MAC 2233.A: Survey of Calculus

Course Coordinator
Name: Mr. Josh Slatton
Office: Little 435
Email: jhslatton@ufl.edu

Course Policies and Syllabus

1. INTRODUCTION

1a. COURSE DESCRIPTIONS and CONTENT. MAC 2233 is the first in the two semester sequence MAC 2233 and MAC 2234 surveying the important ideas of calculus but emphasizing its applications to business economics, life and social sciences. The course covers important precalculus topics: basics of functions and graphing, specific functions and their applications as models (linear, quadratic, rational, exponential and logarithmic) as well as calculus: limits, the definition of the derivative, differentiation techniques, applications of the derivative including rates of change, curve sketching, and optimization, introduction to integration and its applications including area and total change.

A minimum grade of C (**not** C-) in MAC 2233 satisfies three credits of the university General Education quantitative requirement, and three hours of the state Writing/Math requirement.

This is an **online version** of MAC 2233 - all content is delivered online. Students view 35 online lectures in the course management system Canvas, and complete online homework and quizzes using MyMathLab software. Three semester exams and a final exam are posted in Canvas and administered through ProctorU.

1b. PREREQUISITES. MAC 2233 assumes that you have essential precalculus skills necessary to succeed in calculus. This course does not cover trigonometry.

To enroll in MAC 2233, you must have earned a grade of C or better in MAC 1140, precalculus, earned calculus credit through an exam or earlier coursework.

The textbook for MAC 2233 begins with a short review of precalculus topics including a short diagnostic test, and a precalculus review assignment, and quiz in MyMathLab. Completing these assignments during the first week of your semester will help you assess your preparation for calculus. **You should already be competent in working this material. We strongly recommend** that students who are

having difficulty with the review assignments consider first taking MAC 1140, a three credit review of Precalculus Algebra.

1c. REQUIRED MATERIALS

Textbook: Calculus with Applications, Tenth Edition by Lial, Greenwall and Richey. The text may be accessed as an e-book through the online MyMathLab homework system. **You have a two week grace period to use MyMathLab for free.** After that period, you must have an access code to use MyMathLab. You may purchase the code at through UF Flexible Learning or online through MyMathLab. You may access MyMathLab directly in Canvas, as a tool on the left sidebar of any course page.

If you prefer a hard copy of the text, you may purchase the bundle which includes the test and MyMathLab access code from the UF or local bookstores. You may also purchase a used copy. **The hard copy is not required.**

Note: We do not recommend purchasing a used bundle online since the access code may not function correctly, but you can certainly purchase a used text online and the access code directly from MyMathLab as indicated above.

Computer access and requirements: All assignments should be taken on a computer, not cell phone or tablet, since there may be compatibility issues with Canvas and MyMathLab. Be sure you are using a browser that works with MyMathLab and Canvas; **do not use Safari since some course materials may not show up correctly.** Your MyMathLab homepage provides a browser check, or you may check the following link:

http://www.pearsonmylabandmastering.com/northamerica/mymathlab/system-requirements/

It is recommended that proctored exams should be taken with a wired connections, rather than wireless, if possible. **You are responsible for having reliable access when working exams or quizzes online.**

Calculators: For text and homework problems, a scientific calculator doing basic statistics is required. A graphing calculator or computer programs such as Wolfram Alpha can be useful learning tools when used appropriately to supplement your work on individual problems but they are not required. Some videos will illustrate concepts using a TI-84 graphing calculator.

Remember that calculus is a collection of concepts and ideas that are not mastered through calculator skills. No calculators are permitted on exams.

1d. CANVAS. Flexible Learning's course management system is assessed through http://elearning.ufl.edu . Use your Gatorlink username and password to log in. All course information including the course homepage, syllabus, homework assignments, lecture notes and test information are posted on this site. In addition, there is mail tool for communication.

Grades are posted in Canvas (MyMathLab scores can be accessed in your MyMathLab gradebook; only total points may be posted in Canvas). You are responsible to verify that those grades are accurate. **You**

have one week after a score has been posted either in Canvas or MyMathLab to resolve any grade concerns by contacting Mr. Slatton.

