MATH-1325  
Business Calculus  
Department of Mathematics and Statistics  

Spring 2015

A. COURSE INFORMATION

Course number/section:  MATH-1325-003  
Class meeting time:  TR 3:30 – 4:45 PM  
Class location:  IH-267  
Course Website:  www.bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor:  NENE COULIBALY  
Office location:  CI-117  
Office hours:  MW 2:00 – 3:30 PM & T 11:30 – 12:30 PM  
Telephone:  361-825-2219  
E-mail:  Nene.Coulibaly@tamucc.edu  
Appointments:  To schedule an appointment, please email me in advance.

C. COURSE DESCRIPTION

This class is intended to develop the fundamentals of calculus and optimization using technology. The topics to discuss include Graphing Functions, Trend Lines, Demand, Revenue, Cost and Profit, Differentiation (Rate of Change) and its applications, Using Solver, Integration (Area under the curve) and its applications, Normal Distributions, Simulating Normal Random Variables, Hospital Administration.

D. PREREQUISITES AND COREQUISITES

Math 1324 Business Mathematics or placement into Math 1325.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

MyLabsPlus access kit is required for homework and quizzes. You will need to purchase an access code, either through the campus bookstore or directly from the publisher. Historically, the publisher has been less expensive, I recommend checking both sources before buying. I will discuss how you access and use MyLabsPlus during the first class meeting. An electronic version of the textbook, College Mathematics for Business,
Economics, Life Sciences, and Social Sciences, 13th Edition by Barnett, is included inside the MyLabsPlus system.

Optional Textbook(s) or Other References

Supplies
A calculator is required for every quiz and examination. A TI-83/84 calculator or similar is recommended but not required (it may make this class more manageable).

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
By the end of this course, students should be able to:
1. Apply calculus to solve business, economics, and social sciences problems.
2. Apply appropriate differentiation techniques to obtain derivatives of various functions, including logarithmic and exponential functions.
3. Solve application problems involving implicit differentiation and related rates.
4. Solve optimization problems with emphasis on business and social sciences applications.
5. Determine appropriate technique(s) of integration.
6. Integrate functions using the method of integration by parts or substitution, as appropriate.
7. Solve business, economics, and social sciences applications problems using integration techniques.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
- Instructional presentation of new material and concepts,
- Class discussion and problem solving analysis using critical thinking techniques,
- Individual written assignments to enhance understanding of new concepts,
- Discovery method techniques supported by a graphing utility to view the effects of shifting and translation concepts on the functions,
- Use of MyLabsPlus which includes electronic copy of the book, videos, examples, and study hints.
H. MAJOR COURSE REQUIREMENTS AND GRADING

Final course standing will be based upon several homework, quizzes, two semester tests, several mini Projects and a final test.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
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<tbody>
<tr>
<td>Semester Exams</td>
<td>45</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15</td>
</tr>
<tr>
<td>Homework</td>
<td>15</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25</td>
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</tbody>
</table>

Final grades will be assigned as follows

<table>
<thead>
<tr>
<th>Weighted average in %</th>
<th>LETTER GRADE</th>
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<tbody>
<tr>
<td>90 - 100</td>
<td>A</td>
</tr>
<tr>
<td>80 – 89.99</td>
<td>B</td>
</tr>
<tr>
<td>70 -79.99</td>
<td>C</td>
</tr>
<tr>
<td>60 – 69.99</td>
<td>D</td>
</tr>
<tr>
<td>Bellow 60</td>
<td>F</td>
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</table>

I. COURSE CONTENT/SCHEDULE

- See the class Blackboard page for more details.

Suggested Chapter and Topics for the Textbook

<table>
<thead>
<tr>
<th>Chapters/sections</th>
<th>topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1</td>
<td>Introduction to Limits</td>
</tr>
<tr>
<td>10.2</td>
<td>Infinite Limits and Limits at Infinity</td>
</tr>
<tr>
<td>10.3</td>
<td>Continuity</td>
</tr>
<tr>
<td>10.4</td>
<td>The Derivative</td>
</tr>
<tr>
<td>10.5</td>
<td>Basic Differentiation Properties</td>
</tr>
<tr>
<td>10.6</td>
<td>Differentials</td>
</tr>
<tr>
<td>10.7</td>
<td>Marginal Analysis in Business and Economics</td>
</tr>
<tr>
<td>11.2</td>
<td>Derivatives of Exponential and Logarithmic Functions</td>
</tr>
<tr>
<td>11.3</td>
<td>Derivatives of Products and Quotients</td>
</tr>
<tr>
<td>11.4</td>
<td>The Chain Rule</td>
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</tbody>
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3
11.5 Implicit Differentiation
11.6 Related Rates
12.1 First Derivative and Graphs
12.2 Second Derivative and Graphs
12.3 L’Hopital’s Rule
12.5 Absolute Maxima and Minima
12.6 Optimization
13.1 Antiderivatives and Indefinite Integrals
13.2 Integration by Substitution
13.3 Differential Equations; Growth and Decay
13.4 The Definite Integral
13.5 The Fundamental Theorem of Calculus
14.1 Area Between Curves
14.2 Applications in Business and Economics
14.3 Integration by Parts
14.4 Other Integration Methods

