination for the degree.

The major professor serves as chair of the advisory committee. Advisory committees for Master of Science students must include at least two additional graduate faculty members. Furthermore, all students in programs requiring thesis will be assigned a university member (see details below) who ensures that the policies and procedures of the Graduate School of Biomedical Sciences and the Health Science Center are upheld.

Each student is required to meet with his/her advisory committee at least once per academic year.

Students in MS programs that do not require internship practica or thesis projects are not required to designate advisory committees.

Degree Plan

A degree plan listing all courses must be completed by the student, approved by the student's advisory committee and department, and submitted to the graduate dean before the completion of 30 SCH.

The major professor and advisory committee members are chosen on the advice of the department chair or graduate advisor in the major area. All subsequent requests for degree plan changes must be approved by the student's advisory committee and submitted in writing by the major professor to the graduate dean.

Students in MS programs with lock-step curricula are not required to file a degree plan.

University Member

When the advisory committee is formed for students in programs requiring thesis, the graduate dean will appoint a university member.

The purpose of the university member on master's committees is to ensure that the policies and procedures of the Graduate School of Biomedical Sciences and the Health Science Center have been upheld. The presence of the university member is essential for the process of approval of thesis proposals and thesis examinations. The university member's signature on appropriate forms indicates that the integrity of the review process has been preserved. It is the responsibility of the university member to report to the graduate dean any inappropriate due process.

The university member must take part in any formal hearing. The university member must be a voting member of the final examination committee and will sign the thesis fly pages.

Students in MS programs that require Internship Practicum (BMSC 5920) rather than Thesis (BMSC 5950) are not required to have a university member.

Students in programs that require neither internship practica nor thesis projects will not be assigned a university member.

Research Proposal

All Master of Science students are required to submit an approved formal research proposal describing the thesis/practicum project. Clinical Research Management students are required to submit the research proposal by the end of the second month of the internship practicum. Biotechnology students are required to submit the research proposal before the end of the fall semester during the second year of study. Forensic Genetics students are required to submit the research proposal before the end of the spring semester of the second year of study.

All other Master of Science students are required to submit the research proposal before registering for thesis credits.

Research Proposal Guidelines and the Research Proposal approval forms are available on the GSBS Forms and Guidelines site.

Program Requirements

Each student is responsible for the completion of the Master of Science program according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the GSBS Forms and Guidelines site.

1. A major professor should be selected by the student at the earliest possible time, but no later than the completion of 24 SCH after beginning the master's program. The student should meet with the major professor for guidance in forming an advisory committee and degree plan.
2. Before the completion of 30 SCH, the student must select an advisory committee and file a Designation of Advisory Committee form in the graduate school. Enrollment will be restricted to prevent the accumulation of more than 30 SCH without a designated advisory committee.
3. The student must file a degree plan approved by the advisory



committee with the graduate school before the completion of 30 SCH. Course work deficiencies will be stipulated at this time. Enrollment will be restricted to prevent the accumulation of more than 30 SCH without an approved degree plan.

4. A thesis research proposal must be approved by the committee and filed with the graduate school prior to the semester in which the student first enrolls in thesis.
5. Once a student has enrolled in thesis, he/she must maintain continuous enrollment in a minimum of 3 SCH of thesis during each long semester and the summer until the thesis has been accepted by the graduate school. Failure to maintain continuous enrollment will either invalidate any previous thesis credit or will result in the student's dismissal from the degree program unless granted an official leave of absence by the graduate dean for medical or other exceptional reasons.
6. The completed thesis should be submitted to the advisory committee at least two weeks prior to the defense.
7. A formal public seminar pertaining to the thesis will be presented in the student's last semester.
8. A final oral defense of the thesis or report and related work will be given by the committee immediately following the seminar.
9. The thesis must be prepared for digital submission according to the instructions in the Guidelines for Filing Theses, Internship Practicum Reports and Dissertations, available on the GSBS Forms and Guidelines site www.hsc.unt.edu/education/gsbs/forms.cfm.

Doctor of Philosophy Degree

General Requirements

The candidate for a Doctor of Philosophy degree must earn 60 SCH beyond the master's degree or 90 SCH beyond the bachelor's degree. The degree requirements are determined by the graduate catalog currently in force at the time the student's degree plan is approved by the graduate dean.

The quantitative SCH requirements must be regarded as a minimum. The quantity of course work to be completed by each candidate is arranged individually by the advisory committee, subject to the approval of the graduate dean, and may be modified both as to quantity and as to type during the progress of the student's course work.

Consult subsequent sections of this publication for the specific course requirements for the Doctor of Philosophy degree.

Residency Requirement

Every candidate for the doctoral degree must complete the appropriate residency requirement at the Health Science Center. The minimum residency requirement consists of two consecutive long semesters in the graduate school (fall and the following spring, or spring and the following fall), or a fall or spring semester and one adjoining summer.

Time Limitations

All work to be credited toward the doctoral degree beyond the master's degree must be completed within a period of 10 years from the date doctoral credit is first earned. No course credit beyond the Master of Science degree that is more than 10 years old at the time the doctoral program is completed will be counted toward the doctorate.

Time limits are strictly enforced. Students exceeding the time limit may be required to repeat the comprehensive examination, replace out-of-date credits with up-to-date work, and/or show other evidence of being up-to-date in their major fields. Students anticipating that they will exceed the time limit should apply for an extension

before their ninth year of study. Holding a full-time job is not considered in itself sufficient grounds for granting an extension.

Time spent in active service in the U.S. armed forces will not be used in computing the time limit. However, career members of the armed forces should consult the graduate dean concerning the credit given to work completed before or during active military service.

Use of Transfer Credit

Generally, up to 24 SCH of graduate work completed elsewhere may be transferred toward a Doctor of Philosophy degree, depending on the student's previous preparation and degree plan. Doctoral students may request approval of additional transfer credit in writing to the dean. Only those courses with a grade of B or higher will be transferred.

Extension or correspondence credit earned at other institutions may not be counted toward a graduate degree at the Health Science Center. The Graduate School of Biomedical Sciences does not award credit for portfolio-based experiential learning.

It is the student's responsibility to insure that official transcripts of courses completed elsewhere are furnished to the office of the graduate dean and that graduate credit has been assigned by the other institution or institutions to whatever courses are to be counted toward the UNTHSC degree. The student must provide the catalog description and/or the syllabus from the semester the course was taken before transfer credit will be approved. Such courses, although listed on the UNTHSC degree plan, will not be counted toward the degree until official transcripts showing graduate credit have been received and the credit has been approved by the graduate dean. All transfer courses are subject to the time limitation described above.

In accordance with the rules of the Texas Higher Education Coordinating Board, at least one-third of the semester credit hours required for any graduate degree must be completed in course work on the campus of the Health Science Center.

Advisory Committee

Each student must select an advisory committee. Typically, the major professor and/or the graduate advisor assist the student in selecting members to serve on the advisory committee. The committee guides the student in selecting course work appropriate for the degree program and defining research goals and approves the research proposal. In some disciplines, the advisory committee also serves as the examination committee for advancement to candidacy. The advisory committee administers the final examination for the degree.

The major professor serves as chair of the advisory committee. Doctoral student advisory committees must include at least three additional graduate faculty members. Furthermore, all doctoral students will be assigned a university member (see details below) who ensures that the policies and procedures of the Graduate School of Biomedical Sciences and the Health Science Center are upheld.

Each student is required to meet with his/her advisory committee at least once per academic year.

Degree Plan

Before the completion of 42 SCH, a degree plan listing all courses should be prepared by the student, approved by the student's advisory committee, graduate advisor, department chair, and graduate dean. Entering students holding an appropriate master's degree must file a degree plan within the first year of study at the Health Science Center.

The major professor and advisory committee members are chosen on the advice of the department chair or graduate advisor in the major area. All subsequent requests for degree plan changes must

be approved by the advisory committee and submitted in writing by the major professor to the graduate dean.

Doctoral degree requirements listed in the graduate catalog currently in force at the time the student's degree plan is approved by the graduate dean are those that must be completed by the student.

University Member

When the advisory committee is formed for students in programs requiring thesis, the graduate dean will appoint a university member.

The purpose of the university member on doctoral committees is to ensure that the policies and procedures of the Graduate School of Biomedical Sciences and the Health Science Center have been upheld. The presence of the university member is essential for the process of approval of dissertation proposals and defense examinations. The university member's signature on appropriate forms indicates that the integrity of the review process has been preserved. It is the responsibility of the university member to report to the graduate dean any inappropriate due process.

The university member must be incorporated into the review and approval process of the doctoral dissertation, from the formal or substantive inception of the topic through the comprehensive examination and final approval of the dissertation.

The university member must take part in any formal hearing (BMSC 6010 defense and qualifying examination). The university member must be a voting member of the final examination committee and will sign the dissertation.

Advancement to Candidacy

Doctoral students must complete the following two-part process to be advanced to candidacy. First, a discipline-based oral qualifying examination, designed and administered by the discipline's graduate faculty, must be successfully completed within 72 SCH of coursework inclusive of any advanced standing granted for the completion of a master's degree. Second, the student must complete Grant Writing (BMSC 6010). The student is advanced to candidacy and must enroll in Doctoral Dissertation (BMSC 6950) in the first long semester immediately following successful completion of Grant Writing (BMSC 6010). Disciplines may establish more stringent guidelines or establish earlier deadlines for completing the advancement to candidacy process.

A doctoral student whose performance on either the oral qualifying examination or the defense for Grant Writing (BMSC 6010) is most exemplary may be deemed by his/her committee to "pass with distinction."

A doctoral student who has been passed with distinction will receive the following:

- Inclusion of the distinction on the transcript
- Recognition at the annual Graduate School of Biomedical Sciences' Awards Banquet.

Research Proposal

All doctoral students must submit a dissertation research proposal. The research proposal is an outline of the dissertation project. It must include a summary of the proposed project, the hypothesis to be investigated, significance of the project, research design and methodology to be used, and a review of the salient literature that supports or opposes the hypothesis and potential limitations. To take advantage of the advisory committee's expertise and advice, and to clearly define the project and the committee's expectations, it is imperative that the student meet with his/her advisory committee before preparing the research

proposal. The research proposal must be approved by the advisory committee and the dean prior to registering in Dissertation (BMSC 6950). Research Proposal Guidelines and the Research Proposal approval forms are available on the GSBS Forms and Guidelines site.

Dissertation Requirement

A dissertation is required of all candidates for the doctorate. In general, 12 SCH are allowed for the dissertation. The student is required to enroll for dissertation credit and must maintain continuous enrollment in Doctoral Dissertation (BMSC 6950) until the dissertation has been completed and submitted to the graduate dean. Enrollment in BMSC 6950 is limited to nine hours in each long term. Grades of Satisfactory (S) or Unsatisfactory (U) will be recorded at the end of each semester until the dissertation is filed with the graduate school and approved by the graduate dean. A letter grade is recorded for the final semester of enrollment in dissertation and the dissertation credit hours for this semester are included in the GPA calculation. A minimum of three semester credit hours of dissertation enrollment is required during each long semester and one summer session to maintain continuous enrollment.

Doctoral Program Requirements

Each student is responsible for the completion of the doctoral program according to the procedures below. Each item must be completed in the sequence and time period indicated. See the graduate office regarding paperwork when completing each step.

1. A major professor should be selected by the student at the earliest possible time, but no later than the completion of 42 SCH after beginning the doctoral program.
2. The student should meet with the intended major professor for guidance in forming an advisory committee and degree plan.
3. The major professor and the doctoral student should select at least three advisory committee members from the graduate faculty. The student has the responsibility for obtaining the agreement of the professors (using the Designation of Doctoral Advisory Committee form) and will file this in the graduate school before the completion of 42 SCH after beginning the doctoral program. Enrollment will be restricted to prevent the accumulation of more than 42 SCH after beginning the doctoral program without designation of an advisory committee and request for designation of university member.
4. The advisory committee should meet and evaluate all credentials of the student pertinent to the development of the degree program. An approved degree plan will then be submitted to the Office of Admissions and Services. The committee should meet with the student as needed to discuss progress, but must meet at least once per academic year. The advisory committee has sole responsibility for quality control of the student's program and dissertation. Enrollment will be restricted to prevent the accumulation of more than 42 SCH without an approved degree plan.
5. An oral qualifying examination intended to establish the student's candidacy for the PhD degree will be administered by the designated departmental committee upon fulfillment of the course requirements. The qualifying examination must be undertaken prior to the completion of 72 SCH. Results of the qualifying examinations will be sent to the graduate school in writing. Disciplines may have additional qualifying examination requirements, which are indicated in their graduate program descriptions. Notations are added to the student's transcript to denote "Qualifying Examination Passed," "Quali-

“Failing Examination Passed with Distinction” or “Qualifying Examination Failed.” A student that fails the qualifying examination twice may be allowed to complete the requirements for the Master of Science Program.

6. By the end of the first long semester immediately following successful completion of the qualifying examination, the student completes Grant Writing (BMSC 6010). As a component of this course, the student must attend a grant writing workshop held by the graduate school. The student will write, present and defend an NIH-style grant application in fulfillment of the course requirements. Incomplete grades are not assigned for Grant Writing (BMSC 6010). Valid grades are Pass (P) or Fail (F). A student that is assigned a failing grade at the end of the semester must repeat the course during the next semester. If a passing grade is earned, the student will be advanced to candidacy and the original F excluded from the grade point average on the transcript. A second failure will result in the student’s transfer to the Master of Science program.
7. A student who has passed the qualifying examination and successfully completed Grant Writing (BMSC 6010) must maintain continuous enrollment in a minimum of 6 SCH each semester until the dissertation has been accepted by the graduate school. Failure to maintain continuous enrollment will either invalidate any previous dissertation credits or will result in the student being dropped from the degree program unless granted an official leave of absence by the graduate dean for medical or other exceptional reasons.
8. Prior to registering for Dissertation (BMSC 6950), a student must submit a dissertation research proposal. The proposal must be approved by the advisory committee and the GSBS dean before the prerequisite is fulfilled.
9. Upon completion of the research and after consultation with the major professor, the student should submit a Declaration of Intent to Graduate form for the semester when he/she plans to complete the requirements for graduation. Consult the Academic Calendar for deadlines. An Intent to Defend form must be filed with the Graduate School of Biomedical Sciences 30 days prior to the dissertation defense.
10. Upon completion of the research and after consultation with the major professor, the student should submit a rough draft of the dissertation to the advisory committee members at least one month before the receipt of the final draft. The final draft should be distributed to committee members at least two weeks prior to the defense. Committee members should return corrected drafts to the student as soon as possible. Working through committee members at all times, the student and major professor will resolve comments arising from the rough draft and incorporate them into a final draft.
11. During the semester of graduation, the student will present a formal seminar on the research. This seminar should be scheduled immediately prior to the final defense.
12. The advisory committee will administer the final defense and sign final copies of the dissertation. The university member must be present and sign final copies of the dissertation. The committee will notify the dean of the graduate school of results of the final examination.
13. The dissertation must be prepared for digital submission according to the instructions in the Guidelines for Filing Theses, Internship Practicum Reports and Dissertations available on the GSBS Forms and Guidelines site www.hsc.unt.edu/education/gsbs/forms.cfm.

Dual Degree Programs

The Health Science Center offers several dual degree programs. The Graduate School of Biomedical Sciences (GSBS) participates in the DO/MS, MPAS/PhD, and DO/PhD programs with the Texas College of Osteopathic Medicine (TCOM). Typically, the DO/PhD program will be 6 to 7 years in length. The DO/MS program is typically 5 to 6 years in length.

Students may pursue the DO/PhD through the Medical Scientist Training Program (MSTP). MSTP students will be considered by the GSBS for tuition and fee scholarships and assistantships during Block 2 of the program. Support may be available during other blocks of the program through TCOM.

Applicants to the DO/MS and MPAS/PhD programs may apply either using the dual degree admissions process described below or by applying to each school separately. DO/MS and MPAS/PhD applicants are not considered for the MSTP.

Application Procedures

An applicant to the MSTP must first apply to the Texas Medical and Dental Schools Application Service (TMDSAS). The applicant should indicate the dual degree program in which he/she is interested on the application. If invited to interview, the applicant will participate in three interviews rather than the standard two for applicants to the DO program. The application is then processed through a dual program admissions committee.

Individuals who become interested in pursuing the DO/PhD after gaining acceptance into either TCOM or GSBS must make formal application to the school in which he/she is not already enrolled. Procedures are in place to streamline this process by sharing information already in institutional records. Applicants who decide to pursue the DO/PhD after gaining acceptance to either TCOM or GSBS may not be considered for the MSTP.

Costs, Financial Obligations and Assistance

DO/MS and DO/PhD students pay the standard medical school tuition and fees during each block that they are enrolled in TCOM. They also pay the hourly tuition rate and fees for all courses not required for the DO degree (i.e., the credit hours required for the graduate degree). Non-Texas residents pursuing the DO/PhD are assessed tuition at the in-state rate for both medical and graduate school.

The Health Science Center may provide financial support to those students selected for the MSTP by the dual program admissions committee to seek the DO/PhD. This may include a graduate assistantship and payment of all tuition and fees related to GSBS enrollment during Block 2. Support may be available during other blocks as well.

Students who are not selected to participate in the MSTP often receive funding during Block 2 from other sources, including research grants, departmental assistantships, and other departmental funds.

All dual degree program students are eligible to apply for financial aid.

Dual Degree Formats

The general format of the dual degree program is explained below. While the format may be regarded as the standard working format, it is understood that deviations from this format that meet the curricular requirements are also acceptable. A degree plan is established by the student’s major professor and advisory committee and filed in the GSBS Office of Admissions and Services.

DO/MS Format

Block 1. Block 1 consists of the preclinical years for the DO degree. During Block 1, the student will complete the first two years of the DO curriculum and must pass Part 1 of the College of Osteopathic Medical Licensing Examination (COMLEX). During this block, the student will register only in TCOM.

An exception to this rule may be made only with the approval of the appropriate TCOM associate dean. If an exception is granted, the student may register for graduate courses through the GSBS. During Block 1, the student will select a graduate advisory committee and file an approved graduate degree plan of at least 30 SCH (which includes 6 SCH advanced standing awarded for the basic science didactic course work required in the DO curriculum) with the GSBS Office of Admissions and Services.

Block 2. Block 2 consists of at least one year dedicated to graduate study. During Block 2, the student is expected to complete all course work required for the MS degree, file an approved thesis research proposal, and make significant progress toward the completion of the thesis research.

Block 3. During Block 3, the student will complete the required clinical rotations and electives and must pass Part 2 of the COMLEX. During this block, the student may also continue work toward the master’s thesis.

At the end of Block 3, the student is expected to have completed the curriculum required for the DO degree and to have completed at least 24 additional SCH of graduate courses under the GSBS, as required for the second degree, including the thesis. Following completion of the curricula required for both degrees, the student is awarded the DO degree through TCOM and the MS through GSBS.

DO/MS Format

		DO	MS
Block 1	Year 1	Semesters 1-4	Lab Rotations, Individual Research
	Year 2	Semesters 5-8	Specialty Courses
Block 2	Year 3		Specialty Courses, Thesis Research
Block 3	Year 4	Clinical Science Rotations	Thesis Research
	Year 5	Clinical Rotations, Research Rotation Elective	Thesis Research

DO/PhD Format

Block 1. Block 1 consists of the preclinical years for the DO degree. During Block 1, the student will complete the first two years of the DO curriculum and must pass Part 1 of the College of Osteopathic Medical Licensing Examination (COMLEX). During this block, the student will register only in TCOM.

An exception to this rule may be made only with the approval of the appropriate TCOM associate dean. If an exception is granted, the student may register for graduate courses through the GSBS. During Block 1, the student will select a graduate advisory committee and file an approved graduate degree plan of at least 90 SCH (which includes 30 SCH advanced standing awarded for the basic science didactic course work required in the DO curriculum) with the GSBS Office of Admissions and Services.

Block 2. Block 2 consists of at least two years dedicated to graduate study. During Block 2, the student is expected to complete all course work required for the PhD degree, complete the requirements for advancing to candidacy, file an approved dissertation research proposal, and make significant progress toward the completion of the dissertation research. It is not uncommon for students to extend Block 2 for an additional year to continue research and complete the dissertation in Block 3.

Block 3. During Block 3, the student will complete the required clinical rotations and electives and must pass Part 2 of the COMLEX. During this block, the student may also continue work toward the doctoral dissertation.

At the end of Block 3, the student is expected to have completed the curriculum required for the DO degree and to have completed at least 60 additional SCH of graduate courses under the GSBS, as required for the second degree, including the dissertation. Following completion of the curricula required for both degrees, the student is awarded the DO degree through TCOM and the PhD through the GSBS.

DO/PhD Format

		DO	PhD
Block 1	Year 1	Semesters 1-4	Lab Rotations, Individual Research
	Year 2	Semesters 5-8	Specialty Courses
Block 2	Year 3		Electives Qualifying Examination, Individual Research
Block 3	Year 4		Individual Research, Dissertation
	Year 5	Clinical Rotations	Individual Research, Dissertation
	Year 6	Clinical Rotations, Research Rotation Elective	Individual Research, Dissertation

MPAS/PhD Format

The MPAS/PhD format is designed on a case-by-case basis to best meet the needs of the individual student

Disciplines

Biochemistry and Molecular Biology

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Adjunct Graduate Faculty: Clark, Das, McConathy

The Biochemistry and Molecular Biology program offers comprehensive graduate training in two (2) major areas: (1) the biochemical and molecular basis of biological processes; and (2) modern fluorescence spectroscopy/microscopy and proteomic analyses and their application to biophysical and biological processes. Both MS and PhD degree programs are designed to accommodate a broad spectrum of student and faculty interests and require a significant contribution to knowledge through original research. Research training is conducted in modern laboratories and is complemented by informative didactic course work, seminars and journal clubs. The Department of Molecular Biology & Immunology houses facilities featuring state-of-the-art Center for Commercialization of Fluorescence Technologies (<http://www.hsc.unt.edu/CCFT>), Advanced Mass Spectrometry and Proteomics Laboratory (<http://www.hsc.unt.edu/prokai/mslab/MainPage>) and Flow Cytometry and Laser Capture Microdissection Core Facility (<http://www.hsc.unt.edu/FCF>).

A broad range of students is accommodated by faculty research interests that range from clinical studies in human subjects to biophysical analyses of muscle contraction. Within the setting of the Health Science Center, specific research interests of the faculty address a wide range of prominent diseases including cancer, cardiovascular disease, aging, and Alzheimers. Specific projects addressed include the role of oxidative stress and posttranslational protein modification in health and disease, disorders of lipid metabolism in atherosclerosis, the use of recombinant lipoproteins in drug delivery and nanoparticle-mediated delivery of genes into cancer cells and chemotherapy drug resistance. Under these broad umbrellas, research topics encompass an interest in cellular/tissue processes, such as signal transduction, tumor invasion, muscle contraction, enzymology, transcription regulation, angiogenesis, endocytosis, apoptosis, cell proliferation and differentiation, drug resistance, gene delivery, protein phosphorylation-dephosphorylation, protein structure and function, protein-ligand and protein-protein interactions, and lipoprotein metabolism. Research projects employ state-of-the-art molecular and biochemical techniques that include proteomics, mass spectrometry, advanced fluorescence spectroscopy and optical imaging.

Students with undergraduate science majors in areas such as biology, chemistry and biochemistry that fulfill prerequisite courses of organic and inorganic chemistry will be considered for admission. The graduate curriculum consists of a multidisciplinary core that surveys

the fundamental principles of biochemistry, molecular biology, cell biology, microbiology, immunology, pharmacology and physiology. This is followed by advanced courses that focus on the most recent progress in various areas of biochemistry and molecular biology, and provide the student with a contemporary perspective in areas of greatest current scientific interest.

Most students complete the MS requirements in two years, while PhD requirements are completed within approximately five years. Detailed policies and procedures are available from the graduate advisor and supplied to the student during orientation.

Degree Plans

The following are typical degree plans for students in the biochemistry and molecular biology discipline. It is advantageous to the student to begin graduate studies in the fall semester. This degree plan may vary depending upon availability of course offerings in a given semester and each student's progress toward thesis and dissertation research.

MS Degree Plan for Biochemistry & Molecular Biology

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	2
BMSC 5960	Biomedical Ethics	<u>1</u>
		12
YEAR 1: SPRING		HOURS
<i>Two of the following courses:</i>		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
<i>And:</i>		
BMSC 5935	Introduction to Faculty Research Programs	1
	Electives*	2
BMSC 5930	Individual Research for MS Students	<u>1-4</u>
		12
YEAR 1: SUMMER		HOURS
BMSC 5930	Individual Research for MS Students	6
YEAR 2: FALL		HOURS
BIOC 5940	Seminar in Current Topics	1
BMSC 5930	Individual Research for MS Students	2-3
BIOC 6300	Advanced Molecular Biology	2
	Journal Club Course**	<u>0-1</u>
		6
YEAR 2: SPRING		HOURS
BMSC 5950	Thesis	6

PhD Degree Plan for Biochemistry & Molecular Biology

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	2
BMSC 5960	Biomedical Ethics	<u>1</u>
		12

YEAR 1: SPRING		HOURS
<i>Two of the following courses:</i>		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
<i>And</i>		
BMSC 5935	Introduction to Faculty Research Programs	1
	Electives*	0-2
BMSC 6940	Individual Research	<u>1-6</u>
		12

YEAR 1: SUMMER		HOURS
BMSC 6940	Individual Research	6
	Qualifying Examination	<u>0</u>
		6

YEAR 2: FALL		HOURS
BIOC 5940	Seminar in Current Topics	1
BMSC 5010	Scientific Communications	3
BIOC 6300	Advanced Molecular Biology	2
BMSC 6940	Individual Research	1-5
	Electives*	0-4
	Journal Club Course**	<u>1-2</u>
		12

YEAR 2: SPRING		HOURS
BIOC 5940	Seminar in Current Topics	1
BMSC 6010	Grant Writing	3
BMSC 6940	Individual Research	3-8
	Electives*	0-2
	Journal Club Course**	<u>1-2</u>
		12

YEAR 2: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 6940	Individual Research	<u>2</u>
		6

YEAR 3: FALL		HOURS
BIOC 5940	Seminar in Current Topics	1
BIOC 6300	Advanced Molecular Biology	2
BMSC 6940	Individual Research	3-8
	Electives*	0-6
	Journal Club Course**	<u>1-2</u>
		12

YEAR 3: SPRING		HOURS
BMSC 6940	Individual Research	2-5
	Electives*	0-2
	Journal Club Course**	<u>1-2</u>
		6

YEAR 3: SUMMER		HOURS
BMSC 6940	Individual Research	6

YEAR 4: FALL		HOURS
BMSC 6950	Doctoral Dissertation	6

YEAR 4: SPRING		HOURS
BMSC 6950	Doctoral Dissertation	6

Total SCH 96

*ELECTIVE COURSES (6-8 SCH) FROM THE FOLLOWING:

BIOC 5435	Molecular Aspects of Cell Signaling	4
BIOC 6020	Cellular and Molecular Fluorescence.	2
BIOC 6070	Drug Design and Discovery	2
BIOC 6040	Molecular Biology of Lipid Transport	2
BIOC 6050	Mol and Cell Biology of Cancer	2
BIOC 6060	Advanced Biophysics	3
CGEN 6020	Genomics and Proteomics	3

** JOURNAL CLUB COURSES

BIOC 5510	Signal Transduction	1
BIOC 5530	Structure and Function of Proteins	2
BIOC 5560	Current Topics in Cancer Biology	1
BIOC 5920	Cell Motility	1

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination is to ensure that a doctoral student has sufficient mastery of fundamental principles of biochemistry and molecular biology to be successful as a PhD candidate and independent researcher. A list of major topics to be examined will be distributed to the student after the completion of the first year. The student is expected to become knowledgeable in each of these topics through coursework, individual reading, or discussions with faculty members.

The qualifying examination will be administered by biochemistry and molecular biology faculty, except for the student's major professor, and will consist of an oral examination. The student will answer a given set of questions within a given time (two hours). The questions may also be expanded to address related topics in the field of biochemistry and molecular biology. The student must demonstrate an ability to discuss and apply concepts of biochemistry and molecular biology.

1. The qualifying examination will be scheduled in the summer semester of the student's first year of graduate school.
2. It will consist of an oral examination to be attended by all Biochemistry and Molecular Biology Graduate Faculty members and the university member assigned to the student's committee. The graduate advisor will serve as examination coordinator. The examination will take approximately two hours.
3. The student will be expected to have a sound knowledge of major principles of biochemistry and molecular biology taught in the core curriculum; BMSC 5600 (Principles of Biochemistry) and BMSC 5610 (Molecular Cell Biology). As an additional guide, students will be provided a list of topics in which they are to prove proficiency at the beginning of the second (2nd) year of graduate study.
4. The examination will consist of 12 questions organized into four (4) sections written by members of Biochemistry and Molecular Biology Graduate Faculty. Students will be required to answer 6 questions in total, one (1) from sections I and IV, and two (2) each from sections II & III:
 - I. Protein/Enzymes
2 questions; answer 1
 - II. Metabolism
4 questions; answer 2
 - III. Principles of Molecular Biology
4 questions; answer 2
 - IV. Biochemical and Biophysical Analyses
2 questions; answer 1
5. The student will be given the question set thirty (30) minutes prior to the oral examination, from which he/she will prepare answers for 6 questions. The student may answer the questions in any order. Any faculty member can ask questions pertaining to the subject matter of each question during the examination. The questions should be answerable in approximately 15 min so that the students can be tested in all of the defined areas.
6. On completion of the examination, the faculty will vote on a pass/fail grade for the student. At least 75% favorable vote will be required for the student to successfully pass. If a student does not pass, the faculty will inform the student of specific areas of weakness in writing.
7. If necessary, a student will be allowed to retake the oral examination once; but this must be completed before the end of the following semester. Failure on the second attempt will result in dismissal from the doctoral program, although the student may be permitted to pursue a Master of Science degree.
8. Following designations could be used to indicate the performance of the student.
 - Qualifying examination passed
 - Qualifying examination passed with distinction
 - Qualifying examination failed
9. It is the responsibility of the student to obtain signatures from the examination committee chair, graduate advisor, university member and department chair on completion of the examination. The appropriate form may be obtained from the graduate school website.

Grant Writing (BMSC 6010)

This stage of the advancement to doctoral candidacy will evaluate a student's aptitude for independent thought and scientific writing. In this course, a student is required to prepare an NIH-style research proposal, without the assistance of his/her major professor, and defend it before an examination committee. The proposal should be based on an original hypothesis that may be related, but should be distinct from the dissertation research and should describe specific experimental approaches to address this hypothesis. The student

will present this proposal in the form of a public seminar and then privately address specific questions of an examination committee. The examination committee will consist of Biochemistry and Molecular Biology graduate faculty (at least three of the five members), associate faculty and adjunct faculty. The graduate advisor will serve as coordinator and will meet with enrolled students at the beginning of the semester to review guidelines and answer relevant procedural questions. Upon successful completion of this course, the student is advanced to candidacy.

Biomedical Sciences

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Graduate and Adjunct Graduate Faculty: All members of the graduate and adjunct graduate faculty are included in Biomedical Sciences.

The Graduate School of Biomedical Sciences offers both MS and PhD degrees in biomedical sciences. Students are encouraged to acquire a broad base of knowledge in those disciplines that flourish in an environment of a health science center and are required to pursue specialized research and study in a particular area of biomedical and health science. The training students obtain equips them for professional careers in health science centers, universities, secondary science education, health care industry, publishing, pharmaceutical and biotechnology companies. All entering graduate students are expected to complete a one-year integrated biomedical sciences program that surveys the fundamental principles of biochemistry, molecular biology, cell biology, microbiology, immunology, pharmacology and physiology to prepare them for tomorrow's scientific advancements and employment opportunities.

Biomedical Sciences is interdisciplinary in nature; therefore, advanced courses focus on the individual student's particular interests. Mentors may be selected from any of the Graduate Faculty, regardless of departmental affiliation. The traditional MS; specialized MS degrees in biotechnology, clinical research management or medical sciences; or PhD may be obtained through the biomedical sciences' discipline.

Advisory Committee

Research leading to theses and dissertations must reflect the interdisciplinary nature of the biomedical sciences discipline, i.e., the research must involve two or more disciplines, such as integrative physiology and biochemistry/microbiology. Each traditional MS or PhD student is required to select a major professor from the primary discipline. Together, the student and major professor select a minor professor from the secondary discipline. The student's research will then be conducted in both the major and minor professors' laboratories. The remaining advisory committee members will reflect the interdisciplinary nature of the student's specific research and may be selected from any discipline, provided that they are members of the graduate faculty. For the master's program, at least one additional member will be required and, for the doctoral program, at least two additional members will be required. Both master's and doctoral students must have a university member present at any qualifying examination, proposal defense, or final thesis/dissertation defense, as required by the Graduate School of Biomedical Sciences.

YEAR 4: FALL		HOURS
BMSC 6950	Doctoral Dissertation	6
YEAR 4: SPRING		HOURS
BMSC 6950	Doctoral Dissertation	6
Total SCH		96

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination ensures that the doctoral student has mastered a broad knowledge base in biomedical sciences necessary to succeed as an independent research at the doctoral level. The student obtains this knowledge through course work, reading of textbooks and scientific literature, and discussion with faculty members.

The oral qualifying examination is administered by each student's qualifying examination committee and may include topics from any aspect of the biomedical sciences. The student will select one area of primary interest from the areas covered in the integrative core curriculum. These include biochemistry, molecular biology, cell biology, microbiology, immunology, physiology, and pharmacology. The student will also identify two areas of secondary interest. Students are allowed to meet with committee members prior to the examination to discuss potential topics for the questions. Questions will be given to the student in writing 30 minutes prior to the beginning of the examination.

Two attempts to successfully pass the qualifying examination are allowed. Failure to pass the qualifying examination results in dismissal of the student from the doctoral program. A doctoral student who does not pass may be allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

Successful completion of Grant Writing (BMSC 6010) requires the preparation and oral defense of an original NIH-style grant proposal. Two attempts to successfully accomplish this are allowed.

The student must prepare a detailed written report of the research proposal in NIH-style format. The final proposal will be prepared and presented to the advisory committee at least two weeks prior to the oral defense. The grant proposal and presentation will be evaluated on the basis of originality and ability to synthesize and communicate this information.

If the proposal and defense are satisfactory, the student is advanced to candidacy. Failure to pass Grant Writing (BMSC 6010) results in dismissal of the student from the doctoral program. A doctoral student who does not pass may be allowed to complete the requirements for a Master of Science degree.

Biotechnology

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Graduate and Adjunct Graduate Faculty: All members of the graduate and adjunct graduate faculty are included in Biotechnology.

The Biotechnology Program at the Health Science Center is designed to train individuals for careers in industry and research by providing the tools and experience needed for highly technical positions offered in emerging biotechnology companies, life science organizations, and research institutions. The Master of Science degree in the discipline of biotechnology is administered by the Department of Biomedical Sciences. Candidates for the degree earn approximately 56 SCH of which 19 SCH are core requirements and 18 SCH are a laboratory Internship Practicum, the latter substituting for a thesis requirement. The program is usually completed in two years.

The master's degree in the Biotechnology Program will provide a strong foundation upon which to build a career. The rigorous curriculum focuses on providing students a broad-based view of the biomedical sciences, as well as in depth knowledge of lab management and industry practice, ethical issues, and laboratory skills necessary to prepare the student for a career in the biotechnology and life science industry. As part of the Biotechnology Program, all students will complete a 2-semester (40 hours/week) Internship Practicum in biotechnology and use this experience to write a detailed Internship Practicum Report pursuant to receiving the Master of Science degree. The average time to complete the degree is 2 years.

Program Requirements

Each student is responsible for the completion of the requirements for the Biotechnology Program according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the Graduate School of Biomedical Sciences' web site.

1. The Graduate School Admission Committee will review all applicants for acceptance into the MS in Biotechnology Program. A student must have either a BA or BS degree and must meet the general requirements of the Graduate School as described in the current graduate catalog. All applications must be completed and received into the Graduate School by March 1. A student admitted into the Master of Science in the Biotechnology Program must take a **minimum** of 9 SCH per long semester and 6 SCH during the summer (24 SCH/year). A minimum GPA of 3.0 must be maintained.
2. By the end of the second semester or before, usually six weeks prior to starting the internship, the student will be assigned a major professor and an advisory committee consisting of the major professor and two other graduate faculty. The names of these individuals must be filed in the Graduate School prior to starting the internship or no later than one week after starting. In addition, a degree plan must also be filed with the Graduate School at this time. Forms are subject to revision at any time and should be obtained from the Graduate School of Biomedical Sciences' web site.
3. During the fall and spring semesters of year two, the student will enroll in BMSC 5920 (9 SCH/semester), the Internship Practicum. The internship will be at a site previously approved by the advisory committee. The student is responsible for transportation to and from the site, whether it is on-campus or off-campus. During this time, the student will gain experience in tasks associated with the application of biotechnology in an industrial setting. The student should not expect to receive a stipend or other monetary compensation for the internship. A formal plan (Internship Practicum Proposal) describing how the Internship Practicum is to be spent must be approved by the advisory committee and submitted 4 weeks after starting the internship. Research Proposal Approval Form obtained from the Graduate School of Biomedical Sciences' web site.

4. At the end of BMSC 5920, students will present their work as both an oral and written report. The oral presentation will be open to the public and will then be followed by a private defense with the advisory committee. The student must submit a first draft of their Internship Practicum Report and internship daily journal to the major professor prior to the public defense for review. The major professor must approve the Internship Practicum report prior to the student submitting it to advisory committee members. The written report should be given to the committee no later than two (2) weeks before the formal defense. Students should coordinate the reservation of a seminar room with the Graduate School office no later than one (1) month prior to their defense. At this time the committee will either approve/or not approve the work of the internship and the report. If disapproved, the student may have a chance to revise the report or repeat the practicum one time at the discretion of the committee. The major professor together with the other members of the committee will assign a letter grade to the practicum. A copy of the approved report must be submitted to the graduate school before graduation in accordance with the graduate school rules and time limits for the Master's thesis.
5. It is strongly suggested that the student and major professor communicate on a regular basis to review the student's progress during the Internship Practicum.

Degree Plan

The following is a typical degree plans for students in the biotechnology discipline.

TYPICAL CURRICULUM

BMSC 5210	Biostatistics for Biomedical Sciences	4
BMSC 5550	Laboratory Management	2
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
BMSC 5900.001	Special Problems: Laboratory Techniques for Biotechnology	3
BMSC 5920	Internship Practicum	18
BMSC 5960	Biomedical Ethics	1
BMSC 5965	Introduction to Industry Practice	1
BMSC 5540	Introduction to Laboratory Techniques for Biomedical Sciences	2
CGEN 6030	Methods in Molecular Biology	4
BMSC 5940	Seminar in Current Topics	1
BMSC 5900.001	Problems: Short Course in Health Disparities	1
BMSC 5010	Scientific Communications	3

Total SCH 56

Internship Practicum

The Internship Practicum provides a hands-on training experience for the Biotechnology graduate student. The Health Science Center will identify approved, off- campus internship opportunities in North Texas and will work to place students with suitable sponsors. From time-to-time, opportunities may exist in other parts of the state or country. It is also possible that occasional opportunities will exist on the campus. The internship takes approximately 2 semesters

(40 hrs/week) during which the student will be working under the direct supervision of an internship mentor at the internship location. The student is expected to keep a laboratory notebook during this experience. At the end of the practicum, the student will write a report detailing the activities of the internship. The student's advisory committee must approve this report together with the laboratory notebook. The student must make a formal presentation to the advisory committee and defend the work at this time. A copy of the report must be submitted within the appropriate deadlines for graduation (see the Academic Calendar).

Cancer Biology

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Graduate Faculty: S. Awasthi, Y. Awasthi, Basu, Das, Dimitrijevic, Eisenberg, Grant, I. Gryczynski, Z. Gryczynski, Jiang, Jones, Kim, Koulou, Lacko, Mathew, Page, Nair, L. Prokai, Siede, Singh, Singhall, A. Sharma, R. Sharma, Vishwanatha, Wordinger, Yadav, Yang

The Cancer Biology program is an interdisciplinary program that offers both MS and PhD degrees. The goal of this program is to provide students with rigorous education and training in biomedical sciences with a specialty in Cancer Biology. Students receive training through original research, formal classroom education, problem-based learning, seminars, and journal clubs. The program includes faculty members from several departments engaged in various aspects of cancer research, including signal transduction, apoptosis, cell proliferation and differentiation, cancer immunology, drug resistance, tumor invasion and metastasis, DNA damage and repair, gene delivery, cancer therapeutics, molecular carcinogenesis, and nanotechnology/imaging. The research projects employ state-of-the-art molecular, cellular and biochemical techniques that include genomics, proteomics, mass spectrometry, molecular cloning, gene targeting, FACS analysis, advanced fluorescence spectroscopy, and optical imaging.

Students may choose faculty advisors from any department according to their research interests. In addition, students will be able to utilize the resources and expertise of faculty members with diverse backgrounds from several departments. During the first year, students will acquire sufficient background in biological sciences, including biochemistry, molecular biology, cell biology, pharmacology, microbiology and immunology. The students will have the opportunity to rotate in research laboratories in any department prior to selecting their thesis advisors. Students will take two discipline specific courses, Molecular Aspects of Cell Signaling (BIOC 5435) and Molecular and Cell Biochemistry of Cancer (BIOC 6050). The students will be able to select additional elective courses from any department based on their needs and interests. PhD students are admitted to candidacy after successful completion of their preliminary oral qualifying examinations and defense of an NIH-style research grant proposal. MS students are expected to graduate in 1.5 to 2 years whereas, PhD students may require 4 to 5 years to complete their degree.

Degree Plans

The following are typical degree plans for students in the Cancer Biology discipline. It is advantageous for the student to begin graduate study in the fall semester. Degree plans may vary depending upon

availability of course offerings in a given semester and each student's progress toward thesis and dissertation research.

MS Degree Plan for Cancer Biology

YEAR 1: FALL		HOURS
BMSC 5600	Principles of Biochemistry	4
BMSC 5610	Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	2
BMSC 5960	Biomedical Ethics	<u>1</u>
		12
YEAR 1: SPRING		HOURS
At least two of the following		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
<i>and</i>		
BMSC 5935	Introduction to Faculty Research Programs	1
BIOC 6050	Molecular and Cell Biology of Cancer	2
BMSC 5930	Individual Research for MS Students	<u>1-4</u>
		12
YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 5930	Individual Research for MS Students	<u>2</u>
		6
YEAR 2: FALL		HOURS
BMSC 5930	Individual Research for MS Students	4-5
	Electives*	3-4
	Journal Club/Current Topics**	<u>1-2</u>
		9
YEAR 2: SPRING		HOURS
BMSC 5930	Individual Research for MS Students	3
BMSC 5950	Thesis	<u>3</u>
		6
		<hr/>
Total SCH		45

PhD Degree Plan for Cancer Biology

YEAR 1: FALL		HOURS
BMSC 5600	Principles of Biochemistry	4
BMSC 5610	Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	2
BMSC 5960	Biomedical Ethics	<u>1</u>
		12
YEAR 1: SPRING		HOURS
At least two of the following:		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3

<i>and</i>		
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 6940	Individual Research	1-3
BIOC 6050	Molecular and Cell Biology of Cancer	<u>2</u>
		12

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics	4
BMSC 6940	Individual Research	2 S
	Qualifying Examination	<u>0</u>
		6

YEAR 2: FALL		HOURS
BIOC 5435	Molecular Aspects of Cell Signaling	2
BMSC 5010	Scientific Communications	3
BMSC 6940	Individual Research	4-6
	Electives*	2-4
	Journal Club/Current Topics**	<u>1-2</u>
		12

YEAR 2: SPRING		HOURS
BMSC 6010	Grant Writing	3
BMSC 6940	Individual Research	4-6
	Electives*	2-4
	Journal Club/Current Topics**	<u>1</u>
		12

YEAR 2: SUMMER		HOURS
BMSC 6940	Individual Research	6

YEAR 3: FALL		HOURS
BMSC 6940	Individual Research	3-5
	Electives*	0-3
	Journal Club/Current Topics**	<u>1</u>
		6

YEAR 3: SPRING		HOURS
BMSC 6940	Individual Research	4-5
	Journal Club/Current Topics**	<u>1</u>
		6

YEAR 3: SUMMER		HOURS
BMSC 6940	Individual Research	6

YEAR 4: FALL		HOURS
BMSC 6940	Individual Research	3
BMSC 6950	Doctoral Dissertation	<u>3</u>
		6

YEAR 4: SPRING		HOURS
BMSC 6950	Doctoral Dissertation	6

Total SCH 90

**Elective courses must include 6-8 SCH in advanced courses (below):*

BIOC 5510	Signal Transduction	2
BIOC 5560	Current Topics in Cancer Biology	1
BIOC 6020	Cellular and Molecular Fluorescence	2
BMSC 5400	Introduction to Human Subject Research	2
CGEN 6020	Genomics and Proteomics	3
CGEN 6030	Methods in Molecular Biology	4
MICR 6300	Advanced Molecular Biology	3

****Journal Club/Current Topics**

BIOC 5510	Signal Transduction	2
BIOC 5560	Current Topics in Cancer Biology	1
BMSC 5720	Novel Macromolecules that Regulate the Cell Cycle	2

Advancement to Doctoral Candidacy**Qualifying Examination**

The qualifying examination is to ensure a doctoral student has sufficient mastery of fundamental principles of cancer biology and biomedical sciences, including biochemistry, molecular biology and cell biology to be successful as a PhD candidate and independent researcher. A list of major topics to be examined will be distributed to the student after the completion of the first two semesters. The student is expected to become knowledgeable in each of these topics through coursework, individual reading, or discussions with faculty members. The qualifying examination will be administered by faculty members of the cancer biology program, and will consist of an oral examination. A student will answer a given set of questions within a given time. The student must demonstrate an ability to discuss and apply concepts of cancer biology. Two attempts to successfully pass the qualifying examination are allowed. Failure of the student to pass the qualifying examination results in dismissal of the student from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

This stage of the advancement to doctoral candidacy will evaluate a student's aptitude for independent thought and scientific writing. The student is required to (a) prepare an NIH-style research proposal without the assistance of his/her major professor, (b) present the proposal in a public seminar, and (c) address specific questions of an examination committee. The proposal should be based on an original hypothesis that could be related but should be distinct from the student's dissertation research, and should describe specific experimental approaches to address the hypothesis. The student will present this proposal in the form of a public seminar and then privately address specific questions of an examination committee. The examination committee will consist of Cancer Biology faculty (4 members) appointed by the Graduate Advisor. The chairperson of the committee (appointed by the graduate advisor) will serve as coordinator and will meet with the student at the beginning of the semester to review guidelines and answer relevant procedural questions. The grant proposal and the student's oral presentation and defense will be evaluated on the basis of originality and ability to communicate the proposal content. Upon successful completion of this course, the student is advanced to doctoral candidacy. Two attempts to successfully pass Grant Writing (BMSC 6010) are allowed. Failure of the student to pass Grant Writing (BMSC 6010) results in dismissal of the student from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Cardiovascular Sciences

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Cardiovascular disorders are the leading causes of death and disability in the United States. Efforts to define the mechanisms of cardiovascular diseases and to develop effective treatments for these diseases are at the forefront of academic and pharmaceutical industry research. The graduate training program in Cardiovascular Science is designed to foster development of a comprehensive understanding of the physiology and pathophysiology of the heart and cardiovascular system, and to facilitate development of technical proficiencies and communication skills essential for successful careers in this dynamic field.