Please note: Important course information is clearly communicated in this course guide and assignments and course materials are easily accessible through the Canvas modules and announcements. If you cannot find your answer in the resources above, you can email your instructor on through the Canvas mail tool.

1e. LECTURE VIDEOS. The lecture videos provide the main presentation of course material, and are accessed through the Canvas modules. To stay current with the course, we recommend watching the videos weekly. To help you test your understanding, there are questions included in each lecture. You will also complete the corresponding Module Quiz for each lecture in Canvas, which count as ten percent of your final grade. **You should study the videos and the corresponding textbook sections to understand the concepts and problem solving algorithms of a lecture before you take the required Module Quiz and attempt homework**. You may contact your instructor if you need clarification of a topic.

Students should print out the lecture noteshells from the module page before watching the video. This will make it easier to take notes and to follow the lecture.

Note: The lecture notes and other documents posted on the Course Materials and module pages in Canvas are in PDF format which requires Acrobat Reader. You may download the latest version through http://get.adobe.com/reader/ .

1f. SUCCESS. Other than having a strong precalculus background, success in MAC 2233 depends largely on your attitude and effort. **Mathematics is not a spectator sport. You will only understand the material when you are actively engaged.** It is not effective to watch a video and copy notes without following the thought processes involved in the lecture. Instead, **before watching a lecture video** it is important to look over the textbook sections to be covered to become familiar with the vocabulary and main ideas. That way you will better be able to grasp the lecture material. After watching the video, **before** you attempt the homework problems and quizzes, you should reread the text as well as study the lecture to understand the main ideas and the steps involved in solving the example problems.

As with most college courses, you should expect to spend a **minimum** of 2 hours working on your own for every hour of instruction.

It is critical that you keep pace with the course material as presented in the module for each week. Do not fall behind. Email your instructor if you have questions. Do not let misunderstandings go unanswered.

In studying calculus, you must be careful not to let a tutor, friend, or calculator "think" for you. Be sure that you can work problems completely on your own, without help, by the time of a quiz or exam.

Our hope is that through focused study and practice you will gain a real appreciation for the important concepts of calculus and their application. We want you to succeed in this class! But

you must keep up with the course material and take the initiative to get help before you get too far behind. Students with a positive attitude who are intellectually engaged in learning the material will get the most from the course.

1g. STUDENTS WITH LEARNING DISABILITIES. The Disability Resource Center in the Dean of Students Office provides students and faculty with information and support regarding accommodations for students with disabilities. Staff at the Disability Resource Center will assist any students who registers as having a disability. Official documentation of a disability is required to determine eligibility for appropriate accommodations. The professional employees at the Disability Resource Center serve as full-time advocates for students with disabilities ensuring students have physical and programmatic access to all college programs. One of the services provided by the Disability Resource Center includes:

• Test Accommodations

Please visit this page for further information:

https://www.dso.ufl.edu/drc/students/accommodations/testing-accommodations

Here is the webpage to register with the DRC: https://www.dso.ufl.edu/drc/

The Flexible Learning Office needs to be notified of any special accommodations required by the student when they begin their course by emailing the Accommodations Letter to lessons@dce.ufl.edu.

1h. ACADEMIC HONESTY. Remember that you committed yourself to academic honesty when you registered at the University of Florida by agreeing to the Honor Pledge below:

The Honor Pledge

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code.

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

Academic Honesty Guidelines: "All students are required to abide by the Academic Honesty Guidelines which have been accepted by the University. The academic community of students and faculty at the University of Florida strives to develop, sustain and protect an environment of honesty, trust, and respect. Students are expected to pursue knowledge with integrity. Exhibiting honesty in academic pursuits and reporting violations of the Academic Honest Guidelines will encourage others to act with integrity. Violations of the Academic Honesty Guidelines shall result in judicial action and a student being subject to the sanctions in paragraph XIV of the Student Code of Conduct."

The Mathematics Department expects you to follow the Student Honor Code. We are bound by university policy to report any instance of suspected cheating to the proper authorities.

