University of North Texas at Dallas
SPRING 2013
SYLLABUS

MATH 1190: Business Calculus 3Hrs

Department of	Mathematics and Information Sciences	**Division of**	Liberal Arts and Life Sciences

Instructor Name:	*Vinod Arya*
Office Location:	*DAL2, Room #226*
Office Phone:	*972-338 1375*
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Office Hours:	*MW: 11:30 pm – 2:30 pm; T: 1:00 pm – 3:30 pm;* ***or by appointment***
Mathematics Lab Hours:	
Virtual Office Hours:	

Classroom Location:	*DAL2- Room 212*
Class Meeting Days & Times:	MW 11:30 am – 12:50 pm

Course Catalog Description:	Differential and integral calculus with emphasis on applications to business. **Additional Description:** This course is designed for students in majors other than the natural sciences, especially business and economics. It introduces the basic concepts of differential and integral calculus and their applications to algebraic, exponential, and logarithmic functions that occur in economics and marketing situations. This course does not satisfy degree requirements for mathematics, science, or engineering majors, nor does it satisfy the prerequisite for MATH 1720 Calculus II. Students will not receive credit for both Calculus I and Business Calculus. Business Calculus includes the major ideas of calculus, but does not cover all topics in as much depth as Calculus I. Business Calculus emphasizes concepts and applications of calculus to the business world. Calculus I includes all of the topics in Business Calculus and requires a trigonometry or pre-calculus prerequisite. Business Calculus is also recommended for humanities and social science students planning to take the GRE.

Prerequisites:	Two years of high school algebra and consent of department; or MATH 1100 or MATH 1180 with grade of C or better
Co-requisites:	N/A

Required Text:	• the title and edition of the book: Applied Calculus, 4th edition • the author(s): Hughes-Hallett, Gleason, Lock, Flath, et al. • the publisher: John WILEY & Sons, Inc. • the ISBN: 978-0-470-17052-6 http://he-cda.wiley.com/WileyCDA/HigherEdTitle/productCd-0470170522.html • Supplements of the book: ***WileyPLUS*** **A suggestion about how to save money on purchasing a text book:** Use the following link http://customer.wiley.com/CGI-BIN/LANSAWEB?PROCFUN+shopcart2+sh2fn22+FUNCPARMS+parmisbn%28a0100%29:EEGRP10047+parmqty%28p0050%29:1+parmurl%28l0520%29:http%3A%2F%2Fwww.wiley.com%2FWileyCDA%2FSection%2Fid-404743.html

	to purchase a WileyPLUS code for the course (about $75). Then, use the **URL** link http://edugen.wileyplus.com/edugen/class/cls274539/ to enroll yourself in the WileyPLUS account for the course. Once you enroll yourself to the WileyPLUS, I strongly suggest you NOT to purchase any text books. On your WileyPLUS account you will have an *eBook* which is printable.

Required Homework Assignment Service	*WileyPLUS is* online teaching and learning environment which integrates the entire digital textbook with the most effective student resources to fit every learning style. http://catalog.wileyplus.com/Section/Applied-Calculus-4th-Edition.id-402639.html

Access to Learning Resources:	UNT Dallas Library: phone: (972) 780-3625; web: http://www.unt.edu/unt-dallas/library.htm UNT Dallas Bookstore: phone: (972) 780-3652; e-mail: 1012mgr@fheg.follett.com

Course Goals:

The goal of this course is to

Extend students' quantitative reasoning abilities. It is the primary focus of the Business Calculus course. All course exercises and examinations require the student to interpret and/or draw inferences regarding quantitative relations in tabular, graphical, formula, and verbal models. The scientific principles that express our understanding of the physical universe, and upon which technological advances are based, are often expressed in the language of mathematics. Students must utilize mathematical models drawn from business, scientific, and technical disciplines to solve problems and make predictions regarding future behavior.

Extend students' scientific and technological literacy. Students make use of graphing calculator technology in the exploration of mathematical principles and in their application to a variety of fields.

Extend students' analytical skills. Students learn to recognize calculus as a tool for describing change: both rates of change (derivatives) and amounts of accumulation (integrals). Students interpret these concepts within the context of modeled situations. Course examinations and assignments require students to apply analytic techniques in identifying possible and/or optimal solutions to problems drawn from a wide variety of disciplines.

Learning Course Objectives/Outcomes: At the end of this course, the student will

1	Define and describe the derivative algebraically, graphically, and contextually.
2	Approximate the derivative from a formula, table, or graph.
3	Interpret the meaning of the derivative in real-world contexts.
4	Compute the formula of the derivative of functions involving algebraic, exponential, and logarithmic functions.
5	Use first and second derivatives to describe graphs of functions and to describe real-world phenomena.
6	Apply differential calculus to real-world problem solving including optimization, marginal profit, and marginal cost.
7	Define and describe the definite integral of a function algebraically, graphically, and contextually.
8	Approximate the definite integral from a formula, table, or graph.
9	Interpret the meaning of the definite integrals in real-world contexts.
10	Compute the formulas for anti-derivatives of functions involving algebraic, exponential, and logarithmic functions.
11	Use the Fundamental Theorem of Calculus to evaluate definite integrals.
12	Apply integral calculus to real-world problem solving including areas, average value, consumer and producer surplus, present and future value, and probability.