Students will train under the direction of a full complement of faculty renowned for their expertise in cardiovascular physiology, pathology, pharmacology, endocrinology, metabolism and molecular biology. State-of-the-art facilities and instrumentation are available at the Health Science Center to conduct research over the full spectrum from molecules to human subjects. The combination of advanced coursework and laboratory training will establish the foundation enabling the scholar to formulate, conduct and publish focused, cutting-edge research. Graduates of the Cardiovascular Science program will be thoroughly prepared to pursue rewarding, productive careers in cardiovascular research.

Degree Plans

Typical degree plans leading to the MS and PhD degrees are outlined below. It is advantageous to the student to begin graduate study in the summer or fall semesters. The degree plan may vary depending upon availability of course offerings in a given semester and each student's background and progress toward thesis or dissertation research.

MS Degree Plan for Cardiovascular Science

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5960	Biomedical Ethics	1
PSIO 5940	Seminar in Current Topics	1
	Electives	<u>1</u>
		12
YEAR 1: SPRING		HOURS
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5950	Thesis	<u>3</u>
		12
YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 5950	Thesis	<u>3</u>
		7

PhD Degree Plan for Cardiovascular Science

		HOURS
YEAR 1: FALL		
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5960	Biomedical Ethics	1
PSIO 5940	Seminar in Current Topics Electives*	1
		<u>1</u>
		12
YEAR 1: SPRING		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Immunology and Microbiology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
BMSC 5935	Introduction to Faculty Research Programs	1
PSIO 5940	Seminar in Current Topics Electives*	1
		<u>2</u>
		12
YEAR 1: SUMMER		
BMSC 5200	Biostatistics for BMSC	4
BMSC 6940	Individual Research	<u>2</u>
		6
YEAR 2: FALL		
PSIO 5100	Cardiovascular Physiology I	3
PSIO 5940	Seminar in Current Topics Electives*	1
		<u>8</u>
		12
YEAR 2: SPRING		
PSIO 5110	Cardiovascular Physiology II	3
PSIO 5940	Seminar in Current Topics Electives*	1
		<u>8</u>
		12
YEAR 2: SUMMER		
	Electives*	6
YEAR 3: FALL		
	Oral Qualifying Examination	
	Electives*	12
YEAR 3: SPRING		
BMSC 6010	Grant Writing	3
	Electives*	<u>9</u>
		12
YEAR 3: SUMMER		
BMSC 6950	Doctoral Dissertation	6
YEAR 4: FALL		
BMSC 6950	Doctoral Dissertation	6
		<u>6</u>
		96
Total SCH		96

*Electives must include at least 1 additional SCH of Individual Research (BMSC 6940) and at least 3 of the following courses:

PSIO 5200	Respiratory Physiology	3
PSIO 5300	Renal Physiology	3
PSIO 5400	Molecular Genetics of Cardiac and Vascular Disease	3
PSIO 6050	Physiology of Skeletal and Smooth Muscle	3
PSIO 6060	Cardiovascular Regulation During Exercise	3
PSIO 6070	Advanced Endocrine Physiology	3
PSIO 6080	Advanced Autonomic Nervous System Physiology	3
PSIO 6090	Myocardial Metabolism: Concepts and Controversies	3

Advancement to Doctoral Candidacy

Qualifying Examination

Prior to registration for Grant Writing (BMSC 6010), and before completion of 72 SCH of course work, doctoral students are required to pass an oral qualifying examination. The examination will be administered by a departmental examining committee, which will not include the student's mentor. The examination may address all aspects of physiology and, in addition, assess the student's research skills and aptitude.

Grant Writing (BMSC 6010)

After passing the qualifying examination, the student must register for Grant Writing (BMSC 6010) in the next long semester. In this course, students are required to submit an NIH-style grant application to their Advisory Committee. The grant application will describe the student's dissertation research project, and will serve as the student's dissertation proposal. Following a public, oral presentation of the research proposal in the grant application, the student will defend the grant application and research proposal before his/her advisory committee.

Upon approval of the grant application and the research proposal, the student is advanced to candidacy.

Cell Biology and Genetics

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Adjunct Graduate Faculty: Collier, M. Garner, W. Garner, Jacobson, McCartney, Pang, Romano, Shepard

Cell Biology and Genetics has a primary mission to provide instruction in cell biology, forensic genetics, and the anatomical sciences; to develop and maintain research programs; and to participate in the service endeavors of the institution and profession. The major focus of research in the discipline is on the eye involving degenerative retinal diseases, glaucoma, diabetic complications, and cataracts. Other research programs include angiogenesis, apoptosis, cell secretory mechanisms, cell cycle, cellular

differentiation, cell signaling, DNA damage, endothelial physiology, fluorescence microscopy, glial cell biology, growth factors and neurotrophins, nitric oxide, nuclear function, oxidative stress, regulated intramembrane proteolysis, stem cell research, and yeast genetics. Genetics research concentrates on the methods of analysis and procedures used in genetic identity testing of evidentiary materials from human and non-human sources utilizing advanced and state-of-the-art technologies, including microsatellite analysis, mitochondrial DNA, RT-PCR, and SNP technologies.

In support of the various research programs, the department maintains state-of-the-art facilities in microscopy, tissue culture and molecular biology. Over 8,000 square feet of research space is occupied by department faculty and staff.

The department is home to the North Texas Eye Research Institute which involves faculty from various basic science disciplines, as well as professionals in industry and private clinical practice.

Degree Plans

The following are typical degree plans for students in the cell biology and genetics discipline. It is advantageous to the student to begin graduate student in the fall semester. This degree plan may vary depending upon availability of course offerings in a given semester and each student's progress toward thesis and dissertation research.

MS Degree Plan for Cell Biology and Genetics

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5960	Biomedical Ethics	1
CGEN 5940	Seminar in Current Topics	1
CGEN 6599	Current Topics in Cell Biology and Genetics	<u>1</u>
		12
YEAR 1: SPRING		HOURS
<i>At least two of the following:</i>		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
<i>And</i>		
BMSC 5935	Introduction to Faculty Research Programs	1
CGEN 5900	Special Problems in CGEN	1
CGEN 5940	Seminar in Current Topics	1
CGEN 6599	Current Topics in CGEN	<u>1</u>
		12
YEAR 1: SUMMER		HOURS
BMSC 5930	Individual Research for MS Students	2
CGEN 6030	Methods in Molecular Biology (CGEN Advanced Course)	<u>4</u>
		6
YEAR 2: FALL		HOURS
BMSC 5930	Individual Research for MS Students	3
	Elective	<u>3</u>
		6

YEAR 2: SPRING		HOURS
BMSC 5930	Individual Research for MS Students	3
BMSC 5950	Thesis	<u>3</u>
		6
		Total SCH
		42

PhD Degree Plan for Cell Biology and Genetics

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5960	Biomedical Ethics	1
CGEN 5940	Seminar in Current Topics	<u>1</u>
		12
YEAR 1: SPRING		HOURS
<i>At least two of the following:</i>		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
<i>And</i>		
BMSC 5650	Lab Rotations	1
BMSC 5935	Introduction to Faculty Research Programs	1
CGEN 5940	Seminar in Current Topics	1
CGEN 6599	Current Topics in CGEN	<u>1</u>
		12
YEAR 1: SUMMER		HOURS
CGEN 6030	Methods in Molecular Biology (CGEN Advanced Course)	4
CGEN 6699	Special Problems in CGEN	<u>2</u>
		6
YEAR 2: FALL		HOURS
BMSC 5010	Scientific Communications	3
BMSC 6940	Individual Research	2
CGEN 5940	Seminar in Current Topics	1
CGEN 6599	Current Topics in CGEN	1
CGEN 6690	Special Problems in CGEN	2
	Elective 1	<u>3</u>
		12
YEAR 2: SPRING		HOURS
BMSC 6940	Individual Research	2
CGEN 5940	Seminar in Current Topics	1
CGEN 6020	Proteomics and Genomics (CGEN Advanced Course 2)	3
CGEN 6599	Current Topics in CGEN	1
CGEN 6690	Special Problems in CGEN	2
	Elective 2	3
	Qualifying Examination	<u>0</u>
		12

YEAR 2: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 6940	Individual Research	<u>2</u>
		6
YEAR 3: FALL		HOURS
BMSC 6010	Grant Writing	3
BMSC 6940	Individual Research	2
CGEN 5940	Seminar in Current Topics	1
CGEN 6599	Current Topics in CGEN	1
CGEN 6699	Special Problems in CGEN	2
	Elective 3	<u>3</u>
		12
YEAR 3: SPRING		HOURS
BMSC 5965	Introduction to Industry Practice	1
BMSC 6940	Individual Research	2
	Elective 4	<u>3</u>
		6
YEAR 3: SUMMER		HOURS
BMSC 6940	Individual Research	6
YEAR 4: FALL		HOURS
BMSC 6940	Individual Research	3
BMSC 6950	Doctoral Dissertation	<u>3</u>
		6
YEAR 4: SPRING		HOURS
BMSC 6940	Individual Research	3
BMSC 6950	Doctoral Dissertation	<u>3</u>
		6
Total SCH		96

will be allowed. Failure to pass the qualifying examination after 2 attempts will result in dismissal from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Grant Writing (6010)

After passing the qualifying examination, but prior to the completion of 84 SCH, the student must register for Grant Writing (BMSC 6010). This stage of the advancement to doctoral candidacy evaluates a student's aptitude for independent thought and scientific writing. The student is required to (a) prepare an NIH-style research proposal; (b) present the proposal in a public seminar; and (c) orally defend the proposal before his/her doctoral advisory committee. The proposal should be based on an original hypothesis and should describe specific experimental approaches to address the hypothesis. The graduate advisor will appoint a member of the student's advisory committee to coordinate the process. The student will meet with the advisory committee at least two times during the semester to review drafts of the proposal. The final written proposal must be prepared in NIH-style format and presented to the advisory committee at least two weeks prior to the public seminar and oral defense. The grant proposal and the student's oral presentation and defense will be evaluated on the basis of originality and ability to synthesize and communicate the proposal content. The student's university member must be present for the public seminar and oral defense of the proposal. Upon successful completion of Grant Writing (BMSC 6010), the student is advanced to doctoral candidacy. Two attempts to successfully complete Grant Writing (BMSC 6010) will be allowed. Failure to pass Grant Writing (BMSC 6010) will result in dismissal from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination within the discipline of Cell Biology and Genetics must be successfully completed prior to concluding 72 semester credit hours (SCH). The main goal of the examination is to ensure that each doctoral student has a broad knowledge base in biomedical sciences and has mastered the fundamental principles of cell biology and genetics in order to be a successful doctoral candidate and an independent researcher. The qualifying examination consists of written and oral phases. The examination will be directed towards the didactic course work of the student. Basic knowledge and understanding of general research techniques in cell and molecular biology will be included.

The initial phase of the qualifying examination consists of a set of written questions administered by a qualifying examination committee (QEC) composed of faculty members of the Department of Cell Biology and Genetics. Within 4 weeks of taking the written examination, the chair of the QEC will schedule the oral examination. The oral examination will consist of questions that further explore the student's answers in the written phase, as well as questions on additional topics in cell biology and genetics as deemed appropriate by the QEC. The university member must be in attendance for the oral phase of the examination.

The qualifying examination will be graded on a Pass/Fail basis. Successful completion of the qualifying examination must be accomplished before the student can register for Grant Writing (BMSC 6010). Two attempts to pass the qualifying examination

**Cell Biology and Genetics
Structural Anatomy Track – PhD**

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Graduate Faculty: Aschenbrenner, Cammarata, I. Gryczynski, Reeves, Routh, Sheedlo, Siede, Wordinger, Raven

Adjunct Faculty: Lichtman, Bunata, Nana, Wagner, Reddix, Kosmopoulos, Motley

The Department of Cell Biology and Genetics has a primary mission to provide instruction in cell biology, forensic genetics, and the anatomical sciences; to develop and maintain research programs; and to participate in the service endeavors of the institution and profession. The Structural Anatomy Track will focus on anatomy-based research projects using advanced experimental, computational, and clinical tools to study clinical structural anatomy, orthopedic biomechanics and surgery, tissue engineering, and/or educational components of anatomical studies. The major impetus of the research in the discipline will consist of but not be limited to: (1) biomechanics, including the study of the structure, function, and mechanical behavior of soft and hard tissues; and (2) the analysis,

design, and/or development of orthopedic surgical techniques, instruments, and devices used in orthopedic surgery. Research projects involving other areas, such as clinical anatomy, will be developed by students in the program. Both the human anatomy facility and the Bone & Joint Research Center at the Health Science Center are state-of-the-art facilities that use computer technology to teach and train medical and graduate students in the anatomical sciences. In support of the various research programs, the department maintains a microscopy core facility for tissue culture and molecular biology. The department faculty and staff occupy over 8,000 square feet of research space. The department is home to the Biomedical Skills, Research and Educational Laboratory (BSREL) that involves faculty from various basic science disciplines, as well as professionals in industry and private clinical practice.

Degree Plans

The following is a typical degree plan for students in the Structural Anatomy Track for the Cell Biology and Genetics discipline. It is advantageous to the student to begin their graduate studies in the fall semester. This degree plan may vary depending upon availability of course offerings in a given semester and each student's progress toward their dissertation research.

PhD Degree Plan for Cell Biology and Genetics – Structural Anatomy Track

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research	1
BMSC 5960	Biomedical Ethics	1
CGEN5940	Seminar in Current Topics	1
CGEN6690	Special Problems in Anatomy and Orthopedic Laboratory Rotations	1
CGEN6599	Current Topics (Journal Club)	<u>1</u>
		13
YEAR 1: SPRING		HOURS
BMSC 5700	Integrative Biomedical Sciences Physiology	3
BMSC 5705	Integrative Biomedical Sciences Pharmacology	2
<i>or</i>		
BMSC 5710	Immunology and Microbiology	3
<i>and</i>		
CGEN5025	Basic and Clinical Histology	3
CGEN6690	Special Problems in Anatomy and Orthopedic Laboratory Rotations	1
BMSC 5935	Introduction to Faculty Research Programs	1
CGEN5940	Seminar in Current Topics	1
CGEN6599	Current Topics (Journal Club)	<u>1</u>
		12
YEAR 1: SUMMER		HOURS
CGEN6690	Special Problems in Anatomy and Orthopedic Laboratory Rotations	3
BMSC 6940	Individual Research	<u>3</u>
		6
YEAR 2: FALL		HOURS
CGEN6000	Structural and Developmental Anatomy of the Musculoskeletal and Skin System	3
CGEN5000	Structural Neuroscience	6
BMSC 6940	Individual Research	2

CGEN5940	Seminar in Current Topics	1
CGEN6599	Current Topics (Journal Club)	<u>1</u>
		13

YEAR 2: SPRING		HOURS
CGEN5010	Structural Anatomy	7
BMSC 6940	Individual Research	2
CGEN5940	Seminar in Current Topics	1
CGEN6599	Current Topics (Journal Club)	1
CGEN6690	Special Problems in Anatomy and Orthopedic Laboratory Rotations	1
	Qualifying Examination	<u>0</u>
		12

YEAR 2: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 6940	Individual Research	<u>2</u>
		6

YEAR 3: FALL		HOURS
BMSC 6010	Grant Writing	3
BMSC 6940	Individual Research	2
CGEN5940	Seminar in Current Topics	1
CGEN6599	Current Topics (Journal Club)	1
CGEN6690	Special Problems in Anatomy Ed.	2
Elective	PSIO course*	<u>3</u>
		12

YEAR 3: SPRING		HOURS
BMSC 6940	Individual Research	2
CGEN5015	Embryology and Developmental Biology	3
CGEN6690	Special Problems in Anatomy Ed.	<u>1</u>
		6

YEAR 3: SUMMER		HOURS
BMSC 6940	Individual Research	6

YEAR 4: FALL		HOURS
BMSC 6940	Individual Research	2
BMSC 6950	Doctoral Dissertation	3
CGEN6690	Special Problems in Anatomy Ed.	<u>1</u>
		6

YEAR 4: SPRING		HOURS
BMSC 6940	Individual Research	2
BMSC 6950	Doctoral Dissertation	3
CGEN6690	Special Problems in Anatomy Ed.	<u>1</u>
		6

Total SCH 98

*** POSSIBLE PHYSIOLOGY ELECTIVES LISTED BELOW:**

PSIO 5200	Respiratory Physiology	3
PSIO 5300	Renal Physiology	3
PSIO 5400	Molecular Genetics of Cardiac and Vascular Disease	3
PSIO 6050	Physiology of Skeletal and Smooth Muscle	3
PSIO 6060	Cardiovascular Regulation During Exercise	3
PSIO 6070	Advanced Endocrine Physiology	3
PSIO 6080	Advanced Autonomic Nervous System Physiology	3
PSIO 6090	Myocardial Metabolism: Concepts and Controversies	3

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination within the Structural Anatomy Track for the Cell Biology and Genetics discipline must be successfully completed prior to concluding 72 semester credit hours (SCH). The main goal of the examination is to ensure that each doctoral student has a broad knowledge base in biomedical sciences and has mastered the fundamental principles of anatomy and cell biology in order to be a successful doctoral candidate and an independent researcher. The qualifying examination consists of written and oral phases. The examination will be directed towards the didactic course work of the student, with an emphasis on the anatomical sciences and biomechanics. Basic knowledge and understanding of general research techniques in anatomy, cell biology, and molecular biology will be included. The initial phase of the qualifying examination consists of a set of written questions administered by a qualifying examination committee (QEC) composed of faculty members of the Department of Cell Biology and Genetics. Within four weeks of taking the written examination, the chair of the QEC will schedule the oral examination. The oral examination will consist of questions that further explore the student's answers in the written phase, as well as questions on additional topics in anatomy and cell biology as deemed appropriate by the QEC. The university member must be in attendance for the oral phase of the examination. The qualifying examination will be graded on a Pass/Fail basis. Successful completion of the qualifying examination must be accomplished before the student can register for Grant Writing (BMSC 6010). Two attempts to pass the qualifying examination will be allowed. Failure to pass the qualifying examination after 2 attempts will result in dismissal from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

After passing the qualifying examination, but prior to the completion of 84 SCH, the student must register for Grant Writing (BMSC 6010). This stage of the advancement to doctoral candidacy evaluates a student's aptitude for independent thought and scientific writing. The student is required to (a) prepare an NIH-style research proposal; (b) present the proposal in a public seminar; and (c) orally defend the proposal before his/her doctoral advisory committee. The proposal should be based on an original hypothesis and should describe specific experimental approaches to address the hypothesis. The graduate advisor will appoint a member of the student's advisory committee to coordinate the process. The student will meet with the advisory committee at least two times during the semester to review drafts of the proposal. The final written proposal must be typed in NIH format and presented to the advisory committee at least two weeks prior to the public seminar and oral defense. The grant proposal and the student's oral presentation and defense will be evaluated on the basis of originality and ability to synthesize and communicate the proposal content. The student's university member must be present for the public seminar and oral defense of the proposal. Upon successful completion of Grant Writing (BMSC 6010), the student is advanced to doctoral candidacy. Two attempts to successfully complete Grant Writing (BMSC 6010) will be allowed. Failure to pass Grant Writing (BMSC 6010) will result in dismissal from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Clinical Research and Education: Osteopathic Manipulative Medicine

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The Department of Osteopathic Manipulative Medicine and the Physical Medicine Institute, in which the Osteopathic Research Center is housed, offer both MS and PhD degrees in Clinical Research and Education through the Graduate School of Biomedical Sciences. These are multidisciplinary degree tracks that differ from the traditional degree programs in public health or basic sciences. These academic programs are focused on research and education in musculoskeletal and manual medicine. Manual medicine research requires individualized, scientifically rigorous protocols for research that are different from more mainstream bench or clinical research. Students are provided with closely mentored experiences in their academic course work and research.

This is a unique opportunity for medical students to complete a pre-doctoral fellowship in Manipulative & Neuromusculoskeletal Medicine and a Master of Science or Doctor of Philosophy in a specialty research and education program. The program is also available to post-doctoral, licensed physicians who wish to complete an advanced degree in a flexible environment while being involved in clinical and academic training.

Since 2002, the Department of Osteopathic Manipulative Medicine has developed a broad scope of research education and research initiatives in the area of manual/manipulative medicine. The OMM Department is funded for research and research training by the National Institutes of Health, the Osteopathic Heritage Foundation, and other public and private sponsors. This program offers access to researchers and educators from partnering institutions across the U.S. and internationally. Research is ongoing in areas of chronic disease and acute medical conditions, including low back pain, spinal manipulation, neutral zone, temporomandibular joint disorders, EMG signature of pain, carpal tunnel, hand kinematics, respiratory disease, and immune function as well as physical and neuromusculoskeletal conditions.

Degree Plans

There are two degree plan options for medical students in the Clinical Research and Education programs: a Master of Science and Doctor of Philosophy.

The Master of Science program requires a minimum of 30 semester credit hours (SCH) and includes provisions for transfer of 6 SCH from an osteopathic medical school curriculum. This program generally requires two academic years to complete, and may be completed during the fellowship in intermittent blocks during the third and fourth years, thus adding a year to medical school. The student is expected to conduct mentored collaborative research for the thesis project in an aspect of musculoskeletal medicine. For more information, contact the graduate advisor for the Master of Science degree.

The required core courses and recommended electives are listed in the table below, illustrative of a recommended degree plan. After

an academic foundation is achieved, as determined by the graduate advisor and the student's major professor, there is flexibility in the MS program to customize the degree plan and training suitable to the selected area of focus for research.

The degree plan may vary with the research focus and the student's educational goals as approved by the student's advisory committee. However, a minimum of one publishable journal article arising from the research conducted will need to be submitted to the graduate advisor prior to proceeding to oral defense of the thesis.

MS Degree Plan for Clinical Research and Education:

Osteopathic Manipulative Medicine

	HOURS
Advanced standing for medical school course work*	6
Required Courses	
BMSC 5010 Scientific Communications	3
BMSC 5150 Principles of Evidence Based Medicine and Epidemiology	3
BMSC 5200 Biostatistics for BMSC	4
BMSC 5310 Evaluation and Instruction in Teaching	3
BMSC 5320 Issues in Higher Professional Education	1
BMSC 5520 Ethical, Legal and Social Issues for Responsible Clinical Research	1
BMSC 5950 Thesis	6
OMMC 5510 Introduction to Osteopathic Research and Studies	3
OMMC 5900 Special Problems in Research	3
OMMC 5910 Special Problems in Education	3
Total SCH	36

**If 6 SCH of advanced standing is not approved, additional course work must be approved by the graduate advisor and completed by the student to acquire a total of at least 31 SCH.*

The Doctor of Philosophy degree is available for pre-doctoral medical students as a dual degree program, and for post-graduate physicians. Post graduate physicians qualify for "Advanced Standing" with 30 SCH. A minimum of 90 SCH is required for the PhD

The required core courses and recommended electives are listed in the table below, illustrative of a recommended degree plan. After an academic foundation is achieved, as determined by the Graduate Advisor and the student's major professor, there is flexibility in the PhD program to customize the degree plan and training suitable to the selected are of focus for research.

The degree plan may vary with the research focus and the student's educational goals as approved by the student's advisory committee.

**PhD Degree Plan for Clinical Research and Education:
Osteopathic Manipulative Medicine**

	HOURS
Advanced Standing for medical school course work	30
BMSC 5010 Scientific Communication	3
BMSC 5150 Principles of Evidence Based Medicine and Epidemiology	3
BMSC 5200 Biostatistics	4

BMSC 5310	Evaluation and Instruction in Teaching	3
BMSC 5320	Issues in Higher Professional Education	1
BMSC 5400	Regulation of Human Subject Research	2
BMSC 5520	Ethical, Legal, and Social Issues for Responsible Clinical Research	1
BMSC 6010	Grant Writing	3
BMSC 6940	Individual Research	10
BMSC 6950	Doctoral Dissertation	12
CGEN 6000	Structural and Developmental Anatomy of the Musculoskeletal/ Skin System	3
OMMC 5510	Introduction to Osteopathic Research and Studies	3
OMMC 5600	Current Topics in OMM	1
OMMC 5940	Seminar in Current Topics	1
PSIO 6050	Physiology of Skeletal and Smooth Muscle	3
PSIO 6080	Advanced Autonomic Physiology	3
TBD	Upper-level biostatistics and basic science course work**	6

Total SCH 90

Advancement to Doctoral Candidacy

Qualifying Examination

An oral qualifying examination determines if the doctoral student has mastered information needed to succeed in the discipline of research and education in manual and neuromusculoskeletal medicine. The oral examination will be administered by a committee comprised of neuromusculoskeletal clinical specialist graduate faculty, one basic science graduate faculty and a biostatistician selected by the departmental graduate advisor in consultation with the chair of the OMM department. The student's major professor may be present but does not participate in the examination. The student will be required to address questions of scientific knowledge in the chosen field of study. The basic science areas covered may include biomechanics, physiology, immunology, and anatomy.

A maximum of two attempts to pass the qualifying examination will be allowed. A doctoral student who does not pass after the second attempt may be dismissed or allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

Following the qualifying examination and before completing 72 SCH of course work, the student will complete Grant Writing (BMSC 6010) which requires the preparation and oral defense of an original NIH grant proposal. The grant application will describe the student's dissertation research project and serves as the student's dissertation proposal. Following a public oral presentation of the research proposal and grant application, the student will defend them before his/her advisory committee.

Upon approval of the grant application and research proposal, the student is advanced to candidacy.

Students will be required to publish their research with their major professor and other collaborators, if applicable, in peer reviewed journals. Four journal articles will be considered optimum. However, with two published, one in press and one submitted papers students will be allowed to proceed to oral defense of their dissertation. There will be no upper limit for number of papers a student in the program can publish.

Clinical Research Management

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Clinical Research involves the testing and determination of safety and efficacy of new unapproved products, including pharmaceuticals, devices and biologics in human subjects. Clinical trials in humans (volunteers and patients) are required prior to marketing approval, by regulatory authorities such as the U.S. Food and Drug Administration (FDA). The law that governs clinical research is spelled out in Chapter 21 of the Code of Federal Regulations (CFR). In addition to requiring and legislating clinical trials, regulatory authorities define the standards by which clinical trials are to be conducted. These standards are known as Good Clinical Practices (GCPs).

In depth knowledge of the CFR and GCP guidelines as well as International Guidelines specifically as they relate to protection of human rights, prevention and detection of fraud and the use of sound scientific principles, is a fundamental requirement for a clinical research professional. These individuals are key personnel involved in the conduct of clinical trials, which in turn are pivotal in getting new products approved and on the market.

The master's program in Clinical Research Management will provide a strong foundation upon which to build a career. The rigorous curriculum focuses on providing students a broad-based view of the biomedical sciences, as well as in depth knowledge of regulatory requirements (code of federal regulations, good clinical practices), ethical issues, and both the medical writing and administrative skills necessary to conduct clinical research. As part of the program, all students will complete an internship practicum in clinical studies and use this experience to write the thesis pursuant to receiving the Master of Science degree. The average time to complete the degree is eighteen months.

Each student is responsible for the completion of the requirements for the Master of Clinical Research Management Program according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the Graduate School of Biomedical Sciences.

Opportunities for Graduates in Clinical Research Management

Well-trained clinical research professionals are in high demand. The tremendous increase in medical technology and information in the last decade has resulted in an explosion of potential new drugs, devices and biologics that must be tested before being released for use by the public. The profession is constantly challenged to improve and streamline the clinical research programs in order to shorten the development timelines and control the cost for new product development.

Clinical research professionals can hold a multitude of positions either in industry, at the investigational site, or in the clinical research service profession either at a contract research organization (CRO) or a site management organization (SMO). Job titles may include, but are not restricted to, clinical research associate, clinical research scientist, clinical research coordinator, medical writer, clinical trial auditor, clinical trial monitor, product safety specialist, clinical research trainer, etc. Industry (sponsor) and service professions (CRO, SMO) usually provide technical and managerial career paths and ample growth opportunities.

Typically a clinical research coordinator who has been involved with the implementation and coordination of a clinical trial at a research site (private, clinic, hospital), will advance his/her career by switching to either industry or one of the service professions. Others make the reverse switch because they prefer the interactions with the patients, or they may want to travel less than what is typically required from a clinical trial monitor. Turnover in all these industries and positions is relatively high because of the growing variety of choices clinical research professionals have, especially after they have accumulated a number of years of experience.

Program Requirements

Each student is responsible for the completion of the requirements for the Clinical Research Management program according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the Graduate School of Biomedical Sciences' web site.

1. The Graduate School Admission Committee will review all applicants for acceptance into the Clinical Research Management degree program. A student must have either a BA or BS degree and must meet the general requirements of the Graduate School of Biomedical Sciences as described in the current graduate catalog.
2. By the end of the second semester, the student will be assigned a faculty mentor and an advisory committee consisting of the mentor and two other graduate faculty. The names of these individuals will be filed on the designation of advisory committee form with the GSBS Office of Admissions and Services. A degree plan must also be filed with the GSBS Office of Admissions and Services at this time.
3. Students must be in good academic standing prior to be allowed to start their internship at a site (cumulative GPA 3.0). Exceptions to this rule can only be granted by the dean of the graduate school or his designee.
4. During the summer of year one, the student will enroll in BMSC 5920, the Internship Practicum (BMSC 5920). The student will complete a six month unpaid internship at a site previously approved by the graduate school. The student is responsible for transportation to and from the site. During this time, the student will learn how to perform the duties expected of particular clinical research positions in clinical research centers such as a hospital or clinic, pharmaceutical or medical device company, a clinical research organization or site management organization.
5. A formal research proposal describing how the practicum is to be spent must be approved by the advisory committee and submitted to the graduate school early in the summer semester, year one.
6. At the end of the practicum, the student must submit a report and internship daily notebook to the mentor for his/her approval. The advisory committee will meet with the student at this time and review both the notebook and written report. The student will present his/her work as both an oral and written report. The oral presentation will be open to the public and will then be followed by a private meeting with the advisory committee. The written report should be given to the committee two weeks before the formal meeting. At this time, the committee will either approve or disapprove the work of the practicum and the report. If not approved, the student may have a chance to revise the report or repeat the practicum one time at the discretion of the committee. The mentor, together with the other members of the committee, will assign a letter grade to the final semester of practicum. A copy of the approved report must be submitted to the GSBS Office of Admissions and Services according to the deadlines for graduation in the

Academic Calendar. A more detailed description of the internship practicum and report requirements may be found in the Internship Practicum Guidelines available on the GSBS Forms and Guidelines site.

7. It is strongly suggested that the student and major professor, as well as the major professor and the on-site mentor, communicate on a regular basis to review the student's progress during the practicum.

Degree Plan

The following is a typical degree plan for students in the clinical research management discipline.

MS Degree Plan for Clinical Research Management

YEAR 1: FALL		HOURS
BIOS 5210	Biostatistics I (School of Public Health course)	3
BMSC 5010	Scientific Communications	3
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	<u>4</u>
		14
YEAR 1: SPRING		HOURS
BMSC 5510	Introduction to Clinical Research and Studies	3
BMSC 5520	Ethical, Legal and Social Issues for Responsible Clinical Research	1
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
BMSC 5965	Introduction to Industry Practice	<u>1</u>
		13
YEAR 1: SUMMER		HOURS
BMSC 5920	Internship Practicum	6
BMSC 5900.001	Special Problems: Short Course in Health Disparities	<u>1</u>
		7
YEAR 2: FALL		HOURS
BMSC 5920	Internship Practicum	6
	Total SCH	39

Forensic Genetics

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Graduate Faculty: Eisenberg, Planz, Warren, Williamson

The forensic genetics program is designed to offer a broad-based learning experience in forensic science with teaching and research emphasis in DNA technology. The Master of Science degree requirements are met upon satisfactory completion of 58 semester credit

hours (SCH) of course work, including six semester hours of an internship that culminates in a practicum report. In addition to completing selected components of the integrative core curriculum, students in forensic genetics are required to take, among other subjects, population genetics, several forensic DNA methodology laboratories, and courses that prepare them to give legal evidence in forensic science. The program prepares individuals for careers in forensic DNA sciences, emphasizing the application of current methods and technologies to legal proceedings. Upon completion of the program, graduates will be qualified to become DNA analysts and, later, after obtaining job experience, to develop into forensic DNA laboratory managers. The program was designed to meet all educational and many training requirements as outlined in the National Quality Assurance Standards for Forensic DNA Testing Laboratories adopted by the FBI. Graduates will also find the program helpful in building a foundation to pursue further studies at the doctoral level. Certain individuals interested in related investigative fields or practicing law might find the curriculum appropriate for their professional objectives as well.

Degree Plans

The following is a typical degree plan for students in the forensic genetics discipline. This degree plan may vary depending upon availability of course offerings in a given semester and each student's progress.

MS Degree Plan for Forensic Genetics

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for Biomedical Sciences	4
CGEN 5550	Forensic Laboratory Quality Assurance	<u>1</u>
		5
YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5960	Biomedical Ethics	1
CGEN 5600	Current Topics in Forensic and Molecular Genetics	<u>2</u>
		11
YEAR 1: SPRING		HOURS
BMSC 5710	Integrative Biomedical Sciences IV: Immunology and Microbiology	3
CGEN 5300	Population Genetics	3
CGEN 5600	Current Topics in Forensic and Molecular Genetics	2
	Electives	<u>3</u>
		11
YEAR 2: SUMMER		HOURS
CGEN 5050	Methods in Forensic Molecular Biology	4
YEAR 2: FALL		HOURS
CGEN 5100	Biological Evidence Evaluation	4
CGEN 5310	Genetic Data Analysis	4
CGEN 5600	Current Topics in Forensic and Molecular Genetics	2
	Elective	<u>2</u>
		12

YEAR 2: SPRING		HOURS
CGEN 5200	Expert Testimony in Forensic Science	3
CGEN 5600	Current Topics in Forensic and Molecular Genetics	2
CGEN 5950	Forensic Anthropology Electives	3
		<u>1</u>
		9
YEAR 3: SUMMER		HOURS
BMSC 5920	Laboratory Internship Practicum	6
Total SCH		58

The following courses are electives that can be taken as part of the program. Courses from other disciplines may also be used as electives, upon approval of the advisory committee.

BMSC 5540	Introduction to Laboratory Techniques for Biomedical Sciences	2
BMSC 5550	Laboratory Management	2
BMSC 5900	Special Problems: Introductory Biochemistry	2
CGEN 5060	Forensic Biology: The History and Science of Human Identification	2
CGEN 5101	Applications of Y-Chromosome Analysis in Forensic and Genealogical Investigations	1
CGEN 5400	Non-Human Forensic Genetics (Focused Topics)	1-3
CGEN 5700	Forensic Hair Analysis	1
CGEN 5800	Blood Spatter Analysis	1
CGEN 6100	Forensic Mitochondrial DNA Analysis	2
CGEN 6210	Molecular Evolutionary Genetics	3

Integrative Physiology

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Physiology is an essential foundation for clinical and experimental medicine. The physiologist seeks an understanding of the physical and chemical mechanisms of biological processes. Thus, physiology is the study of the function of living organisms and their various components. It encompasses normal and abnormal function and ranges in scope from an understanding of basic molecular and cellular functions to a cognizance of biological control systems and of the integration of bodily functions among multiple organ systems.

The Department of Integrative Physiology maintains an active and productive research program with special emphasis on cardiovascular physiology. Research interests of the faculty include autonomic regulation, cardiac hypertrophy and failure, cardiac resuscitation, cardiac opioids, coronary circulation, adaptation to exercise and hypoxia, lymph flow, effects of aging and obesity, tissue engineering, and calcium signaling. Faculty programs are funded by extramural sources including the American Heart Association, the

National Institutes of Health, American Diabetes Association, and the National Aeronautics and Space Administration.

Students may enter the program with a variety of academic backgrounds, providing that they have fulfilled prerequisite courses in biology, chemistry, physics, and mathematics. The graduate training program involves one year of courses in biomedical sciences and advanced courses in physiology, neurobiology, pharmacology, molecular biology, and biochemistry. The program is designed to integrate the fundamental processes of molecular biology with organ system functions. Students participate in teaching and seminars and receive extensive training in techniques of contemporary physiological research. Doctoral students and Master of Science students perform original, publishable research and present their research findings at national scientific meetings. At the end of the first year, all graduate students must pass an oral physiology progress examination. One to two years are required to complete the Master of Science degree requirements. Three to five years are required to complete the Doctor of Philosophy degree requirements. It is expected that, prior to the awarding of the doctorate, the student will have published, have in press, or have submitted two first-author publications in peer-reviewed journals.

Graduates with advanced degrees find employment in higher education, industry and government agencies.

Degree Plans

Typical degree plans leading to the MS and PhD degrees are outlined below. The doctoral program offers the choice of two tracks, one focusing on Integrative Cardiovascular Science and the other focusing on Molecular Cardiovascular Science. It is advantageous to the student to begin graduate study in the summer or fall semesters. The degree plan may vary depending upon availability of course offerings in a given semester and each student's background and progress toward thesis or dissertation research.

MS Degree Plan for Integrative Physiology

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5960	Biomedical Ethics	1
PSIO 5940	Seminar in Current Topics	1
	Electives	<u>1</u>
		12

YEAR 1: SPRING		HOURS
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Physiology and Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology (optional)	3
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5950	Thesis	<u>3</u>
		12

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 5950	Thesis	<u>3</u>
		7

Total SCH 31

PhD Degree Plan for Integrative Physiology, Integrative Cardiovascular Science Track

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5960	Biomedical Ethics	1
PSIO 5940	Seminar in Current Topics	1
	Electives*	<u>1</u>
		12

YEAR 1: SPRING		HOURS
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Physiology and Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology (optional)	3
BMSC 5935	Introduction to Faculty Research Programs	1
PSIO 5940	Seminar in Current Topics	1
	Electives*	<u>2</u>
		12

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 6940	Individual Research	2
		6

YEAR 2: FALL		HOURS
PSIO 5100	Cardiovascular Physiology I	3
PSIO 5940	Seminar in Current Topics	1
	Electives*	<u>8</u>
		12

YEAR 2: SPRING		HOURS
PSIO 5110	Cardiovascular Physiology II	3
PSIO 5940	Seminar in Current Topics	1
	Electives*	<u>8</u>
		12

YEAR 2: SUMMER		HOURS
	Electives*	6

YEAR 3: FALL		HOURS
	Oral Qualifying Examination	
	Electives*	6

YEAR 3: SPRING		HOURS
BMSC 6010	Grant Writing	3
	Electives*	<u>9</u>
		12

YEAR 3: SUMMER		HOURS
BMSC 6950	Doctoral Dissertation	6

YEAR 4: FALL		HOURS
BMSC 6950	Doctoral Dissertation	6

Total SCH 96

*Electives must include at least 1 additional SCH of Individual Research (BMSC 6940) and at least 3 of the following courses:

PSIO 5200	Respiratory Physiology	3
PSIO 5300	Renal Physiology	3
PSIO 5400	Molecular Genetics of Cardiac and Vascular Disease	3
PSIO 6050	Physiology of Skeletal and Smooth Muscle	3
PSIO 6060	Cardiovascular Regulation During Exercise	3
PSIO 6070	Advanced Endocrine Physiology	3
PSIO 6080	Advanced Autonomic Nervous System Physiology	3
PSIO 6090	Myocardial Metabolism: Concepts and Controversies	3

PhD Degree Plan for Integrative Physiology, Molecular Cardiovascular Science Track

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5960	Biomedical Ethics	1
PSIO 5940	Seminar in Current Topics	1
	Electives*	<u>1</u>
		12

YEAR 1: SPRING		HOURS
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Physiology and Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology (optional)	3
BMSC 5935	Introduction to Faculty Research Programs	1
PSIO 5940	Seminar in Current Topics	1
	Electives*	<u>2</u>
		12

YEAR 1: SUMMER		HOURS
CGEN 6030	Methods in Molecular Biology	4
BMSC 6940	Individual Research	<u>2</u>
		6

YEAR 2: FALL		HOURS
CGEN 6030	Cardiovascular Physiology I	3
PSIO 5940	Seminar in Current Topics	1
	Electives*	<u>8</u>
		12

YEAR 2: SPRING		HOURS
PSIO 5400	Molecular Genetics of Cardiovascular Disease	3
PSIO 5940	Seminar in Current Topics	1
	Electives*	<u>8</u>
		12

YEAR 2: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
	Electives*	<u>2</u>
		6

YEAR 3: FALL		HOURS
	Oral Qualifying Examination	
	Electives*	6
YEAR 3: SPRING		HOURS
BMSC 6010	Grant Writing	3
	Electives*	9
		12
YEAR 3: SUMMER		HOURS
BMSC 6950	Doctoral Dissertation	6
YEAR 4: FALL		HOURS
BMSC 6950	Doctoral Dissertation	6
	Total SCH	96

*Electives must include at least 1 additional SCH of Individual Research (BMSC 6940) and at least 2 of the following courses:

BIOC 5435	Molecular Aspects of Cell Signaling	4
PSIO 6010	Functional Genomics and Proteomics	3
PSIO 6090	Myocardial Metabolism: Concepts and Controversies	3

And at least two of the following courses:

PSIO 5110	Cardiovascular Physiology II	3
PSIO 5200	Respiratory Physiology	3
PSIO 5300	Renal Physiology	3
PSIO 6050	Physiology of Skeletal and Smooth Muscle	3
PSIO 6060	Cardiovascular Regulation During Exercise	3
PSIO 6070	Advanced Endocrine Physiology	3
PSIO 6080	Advanced Autonomic Nervous System Physiology	3
PSIO 6090	Myocardial Metabolism: Concepts and Controversies	3

Advancement to Doctoral Candidacy

Qualifying Examination

Prior to registration for Grant Writing (BMSC 6010), and before completion of 72 SCH of course work, doctoral students are required to pass an oral qualifying examination. The examination will be administered by a departmental examining committee, which will not include the student's mentor. The examination may address all aspects of physiology and, in addition, assess the student's research skills and aptitude.

Grant Writing (BMSC 6010)

After passing the qualifying examination, the student must register for Grant Writing (BMSC 6010) in the next long semester. In this course, students are required to submit an NIH grant application to their advisory committee. The grant application will describe the student's dissertation research project, and will serve as the student's dissertation proposal. Following a public, oral presentation of the research proposal in the grant application, the student will defend the grant application and research proposal before his/her advisory committee.

Upon approval of the grant application and the research proposal, the student is advanced to candidacy.

Medical Sciences Premedical Program (formerly the Post-baccalaureate Certificate Program)

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The Master of Science program in Medical Sciences is designed to provide additional opportunities to those individuals who would like to enhance their credentials for entry into medical school, other health profession graduate programs, or dental programs. This is achieved by offering a strong, challenging biomedical science core curriculum in the environment of a health science center.

The average time to complete the MS in Medical Sciences is twelve months (mid-May through mid-May). Each student is responsible for the completion of the requirements for MS program in Medical Sciences according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the Graduate School of Biomedical Sciences' web site.

Each student is responsible for the completion of the Post-baccalaureate Premedical Certification according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the Graduate School of Biomedical Sciences' web site.

This program admits students each summer.

Opportunities for Graduates in Medical Sciences

The MS in Medical Sciences program responds to the need for generalist graduate study in the medical sciences to provide students with the background required for the pursuit of a variety of careers in the health professions. It is a broad-based curriculum that can provide the student with requirements to pursue medical school, veterinary school, advanced graduate education, or enter a career in allied health sciences, such as public health and health care administration, or in non-research positions including managerial and biotechnology patent law.