You may find the Student Honor Code and read more about student rights and responsibilities concerning academic honesty at the link https://www.dso.ufl.edu/sccr/ .

In addition, we remind you that lecture videos are the property of the University/faculty member and may not be used for any commercial purpose. Students found to be in violation may be subject to discipline under the Student Conduct Code.

1i. PLAGIARISM. "A student shall not represent as the student's own work all or any portion of the work of another. Plagiarism includes but is not limited to:

1. Quoting oral or written materials including, but not limited to, those found on the internet, whether published or unpublished, without proper attribution.
2. Submitting a document or assignment which in whole or in part is identical or substantially identical to a document or assignment not authored by the student."

Source: Regulations of the University of Florida, UF-4.041. For more information, please go to this link: http://regulations.ufl.edu/wp-content/uploads/2012/09/4041.pdf

"For a violation or violations of the Honor Code, a student may receive any of the sanctions that can be imposed for Student Conduct Code violations, including but not limited to conduct probation, suspension, and expulsion, as well as any educational sanctions. In addition, students may receive the following:

a) Assignment grade penalty. The student is assigned a grade penalty on an assignment including but not limited to a zero.
b) Course grade penalty. The student is assigned a grade penalty in the entire course including, but not limited to, an E."

Source: http://regulations.ufl.edu/wp-content/uploads/2012/09/4047.pdf

2. GRADING AND COURSE REQUIREMENTS

2a. COURSE GRADE. Your course grade is based on 500 points accumulated as follows:

MyMathLab assignments	55
MyMathLab quizzes (best 11 or 13, 5 points each)	55
Lecture Quizzes (best 33 of 35, 1.5 points each)	50
3 Semester Exams (80 points each)	240
Final Exam	<u>100</u>
	500

In addition, extra credit may be earned from the following: Precalculus Review Assignment and Quiz, Syllabus Quiz, and Exam Reviews.

Your course grade will be determined according to the following scale. There will be no additional curve in this course, and extra assignments for individual students to improve a grade are NOT possible.

A	450 - 500 pts.	90% – 100%	C+	365 - 379 pts.	73% – 75.8%
A-	435 - 449 pts.	87% – 89.8%	C	335 - 364 pts.	67% – 72.8%
B+	420 - 434 pts.	84% – 86.8%	C-*	320 - 334 pts.	64% – 66.8%
B	400 - 419 pts.	80% – 83.8%	D+	310 - 319 pts.	62% – 63.8%
B-	380 - 399 pts.	76% – 79.8%	D	285 - 309 pts.	57% – 61.8%
			E	Less than 285 pts.	or below 57%

*NOTE: A grade of C- DOES NOT give Gordon Rule or General Education credit!

For those taking the S-U option: S [335-500 pts.]   U [0-334 pts]

Approval of the S-U option must be obtained from your coordinator.

The University of Florida assures the confidentiality of all your education records in accordance with the State University System Rules, State Statutes, and the Family Educational Rights and Privacy Act. **Grades are not given out over the phone.**

For a complete explanation of current policies for assigning grade points, refer to the UF undergraduate catalog: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

2b. GETTING STARTED, SYLLABUS QUIZ. In Canvas, you will find the Start Here page.
Watch the introductory videos and then read the syllabus. After you feel comfortable with the course policies listed, take the syllabus quiz posted in Canvas for extra credit.

2c. MODULES. MAC 2233 is organized into thirty-five modules. In Canvas, each module has an introductory page including the concepts to be covered, and the due dates for the module. From there you may link to the lecture videos, a copy of the noteshell for each lecture, the Lecture Check Quizzes, and any supplementary material. The three semester exams cover the modules as indicated in Canvas.

2d. VIDEOS and LECTURE QUIZZES. Viewing the lecture presentations is an important aspect of the learning process. Videos are accessed through the modules in Canvas, and you should print out the lecture outline before each lecture to fill in as you follow the video presentation. There are several lecture questions included in each lecture. You should work these problems as you watch the videos. A Lecture Quiz including some of those questions is posted for each lecture in Canvas. We encourage you to use the text as well as the videos to help you work the quiz problems; one question on a quiz may be from a worked out textbook example so you can see its solution. These quiz scores will count as 50 points

(10%) of your final course grade. We encourage you to work the quizzes early, after you have watched and studied the videos, while the material is fresh in your mind.

