

University of North Texas at Dallas

Fall 2015 SYLLABUS

BIOL 3510: Cell Biology : 3Hrs

| | | | | | |
|--|---|---|--------------------|--|----------------------------------|
| Department of | | Health and Life Sciences | Division of | | Liberal Arts and Sciences |
| Instructor Name: | | Dr. Aubrey Frantz | | | |
| Office Location: | | Room 251, Building 2 | | | |
| Office Phone: | | 972-338-1523 | | | |
| Email Address: | | aubrey.frantz@untdallas.edu | | | |
| Office Hours: | M 1:00 – 2:30 TR 1:00- 2:30 W 10:30 – 11:30 (If you need another time, please contact me by email) | | | | |
| Classroom Location: | | Founders Hall 240 | | | |
| Class Meeting Days & Times: | | TR Lecture 11:30-12:50 | | | |
| Course Catalog Description: | | BIOL 3510 Structure and function of animal and plant cells with emphasis on cell membranes, cytoplasmic organelles and the nucleus. | | | |
| Prerequisites: | | BIOL 1710 and 1720 (General Biology I and II for majors) | | | |
| Required Text: | | Alberts et al. <u>Essential Cell Biology</u> . 4th Ed. 2013. Garland Science (Taylor & Francis Group) ISBN 13: 9780815344544 | | | |
| Access to Learning Resources: | | UNT Dallas Library: phone: (972) 780-3625; web: http://www.unt.edu/unt-dallas/library.htm | | | |
| Course Goals or Overview: | | | | | |
| The goal of this course is to provide the student with a broad understanding of the structure and function of animal and plant cells | | | | | |
| Learning Objectives/Outcomes: At the end of this course, the student will | | | | | |
| 1 | Appreciate the great diversity of cellular forms and understand the interrelatedness of cellular form and function | | | | |
| 2 | Be able to explain the synthesis and function of macromolecules, including DNA, RNA and proteins | | | | |
| 3 | Be able to understand the dynamic nature of the cell, including how it receives and responds to information from its environment. | | | | |
| 4 | Explain and compare different mechanisms for receptor activation and regulation. | | | | |
| 5 | Understand intracellular signaling cascades and their impact on cellular activities, including cytoskeleton rearrangements, motility and regulation of gene expression. | | | | |
| 6 | Understand mechanisms of cell cycle regulation. | | | | |
| 7 | Be able to understand and critically analyze the scientific evidence underlying our current understanding of cellular processes. | | | | |

Course Outline

This schedule is subject to change by the instructor. Any changes to this schedule will be communicated by the instructor in class.

| TOPICS | TIMELINE |
|---|----------|
| Course Introduction and Introduction to Cells (Chapter 1) | 8/25 |
| Proteins (Chapter 4) | 8/27 |
| Proteins (Chapter 4) | 9/1 |
| DNA and Chromosomes (Chapter 5) | 9/3 |
| DNA and Chromosomes (Chapter 5) | 9/8 |
| Central Dogma (Chapter 7) | 9/10 |
| Central Dogma (Chapter 7) | 9/15 |
| Exam I (Chapters 1, 4, 5 and 7) | 9/17 |
| Membrane Structure (Chapter 11) | 9/22 |
| Membrane Transport (Chapter 12) | 9/24 |
| Membrane Transport (Chapter 12) | 9/29 |
| Energy Extraction (Chapter 13) | 10/1 |
| Energy Extraction (Chapter 13) | 10/6 |
| Mitochondria (Chapter 14) | 10/8 |
| Chloroplasts (Chapter 14) | 10/13 |
| Exam II (Chapters 11, 12, 13 and 14) | 10/15 |
| Intracellular Transport (Chapter 15) | 10/20 |
| Intracellular Transport (Chapter 15) | 10/22 |
| Cell Communication (Chapter 16) | 10/27 |
| Cell Communication (Chapter 16) | 10/27 |
| Cell Communication (Chapter 16) | 10/27 |
| Cytoskeleton (Chapter 17) | 11/5 |
| Cytoskeleton (Chapter 17) | 11/10 |
| Exam III (Chapters 15-17) | 11/12 |
| Cell Division (Chapters 18) | 11/17 |
| Cell Division (Chapters 18) | 11/19 |
| Cell Cycle Control (Chapter 18) | 11/24 |
| THANKSGIVING BREAK | 11/26 |
| Cell Cycle Control and Cancer (Chapter 20) | 12/1 |
| Cancer and Review (Chapter 20) | 12/3 |
| Final Exam IV (Chapters 18-20) | 12/9 |

Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

Exams – written tests designed to measure knowledge of presented course material – You will be given four in-class exams. Each exam is worth 100 points (25% of your final grade). The exams will consist of a combination of multiple choice, labeling, true/false and short answer questions. Attendance is required for all exams. Any student found cheating on any exam will receive a zero for that exam and may face disciplinary action(s) **Note: 882-E scantrons and pencils are required for every exam.**

Extra Credit Opportunities – There will be a minimum of 4 in-class assignments/activities that will be worth 5 points each. These opportunities will be given at the instructor's discretion. There are no make-up opportunities if you are absent the day of the activity.

Grading Matrix:

| Instrument | Value (points) |
|----------------------------|-------------------|
| Exam 1 | 100 |
| Exam 2 | 100 |
| Exam 3 | 100 |
| Exam 4 | 100 |
| Extra Credit Opportunities | 20 (4 x 5 points) |
| Total: | 400 |

University Policies and Procedures

Students with Disabilities (ADA Compliance):

The University of North Texas Dallas faculty is committed to complying with the Americans with Disabilities Act (ADA). Students' with documented disabilities are responsible for informing faculty of their needs for reasonable accommodations and providing written authorized documentation. Grades assigned before an accommodation is provided will not be changed as accommodations are not retroactive. For more information, you may visit the Student Life Office, Suite 200, Building 2 or call Laura Smith at 972-780-3632.

Student Evaluation of Teaching Effectiveness Policy:

The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SETE to be an important part of your participation in this class.

Exam Policy:

Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook).

Academic Integrity:

Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the Student Code of Academic Integrity at http://www.unt.edu/unt-dallas/policies/Chapter%2007%20Student%20Affairs,%20Education,%20and%20Funding/7.002%20Code%20of%20Academic_Integrity.pdf for complete provisions of this code.

Bad Weather Policy:

On those days that present severe weather and driving conditions, a decision may be made to close the campus. In case of inclement weather, call UNT Dallas Campuses main voicemail number (972) 780-3600 or search postings on the campus website www.unt.edu/dallas. Students are encouraged to update their Eagle Alert contact information, so they will receive this information automatically.

Attendance and Participation Policy:

The University attendance policy is in effect for this course. Class attendance and participation is expected because the class is designed as a shared learning experience and because essential information not in the textbook will be discussed in class. The dynamic and intensive nature of this course makes it impossible for students to make-up or to receive credit for missed classes. Attendance and participation in all class meetings is essential to the integration of course material and your ability to demonstrate proficiency. Students are responsible to notify the instructor if they are missing class and for what reason. Students are also responsible to make up any work covered in class. It is recommended that each student coordinate with a student colleague to obtain a copy of the class notes, if they are absent.