Admissions Requirements

- All applications must be completed and received into the Graduate School by the established deadline listed in the Academic Calendar. EIS application records will be updated before letters are mailed. Applicants may check their application records online at <http://my.hsc.unt.edu> for admissions decisions. No admissions decisions will be released by phone.
- Applicants must hold either a BA or BS degree and must meet the general requirements of the Graduate School of Biomedical Sciences as described in the current graduate catalog
- The Medical College Admissions Test (MCAT) is required for admission to this program. While not the only criterion considered in acceptance into medical school, the applicant should have a competitive MCAT score before the application deadline. In general, composite MCAT scores below 20 and individual subset scores below 6 are not competitive for medical school. If the applicant has plans to retake the MCAT for future medical school admissions, he/she must sit for the examination no later than August during the first semester of the year he/she enters the program. The applicant must indicate in writing the actual date he/she will take the MCAT. This information must be filed with the Graduate School of Bio-

medical Sciences at the time of admission to the program.

A student already accepted into another degree program that requests to transfer into the program will be reviewed by the Medical Sciences Admission Committee. All such applicants must have met the requirements described in steps one through three, above.

4. For those individuals who are planning to qualify for consideration for medical school admission at TCOM as part of the program, the following are required:

- Successful completion of all undergraduate course requirements for TCOM as listed in the current catalog;
- Competitive undergraduate grade point average (In general, an overall undergraduate GPA below 3.0 is not considered competitive for medical school) and a GPA of 3.5 in the Graduate School of Biomedical Sciences' Medical Sciences program;
- Competitive MCAT score taken prior to the application deadline; and
- Completed medical school application submitted to the Texas Medical and Dental Schools Application Service (TMDSAS) and a secondary application submitted to the TCOM Office of Medical Student Admissions according to the TMDSAS and TCOM application deadlines.

MS Degree Plan for Medical Science

SUMMER		HOURS
BMSC 5100	Clinical Practice Preceptorship	2
BMSC 5200	Biostatistics for BMSC	4
BMSC 5900.001	Special Problems: Short Course in Health Disparities	1
BMSC 5900.003	Special Problems: Introductory Biochemistry*	2
BMSC 5900.004	Special Problems: MCAT Prep*	2
BMSC 5900.005	Special Problems: Application Workshops	0
*Optional Course		7-11
FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5530	Introduction to Health Disparities/ Issues in the United States	2
BMSC 5150	Principles of Epidemiology and Evidence-based Medicine	3
		13
SPRING		HOURS
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5510	Introduction to Clinical Research & Studies	3
BMSC 5520	Ethical, Legal and Social Issues for Responsible Clinical Research	1
CGEN 5010	Structural Anatomy	7
		16
Total SCH		36-40

Microbiology and Immunology

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Graduate Faculty: Berg, Hodge, Jones, Kim, P. Mathew, S. Mathew, Simecka, Vishwanatha

Infectious diseases have a major impact on health around the world. New infectious agents have emerged, and diseases caused by known pathogens have reestablished themselves. Many of these infections result in life-threatening diseases. To complicate matters, many of these infectious agents have developed resistance to antibiotics routinely used in treatments. Thus, prevention and treatment of these infections are of tremendous importance. The development of new antibiotics and vaccines is dependent on an in-depth understanding of the mechanisms of disease caused by these organisms and their basic biology. Also, many findings arising from the investigation of the molecular biology of microbes has significantly contributed to our understanding of the molecular basis of cancer.

Cancer continues to be a significant health problem and is associated with genetic factors, diet, and exposure to environmental insults and infectious agents. Cells of the body normally are limited in their growth. In contrast, cancer cells are derived from normal cells and divide uncontrollably, forming tumors. Also, cancer cells spread (metastasize) from primary tumors to distant tissues in the body. Understanding the biology of cancer and the process of metastasis will provide important clues in prevention and treatment of cancer.

Immunology is the study of the defense mechanisms of the host against infectious diseases, cancers and other diseases. By inducing immune responses, as in the case of vaccines, infection and disease can be prevented. Enhancement of appropriate immune responses can also result in the destruction of cancer cells. Research in immunology has a tremendous potential in developing new treatments to prevent or recover from cancer and infectious disease.

Faculty maintain active and productive research programs with special emphasis on infectious disease, microbiology, cancer, and immunology. Research interests of the faculty include regulation of prokaryotic and eukaryotic gene expression; T cell and NK cell biology; host response to respiratory, infections; molecular immunology; tumor immunology; vaccine development; regulation and function of cytokines; cancer biology and metastasis. Faculty programs are funded by extramural sources including the National Science Foundation and the National Institutes of Health.

Students may enter the program with a variety of academic backgrounds, providing that they have fulfilled prerequisite courses. The graduate training program involves basic courses in microbiology and immunology, molecular biology, biochemistry and advanced courses in selected topics. Students participate in seminars and discussion of current research and receive extensive training in techniques of contemporary microbiology, molecular biology and immunology. Students perform original, publishable research and present their research findings at national scientific meetings. About two years are required to complete the Master of Science. Approximately four to five years are required to complete the Doctor of Philosophy.

Graduates with advanced degrees find employment in higher education, industry and government agencies.

Degree Plans

The following are typical degree plans for students in the Microbiology and Immunology discipline. It is advantageous to the student to begin graduate school in the fall semester. This degree plan may vary depending upon availability of course offerings in a given semester and each student's progress toward thesis and dissertation research.

MS Degree Plan for Microbiology and Immunology

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	2
BMSC 5960	Biomedical Ethics	<u>1</u>
		12

YEAR 1: SPRING		HOURS
<i>At least one of the following:</i>		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
<i>and</i>		
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
BMSC 5930	Individual Research for MS Students	3-4
BMSC 5935	Introduction to Faculty Research Programs	1
MICR 5940	Seminar in Current Topics	1
MICR 5120	Current Topics in Immunology	<u>1</u>
		12

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 5930	Individual Research for MS Students	<u>2</u>
		6

YEAR 2: FALL		HOURS
BMSC 5010	Scientific Communications	3
BMSC 5930	Individual Research for MS Students	7
MICR 6300	Advanced Molecular Biology	<u>2</u>
		12

YEAR 2: SPRING		HOURS
BMSC 5950	Thesis	6
MICR 5050	Advanced Immunology	<u>3</u>
		9

Total SCH 51

PhD Degree Plan for Microbiology and Immunology

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4

BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	2
BMSC 5960	Biomedical Ethics	<u>1</u>
		12

YEAR 1: SPRING HOURS

<i>At least one of the following:</i>		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
<i>and</i>		
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 6940	Individual Research	3-4
MICR 5940	Seminar in Current Topics	1
MICR 5120	Current Topics in Immunology	<u>1</u>
		12

YEAR 1: SUMMER HOURS

BMSC 5200	Biostatistics for BMSC	4
BMSC 6940	Individual Research	2
	Qualifying Examination	<u>0</u>
		6

YEAR 2: FALL HOURS

BMSC 5010	Scientific Communications	3
BMSC 6940	Individual Research	7
MICR 6300	Advanced Molecular Biology	<u>2</u>
		12

YEAR 2: SPRING HOURS

BMSC 6940	Individual Research	9
BMSC 6010	Grant Writing	<u>3</u>
		12

YEAR 2: SUMMER HOURS

BMSC 6940	Individual Research	6
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YEAR 3: FALL HOURS

BMSC 6940	Individual Research	4
MICR 5120	Current Topics in Immunology	1
MICR 5940	Seminar in Current Topics	<u>1</u>
		6

YEAR 3: SPRING HOURS

BMSC 6940	Individual Research	3
MICR 5050	Advanced Immunology	<u>3</u>
		6

YEAR 3: SUMMER HOURS

BMSC 6940	Individual Research	6
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YEAR 4: FALL HOURS

BMSC 6940	Individual Research	6
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YEAR 4: SPRING HOURS

BMSC 6950	Doctoral Dissertation	6
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YEAR 4: SUMMER HOURS

BMSC 6950	Doctoral Dissertation	6
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Total SCH 96

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination ensures that the doctoral student has mastered information needed to succeed as a PhD in the field of microbiology and immunology. A list of key topics, compiled by the Microbiology and Immunology faculty, will be distributed to the student after completion of the first year of course work. The student is expected to become knowledgeable in each of these topics through their course work, reading of textbooks and scientific literature, and discussion with faculty members.

The oral qualifying examination is administered by a committee comprised of members of the Microbiology and Immunology graduate faculty and the student's university member. The oral examination consists of questions from a selected list of topics provided to the student.

The qualifying examination will be administered during the summer after completion of the core course work. Two attempts to successfully pass the qualifying examination are allowed. Failure of the student to pass the qualifying examination results in dismissal of the student from the doctoral program. A doctoral student who does not pass may be allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

Successful completion of Grant Writing (BMSC 6010) requires the preparation and oral defense of an original NIH-style grant proposal. Two attempts to successfully accomplish this are allowed. BMSC 6010 should be registered for during the spring of the student's second year.

The graduate advisor will serve as the examination coordinator and select an examination committee consisting of four graduate faculty, including a committee chair. The student's major professor may not serve as a committee member. The student's university member will oversee the entire examination process.

The faculty coordinator instructs the student on the regulations of the course and assists in initiating and preparing the proposal. The student should submit a report which presents the hypothesis, experimental strategy and specific aims for the proposal to the examination committee by mid-semester. The proposal must consist of the student's original ideas and is expected to significantly extend scientific knowledge in the chosen research area if the proposed experiments were actually conducted. The proposal should be unrelated to any previous research performed by the student and unrelated to any research currently being pursued in the major professor's laboratory. The committee must approve this summary of the research proposal.

The student must prepare a detailed written report of the research proposal in NIH format after the summary has been approved.

The final proposal will be prepared and presented to the committee at least two weeks prior to the oral defense. The grant proposal and presentations will be evaluated on the basis of originality and ability to synthesize and communicate this information.

If the proposal and defense are satisfactory, the committee will recommend that the student be advanced to candidacy. This recommendation is presented to the discipline's graduate faculty for approval by the faculty coordinator. Upon successful completion of this course, the student is advanced to candidacy. Two attempts to successfully complete Grant Writing (BMSC 6010) will be allowed. Failure to pass Grant Writing (BMSC 6010) will result in dismissal from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Neurobiology of Aging

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Graduate Faculty: Basu, Das, Dillon, Forster, Jung, Koulen, Jones, Krishnamoorthy, Luedtke, Machu, Prokai-Tatrai, Prokai, Schetz, Stokely, Simpkins, Singh, Sumien, Yang, Yorio, Gwartz

The Neurobiology of Aging program offers both MS and PhD degrees in a wide range of research areas, but with focus on biological aging processes and age-related diseases affecting the nervous system. The Neurobiology of Aging program bridges all major discipline-oriented programs, including Biochemistry and Molecular Biology, Cell Biology and Genetics, Psychology, Integrative Physiology, Microbiology and Immunology, and Pharmacology and Neuroscience. Students are encouraged to acquire a broad base of knowledge and techniques in biomedical sciences, and to acquire a basic understanding of biological aging processes as they affect neurophysiological function and promote diseases of the nervous system.

With the "graying of America," society is faced with increasing numbers of individuals with diminished cognitive, sensory, or psychomotor function, which contribute to decreased independence and diminished quality of life. Further, aging promotes an increase in susceptibility to devastating neurodegenerative diseases such as Alzheimer's and Parkinson's diseases, as well as an increased susceptibility to brain insults. For example, it is estimated that by the year 2020, more than 14 million Americans will have Alzheimer's disease. Research in the Neurobiology of Aging includes efforts aimed at delineating the mechanisms of these debilitating neurological and neurodegenerative diseases, as well as fundamental studies to gain understanding of how normal processes of aging in the brain confer an increase in risk for these conditions.

Students with a variety of academic backgrounds may gain acceptance to the Neurobiology of Aging program, though they must be prepared to complete an integrated biomedical science core curriculum that includes fundamental principles of biochemistry, cellular and molecular biology, microbiology and immunology, pharmacology, physiology and neurobiology. Following the completion of the core curriculum, students must complete advanced courses in Functional Neuroscience and the Neurobiology of Aging, as well as other advanced elective courses in any discipline related to their individual research interests. Students will also participate in seminars and group discussions of current research topics, and will be trained in a number of techniques required to address existing research problems in the Neurobiology of Aging. Both MS and PhD students will conduct original, publishable research and will be expected to present their results at national scientific conferences.

Completion of the MS degree typically requires two years; the PhD degree is generally completed in four to five years. Students who successfully complete a graduate degree in the Neurobiology of Aging will be well prepared for careers in academic and government research laboratories, as well as in the pharmaceutical/biotechnology industry.

Degree Plans

The following are typical degree plans for students in the Neurobiology of Aging program. It is advantageous for the student to begin graduate study in a fall semester. Degree plans may vary

depending upon availability of course offerings in a given semester and each student's progress toward thesis and dissertation research.

BMSC 5960	Biomedical Ethics	1
<i>And either</i>		
PHRM 6699	Current Topics in Pharmacology	1
<i>or</i>		
PHRM 5940	Seminar in Current Topics	<u>1</u>
		12

MS Degree Plan for Neurobiology of Aging

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	1
BMSC 5960	Biomedical Ethics	1
<i>And either</i>		
PHRM 6699	Current Topics in Pharmacology	1
<i>or</i>		
PHRM 5940	Seminar in Current Topics	<u>1</u>
		12

YEAR 1: SPRING		HOURS
BMSC 5010	Scientific Communications	3
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Principles of Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Laboratory Rotations	1
<i>And either</i>		
PHRM 6699	Current Topics in Pharmacology	1
<i>or</i>		
PHRM 5940	Seminar in Current Topics	<u>1</u>
		14

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 5930	Individual Research for MS Students	<u>2</u>
		6

YEAR 2: FALL		HOURS
BMSC 5950	Thesis	6

YEAR 2: SPRING		HOURS
BMSC 5950	Thesis	6

Total SCH 44

PhD Degree Plan for Neurobiology of Aging

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	1

YEAR 1: SPRING		HOURS
BMSC 5010	Scientific Communications	3
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Principles of Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences IV: Immunology and Microbiology	3
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Laboratory Rotations	1
<i>And either</i>		
PHRM 6699	Current Topics in Pharmacology	1
<i>or</i>		
PHRM 5940	Seminar in Current Topics	<u>1</u>
		14

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 5650	Laboratory Rotations (if necessary)	1
BMSC 6940	Individual Research	<u>1-2</u>
		6

YEAR 2: FALL		HOURS
PHRM 6000	Functional Neuroscience	4
PHRM 5100	Neurobiology of Aging	3
BMSC 6940	Individual Research	1-4
	Electives*	<u>0-4</u>
		12

YEAR 2: SPRING		HOURS
BMSC 6940	Individual Research	1-8
	Electives*	<u>1-8</u>
		12

YEAR 2: SUMMER		HOURS
BMSC 6940	Individual Research	6
	Qualifying Examination	<u>0</u>
		6

YEAR 3: FALL		HOURS
BMSC 6010	Grant Writing	3
BMSC 6940	Individual Research	3-8
	Electives*	<u>0-6</u>
		12

YEAR 3: SPRING		HOURS
BMSC 6950	Doctoral Dissertation	3-6
	Electives	<u>0-3</u>
		6

YEAR 3: SUMMER		HOURS
BMSC 6940	Individual Research	3
BMSC 6950	Doctoral Dissertation	<u>3</u>
		6

YEAR 4: FALL		HOURS
BMSC 6940	Individual Research	3
BMSC 6950	Doctoral Dissertation	<u>3</u>
		6
YEAR 4: SPRING		HOURS
BMSC 6950	Doctoral Dissertation	6
Total SCH		98

**Elective courses must include 9 SCH in courses offered by any discipline. These may include, but are not limited to, relevant department of Pharmacology and Neuroscience electives (below). Course offerings of other departments are listed elsewhere in this catalog. The successful completion of Functional Neuroscience and Neurobiology of Aging, as well as one of the elective courses, is required before a student can take his/her oral examination*

COURSES OFFERED EACH YEAR		HOURS:
PHRM 5200	Intracellular Calcium Signaling	1
PHRM 5900	Special Problems	3
PHRM 5910	Special Problems	3
PHRM 6000	Functional Neuroscience	4
PHRM 6050	Ocular Pharmacology	3
PHRM 6040	Neurobiological Basis of Neuropsychiatric Disorders	3
COURSES OFFERED "EVEN" YEARS		HOURS
PHRM 5070	Neuropharmacology	4
COURSES OFFERED "ODD" YEARS:		HOURS
PHRM 5100	Neurobiology of Aging	3
PHRM 5435	Molecular Aspects of Cell Signaling	4
PHRM 6080	Receptors and Drug Action	4

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination determines if the doctoral student has mastered information needed to succeed in the discipline of Neurobiology of Aging. The student is required to demonstrate reasonable proficiency in the topics of general biomedical science, functional neuroscience, and the neurobiology of aging presented during the first two years of graduate study. An oral qualifying examination will be administered by a committee comprised of graduate faculty from Pharmacology and Neuroscience selected by the graduate advisor, and may also include faculty from another discipline when appropriate. The student's major professor may be present, but will not participate in the examination. The initial phase of the qualifying examination consists of presentation of a published Neurobiology of Aging article, approved by the graduate advisor, with a subsequent question period. In the second phase of the examination, the student will be required to address questions on his/her knowledge of biomedical science and the Neurobiology of Aging.

A maximum of two attempts to pass the qualifying examination will be allowed. A doctoral student who does not pass after the second attempt may be dismissed or allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

Successful completion of Grant Writing (BMSC 6010) requires the preparation and oral defense of an original NIH-style grant proposal. The student's doctoral advisory committee serves as the student's grant proposal committee. The graduate advisor and the student's major professor instruct the student on the regulations of the course and assist in initiating and preparing the proposal. The proposal must consist of the student's original ideas and is expected to significantly extend scientific knowledge in the chosen research area. The student will first submit a summary report, which presents the hypothesis, experimental strategy, and specific aims for the proposal to the examination committee within the first three weeks of the semester. Once the committee approves this summary, the student must then proceed to prepare a detailed written report of the research proposal in NIH format. The final proposal will be typed and presented to the committee at least two weeks prior to the oral defense. The student will present the proposal to faculty and graduate students. The grant proposal and presentation will be evaluated by the committee on the basis of originality and ability to organize and communicate information. A maximum of two attempts to pass will be allowed.

If the proposal and defense are satisfactory, the committee will recommend that the student be advanced to candidacy.

Pharmacology and Neuroscience

Meharvan Singh, PhD, Graduate Advisor

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Graduate Faculty: Das, Dillon, Forster, Gatch, Jung, Koulen, Krishnamoorthy, Luedtke, Machu, Oglesby, Pearce, Prokai-Tatrai, Schetz, Stokely, Simpkins, Singh, Stokely, Sumien, Uht, Wen, Yang, Yorio

Adjunct Graduate Faculty: Bergamini, DeSantis, Dobbs, Pang, Sharif

The Department of Pharmacology and Neuroscience offers both MS and PhD degrees in a wide range of research areas. Pharmacology is a discipline that bridges the basic and clinical sciences. Classically, pharmacologists sought to understand the pharmacological responses, mechanisms and clinical uses of drugs. In recent decades, the scope of pharmacology has expanded dramatically and includes cutting edge research in signal transduction and molecular biology.

With the "graying of America," society is faced with increasing numbers of individuals affected with disorders of the nervous system. For example, it is estimated that by the year 2050, the number of individuals age 65 and over with Alzheimer's disease could range from 11 to 16 million. Research in neuroscience includes efforts aimed at delineating the mechanisms of these debilitating neurological and neurodegenerative diseases, as well as fundamental studies to gain understanding of how the brain functions. The Department of Pharmacology and Neuroscience has active research programs in these areas, as well as programs in cellular and molecular signaling, vision and glaucoma, molecular and behavioral analysis of substance abuse, and new drug discovery.

Students with a variety of academic backgrounds may gain acceptances to the Pharmacology and Neuroscience program, providing they have completed a number of prerequisite courses. All students entering the program will complete an integrated biomedical science

core curriculum that includes fundamental principles of biochemistry, cellular and molecular biology, microbiology and immunology, pharmacology, physiology and neurobiology. Following the completion of the core curriculum, students may choose from a number of advanced courses in Pharmacology and Neuroscience that are related to their individual research interests. Students will also participate in seminars and group discussions of current research topics, and will be trained in a number of techniques required to address existing research problems in pharmacology and neuroscience. Both MS and PhD students will conduct original, publishable research and will be expected to present their results at national scientific conferences.

Completion of the MS degree typically requires two to three years; the PhD degree is generally completed in four to five years. Students who successfully complete a graduate degree in Pharmacology and Neuroscience will be well prepared for careers in academic and government research laboratories, as well as in the pharmaceutical/biotechnology industry.

Degree Plans

The following are typical degree plans for students in the Pharmacology and Neuroscience discipline. It is advantageous for the student to begin graduate study in a fall semester. Degree plans may vary depending upon availability of course offerings in a given semester and each student's progress toward thesis and dissertation research.

MS Degree Plan for Pharmacology and Neuroscience

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	1
BMSC 5960	Biomedical Ethics	1
<i>And either</i>		
PHRM 6699	Current Topics in Pharmacology	1
<i>or</i>		
PHRM 5940	Seminar in Current Topics	<u>1</u> 12
YEAR 1: SPRING		HOURS
BMSC 5010	Scientific Communications	3
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Principles of Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Laboratory Rotations	1
<i>And either</i>		
PHRM 6699	Current Topics in Pharmacology	1
<i>or</i>		
PHRM 5940	Seminar in Current Topics	<u>1</u> 14

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 5930	Individual Research for MS Students	<u>6</u> 6

YEAR 2: FALL		HOURS
BMSC 5950	Thesis	6

YEAR 2: SPRING		HOURS
BMSC 5950	Thesis	6

Total SCH 44

PhD Degree Plan for Pharmacology and Neuroscience

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Lab Rotations	1
BMSC 5960	Biomedical Ethics	1

<i>And either</i>		
PHRM 6699	Current Topics in Pharmacology	1
<i>or</i>		
PHRM 5940	Seminar in Current Topics	<u>1</u> 12

YEAR 1: SPRING		HOURS
BMSC 5010	Scientific Communications	3
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Principles of Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences IV: Immunology and Microbiology	3
BMSC 5935	Introduction to Faculty Research Programs	1
BMSC 5650	Laboratory Rotations	1

<i>And either</i>		
PHRM 6699	Current Topics in Pharmacology	1
<i>or</i>		
PHRM 5940	Seminar in Current Topics	<u>1</u> 14

YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics for BMSC	4
BMSC 5650	Laboratory Rotations (if necessary)	1
BMSC 6940	Individual Research	<u>1-2</u> 6

YEAR 2: FALL		HOURS
PHRM 6000	Functional Neuroscience	4
PHRM 6410	Basic and Clinical Pharmacology	4
BMSC 6940	Individual Research	1-4
	Electives*	<u>0-4</u> 12

YEAR 2: SPRING		HOURS
BMSC 6940	Individual Research	1-8
	Electives*	<u>1-8</u>
		12
YEAR 2: SUMMER		HOURS
BMSC 6940	Individual Research	6
	Qualifying Examination	<u>0</u>
		6
YEAR 3: FALL		HOURS
BMSC 6010	Grant Writing	3
BMSC 6940	Individual Research	3-8
	Electives*	<u>0-6</u>
		12
YEAR 3: SPRING		HOURS
BMSC 6950	Doctoral Dissertation	3-6
	Electives	<u>0-3</u>
		6
YEAR 3: SUMMER		HOURS
BMSC 6940	Individual Research	3
BMSC 6950	Doctoral Dissertation	<u>3</u>
		6
YEAR 4: FALL		HOURS
BMSC 6940	Individual Research	3
BMSC 6950	Doctoral Dissertation	<u>3</u>
		6
YEAR 4: SPRING		HOURS
BMSC 6950	Doctoral Dissertation	6
		<hr/>
Total SCH		98

*Elective courses must include 9 SCH in courses offered by the Department of Pharmacology and Neuroscience (below). Elective courses offered by other departments must also be taken, provided that the required electives in Pharmacology and Neuroscience are completed. Refer to the course offerings for other departments in this catalog. The successful completion of one of these courses is required before a student can take his/her oral examination

Courses offered each year:

PHRM 5200	Intracellular Calcium Signaling	1
PHRM 5900	Special Problems	3
PHRM 5910	Special Problems	3
PHRM 6000	Functional Neuroscience	4
PHRM 6050	Ocular Pharmacology	3
PHRM 6040	Neurobiological Basis of Neuropsychiatric Disorders	3

Courses offered "even" years:

PHRM 5070	Neuropharmacology	4
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Courses offered "odd" years:

PHRM 5100	Neurobiology of Aging	3
PHRM 5435	Molecular Aspects of Cell Signaling	4
PHRM 6080	Receptors and Drug Action	4

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination determines if the doctoral student has mastered information needed to succeed in the discipline of Pharmacology and Neuroscience. The student is required to demonstrate reasonable proficiency in the topics of pharmacology and neuroscience presented during the first two years of graduate study. An oral qualifying examination will be administered by a committee comprised of Pharmacology and Neuroscience graduate faculty, selected by the department chair and graduate advisor. The student's major professor may be present but will not participate in the examination. The initial phase of the qualifying examination consists of presentation of a published pharmacology and/or neuroscience journal article, approved by the graduate advisor and/or mentor with a subsequent question period. In the second phase of the examination, the student will be required to address questions on his/her knowledge of principles within the disciplines of pharmacology and neuroscience.

A maximum of two attempts to pass the qualifying examination will be allowed. A doctoral student who does not pass after the second attempt may be dismissed or allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

Successful completion of Grant Writing (BMSC 6010) requires the preparation and oral defense of an original NIH-style grant proposal. The student's doctoral advisory committee serves as the student's grant proposal committee. The graduate advisor and the student's major professor instruct the student on the regulations of the course and assist in initiating and preparing the proposal. The proposal must consist of the student's original ideas and is expected to significantly extend scientific knowledge in the chosen research area. The student will first submit a summary report, which presents the hypothesis, experimental strategy, and specific aims for the proposal to the examination committee within the first three weeks of the semester. Once the committee approves this summary, the student must then proceed to prepare a detailed written report of the research proposal in NIH format. The final proposal will be typed and presented to the committee at least two weeks prior to the oral defense. The student will present the proposal to faculty and graduate students. The grant proposal and presentation will be evaluated by the committee on the basis of originality and ability to organize and communicate information. A maximum of two attempts to pass will be allowed.

If the proposal and defense are satisfactory, the committee will recommend that the student be advanced to candidacy.

Physical Medicine

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The Physical Medicine Graduate program is an interdisciplinary program that offers both MS and PhD degrees. The goal of this program is to provide students with rigorous education and training in biomedical sciences with a specialty in Physical Medicine. The students will receive training through original research, formal

classroom education, problem-based learning, seminars, and journal clubs. The program includes faculty members from several departments. Our faculty members are engaged in various aspects of physical medicine research, including low back pain, carpal tunnel syndrome, temporomandibular joint disorders, whiplash, mid-carpal instability, evaluation of manipulative techniques, osteopathic manipulation and lymph flow, spinal mobilization and manipulation, determination of efficacy of treatments, objective characterization of low back pain and disability, gait, and mechanical properties of tendons and ligaments. The research projects employ state-of-the-art biomechanical, kinematic, electromyographic, and tissue testing techniques.

A major advantage of this program is that the students will have the freedom to choose faculty advisors from any department according to their research interests. In addition, students will be able to utilize the resources and expertise of faculty members with diverse background from several departments. During the first year, the students will acquire sufficient background in the basics of physical medicine. The students will have the opportunity to rotate in research laboratories in any department prior to selecting their thesis advisors. In the second year, the students will take advanced courses. The students will be able to select additional elective courses from any department based on their needs and interests. PhD candidates are admitted to candidacy after successful completion of their preliminary oral qualifying examinations and defense of an NIH-style research grant proposal. MS candidates are expected to graduate in 1.5 to 2 years, whereas PhD candidates may require 4 to 5 years to complete their degree.

The students ideally suited to enter the physical medicine graduate program will come with a degree from any of the following disciplines: medicine, osteopathy, chiropractic, physical therapy, occupational therapy, physiology, anatomy, and kinesiology. In some circumstances applicants from other disciplines may also be considered (e.g. psychology, biomedical engineering). However, a degree in any of the foregoing disciplines will not necessarily entitle students for admission, rather render them eligible for consideration. The final decision for acceptance of a student in graduate program will rest on the Graduate Advisory Council of Physical Medicine.

Degree Plans

The following are typical degree plans for students in the MS or PhD programs in the Physical Medicine discipline.

MS Degree Plan for Physical Medicine

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5650	Lab Rotation	2
BMSC 5960	Biomedical Ethics	<u>1</u>
		11
YEAR 1: SPRING		HOURS
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5010	Scientific Communications	3

BMSC 5940	Seminar in Current Topics	1
BMSC 6900	Special Problems	<u>1</u>
		10
YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics	4
BMSC 5930	Individual Research for MS	<u>2</u>
		6
YEAR 2: FALL		HOURS
CGEN 6000	Structural and Developmental Anatomy of the Musculoskeletal Skin System	3
BMSC 5150	Principles of Evidence-Based Medicine and Epidemiology	3
BMSC 5930	Individual Research for MS	4
BMSC 5940	Seminar in Current Topics	<u>1</u>
		12
YEAR 2: SPRING		HOURS
BMSC 5930	Individual Research for MS	3
BMSC 5950	Thesis	4
	Elective	<u>3</u>
		10
		Total SCH
		50

PhD Degree Plan for Physical Medicine

YEAR 1: FALL		HOURS
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5650	Lab Rotation	2
BMSC 5940	Seminar in Current Topics	1
BMSC 5960	Biomedical Ethics	<u>1</u>
		12
YEAR 1: SPRING		HOURS
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5010	Scientific Communications	3
BMSC 5940	Seminar in Current Topics	1
BMSC 6900	Special Problems	<u>3</u>
		12
YEAR 1: SUMMER		HOURS
BMSC 5200	Biostatistics	4
BMSC 5930	Individual Research for MS	<u>2</u>
		6
YEAR 2: FALL		HOURS
CGEN 6000	Structural and Developmental Anatomy of the Musculoskeletal Skin System	3
BMSC 5150	Principles of Evidence-Based Medicine and Epidemiology	3
SCBS 5350 (SPH)	Introduction to Research Methods	3
BMSC 5650	Lab Rotation	2
BMSC 5960	Biomedical Ethics	<u>1</u>
		12

YEAR 2: SPRING		HOURS
CGEN 6060	Clinical Human Anatomy	4
SBBS 6200		
(SPH)	Health Psychology	3
BIOS 5215		
(SPH)	Biostatistics	3
BMSC 6900	Special Problems	<u>2</u>
		12
YEAR 2: SUMMER		HOURS
BMSC 6940	Individual Research	3
BIOS 5740		
(SPH)	Introduction to Statistical Packages	<u>3</u>
		6
YEAR 3: FALL		HOURS
PSY 6720	Psychophysiological Processes	4
BMSC 6940	Individual Research	4
	Elective	3
	Journal Club/Current Topics course	2
	Qualifying Examination	<u>0</u>
		13
YEAR 3: SPRING		HOURS
BMSC 6940	Individual Research	6-8
BMSC 6010	Grant Writing	3
	Journal Club/Current Topics course	<u>1-3</u>
		12
YEAR 3: SUMMER		HOURS
BMSC 6940	Individual Research	6
YEAR 4: FALL		HOURS
BMSC 6940	Individual Research	3
BMSC 6950	Doctoral Dissertation	<u>3</u>
		6
YEAR 4: SPRING		HOURS
BMSC 6950	Doctoral Dissertation	6
Total SCH		96

Elective courses to be chosen by the student and approved by the graduate advisor.

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination is to ensure a doctoral student has sufficient mastery of fundamental principles of physical medicine and biomedical sciences to be successful as a PhD candidate and independent researcher. A list of major topics to be examined will be distributed to the student after the completion of the first year. The student is expected to become knowledgeable in each of these topics through coursework, individual reading, or discussions with faculty members. The qualifying examination will be administered by faculty members of the physical medicine program, and will consist of an oral examination. A student will answer a given set of questions within a given time. The student must demonstrate an ability to discuss and apply concepts of physical medicine. Two attempts to successfully pass the qualifying examination are allowed. Failure of the student to pass the qualifying examination results in

dismissal of the student from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

This stage of the advancement to doctoral candidacy will evaluate a student's aptitude for independent thought and scientific writing. The student is required to (a) prepare an NIH-style research proposal with/without the assistance of his/her major professor, (b) present the proposal in a public seminar, and (c) address specific questions of an examination committee. The proposal should be based on an original hypothesis that could be related but should be distinct from the major professor's funded research, and should describe specific experimental approaches to address the hypothesis. The student will present this proposal in the form of a public seminar and then privately address specific questions of an examination committee. The examination committee will consist of Physical Medicine faculty (4 members) appointed by the graduate advisor. The chairperson of the committee (appointed by the graduate advisor) will serve as coordinator and will meet with the student at the beginning of the semester to review guidelines and answer relevant procedural questions. The grant proposal and the student's oral presentation and defense will be evaluated on the basis of originality and ability to communicate the proposal content. Upon successful completion of this course, the student is advanced to doctoral candidacy. Two attempts to successfully pass the Grant Writing (BMSC 6010) are allowed. Failure of the student to pass the Grant Writing (BMSC 6010) results in dismissal of the student from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Primary Care Clinical Research

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The Primary Care Clinical Research program, administered by the Department of Family Medicine, is designed to provide select osteopathic medical students with the research training, experience, and mentoring necessary to pursue a career in clinical research or academic medicine.

The program offers research practica and mentoring in projects undertaken by many of the family medicine faculty, plus other collaborating investigators within the Texas College of Osteopathic Medicine, the Graduate School of Biomedical Sciences, and the School of Public Health.

At entry to medical school and throughout the medical curriculum, each student will establish collaborative research relationships with faculty members within the Department of Family medicine and other departments of the Health Science Center. These relationships will enable the student to become part of research teams working on various projects relative to family medicine, primary care, and osteopathic medicine.

As part of the program, students will complete the requirements for the Master of Science in the Graduate School of Biomedical Sciences. This program is offered to provide students with clinical research training pertinent to family medicine and other issues

involving primary care and osteopathic medicine. This degree affords students an opportunity to acquire the didactic training needed to complement their research practica.

The formal presentations and courses in the program are designed to give the student a knowledge base in clinical research design; evidence-based medicine; biostatistics and epidemiology, policies, procedures and compliance issues relevant to human subjects research and responsible conduct of research; scientific communications and writing; and educational methodologies for becoming an effective instructor.

Course Requirements

It is anticipated that a student will be able to complete the MS degree requirements within the four years allocated to medical school. Below is a list of the required courses:

Primary Care Clinical Research

REQUIRED COURSES	HOURS	
BIOS 5210	Biostatistics I (School of Public Health course)	3
BIOS 5215	Biostatistics II (School of Public Health course)	3
BMSC 5010	Scientific Communications	3
BMSC 5520	Ethical, Legal and Social Issues for Responsible Clinical Research	1
BMSC 5150	Principles of Evidence Based Medicine and Epidemiology	3
FMED 5540	Research Colloquium	3
FMED 5900	Special Problems in Clinical Research	3
BMSC 5950	Thesis	6
	Advanced Standing from TCOM	6
	Total SCH	31

Visual Sciences

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Adjunct Faculty: Fleenor, Jacobson, McCartney, Pang, Patil, Romano, Senchyna, Shepard

The graduate training program in Visual Sciences is designed to provide the students with knowledge, skills, and technical experience to prepare them for a research career in industry or academia. Students will undertake advanced courses in vision-related topics involving the normal structure and function of the eye and associated structures; and pathologies affecting these organs such as Age-Related Macular Degeneration (AMD), Glaucoma, Diabetic Retinopathy, Inherited Retinal Degenerations, Proliferative Retinal Diseases, and Cataracts. The students will also be involved in in-depth basic research training utilizing genetic, molecular, cellular, biochemical, physiological or pharmacological approaches in laboratories of university-affiliated vision experts in order to complete major requirements for master's or doctoral degrees. In order to accomplish these,

students are encouraged to acquire a broad based knowledge from various disciplines in the institution and laboratories which can then be applied towards vision research.

Like other interdisciplinary programs, the Visual Science Program is intended to provide the student with a repertoire of courses and training from various basic science disciplines. It is the responsibility of the student's mentor and advisory committee to direct the student to make the best choices among these courses and training in order to select those that will best fit the specific research project the student is interested in. To reflect this policy, at least 2 members of the advisory committee in addition to the mentor should be directly involved in eye or vision-related research. The advisory committee could include adjunct faculty from industry involved in eye research.

Degree Plans

The following are typical degree plans for students in the MS or PhD programs in the Visual Sciences Discipline. In both programs, students are required to take the Core Courses during their first year. At the end of the first year, they should have identified their mentor and an advisory committee and should have filed a degree plan with the graduate school. In general, MS students could complete their programs in 2 years while PhD students could graduate after 4 years, if they are able to satisfy the requirements on time.

MS Degree Plan for Visual Sciences

YEAR 1: FALL	HOURS	
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4
BMSC 5960	Biomedical Ethics	1
BMSC 5730	Current Topics in Glaucoma	1
CGEN 6050	Visual Science Seminar	1
BMSC 5935	Introduction to Faculty Research Programs	<u>1</u>
		12
YEAR 1: SPRING	HOURS	
<i>At least two of the following:</i>		
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3
<i>And</i>		
BMSC 5730	Current Topics in Glaucoma	1
CGEN 6050	Visual Science Seminar	1
CGEN 6699	Special Problems in Ocular Research	<u>2</u>
		12
YEAR 1: SUMMER	HOURS	
CGEN 6030	Methods in Molecular Biology (CGEN Advanced Course)	4
CGEN 6699	Special Problems in Ocular Research	<u>2</u>
		6
YEAR 2: FALL	HOURS	
BMSC 5950	Thesis	2
CGEN 6699	Special Problems: Introduction to Visual Sciences	3

CGEN 6050	Visual Sciences Seminar	1	BMSC 5730	Current Topics in Glaucoma	1
CGEN 6699	Special Problems in Ocular Research	2	CGEN 6040	Advances in Ocular Biology	2
BMSC 5730	Current Topics in Glaucoma	<u>1</u>	CGEN 6050	Visual Science Seminar	1
		9	CGEN 6080	Diseases of the Eye	3
			CGEN 6699	Special Problems in Ocular Research	<u>2</u>
					12
YEAR 2: SPRING		HOURS	YEAR 2: SUMMER		HOURS
BMSC 5950	Thesis	2	BMSC 5200	Biostatistics for BMSC	4
BMSC 5965	Introduction to Industry Practice	1	CGEN 6699	Special Problems: Introduction	
CGEN 6040	Advances in Ocular Biology	2		to Bioinformatics	2
BMSC 5730	Current Topics in Glaucoma	1		Qualifying Examination	<u>0</u>
CGEN 6050	Visual Sciences Seminar	1			6
CGEN 6080	Diseases of the Eye	<u>3</u>			
		10	YEAR 3: FALL		HOURS
			BMSC 6010	Grant Writing	3
			BMSC 6940	Individual Research	2
			BMSC 5730	Current Topics in Glaucoma	1
			CGEN 6040	Advances in Ocular Biology	2
			CGEN 6050	Visual Sciences Seminar	1
			PHRM 6050	Ocular Pharmacology	<u>3</u>
					12
			YEAR 3: SPRING		HOURS
			BMSC 6940	Individual Research	1
			BMSC 5730	Current Topics in Glaucoma	1
			CGEN 6050	Visual Sciences Seminar	1
			CGEN 6040	Advances in Ocular Biology	2
			Electives		<u>2</u>
					7
			YEAR 3: SUMMER		HOURS
			BMSC 6940	Individual Research	6
			YEAR 4: FALL		HOURS
			BMSC 6950	Doctoral Dissertation	4
			BMSC 5730	Current Topics in Glaucoma	1
			CGEN 6050	Visual Sciences Seminar	<u>1</u>
					6
			YEAR 4: SPRING		HOURS
			BMSC 6950	Doctoral Dissertation	4
			BMSC 5730	Current Topics in Glaucoma	1
			CGEN 6050	Visual Sciences Seminar	<u>1</u>
					6
			Total SCH		96
PhD Degree Plan for Visual Sciences					
YEAR 1: FALL		HOURS			
BMSC 5600	Integrative Biomedical Sciences I: Principles of Biochemistry	4			
BMSC 5610	Integrative Biomedical Sciences II: Molecular Cell Biology	4			
BMSC 5650	Lab Rotations	1			
BMSC 5960	Biomedical Ethics	1			
BMSC 5730	Current Topics in Glaucoma	1			
CGEN 6050	Visual Sciences Seminar	<u>1</u>			
		12			
YEAR 1: SPRING		HOURS			
	<i>At least two of the following:</i>				
BMSC 5700	Integrative Biomedical Sciences III: Physiology	3			
BMSC 5705	Integrative Biomedical Sciences IV: Pharmacology	2			
BMSC 5710	Integrative Biomedical Sciences V: Immunology and Microbiology	3			
	<i>And</i>				
BMSC 5650	Lab Rotations	1-2			
CGEN 6050	Visual Science Seminar	1			
BMSC 5730	Current Topics in Glaucoma	1			
CGEN 6699	Special Problems in Ocular Research	<u>2-3</u>			
		12			
YEAR 1: SUMMER		HOURS			
CGEN 6030	Methods in Molecular Biology	4			
CGEN 6699	Special Problems in Ocular Research	<u>2</u>			
		6			
YEAR 2: FALL		HOURS			
BMSC 5010	Scientific Communications	3			
BMSC 6940	Individual Research	4			
BMSC 5730	Current Topics in Glaucoma	1			
CGEN 6699	Special Problems: Introduction				
	to Visual Sciences	3			
CGEN 6050	Visual Science Seminar	<u>1</u>			
		12			
YEAR 2: SPRING		HOURS			
BMSC 5965	Introduction to Industry Practice	1			
BMSC 6940	Individual Research	2			

Advanced courses offered by various disciplines can be used as electives. The advisory committee will advise the student on the courses that would best fit his/her program.

Advancement to Doctoral Candidacy

Qualifying Examination

The qualifying examination within the discipline of Visual Sciences must be successfully completed prior to concluding 72 semester credit hours (SCH). The main goal of the examination is to ensure that each doctoral student has a broad knowledge base and has mastered the fundamental principles of biomedical sciences. The qualifying examination consists of written and oral phases. The examination will be directed mainly towards the didactic coursework of the student but understanding of general research techniques in biomedical research

will be included. The student is expected to become knowledgeable in these areas via individual reading of textbooks and scientific literature, coursework, seminar attendance, and/or journal club discussions. Successful completion of the qualifying examination must be accomplished before the student can register for Grant Writing (BMSC 6010). During the first month of the semester in which the examination is to be taken, the student will submit a written request and meet with the graduate advisor for Visual Sciences to discuss the format of the examination. The initial phase of the qualifying examination consists of a set of written questions administered by an Examination Committee (EC) appointed by the graduate advisor. The student's major professor may not sit on the EC. The student may meet with members of EC prior to the examination to discuss the topics and the examination schedule. Each examination answer will be graded independently by at least two EC members who are experts in the subject area. Within 4 weeks of passing the written examination, the chair of the EC will schedule the oral examination. The oral examination will consist of questions that further explore the student's answers in the written examination, as well as questions on additional topics deemed appropriate by the EC. The student's major professor may be present during the oral examination but will not participate in the examination or vote on the outcome. A university committee member must be in attendance for the oral phase of the examination. The qualifying examination will be graded on a Pass/Fail basis. In the written examination, 70% or higher comprises a passing grade. A student who passes both phases will receive a passing mark while failure in both phases will result in a failing mark. A student must pass the written portion before proceeding to the oral part of the examination. A student who passes the written phase but fails the oral phase will be required to retake the oral portion. Two attempts to pass the qualifying examination will be allowed. Failure to pass the qualifying examination after 2 attempts will result in dismissal from the doctoral program. In this case, a student may be allowed to complete the requirements for a Master of Science degree.

Grant Writing (BMSC 6010)

After passing the qualifying examination, but prior to the completion of 84 SCH, the student must register for Grant Writing (BMSC 6010). This stage of the advancement to doctoral candidacy evaluates a student's aptitude for independent thought and scientific writing. The student is required to (a) prepare an NIH-style research proposal, (b) present the proposal in a public seminar, and (c) orally defend the proposal before the student's doctoral advisory committee. The proposal should be based on an original hypothesis and should describe specific experimental approaches to address the hypothesis. The graduate advisor will appoint a chair from the student's advisory committee to coordinate the process. The student will meet with the committee at least 2 times during the semester to review drafts of the proposal. The final written proposal must be typed in NIH format and presented to the committee at least 2 weeks prior to the public seminar and oral defense. The grant proposal and the student's oral presentation and defense will be evaluated on the basis of originality and ability to synthesize and communicate the proposal content. The student's major professor may be present but will not participate in the process nor vote on the outcome. The student's university member must be present for the public seminar and oral defense of the proposal. Upon successful completion of Grant Writing (BMSC 6010), the student is advanced to doctoral candidacy. Two attempts to successfully complete the Grant Writing (BMSC 6010) defense will be allowed. Failure to pass Grant Writing (BMSC 6010) will result in dismissal from the doctoral program in Visual Sciences. In this case, a

student may be allowed to complete the requirements for a Master of Science degree.

Course Descriptions

Prerequisite requirements may be waived on an individual basis as determined by department. All courses require permission of the course director for enrollment.

Biomedical Sciences (BMSC)

5000. Introduction to Concepts in Biomedical Science.

2 SCH. Course designed for undergraduate participants in the summer research programs with emphasis on data collection, analysis and presentation in the areas of physiology, pharmacology, microbiology, molecular biology, anatomy and cell biology. Offered each Summer.

