

Math 108A, B: Functions and Derivatives with Applications

SPRING 2016

Professor: Bonnie G. Brooks

Office: PPHAC 223

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Office Hours: Mondays 8:45-10:00 am

Required Materials

Textbook- Calculus: For Business, Economics, Life Sciences, and Social Sciences, by Barnett, Ziegler and Byleen, 13th edition

2 Graph paper notebooks – one for Lecture notes and one dedicated to Homework (Staples brand Reverse graph paper notebook, and Rhodia graph paper notebook are two very good notebooks)

Graphing Calculator – TI 83+, TI 84+ (Note: TI- 89 Calculators are not allowed)

Course Goals

This course is designed to develop the Calculus concepts that will benefit students interested in the business and social sciences. The approach taken will be especially useful for students who need to study calculus but will benefit by a review of necessary pre-calculus topics.

Upon completing the course, successful students will be able to:

- Work with functions algebraically, graphically, numerically and verbally.
- Use functions to model real world problems.
- Understand the Derivative conceptually
- Know how to calculate derivatives using the various rules and techniques studied in class.
- Understand and be able to use the mathematical vocabulary of Calculus.
- Improve communication and technical writing skills by studying and discussing mathematical problems and presenting solutions in articulate written and oral form.

Course Description

Class is held 3 days per week for 70 minute sessions. Homework will be assigned at each class meeting. Students are expected to complete these assignments by the next class meeting, where they will be discussed. No one can learn mathematics without doing it themselves and so, to the student, daily homework is the most important part

of the course. Since class participation is essential, students are expected to attend every class.

Email requirements – Please check your email Daily for important files, information, video links etc.

Time Management

Students are expected to spend 2-3 hours working outside the class for every hour spent in class. This amounts to approximately 6-10 hours per week, increasing prior to tests and the final exam.

Grading

Your final grade will be based on:

- Homework 15%
- Quizzes 10%
- Tests 50%
- Comprehensive final exam 25%

Attendance and participation will be considered when determining course grade.

Quizzes will NOT usually be announced in advance.

The lowest quiz score will be dropped.

The Instructor reserves the right to fail any student who fails the final exam.

The following grading scale will be used when assigning your final grade:

93 - 100 A	87 - 89 B+	77 - 79 C+	67 - 69 D+	0 - 59 F
90- 92 A-	83 - 86 B	73 - 76 C	63 - 66 D	
	80 - 82 B-	70 - 72 C-	60 - 62 D-	

The final exam schedule is listed on AMOS on college's website.

Makeups

There are NO Makeups.

If you know you will miss a scheduled assessment, and if you notify me in advance, and if I find your reason legitimate, then it may be possible for you to take the assessment Early.

If you are going to be absent on a given day, **especially** a day when a quiz or a test will be administered or when an assignment is due, you are expected to contact me before that class (via email, cell phone, prior notice) and explain your absence.

In general, late assignments will not be accepted.

Class Structure

Class will consist of lecture, group work, individual work, occasional videos and problem solving sessions. Please come to every class prepared with your text, note books, and calculator. Be prepared to participate in class.

Attendance

Attendance will be taken every class. There is a very strong correlation between attendance and grades. In order to understand the material, you need to be present in class. Group work also requires every student's participation. If you know you will be absent (or late) please contact me before the class. (email, text..)

Homework

All homework assignments from the textbook must be written in your graph paper HW notebook.

Start each new section at the top of a new page. Every page must have a heading which lists the Section#, page #s, and problem #s. Please do not crowd your work on the page. All steps required for solving the problem must be neatly and clearly shown. Labeled answers should be boxed. (Box $x=9$, not just 9)

Homework notebooks will be collected and graded during every Test. Otherwise, HW grading will be announced beforehand.

Follow Academic Honesty Policies for Mathematics.

Academic Honesty

For graded homework assignments and projects, you may use your class notes and any books or library sources except a solutions manual. However-

Any resources you use must be documented at the top of the homework assignment. As an example if you get help from the Tutor Center for problem 4 only, please write "Help with problem 4 from Tutor Center".

No points will be deducted for honestly acknowledging help.

On the other hand, if you do not document appropriate resources, this is considered cheating.

The College academic honesty policy appears in your Student Handbook; you are expected to be familiar with it. **The Academic Honesty Policy Guidelines specific to mathematics classes are reiterated at the end of the syllabus. They apply to work done outside of class as well as to in-class quizzes and tests. Please read them carefully.**

Learning Disability Statement

Students who wish to request accommodations in this class for a disability should contact the Academic Support Center, located on the first floor of Monocacy Hall (extension 1401). Accommodations cannot be provided until authorization is received from the Academic Support Center.