**Important Dates**

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, February 24th</td>
<td>Exam 1</td>
<td>Chapter 10, Chapter 11 (11.1 – 11.3)</td>
<td>See MyLabsPlus</td>
</tr>
<tr>
<td>March 16 - 22</td>
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<tr>
<td>Tuesday, March 31st</td>
<td>Exam 2</td>
<td>Chapter 11 (11.4-12.6), Chapter 12</td>
<td>See MyLabsPlus</td>
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<tr>
<td>Friday, April 10th</td>
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<tr>
<td>Thursday, April 30th</td>
<td>Exam 3</td>
<td>Chapter 13, Chapter 14</td>
<td>See MyLabsPlus</td>
</tr>
<tr>
<td><strong>Thursday May 7th, 2015 1:45 – 4:10 PM</strong></td>
<td>Final Exam</td>
<td>Comprehensive exam (covers all materials)</td>
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</tbody>
</table>
Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

Attendance/Tardiness
Attendance will be taken each class. Talking during class time and tardiness are often disruptive to the whole class and are not appreciated. If you are delayed and arrive late please do so quietly. Excessive tardiness, disruptive talking, disruptive behavior or performing activities not related to the class will be counted as absences and may cancel bonus points at the end of the semester that usually is helpful to determine borderline grades. The instructor is NOT responsible for informing absent students what was covered in previous classes, homework or any other announcements.

Late Work and Make-up Exams
Late work will result a 20% deduction for every day it is late. Absolutely no exceptions!!

Extra Credit
If an extra credit work is assigned, or extra points are given, the total score should not exceed 100%. No points will be “saved” toward the next examination.

Cell Phone Use
Cell phone using is prohibited in any circumstances. Use of cell phone in class will be counted as absences and may cancel bonus points at the end of the semester.

Laptop Use
Students are welcome to use their laptops in class only if it is intended for learning purposes like log in to the class blackboard page, or mylabsplus website.

Missed Exam
There will be no makeup for a missed semester test unless for special circumstances.

Participation
Students are encouraged to participate in class discussions and problem solving skills.

Others
- Students are expected to read the PowerPoints materials in Blackboard, view videos and
other multimedia available in MyLabsPlus, and work assignments before the due dates.

- Homework is assigned online regularly through MyLabsPlus that can be accessed at tamucc.mylabsplus.com (you need to buy an access code) and due as specified. Late homework will result a 20% deduction for every question not done on time. If you have problems to access the system you have to let me know as soon as possible.

- There is an online quiz immediately after each chapter is finished.

- Three semester tests will be administered during class times. The dates will be announced in class and posted on Blackboard. These dates may be changed with due notice announced during class time. Bring your own calculators and it cannot be shared. Cell phones cannot be used as calculators.

- The final exam will be a comprehensive examination over all materials covered during the semester. Absolutely no early final examination, so make travel arrangements accordingly. Without taking final exam, it will be an “F” for the semester grade regardless.

K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  It is expected that university students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in personal behavior.
  See Full University Policy at:
  [http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity](http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity)

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that
infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course by **Friday, April 10th, 2015**. No student is eligible to receive a W without completing the official drop process by this deadline. Visit the Office of the University Registrar for the Course Drop Form that must be submitted. After April 10, 2015 a student will not be allowed to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  Disability Services (DS) is the hub for coordinating services and accommodations to ensure accessibility and utilization of all programs for all Texas A&M University-Corpus Christi students with disabilities. Our services are designed to meet the unique educational needs of enrolled students with documented permanent or temporary disabilities. DS provides intake and consultation services to students
seeking to register with our office. DS reviews an individual’s documentation of disability and assesses eligibility for services and the determination of reasonable accommodations. For more information visit the Disability Services Office at 116 Corpus Christi Hall or go to http://disabilityservices.tamucc.edu/

L. OTHER INFORMATION
Help: CASA has many quality tutors to help you while you need someone beside my office hours. Welcome to visit those tutors at the second floor of library. Please find out their schedule first before you make a plan to go for this semester. I will be happy to work with you anytime during my office hours and also email me for your special needs. Good luck to everyone in the class.

GENERAL DISCLAIMER
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.