5010. Scientific Communications.

3 SCH. The purpose of this course is to develop skills and gain experience in the types of scientific writing required for: submitting articles for publication; grant applications; preparing presentations for lectures and seminars; preparing posters for meetings. Offered Fall and Spring semesters.

5100. Clinical Practice Preceptorship.

2 SCH. The goal of this course is to provide exposure to clinical practice conducted by osteopathic physicians and educational experiences within the private sector emphasizing the totality of community-based family practice. A preceptor will be assigned to each student. This course is open only to students in the medical science discipline. Offered each Summer.

5130. Structure and Function of the Eukaryotic Chromosome.

2 SCH. Current publications in the general area of chromosomal structure and function in mammalian cells will be discussed in the journal club format. Students are required to participate in the presentation and discussion of current articles related to chromatin structure, nucleosomes, histone proteins, metaphase chromosomes, telomeres, centromeres, nuclear matrix, nuclear pores, nucleolus, nuclear envelope, nuclear laminas, DNA replication, transcription, DNA damage and repair, ribonucleoprotein particles, splicesomes, and macromolecular interactions in heterochromatin and euchromatin (interphase chromatin). Offered each Spring.

5150. Principles of Epidemiology and Evidence-based Medicine.

3 SCH. This course is intended to introduce students to the fundamental elements of epidemiology, with relevant emphasis on clinical applications and evidence-based medicine. The course consists of lectures, biomedical journal article discussions, student presentations, and other activities as assigned. Lectures emphasize the basic concepts of epidemiology and clinical research design, and their applications to clinical medicine and public health. Biomedical journal articles emphasize the practical application of concepts covered in lectures. Group presentations provide students an opportunity to enhance their communication skills, while also demonstrating mastery of course content. Offered each Fall.

5200. Biostatistics for Biomedical Sciences.

4 SCH. Statistical methods and experimental design; descriptive statistics; data presentation; parametric and non-parametric methods of hypothesis testing including two-sample tests, analysis of variance, regression and correlation analyses; introduction to multivariate statistics. Competency with computer statistical packages is developed. Offered each Summer.

5300. Tools for Teaching Science.

2 SCH. Workshop format to prepare students to serve as resources and teachers in secondary schools. Offered each Summer.

5310. Evaluation & Instruction in Teaching.

3 hours. A distributed learning course designed to provide students with an overview of the teaching-learning process as it relates to the systematic design and assessment of instruction and student learning in graduate health professions education. Offered each semester.

5320. Issues in Higher Professional Education.

1 SCH. A distributed learning course designed to provide students with an overview of the institutional and leadership issues that create the environment for instruction and curricula implementation in graduate health professions education. Offered each semester.

5400. Regulation of Human Subject Research.

2 SCH. Regulations, policies and procedures associated with the conduct of human subjects research will be presented both from historical and contemporary perspectives. Principles and practi-

cal aspects of research involving human subjects will be described, including operational training in protocol development. Case studies will be presented and relevant Institutional Review Board processes will be explored. Prerequisite: BMSC 5960 preferred. Offered each Fall and Spring.

5500. Topics in Biomedical Sciences.

2 SCH. This course is an introduction to the core integrated biomedical sciences curriculum required for all first-year biomedical sciences graduate students at the Health Science Center. It is not intended to be all-encompassing or comprehensive, but it does aim to provide the student with an overview of some seminal concepts in areas ranging from biochemistry to pharmacology and neuroscience. It will become apparent at the conclusion of the course, if not before, that division of biomedical science into traditional disciplines is no longer valid, because, as future scientists, students must become familiar with basic information that transcends all subjects. The goal of this course is to start the student on the path toward the integration of certain important concepts into his/her learning and understanding regardless of final choice of discipline. Offered each Summer.

5510. Introduction to Clinical Research and Studies.

3 SCH. Course covers drug development process, ethical and scientific principles of clinical research, clinical trial preparation, study design, informed consent forms, clinical coordinator responsibility and regulatory considerations. Conducting clinical trials from initiation to implementation. Offered each Spring.



5520. Ethical, Legal, and Social Issues for Responsible Clinical Research.

1 SCH. Regulations involved with human subject research will be discussed both from an historical and contemporary perspective. Case studies will be presented and students will attend an Institutional Review Board meeting. Offered each Spring.

5530. Introduction to Health Disparities Issues in the United States

2 SCH. An examination of the disparities and issues surrounding the treatment of several health problems in the United States, particularly as related to minority populations. Each health condition is approached from the clinical, cultural and scientific aspect so that the student will understand the etiology and treatment of the disease, the cultural characteristics of various populations that may contribute to the disproportionate presence of the disorder in a particular population, and the underlying science involved with each health problem. The latter understanding will aid the student to better approach research, both in the clinical and basic science venues, directed towards better management of the health problems. Offered each Fall.

5540. Introduction to Laboratory Techniques for Biomedical Sciences.

2 SCH. An introduction to basic laboratory techniques used in the biomedical science disciplines. Topics include lab safety and biochemical calculations, buffers and detergents, principles of centrifugation and spectrophotometry, working with proteins, and molecular and cell signaling applications. Offered each Fall; limited enrollment.

5550. Laboratory Management.

2 SCH. This course will introduce students to the tools businesses use everyday to increase efficiency, improve operations, and succeed. These tools can be used in the laboratory to improve turn-around time, lower costs, introduce new testing services, and help to increase quality. There are no prerequisites for this course, however a financial calculator is strongly recommended. Offered each Fall and Spring semester.

5600. Integrative Biomedical Sciences I: Principles of Biochemistry.

4 SCH. A broad introduction to the fundamentals of biochemistry, especially those relating to thermodynamics, molecular pathways and regulation. Discussion of important techniques that contribute to our present understanding of biochemistry. Offered each Fall. Prerequisite: Concurrent enrollment in BMSC 5600 or consent of the department.

5610. Integrative Biomedical Sciences II: Molecular Cell Biology.

4 SCH. The fundamentals of cell and molecular biology, concentrating on understanding of the experimental basis of these disciplines as well as the current state of knowledge. Offered each Fall. Prerequisite: Concurrent enrollment in BMSC 5610 or consent of the department.

5650. Laboratory Rotations.

1 SCH. Designed to allow first-year graduate students an opportunity to work in a particular research laboratory on activities directed by the instructor in order to become acquainted with the research and laboratory environment before selecting a mentor. Prerequisite: instructor consent. Offered each semester.

5700. Integrative Biomedical Sciences III: Physiology.

3 SCH. Emphasis on integrative physiology of human organ systems. Offered each Spring. Prerequisites: BMSC 5600, BMSC 5610 or consent of the department.

5705. Integrative Biomedical Sciences IV: Pharmacology.

2 SCH. Emphasis on fundamental principles of pharmacology that include pharmacodynamics, pharmacokinetics, ligand-receptor interactions and their consequent biological effects. Offered each Spring. Prerequisites: BMSC 5600, BMSC 5610 or consent of the department.

5710. Integrative Biomedical Sciences IV: Immunology and Microbiology.

3 SCH. A general exploration of basic concepts of immunology, microbiology and virology including study of genomics, proteomics and gene therapy. Offered each Spring. Prerequisites: BMSC 5600, BMSC 5610 or consent of the department.

5720. Novel Macromolecules that Regulate the Cell Cycle.

2 SCH. This course focuses on the cellular signaling pathways involved in endogenous active peptides interacting with their receptors. In particular, ocular peptides that may have a role in normal homeostatic function and pathophysiology of the eye are featured. Prerequisites: 5600, 5610, 5700, and 5710.

5730. Current Topics in Glaucoma.

2 SCH. Course reviews and emphasizes current research articles in glaucoma-related fields. Students are required to participate in presentation and discussion of current articles. Faculty and research staff members may participate in presentations. Offered each semester.

5900-5910. Special Problems.

1-3 SCH each. For master's students capable of developing a finite problem independently through conferences and activities directed by the instructor. Problem chosen by the student with the consent of the instructor. May be repeated for credit. Offered each semester.

5920. Internship Practicum.

6 SCH. The candidate must complete an internship at an approved site. At the completion of the practicum, the student will write a report detailing the activities of the internship. A copy of the report must be submitted within the appropriate deadlines to the graduate school according to the guidelines for completing the requirements for graduation. Offered each semester.

5930. Individual Research.

1-12 SCH. Master's-level research of independent nature. A maximum of 12 SCH allowed toward degree. Offered each semester.

5935. Introduction to Faculty Research Programs.

1 SCH. This course is designed to introduce new graduate students to the research programs conducted by the faculty of the Graduate School of Biomedical Sciences. It is also expected that this exposure will promote student-faculty interactions and introduce students to participation in oral scientific presentations and preparation of written reports and manuscripts. This course is graded on a pass/fail basis. Offered each Fall and Spring.

5940. Seminar in Current Topics.

1 SCH. Student will attend 15 lectures of current interest presented by students and/or invited speakers throughout the institution. Attendance is mandatory. May be repeated for credit. Offered Fall and Spring.

5950. Thesis.

3-6 SCH To be scheduled only with consent of department. 6 SCH required. No credit assigned until thesis has been completed and filed with the graduate dean. Continuous enrollment required once work on thesis has begun. Prerequisite: Approved thesis research proposal. May be repeated for credit. Offered each semester.

5960. Biomedical Ethics.

1 SCH. Covers major ethical issues in biomedical sciences, including: authorship and intellectual property; conflict of interest; data selection/research design; privacy and confidentiality; discrimination and sexual harassment; misconduct and whistle-blowing; animals in research; human subjects in research; implication of funding sources for research. Offered each Fall.

5965. Introduction to Industry Practices.

1 SCH. Introduction to the practice of industry science with an emphasis on good laboratory practice, new drug applications, FDA regulations, clinical trials and biotechnology transfer. Course graded on pass/fail basis. Offered each Spring.

5970. Techniques in Biomedical Sciences.

1-2 SCH (varies by technique chosen). A practical course in techniques. Students will participate in laboratories demonstrating up-to-date techniques in biomedical sciences. A listing of the techniques of participating laboratories is available in the schedule of classes. Offered each semester.

6010. Grant Writing.

3 SCH. Demonstration of competence in a specific area of biomedical science as evidenced by writing, presenting and defending an NIH grant application. Attendance at a grant writing workshop held by the graduate school is required. Must be undertaken prior to the completion of 84 SCH. Prerequisite: Successful completion of a discipline-based qualifying examination. This course is graded Pass/Fail. Offered each semester.

6900-6910. Special Problems.

1-3 SCH each. For doctoral students capable of developing a problem independently through conferences and activities directed by the instructor. Problem chosen by the student with the consent of the instructor. May be repeated for credit. Offered each semester.

6940. Individual Research.

1-12 SCH. Doctoral research of independent nature. A maximum of 24 SCH allowed toward degree. Offered each semester.

6950. Doctoral Dissertation.

3, 6 or 9 SCH. To be scheduled with consent of department. A maximum of 12 SCH allowed toward degree. No credit assigned until dissertation has been completed and filed with the graduate office. Doctoral students must maintain continuous enrollment in this course subsequent to passing qualifying examination for admission to candidacy. Prerequisite: Approved dissertation research proposal. May be repeated for credit. Offered each semester.

Biochemistry and Molecular Biology (BIOC)**5425. Advanced Biochemistry.**

4 SCH. Topics include structure and function of nucleic acids and proteins, lipids, carbohydrates and regulation of metabolism. Tools for structural studies will be considered and current research reports in this area will be discussed. Prerequisites: BMSC 5600, 5610, 5700 and 5710. Offered each Spring.

5435. Molecular Aspects of Cell Signaling.

4 SCH. Advanced study of signal transduction events from the plasma membrane to the nucleus. Topics include receptor activation, the generation of second messengers and eukaryotic transcriptional activation and repression. Prerequisites: BMSC 5600, 5610, 5700 and 5710. Offered every other Fall (odd years).

5510. Signal Transduction.

2 SCH. Current publications in the general area of receptor-signal transduction will be discussed in the journal club format. Students are required to participate in presentation and discussion of current articles. Offered each Fall and Spring.

5520. Enzyme Regulation and Mechanism.

2 SCH. Current topics in the areas of Enzyme Mechanism and Regulation will be discussed, based on student and faculty presentations of literature articles. Offered each Spring.

5530. Structure and Function of Proteins.

2 SCH. Topics will include the isolation of proteins from tissue, their structural and functional characterization, effects of natural and synthetic mutants on the structure, stability and function of proteins. Offered each Fall.

5540. Advanced Lipoprotein Metabolism.

2 SCH. Presentation and discussion of recent research findings and literature reports in lipoprotein metabolism and related areas. Offered each Fall and Spring.

5560. Current Topics in Cancer Biology.

1 SCH. Course reviews and emphasized current research articles in cancer-related fields including apoptosis, cell cycle regulation, and metastasis. Students are required to participate in presentation and discussion of current articles. Faculty and research staff members may participate in presentations. Offered each semester.

5900-5910. Special Problems.

1-3 SCH each. For students capable of developing a problem independently through conferences and activities directed by the instructor. Problem chosen by the student with consent of the instructor and department. May be repeated for credit. Offered each semester.

5920. Seminar in Cell Motility.

1 SCH Review of the current literature in muscle contraction, ciliary movement, microfilaments and actin-binding proteins, microtubules and microtubule-associated proteins, intermediate filaments, non-muscle motility, the organization of the cytoskeleton and the novel biochemical and biophysical techniques. Offered each Fall and Spring.

5940. Seminar in Current Topics.

1 SCH. Specialized weekly lectures on topics of current interest by students, faculty and/or invited speakers. May be repeated for credit. Offered Fall and Spring.

6020. Cellular and Molecular Fluorescence.

2 SCH. Basic and advanced topics of fluorescence spectroscopy and microscopy of biological objects. Students attend lecture and laboratory. Prerequisite: BMSC 5600 and BMSC 5610. Offered each Spring.

6040. Molecular Biology of Lipid Transport.

2 SCH. Steroid-mediated regulation of gene expression, molecular function of lipoproteins. Emphasis on discussion of assigned readings and student presentations of literature articles. Prerequisites: BMSC 5600, 5610, 5700, 5710. Offered each Spring.

6050. Molecular and Cell Biology of Cancer.

2 SCH. Emphasis on cancer; initiation, promotion and progression — apoptosis/caspases, angiogenesis, oncogenes and tumor suppressors, adhesion molecules; tumor immunology and metastasis. Course format will consist of brief lecture, discussion of assigned readings, and student presentations of literature articles. Prerequisites: BMSC 5600, 5610, 5700, 5710. Offered each Spring.

6060. Advanced Biophysics.

3 SCH. Proteins, nucleic acids, bioenergetics and photosynthesis, electrophysiology, thermodynamics, topics in cell biophysics (including muscle and contractility, membrane proteins, channels, receptors and transporters) and biophysical methods (including x-ray crystallography, diffraction and scattering, magnetic resonance, spectroscopy and hydrodynamics) will be addressed. Special attention will be given to skeletal muscle. Prerequisites: BIOC 5010, 5520 and 5530. Offered on demand.

6070. Drug Discovery and Design.

2 SCH. Introduction to combinatorial chemistry, multi-compound based technologies, and their use in screening bioassays to discover lead compounds. Concepts of design and synthesis of compound libraries, pharmacological assay development, instrumentation, data interpretation, biological target selection, lead optimization, structure-based drug design and drug-likeness will be discussed. Prerequisite: Undergraduate general and organic chemistry or equivalent (instructor approved).

6300. Advanced Molecular Biology.

2 SCH. Part one of this course is offered in odd years and focuses on modern molecular biology techniques and their background/theory. Part two of this course is offered in even years and consists of lectures on in-depth coverage of eukaryotic gene regulation and student presentation/discussion of current publications in related topics. Crosslisted with MICR 6300. Prerequisites: BMSC 5600 and 5610.

Cell Biology and Genetics (CGEN)**5000. Structural Neuroscience.**

6 SCH. A complete study of the structure and function of the human nervous system utilizing basic principles of neuroanatomy, neurohistology, and neurophysiology. Laboratory activities will require students to participate in gross dissections of the brain and spinal cord. This integrated approach will provide the student with a fundamental understanding of the basic concepts of neuroscience. The course will consist of both lectures and labs related to the functioning of the normal and diseased nervous system. Prerequisites: BMSC 5600, 5610, 5700, 5710. Offered each Fall.

5010. Structural Anatomy.

7 SCH. A study of the gross morphological and histological structures of the human body (excluding those areas taught in CGEN 5000 and 6000). Lecture material and dissections in the gross anatomy laboratory are organized by systems. The course begins with study of the Cardiorespiratory system, then followed by the Digestive system, and ends with the study of the Genitourinary system. Students will explore the embryology, histology, and anatomy of these particular system in full. Laboratory activities will require students to participate in gross dissections of the thorax, abdomen, pelvis, and perineum. In addition, both lecture and laboratory sessions will emphasize clinical significance. Prerequisites: Must have taken or currently be enrolled in BMSC 5600, 5610, 5700, and 5705. Offered each Spring.

5015. Embryology and Developmental Biology.

3 SCH. This course consists of lectures and laboratory sessions and will include the development of a research project related to embryology and developmental biology. This course is designed to provide the necessary foundation for graduate students in biomedical science

through discussion and thorough literature searches regarding current topics in the field. The students will learn the basic language of embryology and the fundamental concepts of the ever-growing field of developmental biology. By the end of the course, students will be able to 1) understand the developmental pathways of the embryo, 2) know how all organs develop, and 3) understand the genetics of development and the effects of mutation of genes during human development. Prerequisites: BMSC 5600, 5610, plus two of the following: BMSC 5700, 5705 and 5710. Offered alternating spring semesters.

5020. Structural and Developmental Anatomy of the Human Genitourinary System.

3 SCH. Designed to familiarize the student with the development and the gross and microscopic structures of the human genitourinary system. Lecture materials on the gross and histological morphology of the organs and structures associated with the human genitourinary system will be supported by detailed dissections of those structures in human cadavers. Completion of a mentor-directed research project utilizing knowledge of the genitourinary system and dissection skills acquired in the laboratory is required. Offered each spring. Requires prior approval from course director.

5025. Basic and Clinical Histology.

3 SCH. This course consists of lectures and laboratories sessions and will include presentations by students on current clinical correlations related to histology. This course is aimed at providing a basic working concept of human histology that can be used by the graduate student as a foundation for research and to encourage an appreciation for and comprehension of the clinical aspects of tissue and organ systems. Students will be expected to 1) understand the 3-dimensional orientation of tissues and the specific stains that are used to label cell components, 2) acquire a basic skill level and appreciation of tissue and cell preparation for light and electron microscopic investigations, and 3) examine and photograph tissue sections with the light and electron microscope. Prerequisites: BMSC 5600, 5610, plus two of the following: BMSC 5700, 5705 and 5710. Offered alternating spring semesters (even years).

5030. Structural and Developmental Anatomy of the Human Cardiorespiratory System.

3 SCH. Designed to familiarize the student with the development and the gross and microscopic structures of the human cardiorespiratory system. Lecture materials on the gross and histological morphology of the human cardiovascular and respiratory organs and associated structures will be supported by detailed dissections of those structures in human cadavers. Completion of a mentor-directed research project utilizing knowledge of the cardiorespiratory system and dissection skills acquired in the laboratory is required. Offered each spring. Requires prior approval from course director.

5040. Structural and Developmental Anatomy of the Human Digestive System.

3 SCH. Designed to familiarize the student with the development and the gross and microscopic structures of the human digestive system. Lecture materials on the gross and histological morphology of the organs and structures associated with the human digestive system will be supported by detailed dissections of those structures in human cadavers. Completion of a mentor-directed research project utilizing knowledge of the digestive system and dissection skills acquired in the laboratory is required. Offered each Spring. Requires prior approval from course director.

5050. Methods in Forensic Molecular Biology.

4 SCH. An intensive laboratory course designed to give student experience and expertise in the basic molecular biology techniques currently utilized in forensic DNA analysis. Techniques will include multiple methods of extraction of nucleic acids from various sources; DNA quantitation methods; design and process of PCR amplification; agarose gel electrophoresis; capillary electrophoresis theory and methods; analysis of microsatellite DNA; mitochondrial DNA sequencing and analysis; single nucleotide polymorphism analysis methods. Offered each Summer.

5060. Forensic Biology: The History and Science of Human Identification.

2 SCH. This course is open to all graduate students but is specifically intended for first year students in the Forensic Genetics program. There are no prerequisites, but familiarity with concepts in immunology protein biochemistry and genetics are helpful. The focus of this course is to familiarize the student with the science and history of human identification and analysis of biological evidence prior to the advent of PCR-STR analysis. The course will cover the use of science to analyze evidence associated with crimes from the early 19th to the later part of the 20th century. Topics to be covered include identification and speciation of bloodstains, forensic serology and bloodtyping, electrophoretic analysis of serum proteins and red cell alloenzymes, the science and genetics of fingerprint identification, anthropometry and the Bertillon system of personal identification, RFLP DNA Analysis, and the early use of PCR technology. This course will not only cover the science and development of the various analytical methods and assays used, but will also cover the first use of those technologies in crime solving and the criminal justice system. This course will also be used to serve as an introduction to concepts in population genetics, electrophoresis, immunology, molecular biology, criminal investigations, and the intersection of law and science that students will need in their future coursework and careers. Offered each Spring.

5100. Biological Evidence Evaluation.

4 SCH. Course topics include collection and preservation of biological evidence, chain of custody, evidence screening for biological components (blood, seminal fluid, saliva, hairs, etc.), presumptive and confirmatory testing, and an overview of historical testing procedures. Training will also include DNA extraction procedures, RFLP, ASO and STR analysis. Prerequisites: CGEN 5050, concurrent enrollment in CGEN 5310. Offered each Fall.

5101. The Applications of Y-Chromosome Analysis in Forensic and Genealogical Investigations.

2 SCH. This course is specifically designed as an elective for second-year students in the Forensic Genetics discipline. The purpose of this course is to introduce the student to the specialized field of Y chromosome analysis and its use in human molecular identity testing. Lecture material will include the following: biology, evolution and genetics of the Y chromosome, Y STR and Y SNP genetic markers, use of the Y chromosome in evolutionary, anthropological and forensic studies, statistical interpretation of Y-chromosome test results, and validation of Y STR kits in forensic testing laboratories. The laboratory portion of this course will be concurrent with the laboratory portion of CGEN 5100. It will include the DNA extraction of mock case samples that would be appropriate for Y STR testing, PCR amplification, and genetic analysis of those samples using commercially available Y STR kits. Offered each Fall. Prerequisites: CGEN 5050, concurrent enrollment in CGEN 5100.

5200. Expert Testimony in Forensic Science.

3 SCH. This course is intended to provide students with training in forensic testimony in the courtroom. Students will be required to provide testimony in a moot court setting. Discussions of admissibility standards, visual aids and trial preparation will be covered. Offered each Spring.

5300. Population Genetics.

3 SCH. Course topics will include the evaluation and characterization of genetic and phenotypic variation, population substructure, selection and random drift models, molecular processes of genetic change, quantitative genetics, and processes and modes of speciation, and organismal zoogeography. Offered each Spring.

5310. Genetic Data Analysis.

4 SCH. Methodological approaches to evaluating genetic data for population analysis, phylogenetic analysis, and genetic evaluation of quantitative trait loci. Emphasis on the statistical evaluation of microsatellite DNA, SNP panels and DNA sequences as applied to forensic DNA evaluations. Several software packages will be utilized for processing diploid and haploid genetic data sets. Offered each Fall. Prerequisite: CGEN 5300 or prior approval from course director.

5400. Non-Human Forensic Genetics.

1-3 SCH. Course content and methods discussed will concentrate on identification of biological evidence that is from non-human sources. Emphasis on biological methods for identifying and individualizing materials from microbial, botanical and vertebrate organisms of economic and environmental concern. Prerequisite: CGEN 5300. Offered every other Summer 2 semester (even years).

5500. Forensic Laboratory Quality Assurance.

1 SCH. Principles of quality assurance, current industry standards for quality systems in forensic DNA and other forensic disciplines. Creating, maintaining and improving quality systems.

5600. Current Topics in Forensic and Molecular Genetics.

1 SCH. Seminar course in which new and advanced methods in the genetic evaluation of biological forensic evidence will be discussed to expand the training of students in the Forensic Genetics program and students interested in clinical genetics. Topics to be discussed will include statistical analysis, microarray technology, bioinformatics, genomics and legal testimony. Offered each Fall and Spring.

5700. Forensic Hair Analysis.

1 SCH. Introduction to the microscopic analysis of hair for forensic evidence evaluation. Offered each Spring.

5800. Blood Spatter Pattern Analysis.

1 SCH Introduction to the analysis of blood spatter patterns for forensic evidence and crime scene evaluation. Offered each Spring.

5900-5910. Special Problems.

1-3 SCH each. For students capable of developing a problem independently through conferences and activities directed by the instructor. Problem chosen by the student with the consent of the instructor and department. May be repeated for credit. Offered each semester.

5940. Seminar in Current Topics.

1 SCH. Specialized weekly lectures on topics of current interest by students, faculty and/or invited speakers. May be repeated for credit. Offered Fall and Spring.

5950. Forensic Anthropology.

3 SCH. Human identification techniques with emphasis on identification from human skeletal remains. Fundamental biology of osseous and dental tissues; forensic botany and entomology; genetics of human variability; serotyping; HLA typing; analysis of hair and dermatoglyphic lines; DNA fingerprinting. Offered each Spring.

6000. Structural and Developmental Anatomy of the Musculoskeletal/Skin System.

3 SCH. A course designed to familiarize the student with the development and gross and microscopic structures of the human musculoskeletal/skin system. Lecture materials on the gross and histological morphology of human muscles and skin and associated bones, nerves, arteries, veins, ligaments and tendons will be supported by detailed dissections of those structures on human cadavers. Completion of a mentor-directed research project utilizing knowledge of musculoskeletal/skin system and dissection skills acquired in the laboratory is required. Offered each Fall. Requires prior approval from course director.

6020. Functional Genomics and Proteomics.

3 SCH. The purpose of this course is to introduce students to concepts and methods used in defining a database of tissue specific and disease specific protein expression. Topics to be discussed include: 1) genome mining; 2) transcriptome mining and validation; 3) proteome mining by 2-dimensional gel electrophoresis, mass spectrometry and protein chips; 4) protein structure determination; 5) protein structure prediction based on gene sequence; 6) protein function prediction and analysis; 7) protein-protein interactions; and 8) protein localization. Cross-listed with PSIO 6010. Offered each Spring.

6030. Methods in Molecular Biology.

4 SCH. An intensive laboratory course designed to give students the expertise to perform basic techniques currently utilized in cell and molecular biology. Techniques will include plasmid preparation; isolation of cDNA inserts from various plasmids; extraction of nucleic acids; agarose gel electrophoresis; Northern and Southern blot analyses; cDNA cloning; sequencing and analysis; PCR amplification; protein gel electrophoresis; and immunoblot analysis. Prerequisite: graduate-level biochemistry. Offered each Summer.

6040. Advances in Ocular Biology.

2 SCH. Emphasis is on the current literature and contemporary approaches dealing with current topics in ocular biology. Each year will focus on one or several research and/or clinical areas. Offered every other Fall (odd years).

6050. Visual Sciences Seminar.

1 SCH. A monthly presentation by a visiting distinguished visual scientist. The seminar will be preceded by a journal check where articles relating to the seminar will be discussed. Offered each Fall and Spring.

6060. Clinical Human Anatomy.

4 SCH. An online (distributed learning) anatomy course offered through WebCT Vista. This course will have laboratories based on digital images taken from cadavers in the anatomy facilities. The course is divided into eight regions and topics covered will include the following: 1) back and suboccipital triangle; 2) upper extremity; 3) lower extremity; 4) head and neck I; 5) head and neck II; 6) thorax; 7) abdomen; and 8) pelvis and perineum. Clinically significant topics for each region will be addressed with an emphasis on the neurological

feature of the particular manifestation. Offered each Fall and Spring semester. Limited enrollment. Cross-listed as PSY 6060.

6070. Selected Topics in DNA Repair and Mutagenesis.

1 SCH. Course reviews and emphasized current research articles in related fields. Students are required to participate in presentation and discussion of current articles. Completion of BMSC 5600 and 5610 preferred. Offered each Summer.

6080. Diseases of the Eye.

3 SCH. Structure and function of the various ocular tissues, as well as the diseases which affect them. Lectures presented by basic scientists and clinical ophthalmologists. Offered on demand.

6100. Mitochondrial DNA Analysis.

2 SCH. Laboratory course covering the analysis and interpretation of mitochondrial DNA sequence data currently used to augment forensic DNA investigations. Offered each Spring. Prerequisites: CGEN 5050, 5100, and 5310 or approval of course director.

6200. Human Genetics.

3 SCH. The goal of this course is to introduce students to the role of human genetics in medicine and to introduce students to the databases that have resulted from the human genome project. Topics to be discussed include: the chromosomal basis for heredity; tools for studying the patterns of single gene inheritance; molecular and biochemical basis for genetic disease; organization and instability of the human genome; genetic mapping; common genetic diseases; and genetics of complex diseases with special focus on metabolic syndrome, cancer and the immune system. Offered on demand.

6210. Molecular Evolutionary Genetics.

3 SCH. The analysis of DNA and/or protein sequences at the gene, population, and species level has become a powerful tool for studying molecular evolution and understanding the effects of genetic change. Statistical and computational methods to effectively evaluate and interpret the data obtained from molecular level investigations have become more involved. The goal of this course is to introduce appropriate theory and methods needed to effectively analyze nucleotide and protein sequence data. Topics covered will include: measurement of sequence divergence, models of evolution, various approaches to phylogenetic evaluation and tree construction, statistical tests for detection of selection and evolutionary rates, inference of ancestral amino acid sequences, and the evolutionary significance of genetic polymorphism. Emphasis is given to practical methods of data analysis using multiple software packages designed to appropriately evaluate genetic data. Prerequisites: BMSC 5600, 5610 (Recommended: BMSC 5200 or equivalent, CGEN 5300, BMSC 5710). Offered every other Fall semester (even years).

6599. Current Topics in Cell Biology and Genetics.

1 SCH. Contemporary topic chosen each semester from the broad areas of anatomy, cell biology, visual science. Format consists of presentations of current research articles by both faculty and students. May be repeated for credit as topics vary. Offered each Fall and Spring.

6690. Special Problems in Cell Biology and Genetics.

1-3 SCH. For students capable of developing a problem independently through conferences and activities directed by the faculty. Problem chosen by the student with the consent of the instructor and the department chair. Offered each semester.

6699. Special Problems in Ocular Research.

1-3 SCH. For students capable of developing a problem independently through conferences and activities directed by the faculty in areas of visual sciences. Problem chosen by the student with the consent of the instructor and the department chair. Offered each semester.

Family Medicine (FMED)**5540. Family Medicine Colloquium.**

3 SCH. This colloquium course will explore the practical issues of clinical research in family medicine and is presented in a seminar format. Speakers will include faculty, invited guests and student participants. Offered each semester.

5900-5910. Special Problems in Family Medicine.

3 SCH. An individualized problem under the direction and supervision of a graduate faculty mentor. Offered each semester.

Integrative Physiology (PSIO)**5100. Cardiovascular Physiology I.**

3 SCH. Designed to familiarize the student with current concepts and progress in human cardiovascular function with an emphasis on the heart. Topics include molecular basis of myocardial contraction, electrochemical coupling, regulation of myocardial mechanics and ventricular performance, the coronary circulation, myocardial ischemia, cardiac failure, and neural control of the heart and coronary circulation. Course format includes lectures, student presentations, term paper, and examinations. Prerequisite: BMSC 5600, 5610, 5700, 5710. Offered every other Fall (even years).

5110. Cardiovascular Physiology II.

3 SCH. Continuation of PSIO 5100 with emphasis on the circulation. Topics include capillary and lymphatic dynamics, control of blood pressure, splanchnic blood flow, regulation of cardiac output and specific cardiovascular perturbations. Prerequisites: BMSC 5600, 5610, 5700, 5710 and PSIO 5100. Course format includes student presentations, term paper and examinations. Offered every other Spring (odd years).

5200. Respiratory Physiology.

3 SCH. Designed as an in-depth study of the functional anatomy and physiology of the respiratory system with emphasis on the human. Topics include pulmonary mechanics and blood flow. Respiratory blood gases and neurohumoral control of ventilation. Course format includes lectures, student presentations, term paper, and examinations. Prerequisite: BMSC 5600, 5610, 5700, 5710. Offered every other Fall (odd years).

5300. Renal Physiology.

3 SCH. This course familiarizes the student with current concepts and progress in human renal function. Topics include the body fluids, the renal vascular bed, glomerular filtration, tubular function, acid-based physiology, renal pathophysiology and the history of renal physiology. Course format includes lectures, student presentations, term paper, and examinations. Prerequisite: BMSC 5600, 5610, 5700, 5710. Offered every other Spring (even years).

5400. Molecular Genetics of Cardiac and Vascular Disease.

3 SCH. Advanced in-depth study of the molecular biology and genetics of both normal and disease state cardiovascular functions. Emphasis is to be placed on the genetics behind disease state etiologies. A thorough review of all new genetic and molecular techniques developed to explore disease state physiology will be presented. Course format includes lectures, student presentations, term paper, and examinations. Prerequisites: BMSC 5600, 5610, 5700, 5710. Offered every other Spring (odd years).

5900-5910. Special Problems.

1-3 SCH each. For students capable of developing a problem independently through conferences and activities directed by the instructor. Problem chosen by the student with the consent of the instructor and department. May be repeated for credit. Offered each semester.

5940. Seminar in Current Topics.

1 SCH. Specialized weekly lectures on topics of current interest by students, faculty and/or invited speakers. May be repeated for credit. Offered Fall and Spring.

6010. Functional Genomics and Proteomics.

3 SCH. The purpose of this course is to introduce students to concepts and methods used in defining a database of tissue specific and disease specific protein expression. Topics to be discussed include: 1) genome mining; 2) transcriptome mining and validation; 3) proteome mining by 2-dimensional gel electrophoresis, mass spectrometry and protein chips; 4) protein structure determination; 5) protein structure prediction based on gene sequence; 6) protein function prediction and analysis; 7) protein-protein interactions; and 8) protein localization. Cross-listed with CGEN 6020.

6020. Advances in Cardiovascular Physiology I.

3 SCH. Directed, in-depth study of current research literature with emphasis on the heart. Oral reports and written reviews are required. Prerequisite: PSIO 5100. Offered each semester.

6030. Advances in Cardiovascular Physiology II.

3 SCH. Directed, in-depth study of current research literature with emphasis on the peripheral circulation. Oral reports and written reviews are required. Prerequisite: PSIO 5110. Offered each semester.

6050. Physiology of Skeletal and Smooth Muscle.

3 SCH. Designed as an in-depth study of the functional anatomy and physiology of skeletal and smooth muscle. Topics include functional anatomy, molecular basis of contraction, excitation-contraction coupling, electro- and pharmaco-coupling and regulation of muscle mechanics and adaptations of the neuromuscular system. Special topics are presented by students. Course format includes lectures, student presentations, term paper, and examinations. Prerequisites: BMSC 5600, 5610, 5700, 5710. Offered every other Fall (odd years).

6060. Cardiovascular Regulation During Exercise.

3 SCH. The course will provide an integrative physiological basis of blood pressure regulation during exercise. The mechanisms to be discussed include "Central Command" and the "exercising muscle pressor reflex" and their integration with basic hemodynamic responses to exercise. Course format includes lectures, student presentations, term paper, and examinations. Offered every other Summer (even years).

6070. Advanced Endocrine Physiology.

3 SCH. An interactive survey of modern endocrinology presented largely from the current primary literature. The scope will focus on mechanisms and will extend from molecular biology (hormone interactions with genes, receptors, ion channels, second messengers, etc.) to systematic control (feedback, secretion, distribution, metabolic clearance rate, etc.) Broad topic areas discussed will be determined in part by class interests. Offered every other Fall (odd years).

6080. Advanced Autonomic Physiology.

3 SCH. This course will cover anatomy, neurotransmitters, and cellular mechanisms of the autonomic nervous system with special emphasis on the peripheral systems. Parasympathetic and sympathetic control of physiological function will be discussed with system emphasis determined in part by student interests. Current research literature combined with up-to-date reviews will be used to spur discussions which will focus on mechanisms extending from molecular biology to systemic control. Individual student interests will be used to determine special topic areas for the last half of the course. Course format includes lectures, student presentations, term paper, and examinations. Prerequisites: BMSC 5600, 5610, 5700, 5710 and PSIO 5100. Offered every other Fall (even years).

6090. Myocardial Metabolism: Concepts and Controversies.

3 SCH. Comprehensive survey of current scientific issues related to heart muscle metabolism and function. Specific topics include: control of myocardial substrate metabolism and fuel selection; ATP synthesis, intracellular transport and utilization; myocardial ischemia-reperfusion injury; cardiac stunning and hibernation; mechanisms of cardiac cell death and cardioprotection; free radical biochemistry in the heart. Course format includes lectures, student presentations, term paper, and examinations. Prerequisites: BMSC 5600, 5610, 5700, 5710. Offered every other Spring (odd years).

6699. Current Topics in Physiology.

1-3 SCH. Survey of literature, oral presentations and written reports. Offered each semester.

Microbiology and Immunology (MICR)**5050. Host-Parasite Relationships in Infectious Diseases.**

3 SCH. Emphasis on pathogenicity, pathogenesis, and the host's innate and acquired resistance to infection. Lectures, conferences, literature review are utilized for student instruction. Demonstration of independent student initiative is an essential part of this course, and a special project is required. Offered on demand.

5120. Current Topics in Immunology.

1 SCH. Format consists of presentations of current research articles in the various areas of immunology by faculty, research staff and students. May be repeated for credit. Offered each semester.

5900-5910. Special Problems.

1-3 SCH. For students capable of developing a problem independently through conferences and activities directed by the instructor. Problem chosen by the student with the consent of the instructor and department. May be repeated for credit. Offered each semester.

5940. Seminar in Current Topics.

1 SCH. Specialized weekly lectures on topics of current interest by students, faculty and/or invited speakers. May be repeated for credit. Offered Fall and Spring.

6000. Immune Responses Against Pathogenic Microorganisms.

2 SCH. This course will focus on how the immune system responds to infection with pathogenic microorganisms. Microbial pathogenesis will be discussed, as well as the ensuing innate and adaptive immune responses generated against the particular pathogen. In addition to faculty lectures, discussions focused on recent articles will enhance the student's knowledge regarding immunity to infections. The course will involve student-led discussions of different infectious pathogens that will broaden the scope of the course and provide the student's the opportunity to gain teaching experience. Prerequisites: BMSC 5600, BMSC 5610, BMSC 5710. Course will be offered each fall semester.

6300. Advanced Molecular Biology.

2 SCH. Part one of this course is offered in odd years and focuses on modern molecular biology techniques and their background/theory. Part two of this course is offered in even years and consists of lectures on in-depth coverage of eukaryotic gene regulation and student presentation/discussion of current publications in related topics. Crosslisted with BIOC 6300. Prerequisites: BMSC 5600 and 5610.

Osteopathic Manipulative Medicine (OMMC)**5510. Introduction to Osteopathic Research and Studies.**

3 SCH. This course is intended to introduce the student to clinical research project design, institutional procedures for review and approval of research involving human subjects, ethical principles of clinical research, and proper implementation and conduct of clinical trials. Prerequisite: BMSC 5960. Offered Fall and Spring semesters.

5540. Clinical Research Colloquium.

1 SCH. This colloquium course will explore the practical issues of clinical research, review of journal articles and is presented in a seminar format. Speakers will include faculty, invited guests, and student participants. Offered Fall and Spring semesters.

5900. Special Problems in Clinical Research.

3 SCH. An individualized problem under the direction and supervision of a graduate faculty mentor. Offered each semester.

5910. Special Problems in Clinical Education.

3 SCH. An individualized problem under the direction and supervision of a graduate faculty mentor. Offered each semester.

5940. Seminar in Current Topics.

1 SCH. Topics are selected for in-depth study by the student's major professor and graduate advisor. Topics may cover clinical, mechanistic, and educational aspects of manual/manipulative and musculoskeletal medicine in human and animal models. Students are expected to complete a concept or literature review paper on the topics. May be repeated for credit. Offered Fall and Spring.

6000. Current Topics in Musculoskeletal Medicine.

1 SCH. Topics are selected by the student's major professor and graduate advisor. Topics include basic science and clinical research and education aspects of manual/manipulative and musculoskeletal medicine in human and animal models. May be repeated for credit. Offered each semester.

Pharmacology and Neuroscience (PHRM)

5050. Introduction to Toxicology.

3 SCH. The interrelationships of natural and synthetic agents to biologic systems are compared with the resulting toxicological response of the organism. Identification of causative agents and determination of limits of detection and safety are discussed. The principles of instrumentation methods and their use in a toxicological laboratory are described. Offered on demand.

5060. Experimental Toxicology.

3 SCH. Lecture and laboratory experience emphasizes adverse reactions to chemicals and drugs, environmental hazards and analytical techniques for detection of foreign substances in biological fluids and tissues. Includes qualitative and quantitative laboratories, identification of causative agents and metabolic studies of toxic agents. Visits to professional laboratories specializing in toxicology are included. Offered on demand.

5070. Neuropharmacology.

4 SCH. In-depth presentations on: 1) mechanisms of neurotransmitter synthesis, storage and release; 2) mechanisms of neuropharmacological agents; 3) molecular and behavioral aspects of Alzheimer's and aging; and 4) drugs and neurodegenerative diseases. Prerequisites: BMSC 5600, 5610, 5700 and 5710. Offered every other Spring (even years).

5100. Neurobiology of Aging.

3 SCH. This course will serve as an introduction to the aging nervous system and age-related nervous system diseases. The course will include lectures by experts in the field of neurobiology of aging and discussion of selected topics in the field. By the completion of the course, the student should have a working knowledge of major issues that drive research in the neurobiology of aging. Prerequisites: 5600, 5610, 5700, and 5710. Offered every other Fall (odd years).

5200. Intracellular Calcium Signaling.

1 SCH. The course is intended for senior graduate students and will cover recent advances in physiology, anatomy, cell biology and molecular biology relevant to intracellular calcium signaling. By the completion of the course, students will have a working knowledge of current areas of interest in research into intracellular calcium signaling. Offered each fall and spring.

5900-5910. Special Problems.

1-3 SCH each. For students capable of developing a problem independently through conferences and activities directed by the instructor. Problem chosen by the student with the consent of the instructor and department. May be repeated for credit. Offered each semester.

5940. Seminar in Current Topics.

1 SCH Specialized weekly lectures on topics of current interest by students, faculty and/or invited speakers. May be repeated for credit. Offered Fall and Spring.

6000. Functional Neuroscience.

4 SCH. Intended for second year and more senior graduate students, this course will cover all major areas of neuroscience research. By the completion of the course, students will have a working knowledge of all major disciplines of neuroscience providing the basis for advanced courses. Offered each Fall.

6020. Advances in Molecular Pharmacology.

3 SCH. An in-depth review of the current literature on modern pharmacology and signal transduction of drug receptors. Oral reports and written reviews required. Offered on demand.

6030. Advances in Behavioral Pharmacology.

3 SCH. Directed, in-depth study of current research literature with an emphasis on behavioral pharmacology. Oral reports and written reviews required. Prerequisite: PHRM 5070. Offered every other Spring (odd years).

6040. Psychiatric Disorders: From Bench to Bedside (including Substance Use).

3 SCH. This advanced course will focus on the neurological basis of psychiatric disorders. A primary goal of the course is to integrate basic research and clinical findings. All disorders will be discussed at the molecular, cellular, systems and behavioral levels. Each lecture, following the introduction, will focus on a specific neuropsychiatric disorder, including Schizophrenia, Attention Deficit Hyperactivity Disorder, Autism, Tourette's Syndrome, Obsessive Compulsive Disorder, Bipolar Depression, and Bipolar Disorder. Other lecture specific topics may include various forms of substance use/abuse (e.g., nicotine, alcohol, cocaine/methamphetamine, hallucinogens and marijuana). A college level knowledge of basic chemistry, cell physiology and anatomy is required. The format of the course will be a formal lecture followed by an informal discussion. Participation in class discussion is essential. Offered every other Fall (even years).

6050. Ocular Pharmacology.

3 SCH. Review of pharmacological principles and therapeutic approaches regarding ocular diseases and eye organ systems. Offered on demand.

6080. Receptors and Drug Action.

4 SCH. In-depth course of drug receptor pharmacology and receptor classes. Emphasis on techniques for studying receptor function, second messenger signaling, and molecular pharmacology. Offered every other Spring (odd years).

6410. Basic and Clinical Pharmacology.

4 SCH. Medical Pharmacology is a course designed for graduate students in the biomedical sciences and presents an introduction to major drugs used for the treatment and prevention of disease. The course begins with an overview of the general principles of pharmacology, including major concepts of pharmacodynamics (drug action) and pharmacokinetics (drug time course, dosing). The remainder of the course examines the major classes of drugs that modify the functioning of the autonomic, cardiovascular, central nervous, hematopoietic, and endocrine systems; antibiotics and NSAIDs are also covered. Emphasis is placed on the therapeutic use and mechanism of action of major drugs by class. The format of the course is student self-directed study supported by interactive sessions with faculty. Cross-listed with PSYC 6410. Offered each Fall.