General Education Outcomes: At the end of this course, the student will

1a	Explore mathematics.
1b	Make connections between different areas of knowledge and different ways of knowing.
1c	Be able to locate, evaluate and organize information including the use of information technologies.
1d	Think critically and creatively, learning to apply different systems of analysis.
2a	Develop problem solving skills that incorporate multiple viewpoints and differing contexts in their analysis.

2b	Cultivate intellectual curiosity and self-responsibility, building a foundation for life-long learning.

Course Outline

Major Course Topics:

A. Functions and Change

B. Limits*

C. Definition and Interpretation of the Derivative

D. Shortcuts to Differentiation

E. Applications of Differentiation

F. Definition and Interpretation of the Definite Integral

G. Fundamental Theorem of Calculus

H. Applications of Integration

I. Finding and Applying Anti-derivatives

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

	Topics
Week 1	General Info About The Course, Syllabus
Week 2	Chapter 1. Functions and Change
Week 3	Chapter 1. Functions and Change
Week 4	Chapter 1. Functions and Change
Week 5	Chapter 2. Rates of Change: The Derivative
Week 6	Chapter 2. Rates of Change: The Derivative
Week 7	Chapter 3. Short-Cuts to Differentiation
Week 8	Chapter 3. Short-Cuts to Differentiation
Week 9	Chapter 3. Short-Cuts to Differentiation
Week 10	Chapter 3. Short-Cuts to Differentiation

Week 11	Chapter 4. Using the Derivatives
Week 12	Chapter 5. Accumulated Change: The Definite Integral
Week 13	Chapter 5. Accumulated Change: The Definite Integral
Week 14	Chapter 5. Accumulated Change: The Definite Integral
Week 15	Chapter 5. Accumulated Change: The Definite Integral
Week 15	Chapter 5. Accumulated Change: The Definite Integral - *Practice Review for the Final Exam*

Course Evaluation Methods

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

Exams – (***Two tests & a comprehensive Final Exam.)*** There will be two Mid-term exams. You will have a full class period (80 minutes) to complete each. The date for each exam is pointed in the schedule. See Make-up Policy section for more information on the Exams.

Final Exam:	Monday, May 6, 2013

Quizzes – In-class or online Quizzes will be given periodically. **There will be no make-ups for any missed quizzes.**

Chapter Online Homework Assignments (from WileyPlus): There is an online supplement to your textbook called WileyPlus (For guidance go to 'WileyPLUS Registration' link which is under 'Getting Started' folder on your course home page in your Business Calculus course BlackBoard account). There will be an online homework assignment in WileyPlus for each chapter covered in the course. It will contain problems from each section and they will be labeled with their section numbers. You will have an unlimited number of attempts to complete an assignment by the due date given and your highest grade will be recorded.

Grading Matrix:

Instrument	Value (points or percentages)	Total
In-class/Online Quizzes	In-class quizzes at 10% each	20%
Chapter On-line HW Assignments	Homework assignments (20%)	20%
Tests	2 tests at 20% each	40%
Final Exam	One comprehensive final exam t 20%	20%
Total:		**100%**

Grade Determination:

A = 90% or better
B = 80 – 89 %
C = 70 – 79 %

D = 60 – 69 %
F = less than 60%

Email Policy: Use your **University** email account to contact me. You are responsible for any information that I send out via email. Due to privacy rights, I will not discuss grades over the phone. I will only answer emails from your **University email** account.

Calculator Policy: A graphing calculator is required. The TI-84 or TI-83 (plus, silver, any edition) is recommended, and is sufficient for all course requirements. The TI-89, TI-92, or Voyage 2000 will not be allowed on exams. The only calculator programs allowed are those I give out during class. All other programs must be erased from the calculator. Using a calculator that is not approved or having programs (or notes) on the calculator will be considered a case of Scholastic Dishonesty and will be dealt with in that manner.

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.

Assignment Policy:
There will be no make-ups for any missed in-class quizzes. Instead, at the end of the semester one lowest scoring quiz will be dropped.
Exam Policy:
Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook). Specifically, in the case of injury or illness, you need to provide a note from a health care professional affirming date and time of a medical office visit regarding the injury or illness and stating that you should not be in class that day. You must notify me no later than the end of the second working day after the missed exam.

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. In addition, all academic work submitted for this class, including exams, papers, and written assignments should include the following statement: **On my honor, I have not given, nor received, nor witnessed any unauthorized assistance that violates the UNTD Academic Integrity Policy.**

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. **Excessive absences (more than 3 classes) may result in being dropped from the course or receiving an F for the course.**

***For security measures** once a student signs an attendance sheet she/he cannot leave the class without professor's permission.*

- *If a student needs to leave the class earlier she/he should talk to the professor before the class; the student should leave the classroom quietly.*
- *If a student has to leave the class (for example in case of a family emergency or a similar situation) the student must invite the professor politely out of the classroom to explain the situation.*

Diversity/Tolerance Policy:
Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of particular nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Center for Student Rights and Responsibilities as the instructor deems appropriate.

Copyright Policy:
The handouts used in this course are copyrighted. By "handouts," I mean all materials generated for this course, which include but are not limited to syllabi, lecture notes, quizzes, exams, in-class materials, review sheets, projects, and problems sets. Because these materials are copyrighted, you do not have the right to copy and distribute the handouts, unless I expressly grant permission.

Other Policy:
*Use of Cell Phones & other Electronic Gadgets (such as Laptops) in the Classroom are prohibited. **Food** is prohibited in the Classroom.*