More information may be found at <P:\acdean\OCR Language.doc>

ACADEMIC HONESTY POLICY GUIDELINES

Mathematics Courses

The Department of Mathematics and Computer Science supports and is governed by the Academic Honesty Policy of Moravian College as stated in the Moravian College Students Handbook. The following statements will help clarify the policies.

In all homework assignments which are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thought of others, however, you must acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other than your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the Academic Honesty Policy of Moravian College. For homework which is not to be graded, if you choose, you may work with your fellow students. You are responsible for understanding and being able to clearly explain the solution of all assigned problems, both graded and ungraded. All in-class or take home tests and quizzes are to be completed by you alone without the aid of books, study sheets or formula sheets unless specifically allowed by your instructor for a particular assessment.

THINGS I REALLY APPRECIATE etc

- Buy a stapler, pencil sharpener, eraser and ruler, and bring them to each class.
- When turning in any work, have the papers in order, stapled and organized.
- Do not hand in anything with a torn or ripped out edge. Only work with clean edges will be accepted.
- Show every step clearly and Box your labeled answers when possible.
- Be legible. If you are writing with a pen and are crossing out mistakes, please use a pencil so that you may erase mistakes. Messy and or illegible assignments will cost you points. (spelling, neatness and grammar count)
- Use black or dark blue pens or sharp pencils only.
- Have one or two colored pens or pencils.
- Have your cell phone turned off during class.
- Be respectful to your classmates and me. If you plan to be absent, tardy or leave class early, please inform me in advance.
- Bring all required materials such as your textbook, writing utensils, graphing Calculator and both notebooks to every class.
- Come ready to learn. That means that you are armed with a good attitude, have carefully read the assigned sections and attempted the homework assignment.

Please refer to me as Professor Brooks

1/17/2016

MATH 108 TENTATIVE SCHEDULE

(subject to change)

Week	Topic	Section	Problems
1	Chapter 1 Function and graphs	1.1 1.2 1.3	1-9 odd,17,31 5-15 odd, 27,29,33, 1-33 odd 51, 65
2	Functions and Graphs	1.4 1.5 1.6	33,35,53-9odd,73,75,91 9-17 odd,29,31-39 odd 1-21 odd 43,45
3	Chapter 2 Limits and the Derivative ****L'Hopital's Rule (will be introduced right after studying the tangent line)	2.1 2.2 (expect quizzes) 4.3	1-25 odd,39,41,47, 49,55,57 9-25 odd ,31-43 odd 1-33 odd
4	Continuity	2.3 TEST 1 chapters 1, 2.1 - 2.3	7-31 odd, 35-41 odd
5	The Derivative Basic Differentiation Rules	2.4 2.5 (expect quizzes)	3,7,9,11,27,29, 31-39 1-17odd, 25- 45odd,49,51,53,55, 81
6	Marginal Analysis in Business and Economics	2.7	1,3,5,7,11,13,15, 17, 19, 27, 29, 33, 35, 37, 43,45
7	Exponential Functions Logarithmic Functions	Review	
8	Chapter 3 Euler's Constant e Continuous and	3.1	1,3,5,7,9,17,19

8 cont.	Compound Interest Derivatives of Exponential and Log functions	3.2	1-21odd,27, 28, 29
9	Derivatives of Products and Quotients The Chain Rule	3.3 (expect quizzes) 3.4	1-25 odd, 39,45,73,83 17-47 odd, 51, 55- 69 odd
10	Implicit Differentiation Elasticity of Demand	3.5 3.7	1-11 odd.17,19, 29 1-5, 9, 13, 19, 23, 25,29, 31,35,37
11	Chapter 4 First Derivatives and graphs	Test 2 chapter 2.4- 2.7 and chapter 3 4.1	 1-8, 11, 13, 15, 17, 19, 21,27,33, 35, 47, 49, 51
12	Second Derivatives and Graphs **L.Hopital's Rule (will be introduced right after studying the tangent line)	4.2 4.3 TEAM GRAPH MATCHING GAME FOR BONUS POINTS	1-21 odd, 25, 31-43 odd, 47, 49, 51, 55-61 odd 1-33 odd
13	Curve Sketching Techniques Absolute Maxima and Minima Optimization	4.4 4.5 4.6	4, 5, 11, 27, 45, 49, 51 7-17 odd, 21, 25, 33, 37, 41 1-13 odd,17,19,21, 23,25
14		Test 3 Chapter 4	

14 cont.	Review for final		
15	FINAL EXAM	Check AMOS for exact date	