6500. Botanical Medicines and Biotechnology.

1 SCH. This advanced course will focus on the use of chemicals isolated from plants and other natural sources for medicinal purposes. A primary goal of the course is to integrate basic research and clinical/industrial findings. Each lecture, following the historical introduction will focus on a specific aspect of natural products research: identification of botanicals, isolation and characterization of chemical components, methods of testing, industry regulations and market barriers, and uses. A college level knowledge of basic biology, chem-

istry, physiology and pharmacology is recommended. The format of the course will be a formal lecture for the first half an hour followed by an informal discussion for the last half hour. Participation in class discussion is an essential part of the course. The reading assignments will vary from week to week, but can include textbook chapters, review articles, journal articles, and seminal or current peer-reviewed research reports. Offered on demand.

6699. Current Topics in Pharmacology.

1-3 SCH. Review of current topics in pharmacology including pharmacology of aging, ocular pharmacology, behavioral pharmacology and new drugs on the horizon. Offered each Fall and Spring.

Psychology (PSY)

6010. Geriatric Health Psychology.

3 SCH. Examination of general and cellular theories of aging and general age-related changes in various body systems including neurological, immunological, cardiovascular, and endocrine systems. An empirical understanding is provided to permit distinction between physical health and aging, normal age-related changes and common chronic illnesses associated with old age. Students will focus on methods of evaluating the health status and needs of the elderly in relation to planning and evaluating multidisciplinary programs. Prerequisite(s): UNT PSYC 5070 or consent of department. Offered each Spring.

6060. Clinical Human Anatomy.

4 SCH. An online (distributed learning) anatomy course offered through WebCT Vista. This course will have laboratories based on digital images taken from cadavers in the anatomy facilities. The course is divided into eight regions and topics covered will include the following: 1) back and suboccipital triangle; 2) upper extremity; 3) lower extremity; 4) head and neck I; 5) head and neck II; 6) thorax; 7) abdomen; and 8) pelvis and perineum. Clinically significant topics for each region will be addressed with an emphasis on the neurological feature of the particular manifestation. Offered each Fall and Spring semester. Limited enrollment. Cross-listed as CGEN 6060.

6820/6830. Health Psychology Preceptorship.

3 SCH. Practical experience that will focus on the integration of the Health Psychologist with the Primary Care Physician, where the Health Psychologist functions as an important member of the primary care team in a manner that overcomes managed care barriers to this integration. The goal is for the student-doctor to achieve an advanced degree of competence in skills, knowledge, judgment, and ethics that will allow for the development of a greater understanding and identification with the role of the professional Clinical Health Psychologist. Offered each semester.

6110. Developmental Neurobiology.

3 SCH. Molecular and cellular events underlying neuronal differentiation, axon guidance, synapse formation, neurotrophic factors, and neural death, with special emphasis on activity-dependent plasticity and its role in generating and maintaining transient or long-lasting and precise connections and circuits as found in the nervous system.

6210. Clinical Neuropsychology and Cognitive Rehabilitation.

4 SCH. An overview of neurocognitive disorders including methods for diagnostic differentiation, theoretical foundations, research methodology, clinical methods, clinical applications, and current issues.

Recent advances and research in the theoretical models of neurocognitive rehabilitation will be considered, along with the development of methods for targeted interventions, monitoring progress and treatment outcomes. Prerequisite(s): UNT PSYC 6420 or consent of department. Offered each Spring.

6250. Human Neuroanatomy.

3 SCH. Introduction to the anatomical organization and basic functional principles of the major sensory, motor, associational, and modulatory systems of the human brain. Students learn to identify visually specific structures on slides, magnetic resonance images (MRI), and dissected brain specimens in relation to neural pathways and system interconnections. This course provides an understanding of the function of each major brain system in relation to the organization and synaptic connections of their principal nuclei as well as to neurological disorders associated with disease or lesions at specific locations.

6410. Basic and Clinical Pharmacology.

4 SCH. Medical Pharmacology is a course designed for graduate students in the biomedical sciences and presents an introduction to major drugs used for the treatment and prevention of disease. The course begins with an overview of the general principles of pharmacology, including major concepts of pharmacodynamics (drug action) and pharmacokinetics (drug time course, dosing). The remainder of the course examines the major classes of drugs that modify the functioning of the autonomic, cardiovascular, central nervous, hematopoietic, and endocrine systems; antibiotics and NSAIDs are also covered. Emphasis is placed on the therapeutic use and mechanism of action of major drugs by class. The format of the course is student self-directed study supported by interactive sessions with faculty. Cross-listed with PHRM 6410. Offered each Fall.

6610. Psychology Research Seminar and Practicum.

4 SCH. Will focus on the initiation, conduct, and consummation of advanced research projects, as well as dialogues related to the art and practice of publishing. The purpose of the practicum is twofold: to engender an appreciation for scholarship and to engage students in research projects that have a high probability of resulting in journal publications. Prerequisite(s): doctoral standing in psychology. May be repeated for credit. Offered each semester.

6710. Neurobehavioral Toxicology.

3 SCH. This course is an examination of a range of environmental determinants that can be toxic to the human condition. It will consider recent advances and research on the implications of chemical exposure, nutrition, radiation, and various pollutants to neuropsychological, behavioral, and other processes and health risks. Offered each Spring.

6720. Psychophysiological Processes.

4 SCH. A review of current psychophysiological methods, principles and research. Emphasis is on electrodermal, cardiovascular, electromyographic and electrocortical measurement in research on arousal, attention, stress, adaptation, emotion, personality and health. Prerequisite(s): UNT PSYC 5790 or consent of department. Offered each Fall.

6770. Biofeedback Methods and Behavioral Medicine.

4 SCH. An introduction to and overview of biofeedback and self-regulation, including experimental foundations, research methodology, clinical methods, clinical applications and current issues. Laboratory work includes supervised practice in the design and implementation of biofeedback training programs for individuals from both normal

and deviant populations. Prerequisite(s): PSYC 6720 or consent of department. Offered each Spring.

6780. Cardiovascular Behavioral Medicine.

3 SCH. An in-depth examination of current issues and research in cardiovascular behavioral medicine, emphasizing cardiovascular measurement, research methods, individual differences and biobehavioral perspectives on the pathophysiology, assessment and treatment of cardiovascular diseases. Prerequisite(s): PSYC 6720 or consent of department. Offered each Spring.

6810. Treatment Outcomes in Health Care.

3 SCH. This course provides students with the basic knowledge and skills to effectively design and implement treatment outcome measurement strategies in health care settings. The course will also provide computer instruction to facilitate the effectiveness of treatment outcome measurement. Students will learn about the various settings in which outcome measurement occurs, such as family medicine clinics, pain centers, hospitals, pharmaceutical industries, and psychiatric facilities. Database management, quality control, and analysis of health care data will be demonstrated. Students will develop and analyze a simulated treatment outcome database of their own and present their findings in class. Offered each Fall.

6900-6910. Special Problems.

1-3 SCH each. For doctoral students capable of developing a problem independently through conferences and activities directed by the instructor. Problem chosen by the student with the consent of the instructor. May be repeated for credit. Offered each semester.

6920. Functional Human Anatomy.

3 SCH. Introduction to anatomical organization and physiological mechanisms in humans. The focus will emphasize physiological and structural factors in major medical disorders.

6950. Dissertation.

3, 6 or 9 SCH. To be scheduled with consent of department. A maximum of 12 SCH allowed toward degree. No credit assigned until dissertation has been completed and filed with the graduate office. Doctoral students must maintain continuous enrollment in this course subsequent to passing qualifying examination for admission to candidacy. May be repeated for credit. Offered each semester.



SCHOOL OF PUBLIC HEALTH

Office of the Dean

Richard S. Kurz, PhD, Dean
 Christine Moranetz, PhD, Associate Dean for Curricular Enhancement
 Elena Bastida, PhD, Associate Dean for Research
 Jason Bradshaw, MA, Administrative Director
 Diane Bradley, Sr. Executive Assistant
 Lupe Sanchez, Executive Assistant
 Vikas Tomer, MPH, Web Administrator

Center for Public Health Practice

Claudia Coggin, PhD, CHES, Director
 Susan Harlin, Sr. Administrative Assistant

Texas Public Health Training Center

Nuha Lacken, PhD, Director
 Zeida Rojas-Kon, MPH, Projector/Program Coordinator

Office of Student & Academic Services

Diane Wynn, MEd, Director
 Amanda Poynter, MPH, Coordinator for Academic Services
 Liz Medders, Coordinator for Recruitment & Retention
 Lori Saunders, Coordinator for Student Services
 Diana Crenshaw, Administrative Services Officer

Academic Calendar

	Fall 2008	Spring 2009	Summer 2009
ADMISSIONS			
<p>Application deadline All application materials must be submitted for consideration.</p> <p>Application deadline for doctoral students who want to be considered for funding for Fall 2009 admission.</p> <p>Application deadline for all degree-seeking programs for Fall 2009 admission; doctoral students who do not want to be considered for funding may apply through this date.</p>	Mar. 15	Sept. 1	Feb. 1
	Feb. 1		
	Mar. 15, 2009		
<p>New International Student Orientation (mandatory)</p> <p>New Student Orientation (mandatory for all new students including international)</p>	Aug. 20	Jan. 6	May 20
	Aug. 21	Jan. 7	May 21
REGISTRATION			
Regular registration	June 16-Aug. 21	Oct. 20-Oct. 31	Apr. 20 - May 1
Late registration	Aug. 22-27	Nov. 3-7	May 4-8
New student registration	Aug. 21	Jan. 6	May 20
IMPORTANT CLASS DAYS			
Classes begin	Aug. 25	Jan. 12	May 26
12th class day (Fall/Spring); 4th class day (summer)	Sept. 9	Jan. 28	May 29
Last day of the semester	Dec. 12	May 8	July 31
Grades Due	Dec. 17	May 15	Aug. 5
SCHEDULE CHANGES			
Last day to ADD a course	Aug. 29	Jan. 16	May 29
Last day to DROP a course without the course appearing on the transcript or without the instructor's consent.	Sept. 9	Jan. 28	May 29
Last day to DROP a course or withdraw with a grade of W for courses that a student is not passing. After this date, a grade of WF may be recorded.	Sept. 19	Feb. 6	June 1
Beginning this date, instructors may DROP students with a grade of WF for non-attendance.	Sept. 22	Feb. 9	June 2
Last day to DROP a course or withdraw. Paperwork must be filed with the Registrar's Office by 5 p.m.	Dec. 1	May 1	July 20

	Fall 2008	Spring 2009	Summer 2009
TUITION/FEE PAYMENTS AND COURSE REFUNDS			
Financial Aid Disbursement	Aug. 15	Jan. 5	May 18
Last day to pay tuition/fees	Aug. 24	Jan. 11	May 25
Beginning this date, students will be dropped from courses for non-payment of tuition/fees.	Aug. 25	Jan. 12	May 26
WITHDRAWAL REFUNDS			
Last day to withdraw for a 100% refund	Aug. 24	Jan. 11	May 25
Last day to withdraw for an 80% refund	Aug. 29	Jan. 16	May 28
Last day to withdraw for a 70% refund	Sept. 8	Jan. 23	N/A
Last day to withdraw for a 50% refund	Sept.15	Jan. 30	June 2
Last day to withdraw for a 25% refund	Sept. 22	Feb. 6	N/A
GRADUATION			
Last day to file Intent to Graduate	July 25	Dec. 5	May 8
Last day for degree candidates to complete and submit all graduation requirements to SPH Office of Student & Academic Services	Dec. 5	May 1	July 24
Commencement	May 16, 2009	May 16, 2009	May 15, 2010
HOLIDAYS/SPECIAL EVENTS *Classes will not be held on days marked with an asterisk (*) due to holidays and/or special events.			
Labor Day*	Sept. 1	---	---
American Public Health Association Conference	Oct. 25-29 (San Diego, CA)	---	---
Thanksgiving*	Nov. 27-28	---	---
Martin Luther King Jr. Day*	---	Jan. 19	---
Spring Break*	---	March 16-20	---
Research Appreciation Day	---	March 6	---
Memorial Day*	---	---	May 25
Independence Day*	---	---	July 4

Mission

To advance public health knowledge through research, service, and education of professionals and scientists who are dedicated to disease prevention, health promotion, and the achievement of efficiency, effectiveness, and equity in the delivery of health services while minimizing health disparities among populations.

Vision

To become one of the Top 10 schools of public health in the nation.

Values

Compassion
Excellence
Pride
Innovation
Integrity
Teamwork
Diversity

Center for Public Health Practice

The mission of the Center for Public Health Practice is to provide the Master in Public Health student with opportunities to gain practical experience in public health or community settings through the required Public Health Practice Experience.

This mission is accomplished by:

- Partnering with public health practitioners to train future public health professionals.
- Identifying relationships and contributions of community activities (social, cultural, environmental) that impact the practice of public health.
- Assisting the student to develop measurable realistic goals and objectives for Public Health Practice Experience project and identifying criteria for evaluation during the experience.
- Assisting the student to effectively present accurate demographic, statistical, programmatic, and scientific information to professional and lay audiences through the required poster session.

Texas Public Health Training Center

The Texas Public Health Training Center (TPHTC) is one of 14 Public Health Training Centers across the nation. TPHTC is a collaborative effort among the Health Science Center School of Public Health, the University of Texas School of Public Health, and the Texas A&M University System Health Science Center School of Rural Public Health. The Center's mission is to improve the state's public health system by strengthening the technical, scientific, managerial and leadership competencies and capabilities of the current and future public health workforce.

For the last five years, these collaborating institutions have been committed to addressing workforce training needs and strengthening this capacity within local health departments, hospitals and other health related organizations to effectively address the needs of the public health workforce. These trainings included live workshops, CD ROM programs, web-casts and videoconferences. The TPHTC envisions expanding its reach to include other arenas in which public health and health care professionals realize their work, including businesses, corporations and grassroots organizations.

Master of Public Health Program (MPH)

The goal of the Master of Public Health (MPH) program is to prepare students to be effective public health professionals. Public health professionals work in a variety of organizations and agencies to contribute the common aim of promoting and protecting health in human populations. Students in the MPH program may select coursework from one of the following areas: biostatistics (biometry or clinical research), community health, environmental health, epidemiology, health management, health policy, or occupational health practice.

The Health Science Center is a member of SOPHAS (Schools of Public Health Application Service). Students may apply online at www.sophas.org. The School of Public Health admits students during the spring, summer and fall semesters. The deadlines are as follows:

Semester	Deadline	Classes Begin
Fall 2008	March 15	August 25, 2008
Spring 2009	September 1	January 12, 2009
Summer 2009	February 1	May 26, 2009
Fall 2009	March 15	August 24, 2009

It is recommended that non-U.S. citizens apply well in advance of these deadlines to allow for the preparation of immigration documents.

Applicants to the MPH program will fall under one of the following admissions categories:

1. **Full Admission:** Accepted without reservation to the MPH program
2. **Denied:** Not admitted to the program because application was not competitive
3. **Non-review:** Not reviewed due to an incomplete application file

MPH Admission Requirements

To be considered for admission, applicants must meet the following requirements:

- Hold a minimum of a bachelor's degree from a regionally or federally accredited institution
- Submit an application to the School of Public Health via SOPHAS (www.sophas.org)
- Submit complete, official transcripts from all colleges or universities attended
- Submit official GRE or MCAT scores (*Health Management & Policy will also accept GMAT or LSAT scores)
- International applicants must include an official WES or ECE evaluation report listing course-by-course U.S. grade point equivalency and official TOEFL scores (minimum scores: written = 555; computer-based = 213; internet-based = 79)
- Current resume or curriculum vita

Once an offer of admissions has been extended to a student, official transcripts from all colleges or university attended must be re-submitted directly to the School of Public Health.

Once an offer of admissions has been extended to an international applicant, the Health Science Center will not issue immigration papers for student visas until the following additional admissions credentials have been received and approved by the School of Public Health:

- Proof of financial resources
- Official transcripts from each college or university attended should be re-submitted both in English and the student's native language

Admissions Decisions and Deferrals

Applicants will be furnished written notification regarding their admission status by the school's Office of Student and Academic Services. Statements by other Health Science Center personnel concerning the applicant's admissibility are not valid until confirmed in writing by the Office of Student and Academic Services.

Students who are admitted to a degree program and plan to enroll are required to submit an Admissions Decision Form along with a non-refundable \$200 assurance fee that will be used toward tuition upon arrival. Applicants admitted to a degree program that do not

intend to enroll in the semester for which they applied must contact the Office of Student and Academic Services to request deferment. Deferments must be made in writing and cannot exceed one year from the original acceptance date. There is a deferment fee of \$300; the deferment fee is due at the time the request is made.

Information submitted in the application materials must be complete and correct. Prospective and current students must notify the proper institution officials regarding any changes in the information provided on their application. Falsification or omission of any information on the application documents will void a student's admission, cancel their enrollment, and/or result in appropriate disciplinary action.

All materials submitted during the application process become the property of the Health Science Center and cannot be returned.

MPH Learning Objectives

After completion of the MPH program, the student will be able to:

1. Select and apply effective approaches to prevent disease and promote health in human populations.
2. Identify the contribution of social, cultural, and physico-chemical/biological environments as risk factors and root causes of health status, health outcomes, and the use of health services.
3. Use appropriate analytical methods and make relevant inferences in analysis of data related to a public health problem.
4. Critically evaluate literature and data relevant to public health issues.
5. Communicate effectively in writing and orally with the lay public and within professional and academic forums.
6. Use technology to access, communicate, manage and analyze data and information.
7. Lead and participate effectively in a group to address issues by applying basic team building and human relations skills in problem solving.

MPH Academic Procedures

Each student is responsible for the completion of the Master of Public Health program according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the School of Public Health Office of Student and Academic Services.

1. Acceptance into the School of Public Health and an advisor is assigned.
2. The student must file a curriculum plan approved by the advisor and department chair with the School of Public Health Office of Student and Academic Services before the completion of the first semester of enrollment. Enrollment will be restricted after the first semester if a curriculum plan is not on file.
3. Students must complete a public health practice experience. Students are eligible to enroll for Public Health Practice Experience (SPH 5855) after the completion of a minimum of 21 SCH, 6 SCH of which must be in their concentration area. Students must confer with the Public Health Practice Coordinator prior to registration.
4. Prior to enrolling in thesis, a student must complete a minimum of 36 credit hours and gain consent from a major professor to supervise the culminating experience. The major

professor must be a full time faculty member within the student's concentration department; the major professor does not have to be the student's advisor. The student must subsequently select a faculty committee. The faculty committee will consist of a major professor and a minimum of two committee members. Committee members must have faculty, adjunct or temporary adjunct faculty status with the School of Public Health. Students should contact the appropriate department regarding individuals with adjunct faculty status.

5. Once a student has selected their major professor and committee members, students are eligible to enroll in thesis (SPH 5950). After the successful oral and written defense of the thesis proposal, it must be filed with the School of Public Health Office of Student and Academic Services. An application for the Institutional Review Board (IRB) must be prepared and submitted for approval before any data can be collected for either the thesis or professional report.
6. Once a student has enrolled in thesis, he/she must maintain continuous enrollment in a minimum of 3 SCH of thesis during each semester (fall, spring, summer) until the final document has been accepted by the appropriate department chair and the dean. Failure to maintain continuous enrollment will either invalidate any previous credit or will result in the student's dismissal from the degree program unless granted an official leave of absence by the dean for medical or other exceptional reason.
7. The completed thesis must be submitted to the faculty committee prior to an oral presentation (check with major professor for specific departmental deadlines).
8. Students are required to give an oral presentation to their faculty committee on the thesis.
9. Students must submit an Intent to Graduate form to the School of Public Health Office of Student and Academic Services prior to the semester in which they intend to graduate. To be eligible for submission of the Intent to Graduate form, students must have a defended copy of their thesis proposal on file with the Office of Student and Academic Services (see academic calendar for Intent to Graduate deadline).

CURRICULUM OVERVIEW	HOURS
Core Curriculum	15
Concentration Courses*	24-30
Practice Experience	3
Culminating Experience*	0-6
Total SCH	48

* Students choosing the comprehensive examination as their Culminating Experience take an additional six (6) SCH of concentration coursework and receive no credit for the comprehensive examination.

CORE COURSES	HOURS
Biostatistics I for Public Health	3
Environmental Health	3
Principles of Epidemiology	3
Introduction to Health Management & Policy	3
Behavioral Foundations of Public Health	3
Total SCH	15

CULMINATING EXPERIENCE OPTIONS BY DEPARTMENT	
Department of Biostatistics	Comprehensive Examination = 0 SCH Thesis = 6 SCH
Department of Environmental & Occupational Health	Comprehensive Examination = 0 SCH Thesis = 6 SCH
Department of Epidemiology	Comprehensive Examination = 0 SCH Thesis = 6 SCH
Department of Health Management & Policy	Comprehensive Examination = 0 SCH Thesis = 6 SCH
Department of Social & Behavioral Sciences	Comprehensive Examination = 0 SCH Thesis = 6 SCH

To request a waiver for a course, a student must submit a petition in writing to their advisor and the appropriate instructor outlining the class they would like to waive. The petition should also include documentation indicating that the previous coursework is comparable to the requirements of the course stated in the petition. The student's advisor and the instructor and department chair associated with the course must approve the petition.

No credits are awarded for courses that are waived.

A waiver allows a student to substitute an elective course for a required course. For additional information regarding transfer coursework, refer to section on "Use of Transfer Credit."

The thesis is an individual research project conducted under the supervision of a faculty committee. The thesis is written in a traditional academic style and orally defended.

Department of Biostatistics

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MPH in Biostatistics

The MPH in Biostatistics curriculum is constructed so that students are able to choose either an emphasis in biometry or clinical research depending on their interests. There are excellent career opportunities for students wishing to pursue positions in local, state, and federal health agencies, health and medical centers, health care and clinical research institutions, the healthcare/pharmaceutical industry, and consulting. Applicants to this program are expected to have a background in college algebra and calculus.

Biometry Emphasis

The biometry emphasis is designed to train students in data management, statistical analysis, interpretation, and presentation of analytical results using computing technology. This emphasis focuses on the methodologies and procedure of statistical analysis and

research design. By the conclusion of the MPH program, a student in the biometry emphasis will be able to:

1. Identify and develop appropriate data collection strategies for a corresponding statistical method.
2. Review statistical analyses and results critically in public health literature.
3. Disseminate statistical results to public health constituents.
4. Identify, develop, apply, and modify an appropriate statistical approach to a public health problem based on constraints and available resources.
5. Analyze and solve public health issues by applying statistical methodology.
6. Assist in the planning, development, and evaluation of health systems, health programs, and surveillance systems.
7. Conduct independent research focusing on the analysis and solution of a problem in public health.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	<u>3</u>
		15

REQUIRED COURSES:		HOURS
BIOS 5215	Biostatistics for Public Health II	3
BIOS 5730	Regression Analysis	3
BIOS 5740	Introduction to Statistical Packages	<u>3</u>
		9

PRACTICE EXPERIENCE:		HOURS
SPH 5855	Public Health Practice Experience	3

ELECTIVE COURSES (SELECT 7):		HOURS
BIOS 5725	Nonparametric Statistical Methods	3
BIOS 5735	Analysis of Variance	3
BIOS 5760	Data Management	3
BIOS 5910	Independent Study in Biostatistics	1-3
BIOS 6700	Probability and Statistical Inference	3
BIOS 6720	Applied Methods of Survey Sampling	3
BIOS 6750	Applied Categorical Data Analysis	3
BIOS 6775	Clinical Trials and Survival Analysis	3
BIOS 6785	Biostatistical Research and Consulting	3
BIOS 6795	Topics in Biostatistics	<u>3</u>
		21

Total SCH 48

- Students may substitute an elective course not on this list only with prior written approval of their advisor.
- Courses not approved as substitutes will not be applied toward the degree plan.

CULMINATING EXPERIENCE:

Comprehensive Examination

(See details at the end of this section.)

- Upon approval by the student's advisor and the department chair, students may elect to complete a thesis for the culminating experience. In this case, students will take 15 SCH of "ELECTIVE" course work and 6 SCH of thesis.

Clinical Research Emphasis

The clinical research emphasis is primarily designed for those who are currently working in the health care professions. The program is for professionals who wish to prepare for roles in clinical research, health care research, medical database management, or statistical consulting in medical or public health settings. The emphasis is oriented toward applied clinical research, outcome measurement, and applied biostatistics. By the conclusion of the MPH program, a student in the clinical research emphasis will be able to:

1. Conduct experimental research in public health such as community trials and clinical trials in collaboration with other health professionals.
2. Communicate findings of the analysis and solution of a problem of health care and public health importance in professional journals.
3. Analyze and solve public health issues by applying statistical methodology.
4. Assist in the planning, development, and evaluation of health systems using biostatistics procedures.
5. Plan and conduct independent research focusing on the analysis and solution of a problem in public health practice.
6. Assist in the planning, development, and evaluation of treatment outcome data collection in a broad array of health care facilities.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	<u>3</u>
		15

REQUIRED COURSES:		HOURS
BIOS 5215	Biostatistics for Public Health II	3
BIOS 5730	Regression Analysis	3
BIOS 6775	Clinical Trials and Survival Analysis	3
HMAP 5230	Ethical, Legal & Social Issues for Responsible Clinical Research	<u>1</u>
		10

PRACTICE EXPERIENCE:		HOURS
SPH 5855	Public Health Practice Experience	3

NON-BIOSTATISTICS LOWER-LEVEL COURSES

ELECTIVE COURSES (SELECT 2):		HOURS
ENVR 5310	Exposure and Risk Assessment	3
EPID 5400	Applied Data Analysis in Epidemiology	3
EPID 5610	Chronic Disease Epidemiology	3
EPID 5630	Infectious Disease Epidemiology	<u>3</u>
		6

NON-BIOSTATISTICS UPPER-LEVEL COURSES

ELECTIVE COURSES (SELECT 1):		HOURS
EPID 6200	Experimental Methods in Epidemiology	3
HMAP 6210	Health Service Research I	3
SCBS 6170	Qualitative Research Methods	<u>3</u>
		3

BIOSTATISTICS ELECTIVE COURSES (SELECT 4):		HOURS
BIOS 5725	Nonparametric Statistical Methods	3
BIOS 5735	Analysis of Variance	3
BIOS 5740	Introduction to Statistical Packages	3

BIOS 5760	Data Management	3
BIOS 5910	Independent Study in Biostatistics	1-3
BIOS 6795	Topics in Biostatistics	3
BIOS 6785	Biostatistical Research and Consulting	<u>3</u>
		12

Total SCH 49

- *Students may substitute an elective course not on this list only with prior written approval of their advisor.*
- *Courses not approved as substitutes will not be applied toward the degree plan.*

CULMINATING EXPERIENCE:

Comprehensive Examination

(See details at the end of this section.)

- Upon approval by the student’s advisor and the department chair, students may elect to complete a thesis for the culminating experience. In this case, students will take 6 SCH of “BIOSTATISTICS ELECTIVE” coursework and 6 SCH of thesis.

MPH Comprehensive Examination (for both emphases)

The comprehensive examination tests mastery of material in courses offered by the Department of Biostatistics, including but not limited to clinical research methods, data management, and statistical analysis. The possible outcomes of taking the comprehensive examination are Pass and Fail. Students who receive a Fail must retake the examination. No more than two attempts are allowed to earn a Pass on the examination. Students must complete all coursework before taking the examination and have a grade point average of 3.0 or higher in all graduate level courses. Students are responsible for informing the Department of Biostatistics of their intention to take the examination. If a student does not complete the examination during the scheduled time, a grade of Fail is automatically recorded. However, students may reschedule the examination with prior written approval of their advisor at least six weeks in advance of the scheduled examination time.

Department of Environmental & Occupational Health

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MPH in Environmental Health

The environmental health concentration accommodates students with various backgrounds and interests, who desire careers related to the environmental aspects of public health. Specifically, this area of concentration provides the expertise and experience to analyze, monitor, interpret and mitigate the effects of chemical and physical contaminants, and microbial pathogens in water, air, soil, and food on public health. It prepares students in the MPH program for technical and administrative jobs in the governmental and private

sectors. By the conclusion of the MPH program, a student in the environmental health concentration will be able to:

1. Assess environmental health threats that affect the health of the public.
2. Understand the interplay between theory and practice of environmental health management.
3. Understand environmental protection strategies and approaches to reduce environmental health risks.
4. Identify, develop, apply, and modify an appropriate research approach to an environmental health problem based on constraints and available resources.
5. Analyze quantitative and qualitative data to describe environmental conditions that have impacts on human health.
6. Synthesize data from a variety of sources, reflective of multidisciplinary perspectives, to develop strategies for addressing complex environmental health problems. Use biostatistics and statistical software to analyze an environmental health problem.
7. Interpret and present findings in written and verbal format from an environmental health and public health perspective.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	<u>3</u>
		15

REQUIRED COURSES:		HOURS
ENVR 5330	Environmental and Occupational Toxicology	3
ENVR 5345	Physical Hazards	3
ENVR 5380	Environmental Health Microbiology	3
ENVR 5410	Environmental Data Analysis	<u>3</u>
		12

PRACTICE EXPERIENCE:		HOURS
SPH 5855	Public Health Practice Experience	3

ELECTIVE COURSES (SELECT 6):		HOURS
ENVR 5310	Exposure and Risk Assessment	3
ENVR 5311	Air Pollution and Health	3
ENVR 5325	Industrial Hygiene	3
ENVR 5370	Arthropods and Public Health	3
ENVR 5420	Texas -Mexico Border Health Issues*	3
ENVR 5500	Biomarkers in Environmental Epidemiology	3
ENVR 5550	Introduction to Genomics and Public Health	3
ENVR 5910	Independent Study in Environmental Health	1-3
ENVR 6600	Spatiotemporal Environmental Health Modeling	3
EPID 6690	Occupational Epidemiology	<u>3</u>
		18

Total SCH 48

- Students may substitute an elective course not on this list only with prior written approval of their advisor.
- Courses not approved as substitutes will not be applied toward the degree plan.

* For the Texas - Mexico Border Health Issues course, ENVR 5420, all students must have a passport prior to taking this course. Additionally, international students also must have a US multi-entry Visa and should purchase a travel visa for Mexico prior to taking this course.

CULMINATING EXPERIENCE:

Comprehensive Examination

Students who select the comprehensive examination option do not register for a course in order to take the examination. In order to take the examination, a student must have a grade point average of 3.0 or higher. Students are responsible for informing the Department of Environmental and Occupational Health of their intentions to take the examination. A student who encounters a last minute emergency (sickness, death in the family, etc.) may appeal to the examination committee for an opportunity to take a make-up examination. Students who fail the examination may, upon recommendation of the department chair, be allowed to retake a different examination. However, an opportunity for retaking the examination is not automatic, and students may only retake the examination once.

Examinations will be held the fall and spring semesters. Students must have completed all core and required coursework before registering for the examination. Students should notify their academic advisor by finals week of the preceding semester that they intend to take the examination. Students will be provided a computer without internet connectivity. Length of time for the examination will be 4 hours. Outside resources are not allowed. The examination will be given to the proctor upon completion of the examination and copies will be distributed to the faculty.

Each question will be graded as Pass or Fail by more than one faculty member. The student's academic advisor is responsible for communicating the results of the examination. Students who fail the examination can retake it the following semester. Students who fail the retake of the examination will be withdrawn from the program and will need to apply for readmission.

- Upon approval by the student's advisor and the department chair, students may elect to complete a thesis for the culminating experience. In this case, students will take 12 SCH of "ELECTIVE" coursework and 6 SCH of thesis.
- MPH students enrolled in the thesis as part of their degree plan are required to demonstrate that they are actively working toward its completion. This requires confirmed submission of written materials and on-going consultation with committee members within the first and subsequent semesters of registering for thesis credit. It is the responsibility of the student to maintain contact with their thesis advisor and committee members to assure satisfactory progress. MPH students choosing the thesis option but not making satisfactory progress as determined by their advisor may be required to take the comprehensive examination instead of the thesis or may be required to take additional courses to assure sufficient knowledge and skills needed to continue the research project. Any action taken as a result of not meeting the above expectations is subject to the discretion of the department chair.
- MPH students can use attendance at departmental seminars towards the 200 hours for the Public Health Practice Experience (SPH 5855) as follows: The practicum must include attendance at a minimum of 8 and a maximum of 16 departmental seminars. This is equivalent to a minimum of 8 and a maximum of 16 hours being credited towards the 200 hours of the practicum required. All students must complete at least 8 hours of seminars for graduation.

MPH in Occupational Health Practice

The occupational health practice concentration is intended for students interested in applied occupational health program design, development and management. This concentration is not a clinical

or medical program. Graduates will be prepared to practice occupational health in a variety of settings with a multidisciplinary approach to the design, implementation, management, and evaluation of occupational health programs and services. The occupational health practice concentration is primarily designed for those individuals who are currently working in an occupational setting, who require an MPH for eligibility for board certification or who are interested in exploring the science of occupational health. The program is for individuals who wish to augment, enhance, or expand their current training or who wish to prepare for roles in occupational health, including, but not limited to, the following areas: safety professionals, industrial hygienists, health practitioners (physicians, nurses, physician assistants) and human resource personnel (program management and procurement). This concentration is also designed for public health or occupational health professionals who wish to become knowledgeable in occupational health research, occupational health data management, and applied occupational health programs or management. By the conclusion of the MPH program, a student in the occupational health practice concentration will be able to:

1. Identify and be familiar with regulatory or legislative authority directed at occupational health practice.
2. Acquire, compile, collate, store, evaluate and analyze occupational health data by applying statistical methodology.
3. Identify external factors which influence worker safety and health.
4. Work effectively as a team member with other occupational health professionals by understanding their roles in occupational health services.
5. Describe employee legal rights to confidentiality of medical record information.
6. Perform assessment, implementation and assurance analyses of occupational health programs.
7. Recognize the roles and functions of employee assistance programs, medical surveillance programs, duty fitness programs, safety programs, and substance abuse testing in the occupational health setting.
8. Plan and conduct independent research focusing on the analysis and solution of a problem in occupational health practice, via the completion of a thesis/project reports.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	3
		15

REQUIRED COURSES:		HOURS
ENVR 5325	Industrial Hygiene	3
ENVR 5330	Environmental and Occupational Toxicology	3
ENVR 5345	Physical Hazards	3
ENVR 5350	Occupational Diseases and Health Practice	3
ENVR 5380	Environmental Health Microbiology	3
ENVR 5410	Environmental Data Analysis	3
		18

PRACTICE EXPERIENCE:		HOURS
SPH 5855	Public Health Practice Experience	3

ELECTIVE COURSES (SELECT 4):		HOURS
ENVR 5310	Exposure and Risk Assessment	3
ENVR 5311	Air Pollution and Health	3
ENVR 5420	Texas-Mexico Border Health Issues *	3
ENVR 5500	Biomarkers in Environmental Epidemiology	3
ENVR 5550	Introduction to Genomics and Public Health	3
ENVR 5910	Independent Study in Environmental Health	3
ENVR 6600	Spatiotemporal Environmental Health Modeling	3
EPID 6690	Occupational Epidemiology	3
		12
Total SCH		48

- *Students may substitute an elective course not on this list only with prior written approval of their advisor.*
- *Courses not approved as substitutes will not be applied toward the degree plan.*
- * *For the Texas - Mexico Border Health Issues course, ENVR 5420, all students must have a passport prior to taking this course. Additionally, international students must have a US multi-entry Visa and should purchase a travel visa for Mexico prior to taking this course.*

CULMINATING EXPERIENCE:

Comprehensive Examination

Students who select the comprehensive examination option do not register for a course in order to take the examination. In order to take the examination, a student must have a grade point average of 3.0 or higher. Students are responsible for informing the Department of Environmental and Occupational Health of their intentions to take the examination. A student who encounters a last minute emergency (sickness, death in the family, etc.) may appeal to the examination committee for an opportunity to take a make-up examination. Students who fail the examination may, upon recommendation of the department chair, be allowed to retake a different examination. However, an opportunity for retaking the examination is not automatic, and students may only retake the examination once.

Examinations will be held the fall and spring semesters. Students must have completed all core and required coursework before registering for the examination. Students should notify their academic advisor by finals week of the preceding semester that they intend to take the examination. Students will be provided a computer without internet connectivity. Length of time for the examination will be 4 hours. Outside resources are not allowed. The examination will be given to the proctor upon completion of the examination and copies will be distributed to the faculty.

Each question will be graded as Pass or Fail by more than one faculty member. The student's academic advisor is responsible for communicating the results of the examination. Students who fail the examination can retake it the following semester. Students who fail the retake of the examination will be withdrawn from the program and will need to apply for readmission.

- Upon approval by the student's advisor and the department chair, students may elect to complete a thesis for the culminating experience. In this case, students will take 6 SCH of "ELECTIVE" coursework and 6 SCH of thesis.
- MPH students enrolled in the thesis as part of their degree plan are required to demonstrate that they are actively working toward its completion. This requires confirmed submission of written materials and on-going consultation with committee members within the

first and subsequent semesters of registering for thesis credit. It is the responsibility of the student to maintain contact with their thesis advisor and committee members to assure satisfactory progress. MPH students choosing the thesis option but not making satisfactory progress as determined by their advisor may be required to take the comprehensive examination instead of the thesis or may be required to take additional courses to assure sufficient knowledge and skills needed to continue the research project. Any action taken as a result of not meeting the above expectations is subject to the discretion of the department chair.

- MPH students can use attendance at departmental seminars towards the 200 hours for the Public Health Practice Experience (SPH 5855) as follows: The practicum must include attendance at a minimum of 8 and a maximum of 16 departmental seminars. This is equivalent to a minimum of 8 and a maximum of 16 hours being credited towards the 200 hours of the practicum required. All students must complete at least 8 hours of seminars for graduation.

7. Implement appropriate study designs to an epidemiologic problem.
8. Review epidemiologic literature critically.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	<u>3</u>
		15

REQUIRED COURSES:		HOURS
BIOS 5215	Biostatistics for Public Health II	3
BIOS 5740	Introduction to Statistical Packages	3
EPID 5110	Intermediate Epidemiology	3
EPID 5300	Survey Methodology	3
EPID 5400	Applied Data Analysis in Epidemiology	<u>3</u>
		15

PRACTICE EXPERIENCE:		HOURS
SPH 5855	Public Health Practice Experience	3

CONCENTRATION SELECTIVE COURSES:		HOURS
<i>Choose one from the following courses</i>		
<i>(applies to both thesis and comprehensive examination option)</i>		
EPID 5610	Chronic Disease Epidemiology	3
EPID 5630	Infectious Disease Epidemiology	<u>3</u>
		3

CONCENTRATION ELECTIVE COURSES:		HOURS
<i>Choose three from the following list of courses if completing the thesis option or four from the following list of courses if completing the comprehensive examination option</i>		
EPID 6100	Advanced Methods in Epidemiology I	3
EPID 6101	Advanced Methods in Epidemiology II	3
EPID 6200	Experimental Methods in Epidemiology	3
EPID 6300	Molecular Epidemiology	3
EPID 6615	Epidemiologic Surveillance	3
EPID 6635	Social Epidemiology	3
EPID 6650	Nutritional Epidemiology	3
EPID 6670	Cancer Epidemiology	3
EPID 6690	Occupational Epidemiology	3
EPID 5200	Epidemiology for Healthcare Practice	3
EPID 5690	Epidemiology of Bioterrorism/ Catastrophic Events	3
EPID 5910	Independent Study in Epidemiology	1-3
BIOS 5760	Data Management	<u>3</u>

Thesis: 9
Comprehensive Examination: 12

Total SCH Thesis: 51
Comprehensive Examination: 48

- Students may substitute an elective course not on this list only with prior written approval of their advisor.
- Courses not approved as substitutes will not be applied toward the degree plan.

Department of Epidemiology

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MPH in Epidemiology

The epidemiology concentration is designed for students seeking to acquire skills in the fundamental methods of epidemiologic investigation and prevention in populations. Concentration courses emphasize basic and advanced epidemiologic principles and their application to current problems in public health and related disciplines. Students in the epidemiology concentration are expected to use appropriate methods to plan, implement, and conduct epidemiologic research. Students are also expected to critically evaluate research methodology to assess validity and potential sources of bias. Skills in computer use and statistics acquired in the public health program are used to analyze, interpret, and disseminate the results of epidemiologic investigations. For the culminating experience, students may choose between a thesis or a comprehensive examination. Students selecting the comprehensive examination option will complete 48 semester credit hours and students selecting the thesis option will complete 51 semester credit hours. By the conclusion of the MPH program, a student in the epidemiology concentration will be able to:

1. Quickly assess a public health problem using quantitative and/or qualitative data.
2. Use relevant analysis for relevant study designs.
3. Understand the natural occurrence of disease and associated risk factors.
4. Understand the importance of ethical considerations in the conduct of epidemiological studies.
5. Identify, develop, apply, and modify an appropriate research approach to an epidemiological problem based on constraints and available resources.
6. Identify and develop data collection strategies for the appropriate epidemiologic approach.

CULMINATING EXPERIENCE:**Comprehensive Examination**

Students who select the comprehensive examination option do not register for a course in order to take the examination. The examination covers material from all required courses. In order to take the examination, a student must have a grade point average of 3.0 or higher in the aforementioned epidemiology courses. The examination is given in the third week of April and the third week of November each year. Students are responsible for informing the Department of Epidemiology of their intentions to take the examination. A student who encounters a last minute emergency (sickness, death in the family, etc.) may appeal to the examination committee for an opportunity to take a makeup examination. Students must receive at least 80% on the examination in order to pass. In exceptional circumstances, students who fail the examination may, upon recommendation of the Chair of the Department of Epidemiology, be allowed to retake a different examination. However, an opportunity for retaking the examination is not automatic, and students may only retake the examination once.

- MPH students enrolled in the thesis as part of their degree plan are required to demonstrate that they are actively working toward its completion. This requires confirmed submission of written materials and on-going consultation with committee members within the first and subsequent semesters of registering for thesis credit. It is the responsibility of the student to maintain contact with their thesis advisor and committee members to assure satisfactory progress. MPH students choosing the thesis option but not making satisfactory progress as determined by their advisor may be required to take the comprehensive examination instead of the thesis or may be required to take additional courses to assure sufficient knowledge and skills needed to continue the research project. Any action taken as a result of not meeting the above expectations is subject to the discretion of the department chair.
- MPH students can use attendance at Epidemiology Seminars towards the 200 hours for the Public Health Practice Experience (SPH 5855) as follows: The practicum must include attendance at a minimum of 8 and a maximum of 16 departmental seminars. This is equivalent to a minimum of 8 and a maximum of 16 hours being credited towards the 200 hours of the practicum required. All students must complete at least 8 hours of seminars for graduation.
- MPH students who take the Public Health Practice Experience (SPH 5855) must include field experience in the practicum which is comprised of 1) performing actual data collection defined as abstraction of records, coding, or medical chart review and abstraction or 2) data editing and analysis. All MPH student practicum must include some element of data collection or working with raw data.

Department of Health Management & Policy

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MPH in Health Management & Policy

The health management and policy concentration is designed to prepare students with competencies needed for careers in policy development, policy analysis and health management. The curriculum addresses health systems, quantitative methods, health economics and finance, managed care, private and public sector management, state and national policy, and health law. The concentration provides instruction in professional competencies commonly found in schools of public policy, public administration, business and management. By the conclusion of the MPH program, a student in the health management and policy concentration will be able to:

1. Understand the ethical framework suitable for health policy and management.
2. Acquire concepts to enable participation in the health care system.
3. Develop knowledge regarding mechanisms to monitor and evaluate programs for their effectiveness and quality.
4. Apply policy and management skills that are enduring and transferable over the course of the student's career.
5. Understand the legal and political system and how to affect change within it.
6. Manage information systems for the collection, retrieval and appropriate analysis of data for decision-making.
7. Apply principles of strategic planning and marketing to public health.
8. Apply quality and performance improvement concepts to address organizational performance issues.
9. Collect, summarize and interpret policy-making structures and information relevant to a health issue.
10. Articulate the health, fiscal, administrative, legal, social and political implications of policy options.
11. Develop plans to implement and evaluate policies, including goals, outcomes, process objectives and implementation steps.
12. Apply quantitative and technological skills appropriate to health management and policy.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	3
		<u>15</u>

REQUIRED COURSES:		HOURS
HMAP 5240	Health Politics and Policy	3
HMAP 5245	Health Economics	3
HMAP 5255	Health Finance I	3

HMAP 5430	Public Health Law	3
HMAP 5450	Public Health Program Planning & Evaluation	3
HMAP 5270	Health Services Management	3
		18

PRACTICE EXPERIENCE:	HOURS
SPH 5855 Public Health Practice Experience	3

ELECTIVE COURSES (SELECT 4):	HOURS
BIOS 5215 Biostatistics for Public Health II	3
BIOS 5730 Regression Analysis	3
BIOS 5740 Introduction to Statistical Packages	3
BIOS 5760 Data Management	3
ECON 5150 Public Economics (UNT)	3
ECON 5460 Industrial Organization and Public Policy (UNT)	3
ECON 5880 Seminar on Current Health Care Economics Research (UNT)	3
HMAP 5215 Introduction to Health Systems and Policy	3
HMAP 5256 Health Finance II	3
HMAP 5260 Health Information Systems	3
HMAP 5442 Decision Analysis and Quantitative Modeling	3
HMAP 6215 Health Insurance and Managed Care	3
HMAP 6220 Advanced Health Economics	3
HMAP 6350 Advanced Health Policy	3
HMAP 6430 Health Care Law	3
MGMT 5140 Organizational Behavior and Analysis (UNT)	3
MGMT 5530 Operations and Management of Physician Practices (UNT)	3
SCBS 5140 Social and Cultural Determinants of Population Health	3
SCBS 5200 Social Justice, Ethics and Human Rights	3
SCBS 5215 Introduction to Health Disparities	3
SCBS 5350 Social and Behavioral Methods and Evaluation	3
SCBS 5411 Community Program Planning	3
SCBS 5415 Public Health Interventions	3
SCBS 5430 Health Communication Strategies in Public Health	3
SCBS 5500 Introduction to International Health	3
	12
	Total SCH 48

- Students may substitute an elective course not on this list only with prior written approval of their advisor.
- Courses not approved as substitutes will not be applied toward the degree plan.

CULMINATING EXPERIENCE:

Comprehensive Examination

The comprehensive examination covers material from all required concentration-specific courses. In order to take the examination, students must be in good academic standing. The examination is given in the first week of April each year. Students are responsible for informing the Department of Health Management and Policy of their intentions to take the examination. A student who encounters a last minute emergency (sickness, death in the family, etc.) may appeal to the examination committee for an opportunity to take a makeup examination. Students who fail the examination may, upon recommendation of the committee, be allowed to retake the

examination. However, an opportunity for retaking the examination is not automatic.

- Upon approval by the student's advisor and the department chair, students may elect to complete a thesis for the culminating experience. In this case, students will take 6 SCH of "ELECTIVE" coursework and 6 SCH of thesis.

Department of Social & Behavioral Sciences

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MPH in Community Health

The community health concentration prepares professionals from a variety of backgrounds (nursing, medicine, dentistry, allied health, social work, health education, nutrition, psychology, anthropology, sociology) for public health careers. This concentration uses a multidisciplinary approach to identify community, family, social, and behavioral factors in both the onset of and solution to public health problems through disease prevention, health promotion, health education or health care. Community health contributes to the development, implementation, and evaluation of programs and policies that promote healthy environments and healthy lives for individuals and populations. Students will learn social and behavioral theories and methodologies that are used to plan, implement, and evaluate health promotion and disease prevention programs and interventions. Students will also be prepared to perform community-based research, communicate findings to the public and policymakers, and advocate for evidence-based programs and policies. This concentration also prepares students to take the Certified Health Education Specialists (CHES) examination. Traditionally, program graduates have assumed positions in public health departments, health and human service agencies, and other health care settings. By the conclusion of the MPH program, a student in the community health concentration will be able to:

1. Identify theories, concepts models, and methodologies from a range of social and behavioral disciplines that are used in the solution of public health problems affecting the health of populations and individuals.
2. Identify needs and assets for social and behavioral science interventions.
3. Analyze social and behavioral factors contributing to disparities in population health.
4. Describe the steps and procedures for planning, implementation, and evaluation of community health programs, policies, and interventions.
5. Specify multiple targets and levels of intervention for community health programs and policies.
6. Apply evidence-based approaches in the development, implementation, and evaluation of community health promotion interventions to improve health and reduce disparities.
7. Implement and coordinate programs, research, and interventions in a public health setting.

8. Interact sensitively, effectively, and professionally with persons from diverse cultural, socioeconomic, educational, and professional backgrounds and with persons of all ages.
9. Develop community health promotion programs and use strategies responsive to the diverse cultural values and traditions of the communities being served.
10. Apply social justice and human rights principles and values when addressing community needs and use collaborative methods to achieve organizational and community health and organizational goals.
11. Apply ethical principles to address potential dilemmas in public health interventions.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	3
		15

REQUIRED COURSES:		HOURS
SCBS 5350	Social and Behavioral Methods and Evaluation	3
SCBS 5410	Community Assessment	3
SCBS 5411	Community Program Planning	3
SCBS 5415	Public Health Interventions	3
		12

PRACTICE EXPERIENCE:		HOURS
SPH 5855	Public Health Practice Experience	3

ELECTIVE COURSES (SELECT 4):		HOURS
SCBS 5140	Social and Cultural Determinants of Population Health	3
SCBS 5200	Social Justice, Ethics and Human Rights	3
SCBS 5215	Introduction to Health Disparities	3
SCBS 5420	Texas -Mexico Border Health Issues*	3
SCBS 5430	Health Communication Strategies in Public Health	3
SCBS 5500	Introduction to International Health	3
SCBS 5650	Stress and Coping	3
HMAP 5240	Health Politics and Policy	3
HMAP 5270	Health Services Management	3
		12

Total SCH 42

• Students may substitute an elective course not on this list only with prior written approval of their advisor.

• Courses not approved as substitutes will not be applied toward the degree plan.

* For the Texas - Mexico Border Health Issues course, SCBS 5420, all students must have a passport prior to taking this course. Additionally international students must also have a US multi-entry Visa and should purchase a travel visa for Mexico prior to taking this course.

CULMINATING EXPERIENCE:

Comprehensive Examination

The comprehensive examination will be administered once each year. This examination will cover the competencies outlined in the degree program. Courses are meant as partial preparation but outside study is strongly suggested. The examination will contain practice-based questions relevant to implementing social and behavioral sciences in public health settings. Areas that will be covered include but are not limited to: community assessment, program planning, health promotion and disease prevention interventions, and evaluation of programs and interventions.

- Upon approval by the student's advisor and the department chair, students may elect to complete a thesis for the culminating experience. In this case, students will take 6 SCH of "ELECTIVE" coursework and 6 SCH of thesis.

Master of Health Administration (MHA) Program

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The master of health administration program is designed to prepare students with competencies needed to assume management positions in health services organizations throughout the world. The 60 credit hour program is designed for aspiring and committed professionals who are interested in careers in health services administration in such settings as hospitals, managed care organizations, medical group practices, long-term care, insurance and pharmaceutical companies, consulting firms, government agencies, and for profit and nonprofit sector organizations. Emphasis is placed on theoretical bases in three areas: organization and operations, economics and finance, and policy analysis. Through an internship and a final integrative experience, students are asked to incorporate, synthesize, and apply their knowledge within both an operational and a community context. The result is an organizational perspective that encourages students to integrate knowledge from a range of management disciplines while emphasizing accountability for effective performance.

MHA Admissions

The School of Public Health is a member of SOPHAS (Schools of Public Health Application Service). Students may apply online at www.sophas.org or directly to the school at www.hsc.unt.edu. The School of Public Health admits MHA students during the fall, spring, and summer semesters. Refer to the school's academic calendar for application deadline.

MHA Admission Requirements

To be considered for admission, applicants must meet the following requirements and submit all application materials to either SO-

PHAS at www.sophas.org or directly to the school at www.hsc.unt.edu:

- Hold a minimum of a bachelor's degree from a regionally or federally accredited institution.
- Submit complete, official transcripts from all colleges or universities attended
- Submit official GRE, MCAT or GMAT scores
- International applicants must include an official WES or ECE evaluation report listing course-by-course U.S. grade point equivalency and official TOEFL scores (minimum scores: written = 550; computer-based = 213; internet-based = 79)
- Three (3) letters of recommendation
- Statement of Purpose
- Current resume or curriculum vita

Once an offer of admissions has been extended to a student, official transcripts from all colleges or university attended must be re-submitted directly to the School of Public Health, Office of Student Academic Services, 3500 Camp Bowie Blvd., Fort Worth, TX 76107-2699.

Once an offer of admissions has been extended to an international applicant, the Health Science Center will not issue immigration papers for student visas until the following additional admissions credentials have been received and approved by the School of Public Health:

- Proof of financial resources
- Official transcripts from each college or university attended should be re-submitted in both English and the student's native language

Admissions Decisions and Deferments

Applicants will be furnished written notification regarding their admission status by the school's Office of Student and Academic Services. Statements by other UNTHSC personnel concerning the applicant's admissibility are not valid until confirmed in writing by the Office of Student and Academic Services.

Students who are admitted to a degree program and plan to enroll are required to submit an Admissions Decision Form along with a non-refundable \$200 assurance fee that will be used toward tuition

upon arrival. Applicants admitted to a degree program that do not intend to enroll in the semester for which they applied, must contact the Office of Student and Academic Services to request deferment. Deferments must be made in writing and cannot exceed one year from the original acceptance date. There is a deferment fee of \$300; the deferment fee is due at the time the request is made.

Information submitted in the application materials must be complete and correct. Prospective and current students must notify the proper institution officials regarding any changes in the information provided on their application. Falsification or omission of any information on the application documents will void a student's admission, cancel their enrollment, and/or result in appropriate disciplinary action.

All materials submitted during the application process become the property of the Health Science Center and cannot be returned.

MHA Learning Objectives

1. Apply financial knowledge to help optimize resource allocation to support organizational viability
2. Use information technology to assist in managerial decision making
3. Manage a diverse staff
4. Demonstrate knowledge of ethical values necessary for managerial decisions
5. Develop knowledge of important federal and state health policy issues
6. Identify important regulatory and legal issues that impact health service management decision making
7. Show a level of leadership that relies on important written and oral communication skills
8. Possess a familiarity with the fundamentals of biostatistics and epidemiology necessary to analyze community needs
9. Understand the role of the application of expert economic, statistical and legal analysis in the support of management decision making
10. Understand the concept of productivity and how to measure it using tools from economics, finance and management science



MHA Academic Procedures

Each student is responsible for the completion of the Master of Health Administration program according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the School of Public Health Office of Student and Academic Services. Students may e-mail the Office of Student and Academic Services at sph@hsc.unt.edu with questions, concerns or clarification on any of the following procedures.

1. Once a student is accepted into the School of Public Health and enrolled in coursework, an advisor is assigned from the Department of Health Management Policy.
2. The student must file a curriculum plan approved by the advisor and department chair with the School of Public Health Office of Student and Academic Services before the completion of the first semester of enrollment. Enrollment will be restricted after the first semester if a curriculum plan is not on file. Students are strongly encouraged to follow a 2-year or 3-year curriculum plan to ensure the most appropriate sequence of courses and the availability of classes.
3. Students must complete a practice experience. Students are eligible to enroll for Public Health Practice Experience (SPH 5855) after the completion of a minimum of 21 SCH (must be a combination of MPH core courses and departmental required courses). Students must confer with the Public Health Practice Coordinator prior to registration. For details regarding the public health practice, review the manual on the Center for Public Health Practice web site.
4. All MHA students must complete the MHA Capstone course. The capstone is an organized, semester-long course, under the supervision of faculty, in which a team project is conducted and a team written presentation of the project is produced.
5. Students must submit the Intent to Graduate form to the School of Public Health Office of Student and Academic Services in the semester prior to the semester for which they plan to graduate. For example, if a student intends to graduate in the spring semester, the Intent to Graduate form must be submitted to the Office of Student and Academic Services by the specified deadline in the fall semester (see academic calendar for deadlines).

To request a waiver, a student must submit a petition in writing to their advisor and the appropriate instructor outlining the class they would like to waive. The petition should also include documentation indicating that the previous coursework is comparable to the requirements of the course stated in the petition. The student's advisor and the instructor and department chair associated with the course must approve such petition.

No credits are awarded for courses that are waived.

A waiver allows a student to substitute an elective course for a required course. For additional information regarding transfer coursework, refer to the section, "Use of Transfer Credit."

MHA Curriculum

REQUIRED COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
HMAP 5240	Health Politics & Policy	3
HMAP 5242	Decision Analysis and Quantitative Modeling	3
HMAP 5245	Health Economics	3

HMAP 5255	Health Finance I	3
HMAP 5256	Health Finance II	3
HMAP 5260	Health Information Systems	3
HMAP 5270	Health Services Management	3
HMAP 5272	Strategic Planning and Marketing	3
HMAP 5450	Public Health Program Planning & Evaluation	3
HMAP 5600	Human Resource Management	3
HMAP 5850	MHA Capstone	3
HMAP 6430	Health Care Law	3
		48

PRACTICE EXPERIENCE:		HOURS
SPH 5855	Public Health Practice Experience	3

ELECTIVE COURSES (SELECT 3):		HOURS
BIOS 5760	Data Management	3
HMAP 5430	Public Health Law	3
HMAP 6200	Organizational Management	3
HMAP 6215	Health Insurance and Managed Care	3
MGMT 5140	Organizational Behavior and Analysis (UNT)	3
MGMT 5210	Human Resource Management Seminar (UNT)	3
MGMT 5530	Operation and Management of Physician Practice Organizations (UNT)	3
		9

Total SCH 60

• Students may substitute an elective course not on this list with prior written approval of their advisor.

Dual Degree Programs

The School of Public Health offers three dual degree programs: MSN/MPH in Health Management & Policy, MS in Applied Anthropology/MPH in Community Health, and the DO/MPH. The students in these programs are evaluated and admitted separately to each school and must meet all requirements for each degree separately. Admission to one program does not assure admission to the other. Students completing a dual degree program receive diplomas and transcripts from each of the participating schools. Thus, they are not joint degree programs where one diploma lists both schools, but rather dual degree programs.

In each of the following programs, students must complete the MPH core curriculum, which includes a course in biostatistics, epidemiology, environmental health, health management and policy and social and behavioral sciences. With the use of transfer credit and dual credit, students are required to complete 45-48 semester credit hours, which includes 3 SCH of practice experience and 6 SCH of a culminating experience (thesis or comprehensive examination and 2 additional electives).

Dual Degree Admission Requirements & Application Procedures

MSN/MPH Applicants

- To be considered for admissions, an applicants must hold a minimum of a bachelor's degree from a regionally or federally accredited institution
- Applicant may only apply to the Department of Health Management & Policy

- Students in the MSN program must apply to the MPH program prior to the completion of 24 SCH in the MSN program. Conversely, students in the MPH program must apply to the MSN program prior to the completion of 24 SCH in the MPH program.
- To be considered for admission, the applicant must file the following official credentials with either the Schools of Public Health Online Application Service, (www.sophas.org) or directly to the school at www.hsc.unt.edu;
 - Application fee
 - Complete official transcripts from all colleges or universities attended
 - International applicants with foreign transcripts must also include an official WES or ECE transcript evaluation report listing course by course U.S. grade point equivalencies
 - Official scores from one of the following entrance examinations: GRE, GMAT, MCAT
 - Three confidential letters of evaluation by individuals in a position to comment on the applicant's potential as a student and future professional
 - An essay of personal career goals
 - A current curriculum vita or resume

MS – Applied Anthropology/MPH Applicants

- To be considered for admissions an applicants must hold a minimum of a bachelor's degree from a regionally or federally accredited institution
- Applicants may only apply to the Community Health Concentration within the Department of Social & Behavioral Sciences
- New students are encouraged to apply simultaneously to both programs for the Fall Semester. Application deadlines for Anthropology are Feb. 15th and May 1st. However, a student may decide to apply at any time *prior to the 18 SCH cut-off*.
- Students are not given dual degree status until they have been successfully admitted to both the MPH and the MS in Applied Anthropology programs.
- For students currently enrolled in the MPH program or Anthropology, they have 18 SCH to decide if they would like to complete the dual degree program. If a current MPH student, they must apply to the anthropology program for the Fall semester. If a current anthropology student, they can apply to the SPH for any semester (Fall, Spring, or Summer).
- To be considered for admission, the applicant must file the following official credentials with either the Schools of Public Health Online Application Service, www.sophas.org, or directly to the school at www.hsc.unt.edu:
 - Application fee
 - Complete official transcripts from all colleges or universities attended
 - International applicants with foreign transcripts must also include an official WES or ECE transcript evaluation report listing course by course U.S. grade point equivalencies
 - Official scores from one of the following entrance examinations or tests: GRE, GMAT, MCAT
 - Three confidential letters of evaluation by individuals in a position to comment on the applicant's potential as a student and future professional
 - An essay of personal career goals
 - A current curriculum vita or resume

DO/MPH Applicants

- To be considered for admissions an applicants must hold a minimum of a bachelor's degree from a regionally or federally accredited institution
- Applicants for the DO/MPH dual degree program may substitute the MCAT for the GRE
- Applicants may apply to any MPH concentration
- Applicants that are currently enrolled in TCOM should submit a letter to the University of North Texas Health Science Center Office of the Registrar granting permission to release copies of official transcripts and MCAT score reports to the School of Public Health, Office of Student and Academic Services.
- Applicants must file the following official credentials with the School of Public Health, Office of Student and Academic Services:
 - An application for admission to the School of Public Health
 - Application fee
 - Complete official transcripts from all colleges or universities attended
 - Official scores from one of the following entrance examinations: GRE, GMAT, MCAT
 - Three confidential letters of evaluation by individuals in a position to comment on the applicants potential as a student and future professional
 - An essay statement of personal career goals (referencing the desired concentration)
 - A current curriculum vita or resume

Applicants that have not enrolled in TCOM must request MCAT scores and official transcripts from any college or university attended to be sent to the School of Public Health, Office of Student and Academic Services.

Dual Degree Curriculum

MSN/MPH Dual Degree Program

The MPH/MSN is a cooperative program offered by the Health Science Center's School of Public Health and the University of Texas at Arlington School of Nursing (UTA-SON). The Health Management & Policy concentration is oriented toward nursing professionals who want to supplement their training with practical public health experience specifically geared toward management and policy.

Thirty (30) SCH are completed within the School of Public Health and fifteen (15) SCH will be transferred in from the MSN curriculum as dual credit coursework. The MPH curriculum consists of four components. These include: (1) the core masters curriculum which provides knowledge, skills and experience in the area of public health; (2) the departmental/concentration curriculum which provides knowledge, skills and experience in the area of health management and policy; (3) the practicum which allows the student to apply their knowledge in the field of health management and policy in a public health setting; and (4) the culminating experience of Thesis in the concentration area which provides an in-depth research opportunity for nursing professionals in the field of health management and policy.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	<u>3</u>
		15

REQUIRED COURSES:		HOURS
HMAP 5240	Health Politics and Policy (taken at UTA)	3
HMAP 5245	Health Economics	3
HMAP 5255	Finance for Health Management (taken at UTA)	<u>3</u>
		9

SELECTIVE COURSES:		HOURS
BIOS 5215*	Biostatistics for Public Health II	3
<i>or</i>		
HMAP 5260*	Health Information Systems	<u>3</u>
		3

* BIOS 5215 recommended for students with a policy focus; HMAP 5260 recommended for students with a management focus.

ELECTIVE COURSES (SELECT 1):		HOURS
HMAP 5430	Public Health Law	3
HMAP 5450	Public Health Program Planning & Evaluation	3
HMAP 5600	Human Resource Management	3
SCBS 5200	Social Justice, Ethics & Human Rights	3
SCBS 6220	Advanced Topics in Culture, Race/Ethnicity & Health	<u>3</u>
		3

PRACTICE EXPERIENCE:		HOURS
NURS 5340	Management Seminar (90 practicum hours)	3

CULMINATING EXPERIENCE:		HOURS
SPH 5950	Thesis	6

UTA-SCHOOL OF NURSING TRANSFER HOURS:		HOURS
NURS 5341	Financial Management in Nursing (45 practicum hours)	3
NURS 5339	Role of the Administrator (90 practicum hours)	3
		<u>6</u>
		6

Total SCH 45

MS Applied Anthropology/MPH Dual Degree Program

The Department of Anthropology at the University of North Texas and the School of Public Health have developed a cooperative agreement that allows students to pursue the Master of Public Health degree and a Master of Science in Applied Anthropology degree simultaneously. The dual degree program in Applied Anthropology and Public Health offers an opportunity to strengthen collaboration in public health, anthropology and social science research and practice. Medical anthropology is a field that uses anthropological theories as a framework to understand public health issues. Its emphasis on social and cultural influences on health, illness, and healing are central to the shared goals of improving health and social justice to eliminate local and global disparities. This 2 ½ year program prepares students for careers in research, public health, and public policy planning relating to health and health care in the U.S.

or in an international setting.

Total hours for dual degree program in MPH/MS in Applied Anthropology – 63 hours (36 in public health; 27 in anthropology)

Master of Public Health/Community Health Concentration

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	<u>3</u>
		15

REQUIRED COURSES:		HOURS
SCBS 5410	Community Program Planning	3
SCBS 5410	Community Assessment	3
SCBS 5415	Public Health Interventions	<u>3</u>
		9

ELECTIVE COURSES:		HOURS
Students may take any departmental (SCBS) MPH course with approval of their Academic Advisor		6

CULMINATING EXPERIENCE:		HOURS
SPH 5950	Thesis (topic to overlap with ANTH 5800 and 5810 Practicum I & II)	6
		<u>6</u>
		6

Public Health SCH 36

Master of Science in Applied Anthropology

CORE COURSES:		HOURS
ANTH 5010	Anthropological Thought and Praxis I	3
ANTH 5021	Anthropological Thought and Praxis II	3
ANTH 5031	Ethnographic and Qualitative Methods	3
ANTH 5041	Quantitative Methods	3
ANTH 5050	Pre-Practicum: Problems and Cases in Applied Anthropology	3
ANTH 5201	Medical Anthropology	3
ANTH 5210	Anthropology and Public Health	<u>3</u>
		21

PRACTICUM IN MEDICAL ANTHROPOLOGY AND PUBLIC HEALTH

		HOURS
ANTH 5800	Practicum I (topic to overlap with SPH 5850 Thesis)	3
ANTH 5810	Practicum II (topic to overlap with SPH 5850 Thesis)	<u>3</u>
		6

Anthropology SCH 27

Total SCH 63

*12 SCH of coursework will transfer to SPH for a total of 48 SCH for the MPH.

DO/MPH Dual Degree Program

The dual DO/MPH curriculum for the Doctor of Osteopathic Medicine (DO) and the Master of Public Health (MPH) is offered through the Texas College of Osteopathic Medicine (TCOM) and the School of Public Health (SPH). The curriculum is oriented toward medical students who want to supplement their training with practical public health experience. The program will typically require four, in some cases five, to complete. Students who have been accepted to TCOM may apply to the DO/MPH program in any of the existing SPH concentrations beginning the summer before their first year of medical school through the completion of their third year of medical school.

Students in the DO/MPH program are required to complete 45 semester credit hours (SCH) of public health coursework to obtain the MPH degree. The MPH curriculum consists of four components: (1) the core masters curriculum which provides knowledge, skills and experience in the field of public health; (2) the departmental curriculum which provides knowledge, skills and experience in the student's area of concentration; (3) the concentration curriculum which provides knowledge, skills and experience in the student's concentration; and (4) the culminating experience of thesis in the concentration area which provides an in-depth research opportunity for osteopathic physicians family medicine and internal medicine practitioners in the field of public health.

CORE COURSES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	3
		15

DEPARTMENT COURSES:		HOURS
Required Courses:		6-12*
Selective Courses:		0-3*
		12

* Number of required and selective courses is dependent upon the concentration selected.

PRACTICE EXPERIENCE:		HOURS
SPH 5855	Public Health Practice Experience*	3

* To be completed during the medical student rotations – student must be placed in a public health setting that is jointly determined by TCOM and the SPH Public Health Practice Coordinator

CULMINATING EXPERIENCE:		HOURS
Comprehensive Examination and 2 Electives		6
<i>or</i>		
SPH 5950	Thesis	6
		6

TRANSFER HOURS FROM TCOM:HOURS	
Medical Competencies in Public Health (135 contact hours)	9

Total SCH 45

Non-Degree & Summer Institute Admissions Requirements

Non-Degree Admissions

The Health Science Center recognizes that some students may wish to be admitted to the School of Public Health for the purpose of taking courses not necessarily leading to an advanced degree. Admission to the School of Public Health may be granted, subject to the following provisions. The School of Public Health admits Non-Degree seeking students during the fall, spring and summer semesters. The application deadlines are as follows:

Semester	Deadline	Classes Begin
Fall 2008	March 15	August 25, 2008
Spring 2009	September 1	January 12, 2009
Summer 2009	February 1	May 26, 2009
Fall 2009	March 15	August 24, 2009

Applicants to the Non-Degree program will fall under one of the following admissions categories:

1. **Non-Degree Admission:** Accepted to take a maximum of 12 semester credit hours (SCH)
2. **Incomplete:** Missing application materials

Admission to the School of Public Health as a non-degree seeking student may be granted subject to the following provisions:

- The applicant must hold a minimum of a bachelor's degree or its equivalent from a regionally or federally accredited institution, have a minimum overall GPA of 3.0 or better, and must meet application deadlines.
- The student in this status is required to receive credit in all graduate courses taken, and must maintain a GPA of 3.0 on all such courses attempted.
- A student who is admitted to non-degree status has no assurance that work completed under this status will be applicable toward degree requirements should he or she subsequently be admitted to a degree program at the Health Science Center. A maximum of 12 SCH may be taken. Completion of departmental graduate courses by non-degree students does not obligate the School of Public Health to grant admission to a degree program at a later date, unless all general and specific requirements for admission to that program have been met.
- International applicants are not eligible for non-degree admission.
- To be considered for admission, the applicant must file the following official credentials with the School of Public Health Office of Student & Academic Services:
 - Complete application (download at www.hsc.ut.edu/education/spH/Admissions)
 - Application fee
 - Complete official transcripts from all colleges or universities attended

Summer Institute Admissions

The Summer Institute is an intensive 3-week session that offers coursework in each of the five major disciplines of public health. Courses are taught by School of Public Health faculty and may be

transferred to a degree program within the School of Public Health or other graduate programs. Students earn three (3) semester credit hours (SCH) for each course in which they enroll. Admission to the School of Public Health may be granted, subject to the following provisions:

- The applicant must hold a minimum of a bachelor's degree or its equivalent from a regionally or federally accredited institution and meet the application deadline published on the academic calendar.
- A student who is admitted to the Summer Institute program will be allowed to take a maximum of 12 (SCH). Completion of departmental graduate courses by Summer Institute students does not obligate the School of Public Health to grant admission to a degree program at a later date, unless all general and specific requirements for admission to that program have been met.
- International applicants are not eligible for Summer Institute admission.
- To be considered for admission, the applicant must file the following official credentials with the School of Public Health Office of Student & Academic Services:
 - Complete application (download at hsc.unt.edu/education/sph/Admissions)
 - Application fee
 - Complete official transcripts from all colleges or universities attended

Applicants will be furnished written notification regarding their admission status by the school's Office of Student and Academic Services. Statements by other UNTHSC personnel concerning the applicant's admissibility are not valid until confirmed in writing by the Office of Student and Academic Services.

Information submitted in the application materials must be complete and correct. Prospective and current students must notify the proper institution officials regarding any changes in the information provided on their application. Falsification or omission of any information on the application documents will void a student's admission, cancel their enrollment, and/or result in appropriate disciplinary action.

All materials submitted during the application process become the property of the Health Science Center and cannot be returned.

Doctor of Public Health (DrPH) Program

The Doctor of Public Health (DrPH) degree in Public Health Practice is an indication of distinguished scholarly accomplishment and practice in the professional field of public health. The goal of the DrPH program is to prepare students for leadership roles in the professional practice of public health in governmental, private and not-for-profit organizations. Enrollment into the program is limited to applicants who have satisfactorily completed an MPH degree or equivalent prerequisite requirements. Preference may be given to those with professional public health work experience. Students in the DrPH program elect an area of concentration in biostatistics, epidemiology, health management and policy, or social and behavioral sciences.

DrPH Admission

The Health Science Center is a member of SOPHAS (Schools of Public Health Application Service). Students may apply online at

www.sophas.org. The School of Public Health admits DrPH students during the fall semester only.

Applicants to the DrPH program will fall under one of the following admissions categories:

1. **Full Admission:** Accepted without reservation to the MPH program
2. **Denied:** Not admitted to the program because application was not competitive
3. **Non-review:** Not reviewed due to an incomplete application file

DrPH Admissions Requirements

1. Hold a minimum of a master's degree from a regionally or federally accredited institution. Preference is given to applicants with the Master of Public Health (MPH) degree. Students who do not hold the MPH degree will be required to take additional courses depending upon their prior course work.
2. Students will only be admitted to the DrPH program in the fall semester. Students may take prerequisite coursework in the spring and summer semesters prior to be granted full admissions to the DrPH program in the fall semester.
3. The prerequisites for the DrPH program include 18 SCH of MPH coursework:
 - Biostatistics for Public Health I
 - Biostatistics for Public Health II
 - Behavioral Foundations of Public Health
 - Introduction to Health Management and Policy
 - Environmental Health
 - Principles of Epidemiology
 Each department may require additional prerequisites that are specific to their area of specialization.
4. Students who apply to the DrPH program without an MPH will be evaluated for their potential in the DrPH program. If they are admitted to the DrPH program, it will be under a provisional status. Upon the successful completion of all DrPH prerequisites with a grade point average of at least a 3.7, students will gain full admission to the DrPH program without having to go through the admissions process again. If the student's GPA is below a 3.7 on the DrPH prerequisites, they must go back through the admissions process for review; they will not be guaranteed full admission to the DrPH program.
5. To be considered for admission, the applicant must file the following official credentials with the SOPHAS www.sophas.org:
 - An application for admission to the School of Public Health
 - Application fee
 - Complete official transcripts from all colleges or universities attended
 - Official scores from all required entrance examinations or tests
 - Three (3) letters of recommendation
 - A written statement of purpose
 - A current curriculum vita or resume

Once an offer of admissions has been extended to a student, official transcripts from all colleges or university attended must be re-submitted directly to the School of Public Health.

Once an offer of admissions has been extended to an international applicant, the Health Science Center will not issue immigration papers for student visas until the following additional admissions credentials have been received and approved by the School of Public Health:

- Proof of financial resources
- Official transcripts from each college or university attended should be re-submitted in both English and the student's native language

Admissions Decisions and Deferments

Applicants will be furnished written notification regarding their admission status by the school's Office of Student and Academic Services. Statements by other UNTHSC personnel concerning the applicant's admissibility are not valid until confirmed in writing by the Office of Student and Academic Services.

Students who are admitted to a degree program and do not intend to enroll in the semester for which they applied must contact the Office of Student and Academic Services to request deferment. Deferments must be made in writing and cannot exceed one year from the original acceptance date. There is a deferment fee of \$300; the deferment fee is due at the time the request is made.

Information submitted in the application materials must be complete and correct. Prospective and current students must notify the proper institution officials regarding any changes in the information provided on their application. Falsification or omission of any information on the application documents will void a student's admission, cancel their enrollment, and/or result in appropriate disciplinary action. All materials submitted in the application become the property of the Health Science Center and cannot be returned.

DrPH Academic Procedures

Each student is responsible for the completion of the DrPH program according to the procedures that follow. Each item must be completed in the sequence and time period indicated. Forms are subject to revision at any time and should be obtained from the School of Public Health Office of Student and Academic Services.

1. Acceptance into the School of Public Health and an academic advisor is assigned. Students will only be admitted to the DrPH program in the Fall semester.
2. DrPH curriculum is a 65 semester credit hour program consisting of the public health core (22 SCH), departmental coursework (30 SCH), public health practice residency (4 SCH) and dissertation hours (9 SCH).
3. The student must file a curriculum plan, approved by the advisor and the appropriate department chair, with the School of Public Health Office of Student and Academic Services before the completion of the first semester of enrollment. Enrollment will be restricted after the first semester unless a curriculum plan is on file.
4. Students who apply to the DrPH program without an MPH will be evaluated for their potential in the DrPH program. If they are admitted to the DrPH program, it will be under a provisional status. The prerequisites for the DrPH program include 18 SCH of MPH coursework:

PREREQUISITE COURSES	HOURS
Biostatistics I for Public Health	3
Biostatistics II for Public Health	3
Environmental Health	3
Principles of Epidemiology	3
Introduction to Health Management & Policy	3
Behavioral Foundations of Public Health	3
Total SCH	18

Each department may require additional prerequisites that are specific to their area of specialization.

5. Upon the successful completion of all DrPH prerequisites with a grade point average of at least a 3.7, students will gain "Full" admissions to the DrPH program without having to go through the admissions process again, restricted after the first semester unless a degree plan is on file.
6. If the student's GPA is below a 3.7 on the DrPH prerequisites, he or she must go through the admissions process for review; he or she will not be guaranteed full admission to the DrPH program.
7. The student, in consultation, with the advisor, must select a dissertation committee. The major professor and one committee member must be from the student's department and the other committee member may be from outside the student's department. The committee member from outside the student's department must have full or adjunct faculty status with the School of Public Health.
8. The committee must consist of a minimum of three faculty members.
9. Each department will determine when students should form doctoral committees.
10. During the final semester that a DrPH student is completing all required coursework, the student should submit a request to take the qualifying examination to the Office of Student and Academic Services. A degree audit will be performed and the student, advisor and department support staff will be notified of the student's eligibility to enroll in the proposal development/qualifying examination course the following semester.
11. The student must obtain committee approval of a proposal for the dissertation by orally presenting and defending the proposal to the committee. Students requesting to present and defend their dissertation proposal in conjunction with the specialized qualifying examination must obtain approval from their major professor and department chair. Written approval must be submitted to the Office of Student and Academic Services prior to their proposal defense. The approved proposal must be filed with the School of Public Health Office of Student and Academic Services.
12. Students will not be eligible to register for dissertation hours until they have successfully passed the qualifying examination.
13. Each department will have its own Departmental Qualifying Examination Policies and Procedures.
14. In the event that a student does not pass the qualifying examination, the department chair, in conjunction with the student's doctoral committee, may recommend remedial measures. If the examination is not passed a second time, the student will be dismissed from the DrPH program.
15. Students are required to complete a 4 SCH Residency
16. Before the completion of the residency course (SPH 6860), the student must submit a paper for publication in a public health journal. Students should contact their department chair regarding additional journal/publication requirements.
17. Once the student has enrolled in dissertation, he/she must maintain continuous enrollment in a minimum of 3 SCH of dissertation during each semester (Fall, Spring, Summer) until the final document has been accepted by the appropriate department chair and the dean. Failure to maintain continuous enrollment will either invalidate any previous credit or will result in the student's dismissal from the degree program unless granted an official leave of absence by the dean for medical or other exceptional reasons.

Curriculum

Students in the DrPH program are required to complete a minimum of 65 semester credit hours (SCH) beyond the master's degree to obtain the DrPH degree. The DrPH curriculum consists of three components. These include: (1) the core doctoral curriculum that provides the knowledge, skills and experience necessary for competence in public health leadership positions; (2) the concentration curriculum, which develops expertise in a specialized area of public health; and (3) a culminating experience, in which the student must apply knowledge and skills developed in the program to the conduct of research or an applied project.

CURRICULUM OVERVIEW:	HOURS
Core Curriculum	22
Concentration Courses	30
Practice Experience	4
Culminating Experience	9
Total SCH	65

DrPH CORE COURSES:	HOURS
Applied Statistical Methods for Data Analysis	3
Environmental Health Determinants	3
Intermediate Epidemiology for Non-Majors	3
Health Care Systems	3
Social & Behavioral Theories and Health Applications	3
Ethical Issues in Public Health	2
Leadership for Public Health	2
Doctoral Capstone	3
Total SCH	22

To request a waiver, a student must submit a petition in writing to their advisor and the appropriate instructor outlining the class they would like to waive. The petition should also include documentation indicating that the previous coursework is comparable to the requirements of the course stated in the petition. The student's advisor and the instructor and department chair associated with the course must approve such petition.

No credits are awarded for courses that are waived.

A waiver allows a student to substitute an elective course for a required course. For additional information regarding transfer coursework, refer to "Use of Transfer Credit in the Academic Policies" section of this document.

DrPH in Biostatistics

Department of Biostatistics

Karan P. Singh, PhD
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 School of Public Health
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This concentration is designed for health professionals who would like to become leaders in public health, especially in biostatistics and related areas. The Department of Biostatistics coordinates the concentration. Graduates will be able to develop their careers in academia, public health institutions, or healthcare facilities. The graduate of the concentration will understand public health policies and practices, will identify key elements of quantitative nature for decision-making, and will be able to plan and evaluate health systems and public health programs by using biostatistical methodology. The student will also have the opportunity to learn about community health measurements, as well as the design and management of health data systems. The concentration provides the expertise and experience to plan, develop, and evaluate public health programs. The student will also gain biostatistical knowledge and skills to be able to plan and conduct applied biostatistical research as an independent researcher or member of research teams in public health and other biomedical sciences that use experimental and observational techniques. A doctoral dissertation for the concentration is required, providing the opportunity to apply the knowledge gained during coursework and other academic activities. The dissertation is expected to analyze and propose solutions to a problem with implications for public health practice, often by translating and applying new theoretical and technical advances to current problems in public health. The graduate of this program can undertake professional, managerial or leadership position in governmental or private institutions such as public health departments, academic settings such as schools of public health, epidemiologic research institutions, hospitals and other medical facilities, health care, and pharmaceutical companies. By the conclusion of the DrPH program, a student in the biostatistics concentration will be able to:

1. Plan and conduct independent research focusing on the analysis and solution of a problem in public health practice.
2. Assist in the planning, development, and evaluation of health systems, health programs, and surveillance systems.
3. Analyze and solve public health issues by applying statistical methodology.
4. Communicate finding of the analysis and solution of a problem of public health importance in professional journals.
5. Conduct experimental research in public health such as clinical and community trials in collaboration with other health professionals.

PREREQUISITES	HOURS	
BIOS 5210	Biostatistics for Public Health I	3
BIOS 5215	Biostatistics for Public Health II	3
BIOS 5725	Nonparametric Statistical Methods*	3
BIOS 5730	Regression Analysis	3
BIOS 5735	Analysis of Variance*	3
BIOS 5740	Introduction to Statistical Packages*	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	3
		30

* This course may be substituted with other biostatistics course with the written approval of advisor.

Biostatistics DrPH Curriculum

CORE COURSES:		HOURS
BIOS 6100	Applied Statistical Methods for Data Analysis	3
ENVR 6100	Environmental Health Determinants	3
EPID 6110	Intermediate Epidemiology for Non-Majors	3
HMAP 6100	Health Care Systems	3
SCBS 6100	Social & Behavioral Theories and Health Applications	3
HMAP 6140	Ethical Issues in Public Health	2
HMAP 6145	Leadership for Public Health	2
SPH 6900	Doctoral Capstone	<u>3</u>
		22

- *Students should enroll in the Doctoral Capstone (SPH 6900) at the conclusion of all coursework.*
- *Students must obtain a permission number from their major professor to register for SPH 6900.*

PRACTICE EXPERIENCE:		HOURS
SPH 6860	Public Health Practice Residency	4

- *The Public Health Practice Residency will be managed by the Department of Biostatistics. DrPH students should refer to the Public Health Practice Residency Manual on the School of Public Health website for general guidance and policy. However, there may be additional departmental requirements related to the above policy, and students are advised to check with their advisors about them.*

REQUIRED COURSES:		HOURS
BIOS 6700	Probability and Statistical Inference	3
BIOS 6750	Applied Categorical Data Analysis	3
BIOS 6775	Clinical Trials and Survival Analysis	3
BIOS 6785	Biostatistical Research and Consulting	<u>3</u>
		12

ELECTIVE COURSES (SELECT 6):		HOURS
BIOS 6720	Applied Methods of Survey Sampling	3
BIOS 6760	Multivariate Analysis	3
BIOS 6795	Topics in Biostatistics	3
BIOS 6910	Doctoral Independent Study in Biostatistics	1-3
EPID 6200	Experimental Methods in Epidemiology	3
EPID 6615	Epidemiologic Surveillance	3
HMAP 6210	Health Services Research I	3
SCBS 6170	Qualitative Research Methods	3
SCBS 6400	Research Methods in Social and Behavioral Sciences	<u>3</u>
		18

- *Students may substitute an elective course not on this list only with prior written approval of their advisor.*
- *Courses not approved as substitutes will not be applied toward the degree plan.*

CULMINATING EXPERIENCE:		HOURS
SPH 6950	Dissertation	9

Total SCH 65

Biostatistics DrPH Qualifying Examination

The qualifying examination tests mastery of material in courses offered by the Department of Biostatistics, including but not limited to clinical research methods, data management, and statistical analysis. The possible outcomes of taking the qualifying examination are Pass and Fail. Students who receive a Fail must retake the examination. No more than two attempts are allowed to earn a Pass on the examination. Students will not be allowed to register for dissertation hours before receiving a Pass on the examination. Students must complete all coursework before taking the examination and have a grade point average of 3.0 or higher in all doctoral-level coursework. Students are responsible for informing the Department of Biostatistics of their intention to take the examination. If a student does not complete the examination during the scheduled time, a grade of Fail is automatically recorded. However, students may reschedule the examination with prior written approval of their advisor at least six weeks in advance of the scheduled examination time.

DrPH in Epidemiology

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This concentration is designed for health professionals who would like to become leaders in public health, specifically in epidemiology and other related areas. The Department of Epidemiology coordinates this concentration. Graduates will be able to develop their careers in academia, public health institutions, or health-care facilities. They will understand public health policies and practices, identify key elements for decision-making, and be able to plan and evaluate health systems and public health programs by using epidemiologic methodology. This concentration provides the expertise and experience to plan, develop, and evaluate epidemiologic surveillance systems. Students will also gain the epidemiologic knowledge and skills to be able to plan and conduct applied epidemiologic research as independent researchers or as members of research teams. A doctoral dissertation is required providing the opportunity to apply the knowledge gained during coursework and other academic activities. The dissertation is expected to analyze and propose solutions to a problem with implications for public health practice, often by translating and applying new theoretical and technical advances to current problems in public health. Graduates of this program will be able to undertake professional, managerial or leadership positions in public health departments or academic settings, such as schools of public health, epidemiologic research institutions, hospitals or other medical facilities. By the conclusion of the DrPH program, a student in the epidemiology concentration will be able to:

1. Conduct epidemiological evaluations for public health programs.
2. Assist in the planning, development and evaluation of health systems and programs using epidemiologic methodology.
3. Plan, develop and evaluate epidemiologic surveillance systems.
4. Analyze and solve a public health issue by applying epidemiologic methodology.
5. Communicate findings of the analysis and solution of a problem of public health importance in professional journals.

6. Plan and conduct independent research focusing on the analysis and solution of a problem in public health practice.

DrPH PERQUISITES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
BIOS 5215	Biostatistics for Public Health II	3
BIOS 5740	Introduction to Statistical Packages	3
ENVR 5300	Environmental Health	3
EPID 5100	Principles of Epidemiology	3
EPID 5110	Intermediate Epidemiology	3
EPID 5300	Survey Methodology	3
EPID 5400	Applied Data Analysis in Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	<u>3</u>
		30

• Prerequisite coursework does not contribute to the required total number of semester credit hours needed to graduate.

CORE COURSES:		HOURS
BIOS 6100	Applied Statistical Methods for Data Analysis	3
ENVR 6100	Environmental Health Determinants	3
EPID 6100	Advanced Methods in Epidemiology I	3
HMAP 6100	Health Care Systems	3
SCBS 6100	Social & Behavioral Theories and Health Applications	3
HMAP 6140	Ethical Issues in Public Health	2
HMAP 6145	Leadership for Public Health	2
SPH 6900	Doctoral Capstone	<u>3</u>
		22

• Students should enroll in the Doctoral Capstone (SPH 6900) at the conclusion of all coursework.

• Students must obtain a permission number from their major professor to register for SPH 6900.

PRACTICE EXPERIENCE:		HOURS
SPH 6860	Public Health Practice Residency	4

• The Public Health Practice Residency will be managed by the Department of Epidemiology. DrPH students should refer to the Public Health Practice Residency Manual on the School of Public Health website for general guidance and policy. However, there may be additional departmental requirements related to the above policy, and students are advised to check with their advisors about them.

REQUIRED COURSES:		HOURS
ENVR 6600	Spatiotemporal Environmental Health Modeling	3
EPID 6615	Epidemiologic Surveillance	3
EPID 6101	Advanced Methods in Epidemiology II	3
HMAP 5450	Public Health Program Planning and Evaluation	<u>3</u>
		12

CONCENTRATION REQUIRED ELECTIVE COURSES (SELECT 4):		HOURS
EPID 5200	Epidemiology for Healthcare Practice	3
EPID 5690	Epidemiology of Bioterrorism/ Catastrophic Events	3

EPID 6200	Experimental Methods in Epidemiology	3
EPID 6300	Molecular Epidemiology	3
EPID 6635	Social Epidemiology	3
EPID 6650	Nutritional Epidemiology	3
EPID 6670	Cancer Epidemiology	3
EPID 6690	Occupational Epidemiology	3
EPID 6910	Doctoral Independent Study in Epidemiology	3
ENVR 5500	Biomarkers in Environmental Epidemiology	3
SCBS 6170	Qualitative Research Methods	<u>3</u>
		12

SELECTIVE COURSES (SELECT 1):		HOURS
EPID 5610	Chronic Disease Epidemiology	3
EPID 5630	Infectious Disease Epidemiology	<u>3</u>
		3

BIostatistics REQUIRED COURSES (SELECT 1):		HOURS
BIOS 5720	Survey Sampling	3
BIOS 5725	Nonparametric Statistical Methods	3
BIOS 5730	Regression Analysis	3
BIOS 5735	Analysis of Variance	3
BIOS 6750	Applied Categorical Data Analysis	3
BIOS 6760	Multivariate Analysis	3
BIOS 6775	Clinical Trials and Survival Analysis	<u>3</u>
		3

• Students may substitute an elective course not on this list only with prior written approval of the advisor.

• Elective courses not approved as substitutes will not be applied toward the curriculum plan.

• Students are strongly encouraged to take more semester credit hours than the required minimum.

CULMINATING EXPERIENCE:		HOURS
SPH 6950	Dissertation	9

Total SCH 65

Epidemiology DrPH Qualifying Examination

Epidemiology DrPH students are required to pass a qualifying examination which is given in the third week of February and the third week of October each year. In order to take the examination, a student must have a grade point average of 3.0 or higher in all coursework. The examination is a culminating experience that tests the student's ability to integrate and apply knowledge s/he has obtained in courses such as EPID 5110: Intermediate Epidemiology; EPID 5300 Survey Methodology; EPID 5400 Applied Data Analysis in Epidemiology; EPID 6100: Advanced Methods in Epidemiology I; EPID 6101 Advanced Methods in Epidemiology II; biostatistics courses; epidemiologic journals, and other sources outside of the classroom. Students are responsible for informing the Department of Epidemiology of their intentions to take the examination. The examination consists of eight questions, of which a student must successfully answer at least seven questions in order to pass. A student who successfully answers less than six questions will fail the examination. For a student who successfully answers six questions, a decision as to whether the student passes will be made by the examination committee. Students who fail the examination may, upon recommendation of the committee, be allowed to retake a different examination or to take an oral examination. However, an opportunity for retaking the written examination or taking an

oral examination is not automatic; students may only retake the examination once.

Doctoral students enrolled in dissertation credit hours are required to demonstrate that they are making satisfactory progress toward the completion of their dissertation. Satisfactory progress will be determined by the dissertation advisor. Doctoral students are required to defend their dissertation proposal before permission is granted to work on their dissertation. In the event their dissertation proposal is judged to be unacceptable by committee members, the student may be required to take additional coursework before being allowed one more opportunity to present the proposal. The dissertation proposal must be judged acceptable by all committee members to maintain satisfactory progress. Students failing the dissertation proposal defense after two tries may not continue in the program. Any action taken as a result of not meeting the above expectations is subject to the discretion of the department chair.

DrPH in Health Management and Policy

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This concentration is designed for health professionals who want to become leaders in health management and policy in the public and private, for-profit and not-for-profit, health sectors. The Department of Health Management and Policy coordinates this concentration. The graduate of this program will understand and apply skills relevant to health policy development and analysis, management practices, and health services research. Two research papers and a dissertation will provide the opportunity to apply the knowledge and skills gained during coursework and a residency practice. The dissertation is expected to analyze and propose solutions to health management or policy problems by applying new theoretical or analytic advances to current problems in health care. Graduates will be able to start or develop their careers in state or federal government health programs, academia, or health care provider organizations. By the conclusion of the DrPH program, a student in health management and policy concentration will be able to:

1. Conduct management and policy analysis of health issues using advanced quantitative and qualitative techniques.
2. Synthesize knowledge of the political and legal system and affect changes to health policies and programs within various systems.
3. Plan and evaluate health programs in the public and private sectors.
4. Apply ethical frameworks to the conduct of health care research, practice, policy-making, and management.
5. Conduct research focusing on the analysis and solution of management and policy issues in public health practice.

DrPH PREREQUISITES:		HOURS
BIOS 5210	Biostatistics for Public Health I	3
BIOS 5215	Biostatistics for Public Health II	3
ENVR 5300	Environmental Health	3

EPID 5100	Principles of Epidemiology	3
HMAP 5210	Introduction to Health Management and Policy	3
SCBS 5115	Behavioral Foundations of Public Health	<u>3</u>
		18

• *Prerequisite coursework does not contribute to the required total number of semester credit hours needed to graduate.*

CORE COURSES:		HOURS
BIOS 6100	Applied Statistical Methods for Data Analysis	3
ENVR 6100	Environmental Health Determinants	3
EPID 6110	Intermediate Epidemiology for Non-Majors	3
HMAP 6100	Health Care Systems	3
HMAP 6140	Ethical Issues in Public Health	2
HMAP 6145	Leadership for Public Health	2
SCBS 6100	Social & Behavioral Theories and Health Applications	3
SPH 6900	Doctoral Capstone	<u>3</u>
		22

• *Students should enroll in the Doctoral Capstone (SPH 6900) at the conclusion of all coursework.*

• *Students must obtain a permission number from their major professor to register for SPH 6900.*

PRACTICE EXPERIENCE:		HOUR
SPH 6860	Public Health Practice Residency	4

• *The Public Health Practice Residency will be managed by the Department of Social and Behavioral Sciences. DrPH students should refer to the Public Health Practice Residency Manual on the School of Public Health website for general guidance and policy. However, there may be additional departmental requirements related to the above policy, and students are advised to check with their advisors about them.*

REQUIRED COURSES (SELECT 4):		HOURS
HMAP 6210	Health Services Research I	3
HMAP 6211	Health Services Research II	3
HMAP 6220	Advanced Health Economics	3
HMAP 6350	Advanced Health Policy	3
HMAP 6430	Health Care Law	<u>3</u>
		12

ELECTIVE COURSES (SELECT 6):		HOURS
BIOS 6750	Applied Categorical Data Analysis	3
BIOS 6760	Multivariate Analysis (Prerequisites: BIOS 5730, BIOS 5735, and BIOS 6100 strongly recommended)	3
EPID 6635	Social Epidemiology	3
HMAP 6200	Organizational Management	3
HMAP 6215	Health Insurance and Managed Care	3
HMAP 6250	Performance Management in Public Health	3
SCBS 6220	Advanced Topics in Culture, Race, Ethnicity and Health	3
SCBS 6360	Public Health and Aging	<u>3</u>
		18

• *With written approval of the advisor, students may substitute an elective course not on this list.*

CULMINATING EXPERIENCE:	HOURS
SPH 6950 Dissertation	9
<hr/>	
Total SCH	65

Health Management and Policy Doctoral Committee

Students should select a doctoral committee by the end of their first semester, which should be comprised of a major professor and two other members (refer to the DrPH Academic Procedures section of the catalog for details).

Health Management and Policy Qualifying Examination

1. Students must complete all coursework before taking examination.
2. The examination will be divided into two 4-hour sessions.
3. Students will take the examination on campus and will not be permitted to discuss their examination with anyone during the examination.
4. The examination will be open book. Students will not have access to the Internet.
5. The examination will cover all courses.
6. An oral examination may be required for remediation. If an oral examination is necessary, it must occur within 2 weeks of notification of examination results.
7. A student who does not pass the oral examination will be given the opportunity to repeat the course pertaining to the part of the examination not mastered. The student will take the examination again the next time it is offered.

DrPH in Social & Behavioral Sciences

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The concentration in social and behavioral sciences in public health is designed for social and health professionals that want to prepare themselves in research, teaching and public health practice, and other leadership positions involving the design, development and evaluation of public health programs, as well as application of social and behavioral sciences to the development of intervention strategies for health promotion and disease prevention. The first part of the coursework training is focused on the core knowledge of public health, development of leadership skills, and the study of ethical and economic issues in public health. The concentration courses include quantitative and qualitative research methods as applied to social and behavioral sciences in public health. The program also relies on theoretical perspectives in sociology and psychology. Students may also further develop their training in medical anthropology, health education, Latino health, community health, social marketing and health communication by taking further elective coursework and research. One research paper and a dissertation will provide the opportunity to apply the knowledge and skills gained during coursework and a residency practice. Graduates will be able to develop their careers in state or federal government health programs, academia, or health care provider organizations. By the

conclusion of the DrPH program, a student in the social and behavioral sciences concentration will be able to:

1. Occupy leadership positions in health care organizations such as public health departments, health-care facilities, federal or state health departments or academia.
2. Carry out a community diagnosis/assessment in order to facilitate problem solving and policy development.
3. Design, plan, develop and evaluate programs of health promotion and disease prevention using quantitative and qualitative techniques.
4. Identify the role and impact of social, economic, cultural, political and behavioral factor in determining health status.
5. Identify social, cultural, economic and gender related determinants of health and how to develop effective behavioral changes and other interventions which are culturally sensitive.
6. Develop his/her public health career on social science theories, health education, community health, health promotion, and health education.
7. Apply ethical frameworks to the conduct of health care research, practice, policy-making and management.
8. Analyze data and write journal articles, focusing on social and/or behavioral aspects in public health.
9. Write a dissertation, focusing on the analysis and solution of social and/or behavioral issues in public health.

DrPH PREREQUISITES:	HOURS
BIOS 5210 Biostatistics for Public Health I	3
BIOS 5215 Biostatistics for Public Health II	3
ENVR 5300 Environmental Health	3
EPID 5100 Principles of Epidemiology	3
HMAP 5210 Introduction to Health Management and Policy	3
SCBS 5115 Behavioral Foundations of Public Health	<u>3</u>
	18

• Prerequisite coursework does not contribute to the required total number of semester credit hours needed to graduate.

CORE COURSES:	HOURS
BIOS 6100 Applied Statistical Methods for Data Analysis	3
ENVR 6100 Environmental Health Determinants	3
EPID 6110 Intermediate Epidemiology for Non-Majors	3
HMAP 6100 Health Care Systems	3
HMAP 6140 Ethical Issues in Public Health	2
HMAP 6145 Leadership for Public Health	2
SCBS 6100 Social & Behavioral Theories and Health Applications	3
SPH 6900 Doctoral Capstone	<u>3</u>
	22

• Students should enroll in the Doctoral Capstone (SPH 6900) at the conclusion of all coursework.

• Students must obtain a permission number from their major professor to register for SPH 6900.

PRACTICE EXPERIENCE:	HOUR
SPH 6860 Public Health Practice Residency	4

• The Public Health Practice Residency will be managed by the Department of Social and Behavioral Sciences. DrPH students should refer to the Public Health Practice Residency Manual on the School of Public Health website for general guidance and policy. However, there may be additional departmental requirements

related to the above policy, and students are advised to check with their advisors about them.

REQUIRED COURSES (SELECT 4):		HOURS
BIOS 6750	Applied Categorical Data Analysis	3
BIOS 6760	Multivariate Analysis	3
EPID 6635	Social Epidemiology	3
SCBS 6770	Qualitative Research Methods	3
SCBS 6400	Research Methods in Social & Behavioral Sciences	3
		<u>12</u>

ELECTIVE COURSES (SELECT 6):		HOURS
SCBS 6125	Anthropology of Health	3
SCBS 6200	Health Psychology	3
SCBS 6220	Advanced Topics in Culture, Race, Ethnicity and Health	3
SCBS 6250	Health Promotion in Multicultural Populations	3
SCBS 6340	Motivational Interviewing in Public Health Settings	3
SCBS 6360	Public Health and Aging	3
SCBS 6415	Society & Health	3
SCBS 6910	Doctoral Independent Study in Social & Behavioral Science	1-3
HMAP 6220	Advanced Health Economics	3
		<u>18</u>

- Students may substitute an elective course not on this list only with prior written approval of the advisor.
- Elective courses not approved as substitutes will not be applied toward the degree plan.

CULMINATING EXPERIENCE:		HOURS
SPH 6950	Dissertation	9

Total SCH 65

Social and Behavioral Sciences DrPH Qualifying Examination

1. The doctoral student must complete all course work except DrPH Capstone before taking the qualifying examination; the DrPH Capstone may be taken during the same semester the qualifying examination is taken.
2. The qualifying examination will be a separate activity from the dissertation proposal defense.
3. A written component of the qualifying examination will be administered in a proctored, off-campus environment. An oral component, administered by the examination committee, will occur approximately two weeks after the written examination. Only the student and the committee attend the oral defense.
4. The qualifying examination committee will be composed of the student's academic advisor and faculty who taught the courses over which the student will be tested.
5. The examination will test the student's ability to integrate and apply knowledge gained in the required DrPH Social and Behavioral departmental courses. The examination will have two essay questions from each course composed by the faculty member who taught the course.

6. The written component of the examination will follow the guidelines outlined below:
 - 8 hours (8:00 a.m. – 5:00 p.m.) with a 30 minute lunch break
 - No internet access
 - No books/notes allowed
 - No test questions beforehand
 - Test questions will be provided and submitted on a diskette
 - A computer will be provided for the student's use
 - All cell phones must be turned off and stored out of sight
 - All pagers must be turned off unless the student has a clinical 'on-call' requirement
 - A test monitor (academic advisor) will be present at all times
 - No discussion of the examination with anyone
7. A student who fails the examination may, upon recommendation from the examination committee, be asked to repeat the course pertaining to the part of the examination not mastered and retake the examination at a later date. A student may not defend his/her dissertation proposal until both the written and oral parts of the examination have been passed.

Academic Policies

Academic policies can be changed at any time by the School of Public Health. Students should review the Student Handbook for additional policies and procedures concerning their roles as students.

Official Means of Communication for Students

E-mail is the primary means of communication for all School of Public Health students; therefore, students are expected to read their UNTHSC E-mail regularly. All new students are assigned a GroupWise account at new student orientation. The GroupWise E-mail account will be the official means of communication with students regarding all academic information.

Enrollment of Continuing Students

A continuing student is defined as a student who enrolls in one of three consecutive semesters. Example: enrolls Summer 2008, no enrollment Fall 2008 or Spring 2009, re-enrolls Summer 2009. Continuing students do not need to reapply to the School of Public Health to take classes if they meet all of the following conditions:

1. The student has not received a degree from the Health Science Center since last enrollment;
2. The student does not have any current holds on his or her record (i.e., immunizations or academic); and
3. The student has not attended any other academic institution during his/her absence from the Health Science Center.

Students who do not meet these requirements must give a written explanation of the facts surrounding the situation to the School of Public Health Office of Student and Academic Services for consideration. Students who are unsure if they meet all of the above conditions for re-enrollment should contact the School of Public Health Office of Student and Academic Services at sph@hsc.unt.edu or 817-735-2401 before the registration period.

Re-Admission of Former Students

Students who previously have been admitted to the School of Public Health but have not enrolled during the last three consecutive semesters (i.e., Fall, Spring, Summer) must follow these re-admission procedures:

1. File an admission application by the deadline for admission as established in the Academic Calendar.
2. Submit transcripts from all colleges attended (if any) since leaving the Health Science Center showing eligibility to re-enroll at each institution.
3. Former students who have not enrolled elsewhere since leaving the Health Science Center and are in good academic standing are required only to submit an admissions application and the application fee.
4. All completed applications are reviewed by the department chair for which the student is re-applying. Admissions decisions will be communicated to the student by the Office of Student and Academic Services.

Non-Degree Admission of Students

Admission to the School of Public Health as a non-degree seeking student may be granted subject to the following provisions:

1. The applicant must meet all of the general admission requirements described in the non-degree section and must meet all application deadlines.
2. The student in this status is required to receive credit in all courses taken and must maintain a minimum grade of B in each course attempted.
3. A student in non-degree status has been accepted to take courses at the School of Public Health with no intent on seeking full admission status. Additionally, there is no assurance that work completed under this status will be applicable toward degree requirements should he or she subsequently be admitted to a degree program at the Health Science Center.
4. A maximum of 12 SCH are allowed while in this status.
5. Non-degree seeking students are not eligible for financial aid.

Use of Transfer Credit

A student who holds a bachelor's degree may apply up to 12 SCH of appropriate graduate work completed elsewhere toward the completion of a graduate degree at the School of Public Health if the coursework has not been used toward the completion of another degree. A maximum of 12 SCH of graduate work beyond a master's degree may be accepted and credited toward a doctoral degree if the coursework has not been used toward the completion of a master's or doctoral degree. All transfer credits are subject to the approval of the department chair. Requests for waiving a core course with transfer credit must be approved by the appropriate department chair and instructor associated with the course. The request must be accompanied with documentation showing that the previous coursework is comparable to the requirements of the core course. Only those courses with a grade of B or higher from an accredited institution will be transferred. These courses must have been completed within six years of the date of first acceptance for the MPH or MHA program and seven years for the DrPH program. Any course work from a prior degree may not be transferred toward the MPH, MHA or DrPH degree. It is the student's responsibility to make sure that official transcripts of courses completed elsewhere are furnished to the School of Public Health Office of Student and Academic Services.

Change of Department/Concentration Area

Students who wish to change departments or their area of concentration must submit a new application, statement of professional goals and resume to the Office of Student and Academic Services. There is a \$25 processing fee. The student's new application and academic file will be forwarded to the chair/faculty of the new department/concentration for review and an admissions decision will be sent to the Office of Student and Academic Services.

The Office of Student and Academic Services will then notify the student of the admissions decision. If the student is admitted to the new concentration, the outgoing department will be notified by the School of Public Health Office of Student and Academic Services.

Academic Misconduct

Cheating and plagiarism are types of academic misconduct for which penalties are described and assessed under the Health Science Center's Code of Student Conduct and Discipline. Students in the School of Public Health who are found in violation of this policy will be suspended for the remainder of the current semester plus one full semester.

The term "cheating" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations; (2) dependence upon the aid of sources specifically prohibited by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; and (3) the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the Health Science Center.

The term "plagiarism" includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgement. Plagiarism also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. All sources (i.e., internet web pages) must be cited appropriately.

Specific penalties can be assigned by a faculty member for certain cases of academic misconduct (including cheating and plagiarism). These penalties include: giving a failing grade for the test or assignment; reducing or changing the grade for the test, assignment, or course; requiring additional academic work not required of other students; and assigning a failing grade in the course. Other specific penalties can be recommended by a faculty member to the appropriate administrative/academic authority, including denial of the degree, expulsion from the Health Science Center or revocation of a degree already granted.

All students are responsible for making themselves aware of the definitions and implications of academic misconduct. For further information on academic misconduct, penalties and appeal procedures, the student should refer to the Student Handbook available through the Office of Student Affairs.

Academic Standing of Student Officers

A student in the School of Public Health must be in good academic standing to run for office in any student organization and must remain in good academic standing throughout the term of office, if elected.

Appeal/Grievance Process

Specific policies and procedures have been established for students seeking to appeal an admissions decision, a grade in a course,

or an extension of time to complete a degree. The policies are outlined below:

1. Appeals concerning admission to the School should be addressed to the chair of the department for which the student is seeking admissions.
2. Advice concerning how to pursue appeals on any other matter can be sought from the School of Public Health Office of Student and Academic Services.
3. The policy and procedures for requesting an extension of time to complete a degree are available through the Office of Student and Academic Services. A petition for an extension of time must be submitted to the Director of the Office of Student and Academic Services. Upon review of the student's academic record, the petition is forwarded to the appropriate department chair for approval.

Enrollment Status During Appeal/Grievance

Any student dismissed from the School who has filed an official appeal of any decision will be permitted to remain in classes, clinical clerkship rotations, and/or internships during the period of appeal until or unless one or more of the following circumstances is determined by the dean to exist:

1. The appeal has not been made according to officially recognized procedures for appealing a dismissal decision;
2. The presence of the student in classes, clinical rotation, or internship constitutes a disruptive influence to the educational process or to patient care activities; or
3. The presence of the student potentially presents a threat or harm to the health, safety or welfare of patients, students or anyone associated with the educational process.

Grade Appeal Policy and Procedures

1. Any student who believes that a grade has been inequitably awarded should first contact the instructor who awarded the grade in order to discuss and attempt to resolve the issue. Any instructor no longer associated with the Health Science Center at the time of the appeal will be represented in these proceedings by the department chair over the concentration in question. The student who is unable to resolve the differences with the instructor has 30 days following the first class day of the succeeding semester to file a written appeal with the appropriate department chair. If the instructor is the department chair, the appeal should be submitted to the Dean, who will act as a substitute for the department chair in the following action.
2. The department chair may follow any of the four procedures below or a combination of them:
 - The department chair may confer with the instructor.
 - The department chair may request that the instructor submit a written reply to the student's complaint.
 - The department chair may conduct a meeting of the two parties.
 - The department chair may refer the case directly to the dean, as outlined below. In following any of the first three procedures noted above, the department chair should make a judgment on the merits of the case and determine a specific action in regard to the disputed grade. Either the student or the instructor may appeal the decision of the department chair to the Dean who will in turn establish an ad hoc committee to review the case. This appeal must be submitted in writing

within two working days of the notice of decision from the department chair.

3. The ad hoc committee shall be constituted as follows and shall perform the following duties:
 - The ad hoc committee will consist of three School of Public Health faculty members. One faculty member will be selected by the student and the other by the instructor. If either party involved in the dispute declines to choose a member of the committee, the dean will select that member. The third faculty member of the committee, who will serve as chair, will be chosen by agreement of the student and the instructor. If they cannot agree upon a third member, the member will be chosen by the dean.
 - This ad hoc committee should require written statements from each participant in the dispute. Judgments may be rendered upon the basis of these statements, upon other evidence submitted in support of the statements, and upon the facts outlined in an oral hearing, if such a hearing is deemed necessary.
 - The committee must make a recommendation for disposition of the case within 30 days of its appointment.
 - All records in the case will be filed with the School of Public Health Office of Student and Academic Services.
4. If the appeal is based solely upon alleged violations of established procedures, either party to the dispute has 5 working days following the rendering of the ad hoc committee's decision to appeal that decision to the dean. Substantive matters, up to and including the refusal of the instructor to act in accordance with the ad hoc committee's recommendation or the student's refusal to accept the decision, may not be appealed to the dean.
5. The Dean, after a review of the submitted written materials (and oral hearings if necessary), will make (within 15 days) a ruling about procedural questions.

Application for the Completion of the Degree

It is the responsibility of the student to keep track of their progress toward the degree and to file an Intent to Graduate form in the School of Public Health Office of Student and Academic Services. Consult the Academic Calendar for the appropriate dates. The applicant's grade point average on all work attempted must be at least 3.0 to be considered for candidacy.

Because of the time required to receive transcripts, students otherwise eligible for graduation who complete their last course or courses elsewhere will not graduate at the end of the semester or summer session in which the work is completed, but will receive their degrees at the close of a subsequent semester. This delay is needed to receive and evaluate transcripts.

Information concerning graduation fees is available in the Tuition and Fee Register, on the School of Public Health website under forms, or may be obtained from the Office of Student and Academic Services. Students anticipating graduation should consult the Academic Calendar for important dates regarding payment of fees and other graduation requirements.

Auditing

With the written permission of the instructor, an individual fully eligible to enroll in the School of Public Health may sit in a class as an auditor without receiving credit. The auditor's name will not be entered on the class roll, and the instructor will not accept any papers, tests or examinations.

Attendance as an auditor may not be used as the basis of a claim for credit in the course. Students who are enrolled for credit may audit classes without payment of additional fees; others may be subject to pay an auditor's fee (\$152).

A person 65 years of age or older may enroll as an auditor and observer without credit and without payment of an audit fee if space is available and if approved by the instructor. Such enrollment entitles the person to library privileges, but not the use of laboratory equipment, supplies, or health/hospital benefits.

For additional questions, students should contact the Office of Student and Academic Services.

Class Attendance

Regular and punctual class attendance is expected. Although, in general, students are graded on intellectual effort and performance, absences may lower the student's grade where class participation is deemed essential by the faculty member. In those classes where participation is considered as part of the grade, the instructor should give written notice of the requirement at the beginning of the semester. An instructor may request the Registrar to drop a student from a course for lack of participation or one unexcused absence.

If the instructor-initiated drop action falls within the time that the student is eligible to drop with instructor consent, a W will be assigned. If the drop falls after this period, a W or WF will be assigned as appropriate.

Concentrations and similar academic units have authority to establish a concentration-wide or course-wide policy so long as the policy is in accord with the above stipulations.

Commencement Exercises

The Health Science Center commencement exercises are held the third Saturday in May each year. Diplomas may be obtained from the Office of the Registrar at the conclusion of any semester in which all graduation requirements have been met and verified.

Concurrent Enrollment at Another Institution

Students must secure written permission from the advisor and department chair before registering for any course or courses at another institution while registered for any courses at the Health Science Center. Failure to secure the required permission for concurrent enrollment prior to registration at the second institution may cause the Health Science Center to refuse degree credit for the work taken elsewhere.

Adding Courses

Students may add courses on-line. In order to be eligible for adding courses, students must have registered for coursework during the regular or late registration time period. If they have difficulties doing so, students should contact the School of Public Health Office of Student and Academic Services at sph@hsc.unt.edu. All requests must be made in writing. Consult the Academic Calendar for dates during which adds are allowed.

Dropping Courses

Students who wish to drop a course may do so on-line through the 12th/4th class day (see Academic Calendar for specific dates). After the 12th/4th class day, students who wish to drop a course must complete the Instructor Approval to Drop form which can be

obtained from the Office of the Registrar. The instructor or advisor may withhold consent for students to drop for any reason providing the instructor has informed students in writing at the beginning of the semester. If the drop results in non-enrollment, refer to the following section on "Withdrawal from the Health Science Center."

The grade of W is recorded for any course dropped with the instructor's consent before the end of the fourth week of classes (summer term, end of the second week). After that time the student must have a passing grade in order for the instructor to assign a grade of W for a dropped course; otherwise, the grade WF is recorded.

Instructors may drop students with grades of WF from courses for non-participation at any time after the fourth week of classes (summer term, after the second week). See "Class Attendance" above.

Drop procedures must be completed by 5 p.m. on the deadline dates specified in the Academic Calendar. After these dates, a student may not drop a course for any reason.

Withdrawal from the Health Science Center

A student may withdraw from the Health Science Center at any time. To receive a W, the student must complete the withdrawal prior to the deadline specified in the Academic Calendar by making a request in the Office of the Registrar. A student who withdraws by the appropriate deadline will receive a grade of W for each course in which they were enrolled. After the deadline, a withdrawn student receives a grade of W only for those courses in which there were passing grades at the time of withdrawal; otherwise the grade WF is recorded.

Official dates and deadlines for withdrawing are specified in the Academic Calendar.

Course Offerings

Individual courses are subject to change or withdrawal at any time and may not be offered each semester of every year. Any course may be cancelled from current offerings if the number of registrants is too small to justify conducting the course.

Enrollment Certification

Enrollment verification and loan deferments are completed in the Office of the Registrar based upon the student's having registered and paid tuition and fees according to the criteria listed under "full-time enrollment" below.

International students may also request the International Student Service Office to issue letters of enrollment for the use of foreign governments, embassies, scholarship agencies and banks. See the School of Public Health Office of Student and Academic Services for details.

Full-time Enrollment

A student must enroll for nine semester hours for each long semester to be considered full-time. Enrollment in a total of six semester hours is considered full-time for the summer.

A student who has completed all but the dissertation, thesis, professional report or capstone requirement for the degree will be considered full-time if enrolled in three semester credit hours.

Students are responsible for meeting enrollment requirements for federal or state financial aid purposes.

Grading System

The School of Public Health uses the letters A, A-, B+, B, C+, C, F, P, NP, I, PR, W, WF and Z in the grading system.

- A 4.0 grade points for each semester hour (95-100)
- A- 3.7 grade points for each semester hour (90-94)
- B+ 3.3 grade points for each semester hour (85-89)
- B 3.0 grade points for each semester hour (80-84)
- C+ 2.7 grade points for each semester hour (75-79)
- C 2.0 grade points for each semester hour (65-74)
- F Failure; given when a student: 1) has failed the course while still officially enrolled at the end of the semester; 2) is failing in a course and misses the final examination without satisfactory explanation; or 3) stops attending class without completing an official drop or withdrawal (64 and below).
- P Passed; a credit grade on pass/no pass option in selected individual problems and research courses.
- NP Not passed; a failing grade on the pass/no pass option.
- I Incomplete; a non-punitive grade given only during the last one-fourth of a semester and only if a student is: 1) passing the course; 2) has a justifiable reason why the work cannot be completed on schedule; and 3) arranges with the instructor to finish the course at a later date by completing specific requirements which the instructor must list on the grade sheet. For information on removal of I, see "Removal of I" below.
- PR Assigned at the close of each semester in which the student is enrolled in dissertation, thesis, or professional report hours. No credit hours are shown when the grade of PR is assigned. When the work has been completed and submitted to the major professor and department chair, appropriate grades and credit hours will be shown on the students' record for the required number of credits.
- W Drop or withdrawal without penalty. Given when a student drops a course or withdraws from the school according to the dates in the Academic Calendar. See regulations for dropping and withdrawing.
- WF Drop or withdrawal with failing grade. May be assigned if a drop or withdrawal is not completed by the dates listed in the Academic Calendar. See regulations for dropping and withdrawing.
- Z Used to indicate that a grade was not properly received and/or recorded for a course.

Courses assigned F, I, NP, PR, W, WF, or Z are not counted toward the degree but are presented on transcripts as courses attempted.

A complete record of all previously used grades and grading systems is detailed on the official transcript.

Grade Point Average

The overall grade point average (GPA) is used to determine academic standing and eligibility for graduation. All GPA calculations are subject to post-audit and correction by the Registrar's Office.

The number of semester hours attempted for calculation of the GPA includes all courses with grades of A, A-, B+, B, C+, C, F, and WF unless replaced by a later grade. Courses with grades of I, NP, P, PR, W, or Z are not counted as courses attempted for the purpose of calculating a GPA.

Quality of Work Required

Students must make satisfactory progress toward completion of degree requirements. Unsatisfactory progress toward a degree is defined as:

- obtaining a grade of F, or NP in any course attempted;
- having a cumulative GPA below 3.0;
- withdrawal from multiple courses;
- withdrawal from the same course on multiple occasions;
- carrying multiple incompletes; or
- not maintaining continuous enrollment in thesis, professional report, dissertation or other course with this requirement.

MPH students enrolled in the thesis or professional report as part of their degree plan are required to demonstrate that they are actively working toward its completion. This requires confirmed submission of written materials and on-going consultation with committee members within the first and subsequent semesters of registering for thesis or professional report credit. It is the responsibility of the student to maintain contact with their research advisor and committee members to assure satisfactory progress. MPH students choosing the thesis option but not making satisfactory progress as determined by their advisor may be required to take the comprehensive examination instead of the thesis or may be required to take additional courses to assure sufficient knowledge and skills needed to continue the research project.

Doctoral students enrolled in dissertation credit hours are required to demonstrate that they are making satisfactory progress toward the completion of their dissertation. Satisfactory progress will be determined by the dissertation advisor. Doctoral students are required to defend their dissertation proposal before permission is granted to work on their dissertation. In the event their dissertation proposal is judged to be unacceptable by committee members, the student may be required to take additional coursework before being allowed one more opportunity to present the proposal. The dissertation proposal must be judged acceptable by all committee members to maintain satisfactory progress. Students failing the dissertation proposal defense after two tries may not continue in the program.

Any action taken as a result of not meeting the above expectations is subject to the discretion of the department chair.

Probation and Dismissal

A student who fails to achieve the required cumulative average of 3.0 GPA (B average) on all course work in a semester will be placed on academic probation for the subsequent semester. If the student achieves a 3.0 semester GPA in the subsequent semester, but the cumulative GPA is still below 3.0, the student will remain on academic probation. The student will be removed from academic probation when the 3.0 cumulative GPA is achieved.

A student who is placed on academic probation who does not receive either a semester or a cumulative 3.0 GPA during the following semester of probation will be Dismissed from the School of Public Health. Upon Dismissal, the student is not permitted to return to a degree program at the UNT Health Science Center School of Public Health. Appeals to a Dismissal must be made to the Dean of the School of Public Health.

To graduate from UNT Health Science Center School of Public Health, a student must have a minimum 3.0 cumulative GPA.

Repeating Courses

Students must obtain a grade of A, A-, B+, B or P for each core or required course. If a grade of A, A-, B+, B or P is not made in a core or required course, the student must repeat it and obtain a grade of A, A-, B+, B or P before credit will be given toward completion of graduation requirements. The original grade will not be used in the calculation of the GPA.

If a student does not receive a grade of A, A-, B+, B, C+, C or P in

an elective course, the student may repeat the course. If a grade of A, A-, B+, B, C+, C or P is obtained on the repeated elective course, the original grade will not be used in the calculation of the GPA. With the approval of the student's academic advisor and the appropriate department chair, the student may choose to take another elective course. If a grade of A, A-, B+, B, C+, C or P is obtained on the new elective course; the student may count it toward graduation requirements. However, the failed course will remain on the transcript and will be calculated to determine the student's cumulative GPA.

Students must meet with their academic advisor each semester to determine which courses must be repeated. An academic advising form will be signed and returned to the Office of Student and Academic Services each semester verifying the necessary repeated course work. Courses taken at the School of Public Health may not be repeated at other institutions and transferred for credit toward a degree at the UNT Health Science Center.

Grade Changes

No grade except "I" may be removed from a student's record once properly recorded. Changes are not permitted after grades have been filed except to correct clerical errors.

Requests for an error correction must be initiated immediately after the close of the semester for which the grade was recorded.

A faculty member who believes that an error has been made in calculating or recording a grade may submit in person a request for a grade change to the department chair and the dean. The Registrar accepts requests for grade changes only from the dean.

Grade Reports

Grade reports for each student are available online; they include a statement of current academic status. If the grade report or the academic status is believed to be in error, the student should contact the Office of the Registrar within 30 days.

At mid-semester in the long sessions, instructors may provide individual written warnings to students whose coursework is unsatisfactory. These warnings are mailed from the Office of the Registrar upon request of the instructor.

Pass/No Pass Grading

The School of Public Health may elect to assign pass/no pass grades in graduate-level courses in which the student is engaged in individual research and is not attending an organized class. The student should inquire at the time of registration for such courses whether a letter grade or a pass/no pass grade will be granted. Pass/no pass grades are not taken into account in computing the student's grade point average.

Removal of Incomplete ("I")

A student must remove a grade of "I" within 30 days of the first day of the subsequent semester. If, at the end of the initial 30 days, the incomplete has not been removed, a grade of F will be recorded.

A student may request an extension, within the initial 30 days, of the time allotted to complete the requirements for the removal of an "I." The request must be made in writing to the faculty member who assigned the "I." The faculty member, department chair and dean must approve the extension. Upon approval, the faculty member, department chair and dean must sign the original letter and forward it to the School of Public Health Office of Student and Academic Services. The original letter must specify the exact length of the extension (not to exceed 30 days for a maximum total of 60 days from the

first day of the subsequent semester), the reason for the extension, and a description of the work required to complete the course.

An "I" is removed by completing the stipulated work, obtaining signatures of the instructor, department chair and the dean (on a Removal of Incomplete Grade/Change of Grade form available from the School of Public Health Office of Student and Academic Services), paying the \$5 fee and returning the form to the instructor. The instructor then files the form in the School of Public Health Office of Student and Academic Services, and the grade and the GPA is adjusted accordingly. If a student does not complete the stipulated work within the time specified, a grade of F will be recorded. If a grade of A, A-, B+, B or P in a core or required course or a grade of A, A-, B+, B, C+, C or P in an elective course is not assigned, the student will be required to register for and repeat the course for it to count toward the degree plan. The GPA is adjusted accordingly.

A student who could not complete final examinations because of illness may remove a grade of "I" without payment of the fee. The Director of Student and Academic Services is authorized to waive the fee upon certification of illness signed by the attending physician.

Open Records Policy

Pursuant to the provisions and intent of Article 6252-17a, Texas Civil Statutes, known as the Open Records Act, and the Family Educational Rights and Privacy Act of 1974 as amended, known as the Buckley Amendment, the school has established a policy relating to the accessibility of information in the custody of the Health Science Center.

Student records that include general information concerning the student and the student's individual relationship to the educational institution are available on request to UNTHSC personnel who have an educational interest in the records, the student, and the student's parent or legal guardian if the student is a dependent for income tax purposes of the parent or legal guardian.

For information regarding the policy on access to records and to request accessibility to center records, contact the designated Custodian of Public Records, Office of the Vice President and General Counsel, UNT Health Science Center.

Student Load

Special restrictions apply to the load permitted to teaching assistants. The total load of course enrollment and teaching assignment may not exceed 18 semester hours in any long semester and 9 in the summer semester. Approval of the advisor and department chair is required for loads in excess of this amount.

Summons

In the event a student's conduct of behavior is found to be in violation of a published policy or regulation, a summons may be issued. A summons is an official request that the student appear before a UNTHSC administrator. It is always important and must have the student's immediate attention. Failure to answer a summons can result in immediate disciplinary action, including suspension.

Temporary Visa Holders

Students holding temporary visas are responsible for maintaining status with the United States Citizenship and Immigration Service (CIS). All visa restrictions and regulations regarding enrollment, employment and visa renewal must be followed exactly as determined by the CIS.

Time Limitations

All requirements for the Master of Public Health degree must be completed within six years. All requirements for the Doctor of Public Health degree must be completed within seven years.

Time limits are strictly enforced. Students exceeding the time limit may be required to repeat out-of-date credits, and/or show other evidence of being up-to-date in their major field of study. Students anticipating that they will exceed the time limit should apply for an extension before the normal time period to complete the degree expires. Holding a full-time job is not considered in itself sufficient grounds for granting an extension.

Time spent in active service in the U.S. armed forces will not be used in computing the time limit. However, career members of the armed forces should consult the School of Public Health Office of Student and Academic Services concerning credit given to work completed before or during active military service.

Leave of Absence

If a situation arises where a student must set aside his/her graduate studies for a period of time, a leave of absence (LOA) may be requested. LOA may be requested for up to three semesters. If additional leave is needed, a new request must be submitted. The maximum amount of LOA is six semesters (two academic years). A student on LOA cannot receive funding as a graduate student. LOA status may affect student loans. Graduate advisors will be notified of any change to the LOA. The student initiates the request by completing the LOA Request form, obtaining approval from his or her advisor or major professor (depending on where they are in their academic career), and submitting it to their department chair. Upon approval by the department chair, the form is submitted to the SPH Office of Student and Academic Services and filed with Registrar's Office.

Once all required signatures are obtained, a copy will be sent to all parties via E-mail. Toward the end of a period of approved LOA, the student must take steps to resume studies at the beginning of the next semester, extend the LOA, or withdraw from the School of Public Health. To resume studies, the student obtains approval from the major professor/advisor and department chair. To extend the LOA, the student completes and submits a new LOA Request form. To withdraw from school, the student follows the normal procedures for withdrawal, including completion of the clearance process. Time taken for an approved LOA is not counted toward the course/degree completion time limits.

Curriculum Plan

A curriculum plan listing all courses must be completed by the student, approved by the student's advisor and department chair, and submitted to the School of Public Health Office of Student and Academic Services before the completion of the first semester of enrollment for all MPH and DrPH students. Please refer to the section on Use of Transfer Credit regarding transferring course work.

All subsequent requests for curriculum plan changes must be submitted in writing by the student to their advisor and department chair for approval. All changes must be submitted to the School of Public Health Office of Student and Academic Services. A degree plan must follow the guidelines stated in the catalog for the Academic Year in which it is filed.

SPH Course Descriptions

BIOS 5210. Biostatistics for Public Health I

3 SCH. This course provides students with the basic knowledge and skills to effectively use biostatistics in research design and data analysis and to understand articles in related professional journals. Topics include choosing correct statistical methods and experimental designs in public health research and practice; descriptive statistics; probability and probability distributions; estimation and hypothesis testing; simple linear regression; introduction to analysis of variance and an introduction to the use of statistical software packages.

BIOS 5215. Biostatistics for Public Health II

3 SCH. The student is introduced to more advanced statistical methods including multiple regression, logistic regression, factorial ANOVA, repeated measure designs, analysis of categorical data, and nonparametric statistics. Prerequisite: BIOS 5210 or equivalent.

BIOS 5725. Nonparametric Statistical Methods

3 SCH. This course covers a wide selection of nonparametric statistical tests as alternatives to parametric tests. The strength and weakness of each test, as well as test efficiency, will be discussed and statistical software will be used throughout the course. Prerequisites: BIOS 5210 and BIOS 5215.

BIOS 5730. Regression Analysis

3 SCH. This course presents the methods in regression beyond the introductory level, to include multiple and partial correlation and regression, residual analysis, logistic regression, polynomial regression, poisson regression, and selection of predictor variables. Prerequisites: BIOS 5210 and BIOS 5215.

BIOS 5735. Analysis of Variance

3 SCH. This course presents the ANOVA model beyond the introductory level, to include various experimental designs, in-depth treatment of multiple comparison methods, factorial repeated measure ANOVA, analysis of covariance, power analysis, and determination of sample size. Prerequisites: BIOS 5210 and BIOS 5215. BIOS 5730 is recommended.

BIOS 5740. Introduction to Statistical Packages

3 SCH. Develops skills in the use of statistical packages in public health research. Emphasis is on data definition, verification, descriptive examination, and graphical presentation. Statistical packages will include SAS software. Prerequisite: BIOS 5210.

BIOS 5760. Data Management

3 SCH. The goal of this course is to provide an overview of data collection and management. The topics include study design, data form design and coding, defining a database and a database system, data collection and entry, quality control, and database management. Also, privacy, confidentiality and security concerns as well as ethical and legal issues will be discussed. Examples of databases may be illustrated by use of EPI Info. Prerequisites: BIOS 5210; BIOS 5740 is recommended.

BIOS 5910. Independent Study in Biostatistics

1-3 SCH. For students capable of independently completing topical studies or projects through conferences and activities directed by the instructor. Topical or project work is chosen by the student with the consent of the instructor. May be repeated for credit. Offered each semester.

BIOS 6100. Applied Statistical Methods for Data Analysis

3 SCH. The course emphasizes the design, implementation, analysis, and reporting of research investigations. Topics include two-sample inference using t-distributions, alternatives to t-test based analyses, comparisons among several samples, linear combinations, and multiple comparisons, simple and multiple linear regression methods, regression diagnostics, variable selection, and related methods, the repeated measures and other multivariate responses, exploratory tools for summarizing multivariate responses, logistics methods for binary response variables and binomial counts, log-linear regression for Poisson counts, hierarchical (multi-level) and structural equation modeling will be discussed and life tables, Kaplan-Meier and proportional hazards methods for analysis of time to event data. Prerequisites: BIOS 5210, BIOS 5215 or permission from course instructor.

BIOS 6700. Probability and Statistical Inference

3 SCH. The course provides a modern introduction to the theory of probability and statistical inference. Topics include basic concepts of probability, conditional probability, independence, random variables, distributions, expectations, moments, probability models, convergence concepts, sampling distributions, frequentist and Bayesian approaches to estimation, hypothesis testing, and interval estimation. Rigorous proofs are deemphasized and replaced with extended discussions of interpretation of results and simulations for illustration.

BIOS 6720. Applied Methods of Survey Sampling

3 SCH. The course covers the basic ideas of sampling from an applied perspective. Topics include simple random sampling, stratification, systematic selection, cluster sampling, multistage sampling, probability proportional to size sampling, cost models, sampling error estimation techniques, nonsampling errors, and compensating for missing data. Prerequisites: BIOS 5210 and BIOS 5215 or equivalent.

BIOS 6750. Applied Categorical Data Analysis

3 SCH. This course introduces descriptive and inferential statistics for univariate and multivariate categorical data with applications in public health and clinical field. Theory and application of contingency tables, measures of association and tests for homogeneity between populations and independence of variables will be covered. Log linear and logistic regression analyses methods will be investigated using public use public health data sets available.

BIOS 6760. Multivariate Analysis of Variance

3 SCH. This course covers advanced topics in the general MANOVA model, including inference about mean vectors and covariance matrices, canonical correlation, principal components, discriminate analysis, cluster analysis, and grouping techniques. Special emphasis will be on the use of major statistical package such as SAS. A background in matrix algebra is expected. Prerequisites: BIOS 5730 and BIOS 5735. BIOS 5740 is recommended.

BIOS 6775. Clinical Trials and Survival Analysis

3 SCH. This course covers the general concepts and methodologies in clinical trials and statistical techniques in survival analysis. Topics covered include: phase I, II and III clinical trials, basic study design, ethical considerations, organization, study population, patient recruitment, protocol adherence and compliance, adverse event, data management, closeout, issues in reporting results as well as statisti-

cal techniques such as designs for phase I, II and III clinical trials, randomization, blindness techniques, sample size determination, and interim analysis. In addition, survival analysis will cover survival distributions, censored data, Kaplan-Meier curve and life-table analysis, logrank test, hazard function, and the Cox regression.

BIOS 6785. Biostatistical Research and Consulting

3 SCH. This course provides students with the basic knowledge and skills to provide statistical consulting to persons and organizations in a wide variety of settings, including medical centers, hospitals, industry, and government. Students will be instructed in scientific writing, and will practice reading and writing about medical research. This course brings together the skills that students have learned in other core classes, such as BIOS 5210 and 5215: Biostatistics I and II, BIOS 5760: Data Management, and BIOS 5740: Introduction to Statistical Packages. Students will complete an original research project whereby they assess, analyze, write, and present findings from actual health care data. This course serves as part requirement for Clinical Research students who choose to opt out of writing a master's thesis.

BIOS 6795. Topics in Biostatistics

3 SCH. This course is designed to give exposure to students to a specialized modern biostatistical topic chose by the instructor. Examples of such a topic include, but are not limited to, statistical methods in genetic epidemiology, longitudinal data analysis, Bayesian data analysis, generalized linear models, and sequential analysis.

BIOS 6910. Doctoral Independent Study in Biostatistics

3 SCH. This academic activity includes research and other scholarly projects carried out by the student under the supervision of a School of Public Health faculty member (instructor). A brief proposal should be written and approved by the academic advisor and a final report should be submitted to the supervising instructor for credit. Topical or project work is chosen by the student with the consent of the supervising instructor and approval from the academic advisor. This course may be repeated for credit. Offered each semester.

ENVR 5300. Environmental Health

3 SCH. An introduction to the environmental (physical, chemical, biological) determinants that influence human health and means of controlling these determinants. This course will discuss municipal water supply and disposal, ambient and indoor air quality, solid and hazardous wastes, food protection, vector control, pesticides, occupational safety, toxicology, risk assessment/risk communication and genomics.

ENVR 5310. Exposure and Risk Assessment

3 SCH. The goal of this course is to provide an excellent opportunity for students to learn both theories and application methodologies in exposure and risk assessment. The class involves techniques for estimating the exposure and corresponding risk to humans or ecosystems from exposure to chemicals, radiation, technology, or any other factors that can influence health and well-being. Prerequisites: BIOS 5215 and ENVR 5330.

ENVR 5311. Air Pollution and Health

3 SCH. The course introduces students to knowledge in air pollution and public health, especially in developing countries, and thereby to provide a firmer basis for improving public health in low and middle income countries. Studies from a wide range of less heavily researched Asian, African and Latin American countries are

reviewed in the course. The course also examines issues of particular relevance to low and middle income countries for vehicular pollution.

ENVR 5325. Industrial Hygiene

3 SCH. An introduction to the evaluation and control of the occupational environment with regard to minimizing toxic exposure in the workplace, including chemical agents, biological agents, dusts and fibers, noise, heat and radiation, methods of detection and control, development standards in the workplace, ventilation, engineering and other controls, personal protection, air monitoring, exposure-health effect, linkage and job-exposure matrices. Prerequisites: BIOS 5210, ENVR 5300, and EPID 5100.

ENVR 5330. Environmental & Occupational Toxicology

3 SCH. This course will deal with some important topics in environmental toxicology. Some of the topics that will be covered include: dose-response curves and nature of threshold for carcinogens and non-carcinogens; determination of air concentrations within and outside the workplace; development of standards; mechanism(s) of carcinogenicity and promotion; latency periods; exposure assessment; risk assessment.

ENVR 5340. Food Quality and Safety

3 SCH. This course will examine the quality and safety aspects of our food supply from the "Farm to the Table." It will provide students with information necessary to hygienic practices in food protection. It will thoroughly discuss the relationship of microorganism and sanitation, food contamination sources, personal hygiene and sanitary food handling, quality assurance, cleaning compounds, cleaning equipment, waste disposal, food processing and preparation, and pest control. Prerequisites: ENVR 5300 or concurrent enrollment in ENVR 5300.

ENVR 5345. Physical Hazards

3 SCH. This course provides the students with a practical application of basic skills in the identification, evaluation, and control of physical hazards in the industrial environment. Course emphasis is on effective identification and control of physical hazards in the workplace to prevent injury and illness.

ENVR 5350. Occupational Diseases and Health Practice

3 SCH. This course provides an overview of the principles of occupational health surveillance. The student will be able to identify key occupational hazards and exposures which are potential hazards to workers. A working knowledge of OSHA's standards that are in place in order to protect workers from hazardous exposures and deleterious health effects.

ENVR 5355. Work Surveillance, Safety, and Law

3 SCH. This course provides an overview of the principles of occupational health surveillance. The student will be able to identify key occupational hazards and exposures which are potential hazards to workers. A working knowledge of OSHA's surveillance standards and the legal environment that generated the standard in order to protect workers from hazardous exposures and deleterious health effects.

ENVR 5370. Arthropods and Public Health

3 SCH. This course provides overview of arthropods and their impacts on human and public health. The course presents basic information on medically important arthropods, the related diseases, and the prevention and control. Detailed discussions of the important vector-borne diseases such as malaria, dengue, filariasis, Trypanoso-

miasis, equine encephalitis, and Lyme and other tick-borne diseases are included.

ENVR 5380. Environmental Health Microbiology

3 SCH. This course provides an understanding of pathogenic microorganisms found in common environments such as food, water, and air – biology and characteristics, sampling and detection methods, epidemiology and risk assessment, and transmission and control.

ENVR 5410. Environmental Data Analysis

3 SCH. The objective of the course is to introduce basic statistical knowledge that is useful for environmental studies. Through the course students are expected to learn how statistical principles and methods are applied to environmental studies. The course illustrates probabilistic theory and distributions, random variables and properties of a random sample, data reduction, estimation and hypothesis testing, analysis of variance, regression models. The course also introduces environmental monitoring and space-time environmental data analysis. Prerequisite: BIOS 5210.

ENVR 5420. Texas-Mexico Border Health Issues

3 SCH. This experiential course focuses on issues surrounding public health on the Texas-Mexico border. Border health issues addressed include cultural diversity; water and waste water treatment; air and water pollution; and zoonotic, acute infectious and chronic disease control. Course includes on-site study in Laredo and/or other border communities. Enrollment limited. Prerequisites: ENVR 5300 and SCBS 5110, plus 6 hours of additional course work and approval of the instructor. All students must have a passport prior to taking this course. International students must also have a U.S. multi-entry Visa and purchase a travel Visa for Mexico prior to taking this course.

ENVR 5500. Biomarkers in Environmental Epidemiology

3 SCH. The goal of this course is to introduce students to the application of molecular biology as exposure assessment tool in epidemiological research. This course covers both major theoretical concepts and practical applications using biological responses (biomarkers) to study and protect public health. Prerequisites: ENVR 5330 or permission of course instructor.

ENVR 5550. Introduction to Genomics and Public Health

3 SCH. This course overviews genomics and bioinformatics, and implications for public health. The course also provides the students with theory and practices in analysis of DNA, RNA, and proteins. Requires permission of course instructor.

ENVR 5910. Independent Study in Environmental Health

1-3 SCH. For students capable of independently completing topical studies or projects through conferences and activities directed by the instructor. Topical or project work is chosen by the student with the consent of the instructor. This course may be repeated for credit. Offered each semester.

ENVR 6100. Environmental Health Determinants

3 SCH. This course provides the students with knowledge and skills in the identification, effect on human health, risk assessment, and control of environmental health determinants. Course consists of three parts: biological, chemical, and physical determinants.

ENVR 6600. Spatiotemporal Environmental Health Modeling

3 SCH. The course introduces fundamental concepts and knowledge involved in the space-time stochastic modeling of environmental health process. In this course students learn how to represent uncertainty and variability of environmental health process. Students also

learn modeling methods for the prediction of unknown phenomenon of the natural process. Topics include scientific knowledge and the stochastic method of thinking; analysis and synthesis of environmental processes in the face of uncertainty; natural variability; scale of observation effects; space/time continuum laws; random field representations of physical and natural laws; the theory of generalized random fields for natural properties with complex spatial/temporal trends; practical variography and anisotropic structures; scales of observation and the upscaling problem.

EPID 5100. Principles of Epidemiology

3 SCH. The overall purpose of this course is to introduce public health students to epidemiology so that they understand how epidemiology contributes to (1) identifying factors that cause diseases, (2) assessing the public health importance of diseases, (3) describing the natural history of diseases, and (4) evaluating procedures for preventing diseases.

EPID 5110. Intermediate Epidemiology

3 SCH. This course illustrates concepts, methods, and strategies used in epidemiologic studies, beyond the principles discussed in EPID 5100. Topics include analysis of birth cohorts, measures of disease frequency and association, bias, confounding, effect modification, stratification and adjustment, quality control, and reporting of epidemiologic results. The primary objective of the course is to present the main issues in establishing causal relationships from observational data. Prerequisite: EPID 5100 and BIOS 5210.

EPID 5200. Epidemiology for Health Care Practice

3 SCH. The purpose of this course is to introduce students to clinical epidemiology and evidence-based health care. This course will provide students with the knowledge and skills to make competent health service decisions, to find and appraise evidence related to health services, and to implement these findings into practice and a health care system.

EPID 5300. Survey Methodology

3 SCH. The purpose of this course is to prepare students to examine the unified concepts, principles and methodologies that govern survey research. The course stresses survey design, questionnaire design, and analysis of survey data. Prerequisite: EPID 5110 or permission of course instructor.

EPID 5400. Applied Data Analysis in Epidemiology

3 SCH. The purpose of this course is to provide practical experience in analyzing epidemiologic data. This course teaches applying analytic methods to answer specific epidemiologic research questions and interpreting the results. Students will be provided with several data sets from epidemiologic (cross-sectional, case-control and cohort) studies and will be asked to conduct analysis of these data. Prerequisites: EPID 5110 or EPID 6110, BIOS 5210, BIOS 5740.

EPID 5610. Chronic Disease Epidemiology

3 SCH. This course provides a survey of common chronic diseases in the United States and epidemiologic methods used in the prevention and control of such diseases. Course content includes study of the multifactorial etiology of many chronic diseases and the methodologic problems posed in studying chronic diseases. Prerequisite: EPID 5100 or permission of course instructor.

EPID 5630. Infectious Disease Epidemiology

3 SCH. Infectious diseases are a leading cause of death, accounting for a quarter to a third of the estimated 50+ million deaths worldwide. This course provides an introduction to the epidemiology of

infectious diseases. This course focuses on the epidemiologic patterns of infectious diseases as well as new emerging infectious diseases, and their prevention and control. Prerequisite: EPID 5100 or permission of course instructor.

EPID 5690. Epidemiology of Bioterrorism and Catastrophic Events

3 SCH. The purpose of this course is to give epidemiology majors and other interested public health students an understanding of the basic epidemiologic principles and methods related to bioterrorist attacks and other catastrophic events (both natural and man-made). The use of biological, chemical, and radiological agents as weapons will be examined as well as the distribution and frequency of diseases associated with these events and other natural and manmade catastrophic events. A unified set of concepts, principles, theory and methodologies used in the study of bioterrorism and other catastrophic events will be undertaken. Examples will be taken from bioterrorist events (Aum Shinrikyo, Dalles, Oregon, etc), man-made catastrophies (Chernobyl, Bhopal, etc) and natural catastrophic events (Galveston Hurricane, CO2 at Lake Nyos, etc). It is designed to build on a foundation of coherent epidemiological concepts and foster the understanding of the use of epidemiologic principles and methods in responding to catastrophic events. This course is designed specifically for epidemiology concentration and other public health students requiring a more thorough knowledge of bioterrorism and catastrophic events. Prerequisites: EPID 5100 or permission of course instructor.

EPID 5910. Independent Study in Epidemiology

1-3 SCH. For students capable of independently completing topical studies or projects through conferences and activities directed by the instructor. Topical or project work is chosen by the student with the consent of the instructor. This course may be repeated for credit. Offered each semester.

EPID 6100. Advanced Methods in Epidemiology I

3 SCH. This is an advanced, doctoral level course for students who require extensive preparation in epidemiologic theory and methodology. Topics covered include causal inference; study design; the analysis of crude, stratified, and matched data; approaches to assessing effect modification and adjusting for confounding; estimating dose response associations; modeling data; bias and the critical evaluation of epidemiological studies. Prerequisites: EPID 5110, BIOS 5210 and BIOS 5215.

EPID 6101. Advanced Methods in Epidemiology II

3 SCH. This course is designed to integrate methods introduced in Applied Data Analysis in Epidemiology and Advanced Methods in Epidemiology I, along with new methods in data synthesis in order to prepare students to apply these methods as independent researchers in epidemiology. Students will have the opportunity to 1.) critically evaluate and interpret epidemiologic evidence, 2.) synthesize such evidence, 3.) analyze real data, and 4.) write manuscripts. Students will learn to interpret and synthesize information from ecologic, cross-sectional, case-control, cohort and clinical trial studies. Descriptive methods of synthesis as well as systematic meta-analysis methods will be covered. Classes will include both didactic instruction as well as hands-on practice interpreting, critically reviewing, synthesizing, analyzing and writing up results from epidemiologic studies. Course evaluations will be based on the students' performance in class participation, exercises, as well as written and oral projects demonstrating the students' ability to understand and apply epidemiologic methods, critically evaluate and synthesize informa-

tion from the literature, analyze real data and write manuscripts. Prerequisites: EPID 5400 and EPID 6100.

EPID 6110. Intermediate Epidemiology for Non-Majors

3 SCH. This course illustrates methods, concepts, and strategies used in epidemiologic studies, beyond the principles discussed in EPID 5100. Topics include a review of basic study designs, analysis of birth cohorts, measures of disease frequency and association, bias, confounding, effect measure modification, stratification, adjustment, research ethics, causal inference, data analysis, and reporting of epidemiologic study results. Students are evaluated by exercises, class participation, a midterm and final examination, and a final research paper. Epidemiology students may NOT register for this course. Epidemiology students should register for EPID 5110. Prerequisites: EPID 5100 and BIOS 5210.

EPID 6200. Experimental Methods in Epidemiology

3 SCH. This course is designed to introduce students to the methods involved in the design, conduct, analysis and evaluation of results from clinical trials. Topics include planning a trial, randomization, blinding, trial designs, ethics, analyses, and writing a protocol. This course also provides examples of how these methods are applied in actual clinical trials. Course evaluations will be based on the students' performance in class participation, the mid-term examination, as well as a written project demonstrating the students' ability to apply these methods in planning for a clinical trial. Prerequisite: EPID 5100.

EPID 6300. Molecular Epidemiology

3 SCH. The focus of the course is on the basic concepts and methodology of molecular epidemiology, particularly in cancers. Designed for students who have a strong biology background and want to pursue doctoral study in the area of molecular epidemiology, this course explores how molecular biomarkers are integrated into population based studies to more accurately define and measure exposures and outcomes and how these measures in turn guide study development. Examples are discussed using current epidemiologic literature to emphasize methodologic issues relevant to molecular epidemiology. This course also reviews the ethical issues posed by this rapidly evolving field. Prerequisites: EPID 5110 or EPID 6110 or permission of course instructor.

EPID 6615. Epidemiologic Surveillance

3 SCH. This course includes the application of epidemiologic methods to two important professional areas of public health. The first one is devoted to the planning, management, and data analysis of public health surveillance systems. The steps for planning a surveillance system, criteria for identifying high priority health events for surveillance, types of surveillance systems, data collection, data processing, quality control, analysis and the interpretation of surveillance data are included. This part of the course also encompasses the basis for evaluation of surveillance systems and the methods used for screening of disease. A small-scale computerized surveillance system is developed as part of the course. The second part of the course, deals with the basic epidemiologic methodology used to assist in the planning and evaluation of health programs of disease control and prevention. It includes the methodology for the design of instruments for data collection, assessment of health care needs, and the epidemiologic evaluation of the impact of health interventions. Prerequisites: EPID 5100 and BIOS 5210.

EPID 6635. Social Epidemiology

3 SCH. This course will explore study design, measurement, and analytic issues applicable to epidemiologic research into the social determinants of health. The format of the course is a seminar offered to students with a basic knowledge of epidemiologic and biostatistical principles. The course is organized around key concepts in social epidemiology. Students will be expected to critically examine the scientific literature, form scientifically-based critiques, reach empirically and theoretically grounded conclusions and actively participate in class discussions. This course is intended for persons who have an interest in research and some background in epidemiology and/or behavioral sciences. Prerequisites: EPID 5100 and BIOS 5210 or permission of course instructor.

EPID 6650. Nutritional Epidemiology

3 SCH. The overall purpose of this course is to introduce the methods and concepts involved in nutritional epidemiologic research. Topics that will be discussed in this course include the assessment on diet, physical activity and body composition, the reliability and validity of dietary assessment, advantage and disadvantage of different study designs in nutritional epidemiologic research, gene-nutrient interaction and the use of biomarkers, specific statistical issues involved in nutritional epidemiologic research, and the development of a research proposal on nutritional epidemiologic studies. Prerequisites: EPID 5100, EPID 5110 or EPID 6110, BIOS 5210, and BIOS 5215.

EPID 6670. Cancer Epidemiology

3 SCH. The course is designed to apply principles learned in the introductory and intermediate epidemiologic methods courses to the critical evaluation and interpretation of cancer epidemiology studies. Basic methodological concepts and problematic issues specific to cancer epidemiology studies and/or cancer sites will be emphasized, rather than descriptive epidemiology of specific cancers. The course is conducted in a participatory seminar format using assigned articles as a stimulus for discussion. Prerequisites: EPID 5100 and EPID 5110.

EPID 6690. Occupational Epidemiology

3 SCH. The purpose of this course is to prepare students to examine the unified set of concepts, principles and methodologies that govern occupational epidemiology. It is designed to build on a foundation of coherent epidemiological concepts and foster the understanding of the principles and methods of occupational epidemiologic study design, analysis, and interpretation. This course is designed specifically for the epidemiology concentration and other public health students requiring a more thorough knowledge of the concepts and methods used in occupational epidemiologic research. Building upon material covered in previous epidemiology courses, this course stresses etiologic study designs, methodological issues and analytic methods as they relate to occupational studies. Prerequisites: EPID 5100 and BIOS 5210 or permission of course instructor.

EPID 6910. Doctoral Independent Study in Epidemiology

1-3 SCH. This academic activity includes research and other scholarly projects carried out by the student under the supervision of a School of Public Health faculty member (instructor). A brief proposal should be written and approved by the academic advisor and a final report should be submitted to the supervising instructor for credit. Topical or project work is chosen by the student with the consent of the supervising instructor and approval from the academic advisor. This course may be repeated for credit. Offered each semester.

HMAP 5210. Introduction to Health Management and Policy

3 SCH. This course is a required core course for all MPH students intended to introduce the areas of Health Management and Health Policy. This is a multidisciplinary field of inquiry and practice concerned with the delivery, quality and costs of health care for individuals and population. The course will have both a managerial and policy perspective with the structure, processes and outcomes of health services, financing, organization, outcomes and accessibility of care.

HMAP 5215. Introduction to Health Systems and Policy

3 SCH. This course will provide a basic understanding of the United States health care system. Components of the health care system will be examined in addition to their interactions. Problems which arise from this “unplanned system” will be analyzed and health policies which have been enacted or recommended will be explored. Key actors in health policy and their perspectives will be discussed.

HMAP 5230. Ethical, Legal and Social Issues for the Responsible Conduct of Clinical Research

1 SCH. Regulations involved with human subject research will be discussed, both from an historical and contemporary perspective. Case studies will be discussed, and students must complete the IRB Tutorial on line, and submit the Certificate of Completion for course credit.

HMAP 5235. Biomedical Aspects of Health Disparities

2 SCH. The course examines the disparities in health care among minority populations for several specific diseases. The course is offered as a lecture series divided into three sections for each health care problem: basic science, clinical and public health. It is the intention of the course to bring to light the behavioral and cultural characteristics of the minority populations that contribute to the disproportionate presence of the disease in that population, and the disparity in treatment available.

HMAP 5240. Health Politics and Policy

3 SCH. This course emphasizes key concepts and knowledge regarding how health policy is formulated, enacted, and implemented. Policy analysis skills are developed and applied by the students. Current health policy issues are explored to exercise these conceptual and analytic skills.

HMAP 5242. Decision Analysis and Quantitative Modeling

3 SCH. This course will cover various quantitative techniques, such as regression and forecasting, that are used in health management and policy. Each topic will be covered in three stages: theory, example problem, and a real health care application. Students will use Microsoft Excel software to solve problems. Prerequisite: BIOS 5210.

HMAP 5245. Health Economics

3 SCH. An overview of microeconomic theory, demand and supply of health services, hospital and physician service markets, role of public sector, comparative health systems and cost effectiveness analysis. Background in economics and statistics is helpful.

HMAP 5255. Health Finance I

3 SCH. This course offers an introduction to financial theory and practice in health care settings. It is designed to familiarize students with important concepts and issues confronting managers in the health sector. Background in accounting and economics is helpful.

HMAP 5256. Health Finance II

3 SCH. This course is the sequel to Health Finance I. It is designed to provide additional material and more in-depth financial theory and practice for MPH and MHA students. Topics include: payment systems, management control, capital budgeting, capital structure, and special topics concerning health finance and public policy. Prerequisite: HMAP 5255.

HMAP 5260. Health Information Systems

3 SCH. This course will consist of three modules: technology, planning and management, and applications in health care and public health. The emphasis will be on conceptual frameworks as well as a deeper level of engagement on system applications. This is not a course in computer programming, rather the main focus will be on the management of technology, with a particular emphasis on the private/public sector for health management. This course is designed to familiarize students with core concepts and issues confronting managers in the health sector associated with planning, implementation and evaluation of information systems. Students will also learn how to access and use downloadable and extractable databases for research from the web, such as those from the CDC, AHRQ, TDH and NCHS.

HMAP 5270. Health Services Management

3 SCH. The course will integrate alternative disciplinary perspectives from management, social science, policy analysis, and health services literatures to provide an understanding of how health care organizations work. Students will become familiar with the internal and external environments confronting health care managers, as well as essential tools and skills for managing health care organizations.

HMAP 5272. Strategic Management and Marketing

3 SCH. This course focuses on issues in strategic management and marketing. It will concentrate on modern analytic approaches. The course is intended to provide a pragmatic approach to guide the formulation and implementation of corporate, business and functional strategies. This course explores the issues of defining corporate missions, objectives and goals. Students will focus on analysis of a firm's external and internal environment to identify and create competitive advantage. The course emphasizes the cultural, ethical, political, and regulatory issues faced in any global business environment and the need for leadership for a successful management of strategic change.

HMAP 5430. Public Health Law

3 SCH. Introduction to the statutes and case law governing the practice public health professionals. Emphasis on the constitutional basis for public health issues and the role of administrative law in public health.

HMAP 5450. Public Health Program Planning and Evaluation

3 SCH. This course is an introduction to the concepts, methods, and applications of public health program planning and evaluation. The course will explore the role of planning and evaluation in improving program implementation and management and public policy. Design and application of evaluations will include both quantitative and qualitative research methods.

HMAP 5600. Human Resources Management

3 SCH. This course offers an introduction to human resource management for health administrators. It is designed for those with minimal background in the subject but provides a comprehensive survey appropriate for graduate students. The main objective of the course is to develop a familiarity with human resource management theory and its application to the health sector. Specific objectives

include enabling students to develop familiarity with the theory of human resource management, assess the strength of human resource staffing plans, explain the legal rights and responsibilities of employees and employers, analyze the effectiveness of compensation plans and grievance procedures, and describe the practice of “managing diversity.”

HMAP 5850. Capstone - Master of Health Administration

3 SCH. This capstone course is designed to allow students the opportunity to apply methods and techniques learned in the MHA program to a practical health administration problem. All students will participate as members of a team to conduct a project focused on a health administration problem and will present their results orally and in a written report. This course is designed to partially meet the culminating experience requirement for students in the Master of Health Administration program.

HMAP 5910. Independent Study in Health Management and Policy

1-3 SCH. For students capable of independently completing topical studies or projects through conferences and activities directed by the instructor. Topical or project work is chosen by the student with the consent of the instructor. This course may be repeated for credit. Offered each semester.

HMAP 6100. Health Care Systems

3 SCH. The purpose of this course is to provide a basic understanding of the U.S. Health Care System. This course describes how various health care components work individually and how they work (or fail to do so) together to create a “health care system.” While the focus of the course is on the American health care system, comparisons to international health care systems will be included.

HMAP 6140. Ethical Issues in Public Health

2 SCH. The course provides an examination of fundamental and current ethical issues in public health. Through lectures, readings, case studies, and historical examples students will explore principles of ethics and theories of justice applicable to the public health profession. Students will develop skills of ethical analysis and apply them to major issues in public health practice, research, management and policy. Examples of such issues include professional ethics, community contexts, human subject research, social justice, healthcare resource allocation, the relationship between the individual and the state.

HMAP 6145. Leadership for Public Health

2 SCH. This course provides an examination of three fundamental areas of leadership in public health: 1) leadership theory distinguishing leaders from managers and strategies from tactics, 2) the role of the leader in the translation of public health findings into legislation and 3) developing the skills to mobilize the community and resources.

HMAP 6200. Organizational Management

3 SCH. This course will prepare students to function in managerial and leadership positions in either the public or private sectors. The course will use the “Balanced Scorecard” as the basis for learning the concepts and methods of strategic management, which seeks organizational alignment of organizational goals and objectives, financial measures, internal processes, customer relationships, and learning and growth.

HMAP 6210. Health Services Research I

3 SCH. The course will provide an overview of current health services research of interest to public health and health management and policy. Methodologies related to health services research will be presented and critiqued. Students will gain experience in presenting and providing critiques of current research. The course will culminate in an original health services research project by each student. Prerequisites: BIOS 5210 and BIOS 5215.

HMAP 6211. Health Services Research II

3 SCH. This course builds upon the concepts and skills presented in the Health Services Research I course. Students will continue to develop skills in use of the Stata analytic software which is becoming standard in health services research. Students will learn and apply more complex analytic methods than those covered in Health Services Research I. Considerable emphasis is placed on applying these methods to existing data bases (national and state) in a computer lab setting. The course is intended to assist doctoral students in developing and implementing methods such as ordered logit and probit analyses, analysis of complex sample design data, fixed-effects and other methods. Prerequisite: HMAP 6210

HMAP 6215. Health Insurance and Managed Care

3 SCH. A survey of the history of health insurance in the United States. Theoretical issues in health insurance, cost containment in public and private sectors, global finance of health services, long term care and the problem of the uninsured.

HMAP 6220. Advanced Health Economics

3 SCH. The course considers a variety of special topics with a focus on managed care issues. Issues include: actuarial problems in managed care, rate setting for hospital and physician services, mergers and acquisitions, antitrust in the health sector, the role of equity markets in health services, cost benefit and cost effectiveness analysis.

HMAP 6225. Quality Management in Long-Term Care

3 SCH. The theoretical basis and diverse perspectives of quality management and regulation approaches for long-term care services will be presented. Will include relevant research and management methodologies that are currently being used in the long-term care system.

HMAP 6230. Public Health Long-Term Care Policy

3 SCH. The organization, financing, delivery and utilization of long-term care, comprehensively designed, are examined with emphasis on affordability, access and quality in a managed care environment for older adults. Note: the Health Resources and Services Administration (HRSA) and Managed Care Technical Assistance Program will support this course.

HMAP 6350. Advanced Health Policy

3 SCH. This course provides an in-depth review of the major health policy issues currently facing the United States policy community. The class will explore health policy analysis as a discipline and a profession. Critical analysis of the literature is emphasized to sharpen student's skills in understanding the nature of the debates, underlying assumptions, application of evidence, and the crafting and evaluation of policy options.

HMAP 6430. Health Care Law

3 SCH. This course is a study of the fundamental legal issues that should be understood by both a Public Health practitioner and a practicing health lawyer, including structural and operational issues affecting health care providers and payers. Discussions will cover

federal and state fraud and abuse issues, self-referral laws, false claims issues, antitrust issues, confidentiality, and Medicare and Medicaid reimbursement issues.

HMAP 6910. Doctoral Independent Study in Health Management and Policy

1-3 SCH. This academic activity includes research and other scholarly projects carried out by the student under the supervision of a School of Public Health faculty member (instructor). A brief proposal should be written and approved by the academic advisor and a final report should be submitted to the supervising instructor for credit. Topical or project work is chosen by the student with the consent of the supervising instructor and approval from the academic advisor. This course may be repeated for credit. Offered each semester.

SCBS 5115. Behavioral Foundations of Public Health

3 SCH. This course provides an introduction to theoretical approaches used in developing and implementing behavioral, social and cultural change to improve health for populations in specific settings. In addition, this course provides an overview of the behavioral and social factors that determine the health and wellness of individuals and communities. Health promotion and prevention programs designed to change social conditions and/or health behaviors should be based on social and behavioral theories and research. Health professionals and practitioners in various fields also apply social and behavioral theories and research to evaluate effectiveness of policies and programs. Students learn the importance of integrating multi-disciplinary social, cultural, and political/economical perspectives to address health disparities and assess impacts of health policy.

SCBS 5125. Maternal and Child Health

3 SCH. Maternal and Child Health (MCH) as a field historically has focused on children and their mothers. This course seeks to go beyond this approach and underscores the significance of women's own health and well-being beyond its impact on reproductive and parenting status. It also seeks to place these traditional MCH populations in the context of the larger families, communities, and societies in which they live and experience the public health issues being addressed.

SCBS 5140. Social and Cultural Determinants of Population Health

3 SCH. The goal of this course is to provide students with a broad overview and introduction to social and cultural determinants of population health in the United States and contemporary societies. Using theory and research in medical sociology and medical anthropology, students will examine bio-cultural, social, and political-economic bases of health, mental health and health care. Class discussions and course readings will familiarize students with relevant theoretical, historical, and global health issues.

SCBS 5200. Social Justice, Ethics and Human Rights in Public Health

3 SCH. This course examines contemporary social justice, ethical and human rights issues in public health. Health, mental health and quality of life as related to illness and disability in diverse and underserved populations are analyzed from social justice and human rights perspectives. Social and behavioral theories and research are applied to address ethical issues related to health inequality and to eliminate health disparities.

SCBS 5215. Introduction to Health Disparities

3 SCH. The objective of this course is to provide students with an understanding about how to identify, reduce, and eliminate health disparities related to race/ethnicity in public health settings. Students will become familiar with the determinants and consequences of racial/ethnic disparities in health and health care. In addition, students will learn how to formulate testable hypotheses about reducing and/or eliminating existing racial and ethnic health disparities. The course is divided into five main topics: historical/conceptual/demographic issues of race/ethnicity and health, morbidity and mortality patterns, etiology of race/ethnic differences in health, race/ethnic group issues, and addressing health disparities.

SCBS 5350. Social and Behavioral Research Methods and Evaluation

3 SCH. This course is an introduction to research methods and program evaluation that will provide students with instructions and hands-on experience in applying social and behavioral research methods, both quantitative and qualitative, to research problems associated with health promotion and disease prevention. This course will prepare students to write and critically evaluate proposed and published research and assist students in designing their own research project.

SCBS 5400. Community Health

3 SCH. This course provides an introduction to major community health issues and general principles of health planning and program development. Community-based public health programs are oriented toward a perspective that links together strategies to address public health problems, with practical techniques for community assessment and program evaluation.

SCBS 5410. Community Assessment

3 SCH. This course provides an introduction to community assessment as it pertains to the functions of public health. As one of the core functions of public health, community assessment facilitates problem solving and policy development. The course covers concepts relevant to community diagnosis such as statistics on health status, health resources, health needs and health problems as well as the systematic collection, assembly, analysis, and interpretation of data related to the characteristics, resources, and health of the community.

SCBS 5411. Community Program Planning

3 SCH. This course is an overview of the concepts, theories, models and applications of program planning and interventions for the community. This course will use the intervention mapping model to plan, implement public health programs and design the program evaluation. This course is the second in a series of three courses to prepare the student to assess, implement, and evaluate community intervention programs.

SCBS 5415. Public Health Interventions

3 SCH. This practice-based course will explore the theoretical foundation, design, implementation, and effectiveness of specific public health interventions at the individual, interpersonal, organizational, and community levels for addressing particular chronic or infectious diseases. The specific focus of this course may vary by semester.

SCBS 5420. Texas-Mexico Border Health Issues

3 SCH. This experiential course focuses on issues surrounding public health on the Texas-Mexico border. Border health issues addressed include cultural diversity; water and waste water treatment; air and water pollution; and zoonotic, acute infectious and chronic disease

control. Course includes onsite study in Laredo and/or other border communities. Enrollment limited. Prerequisites: ENVR 5300, SCBS 5110, plus 6 hours of additional course work and approval of the instructor. All students must have a passport prior to enrolling in this course. International students must also have a U.S. multi-entry visa and purchase a travel visa for Mexico prior to enrolling in this course.

SCBS 5430. Health Communication Strategies in Public Health

3 SCH. This course is designed to provide a step-by-step approach to developing, implementing, and evaluating a health communication plan designed to influence voluntary behavior change of target audiences to improve their personal welfare and that of their society. The role of media and other channels will be evaluated as part of health communication strategies. National and international health communication campaigns will be analyzed.

SCBS 5500. Introduction to International Health

3 SCH. This introductory course provides the student with an overview of the conditions, practices and obstacles encountered in delivering primary health care in the international arena. The differences and commonality of the challenges facing the health care provider are explored. The history of international health and the roles of government and non-governmental agencies are presented along with specific models of intervention and evaluation of major international health problems.

SCBS 5650. Stress and Coping

3 SCH. The purpose of this graduate level course is to provide public health professionals with a survey of stress and coping theories, research, and practice across a broad array of common (e.g., occupational, marital, mental and physical illness, aging, etc.) and extreme (e.g., natural disaster, interpersonal violence, etc.) stressors primarily in adulthood. Attention will also be directed towards issues of human diversity (minority status, acculturation, social stratification) including interventions at individual, group, and community-wide levels.

SCBS 5800. Capstone

3 SCH. This capstone course is designed to allow students the opportunity to apply methods and techniques learned in the MPH program to a practical public health problem. All students will participate as members of a team to conduct a project focused on a public health problem and will then communicate their results in a written report. This course is designed to partially meet the culminating experience requirement for students in the Department of Social and Behavioral Sciences. Consistent attendance is strongly advised (student must also complete SPH 5900). This course will be offered in the fall semester and may be used by both Social and Behavioral Science students and Health Management and Policy students as the culminating experience. Prerequisites: Student must complete 30 hours of core and departmental coursework, including all core courses.

SCBS 5910. Independent Study in Social & Behavioral Sciences

1-3 SCH. For students capable of independently completing topical studies or projects through conferences and activities directed by the instructor. Topical or project work is chosen by the student with the consent of the instructor. This course may be repeated for credit. Offered each semester.

SCBS 6100. Social and Behavioral Theories and Health Applications

3 SCH. This course covers the principal theories in the social and behavioral sciences and health education as they are used to understand and influence the health status of populations. The development of theory in medical anthropology, medical sociology, health psychology, and health educations are examined. Detailed examples of application in the fields of addictive behaviors and obesity research illustrate the theoretical approaches.

SCBS 6125. Anthropology of Health

3 SCH. This course is an advanced seminar on the comparative context of health and cross-cultural health research. The social production of health, mental health and quality of life is analyzed within and across societies. Cultural interpretations of health are contrasted with health assessments and indicators. Anthropological theory and ethnographic methods are applied in developing social research to address health disparities.

SCBS 6170. Qualitative Research Methods

3 SCH. The course integrates qualitative research design with grounded theory, participatory research and evaluation, and ethical guidelines for community health and mental health research. Methods and techniques include ethnography, participant observation, interviews, narratives, oral and life histories, natural and group observation, focus groups, and qualitative data analysis.

SCBS 6200. Health Psychology

3 SCH. This course will provide a foundation in health psychology by examining the medical field, medical professionals, and patient perspectives in health care. This course will focus on behavioral factors that affect both diseases outcomes and public health promotion. Topics will include; cross cutting health risk factors and risk reduction (e.g., behavioral aspects of obesity, substance abuse, cigarette smoking), mediators of risk and risk reduction (e.g., stress, social support), and adaptation and coping with disease (e.g., the biopsychosocial perspective of pain).

SCBS 6220. Advanced Topics in Culture, Race, Ethnicity, and Health

3 SCH. The course will examine how culture affects health, health care and access to care. This course is designed to provide the student with a foundation of culture, race/ethnicity, and how these relate to health status, health care, attitude towards health, disease treatments and the values associated with these factors. This course will increase the student awareness and sensitivity to the dimensions and complexities of the determinants of health status, health needs, and the implications for health services delivery to various cultural and ethnic groups within the context of the society at large. The course will explore the public health implications of cultural traits such as ethnicity, race, age, gender, socioeconomic characteristics that define different groups in the United States and that interact with health. The role of public policy to address health needs and disparities will be addressed. The impact of environment (e.g., social, economics, physical) and lifestyle will be emphasized.

SCBS 6250. Health Promotion in Multicultural Populations

3 SCH. This course is designed to provide students a survey of experiences of health promotion professionals who do their work in various ethnically culturally diverse populations. The course will provide in-depth coverage of current theory, intervention models, and other consideration related to promoting health and preventing disease within and among a variety of special population groups.

The course goal is to awaken and enlighten the cultural knowledge and enhance the cultural sensitivity of practitioners.

SCBS 6340. Motivational Interviewing in Public Health Settings

3 SCH. Public health practitioners spend an enormous amount of time emphasizing the importance of healthy behaviors. Despite these efforts, many patients continue to engage in unhealthy or self-destructive patterns. This course covers an increasingly popular form of behavior change counseling known as Motivational Interviewing. This course will provide a foundation in Motivational Interviewing (MI) with an emphasis on evidence-based interventions such as motivational interviewing that have proven effective in counseling, healthcare, and other public health settings. Through a mixture of didactic presentation, role-play, and discussion, the course focuses on interventions for many of the leading health indicators as identified by Health People 2010-- such as smoking, alcohol and other drug use, physical activity, obesity, and responsible sexual behavior. MPH students will be eligible to take this course with the prior permission of the instructor.

SCBS 6360. Public Health and Aging

3 SCH. The goal of this course is to provide an overview of special health problems associated with aging with special focus on demographic, socioeconomic, historical, and cultural factors influencing these health problems and challenges in studying aging in the field of public health. Special emphasis is given to demographic trends, mortality and life expectancy, theories of aging, special methodological issues in studying aging and health, chronic diseases and disability, the interface between physical and mental health, the influence of social and psychological factors, mental health and dementia, and long-term care and institutionalization.

SCBS 6400. Research Methods in Social and Behavioral Sciences

3 SCH. An advanced methods seminar in research design and methodology. The course objective is to provide students with instruction and hands-on experience in applying methods of primarily quantitative analysis to research problems associated with social and behavioral aspects of public health.

SCBS 6415. Society and Health

3 SCH. This course is based on the premise that social structure (norms, status, institutions, culture) is a fundamental cause of health and illness. Disparities in health and health care can be reduced by focusing on macro-level forces that produce an unequal distribution and access to resources. Therefore, this course analyzes social determinants of population health such as social class, gender, race/ethnicity, family, neighborhoods, and social institutions. Then, we will discuss the consequences and explanations of these patterns which will include reviewing the empirical and theoretical literature on mechanisms and processes that mediate between social factors and their health effects. This course concludes with strategies to promote public health through social action and social research. Prerequisites: SCBS 6100, BIOS 6100 and SCBS 6400.

SCBS 6910. Doctoral Independent Study in Social and Behavioral Sciences

1-3 SCH. This academic activity includes research and other scholarly projects carried out by the student under the supervision of a School of Public Health faculty member (instructor). A brief proposal should be written and approved by the academic advisor, and a final report should be submitted to the supervising instructor

for credit. Topical or project work is chosen by the student with the consent of the supervising instructor and approval from the academic advisor. This course may be repeated for credit. Offered each semester.

SPH 5145. Seminar in Public Health

3 SCH. Topics in public health practice examined. Topics vary. This course may be repeated for credit.

SPH 5850. Practice Experience in Public Health

3 SCH. This course provides students with experience in public health practice through directed work in practice settings. Students are required to commit 135 hours to the practice experience, produce a written report of project(s) undertaken in the placement, and prepare a poster presentation of their practice experience. Placements and practice activities are selected to complement the student's academic and professional plans. Students must obtain approval of their choice of practice placement and plan for the practice experience in the semester prior to registering in SPH 5850. SPH 5850 requirements may be completed over the period of more than one semester with approval of the practice coordinator and advisor. If the practice experience is not completed in two semesters then the student must re-register for the course each semester until it is complete. Prerequisite: Students must have completed 21 credit hours (15 hrs. from MPH core courses and six hours from required departmental courses).

SPH 5855. Public Health Practice Experience

3 SCH. This course provides students with experience in public health practice through directed work in practice settings. Students are required to complete 200 hours to the practice experience, produce a written report of project(s) undertaken in the placement, and develop a poster presentation of their practice experience. Placements and practice activities are selected to complement the student's academic and professional plans. Students must obtain approval of their choice of practice placement and plan for the practice experience in the semester prior to registering for SPH 5855 from their faculty advisor and Public Health Practice Coordinator. SPH 5855 requirements may be completed over the period of more than one semester with approval of the practice coordinator and faculty advisor. If the practice experience is not completed in two semesters then the student must re-register for the course each semester until it is complete. Prerequisites: Students must have completed 21 credit hours (15 from MPH core courses and six hours from required departmental courses). Option - Students who take 9 hours each semester and have completed a minimum of 18 hours (combination of MPH core courses and department required courses) and have secured a full-time internship with a local, state or federal agency for a semester may submit a form for approval to register for SPH 5855 to the Public Health Practice Coordinator and faculty advisor.

SPH 5900. Professional Report

3 SCH. The student conducts an individual project that addresses a well-focused public health question or issue. Work is conducted under the supervision of a faculty committee. A written report of the project is required as well as an oral presentation by the student to the supervisory faculty committee. SPH 5900 is designed to partially meet the culminating experience requirement for the MPH (student must also complete SPH 5800). The student must maintain continuous enrollment in SPH 5900 until the requirements are completed. This course is graded on a Pass/Fail basis only.

SPH 5950. Thesis

3 SCH. The thesis requires the student to conduct and prepare the written thesis under the supervision of a faculty committee. The thesis is written in traditional academic style or in journal article manuscript format. The student must complete an oral defense of the thesis. The student must maintain continuous enrollment in SPH 5950 until the requirements are completed and the thesis is approved by the dean. This course may be repeated for credit. A minimum of 6 SCH is required to meet the MPH culminating experience requirement. This course is graded on a Pass/Fail basis only.

SPH 6145. Doctoral Seminar in Public Health

3 SCH. Topics in public health practice examined. Topics vary. This course may be repeated for credit.

SPH 6860. Public Health Practice Residency

4 SCH. This academic activity provides doctoral students with experience in public health practice through directed work in practice settings. Students are required to commit a substantial number of hours to the practice experience, produce two written reports of project(s) undertaken in the placement. One of the written reports should be presented in the form of a publishable article to be submitted to a public health related peer-review journal. The other report is described in the Public Health Practice Residency Manual. Placements and practice activities are selected to complement the student's academic and professional plans. Students must obtain approval of their choice of practice placement and plan for

the practice experience plan prior to registering. Requirements may be completed over the period of more than one semester with approval of the academic advisor and the practice coordinator. The student must maintain continuous enrollment in SPH 6850 until the requirements are complete. This course requirement may not be waived. This course is graded on a Pass/Fail basis only.

SPH 6900. Doctoral Capstone

3 SCH. This course will provide students with the necessary instruction to prepare dissertation proposals. Topics include scientific writing, preparation of manuscripts for publication, grant writing, proposal writing, and oral presentation skills. Prerequisites: Completion of most required coursework for DrPH curriculum (enrollment is permitted if a student is taken one final elective concurrently with this course).

SPH 6950. Doctoral Dissertation

3 SCH. The doctoral dissertation must consist of original research or public health program development and testing that is focused on a particular health problem. The student's advisor is expected to provide guidance in the selection of a suitable project that provides for a clear direction for implementing the research or program. The student must complete an oral defense of the dissertation. The student must maintain continuous enrollment in SPH 6950 until the requirements are completed. This course may be repeated for credit. A minimum of 9 SCH is required for the DrPH degree. This course is graded on a Pass/Fail basis only.





FACULTY

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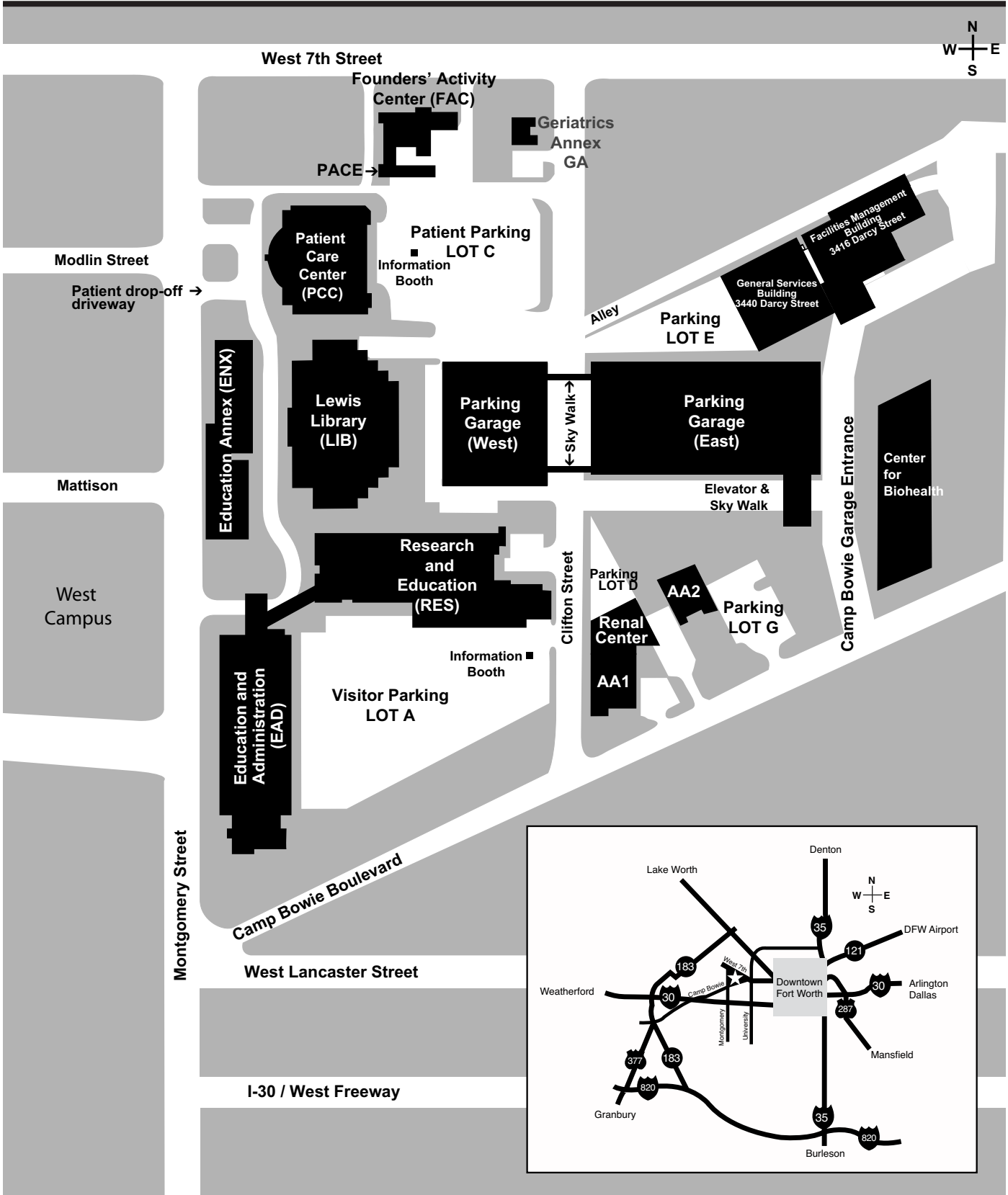
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Campus Map



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