2e. MYMATHLAB HOMEWORK. Online homework administered in MyMathLab is planned to review concepts and to provide practice of the lecture material. Your point score on each assignment will be added and the total will count for 55 points of your final grade.

The homework problems are graded by the software and you see your score immediately after submitting your work. You will have six attempts for each problem (except multiple choice or true/false); there are aids and a link to the e-book to help you solve each question.

2f. MYMATHLAB QUIZZES. Thirteen five point quizzes will be posted in MyMathLab. **You must score a minimum of 80% on the corresponding MyMathLab assignment before you can take the quiz.** You will have three attempts for each quiz and 90 minutes per attempts; the clock starts from the time you open your quiz. **Your top ten quiz scores from quizzes 1-12, plus your quiz score from quiz 13, will count for a total of 55 points of your grade.**

If you are experiencing a technical problem with MyMathLab, please contact Pearson's MyMathLab Technical Support Team by calling 1-800-677-6337.

NOTE: MyMathLab Homework and Quizzes and the Lecture Check Quizzes in Canvas account for 32% of your total score, to reflect their important in understanding course concepts.

2g. EXTRA CREDIT. You may earn additional credit in the following ways:

1. **SYLLABUS QUIZ, Precalculus Review Assignment and Quiz.** These are designed to introduce you to the format of the course, and to provide a review of precalculus skills.
2. **EXAM PREPARATION.** An exam review and sample exam will be posted in Canvas for each of the exams. These will give you a flavor of the type of questions you will see on the actual test. Detailed instructions for earning extra credit will be posted with the exam reviews.

2h. ADDITIONAL PRACTICE PROBLEMS. Textbook exercises for each lecture are listed in the **Lecture Topics, Reading Topics and Homework** outline posted in Canvas. These complement the online problems and provide additional practice. There is a solutions manual in MyMathLab with worked out answers to selected exercises.

2i. COURSE DEADLINE AND EXTENSION POLICY. Students are allowed 16 weeks, from their date of enrollment, to complete and submit their coursework. If the student has not submitted at least 50% of their coursework and have an extenuating circumstance preventing them from submitting the coursework, a failing grade of "E", "E0" or "E1" will be issued and recorded to the UF Registrar.

If the student has made sufficient academic progress, which is defined as completing and submitting at least 50% of the coursework and have an extenuating circumstance, the student may petition the instructor for a course extension before the course expires. Each course extension request will be administratively evaluated. Instructors are not required to allow extensions. If a student does receive an

extension, an incomplete grade of an "I" will be assigned as an interim grade. When the course is completed, the instructor will initiate the change of grade. After that, the "I" grade will be changed to the student's final course grade on their transcript.

2j. DROPPING OR WITHDRAWING FROM A COURSE. A tuition refund may be granted after a student submits a written request for withdrawal from a course within 30 days of enrollment. This request must be in writing and may be sent by fax (352–392–6950) or email (learn@dce.ufl.edu). All requests will receive written responses. Refunds will be the amount of tuition, less $25.00 per course. If a credit card was used to pay for tuition, the refund will be in the form of credit to that card. A refund can be issued on course materials at the time of withdrawal if they are returned within 30 days of sale and are in their original condition. Allow 6-8 weeks for refund checks. **No refunds are granted after 30 days.** Students with disabilities who need to drop a course due to disability-related reasons are allowed to petition for additional drops. For more information, contact the Disability Resource Center at https://www.dso.ufl.edu/drc .

Attention UF Students:
- In order to drop a UF Flexible Learning course, UF students must have an Academic Advisor or Department Chair email the UF Flexible Learning Office at learn@dce.ufl.edu stating that the student is approved to drop the course. Students must also notify the UF Flexible Learning Office of this request by emailing learn@dce.ufl.edu. Use this link for more information: https://catalog.ufl.edu/current/regulations/info/drops.aspx#drop

- UF Students wishing to drop a UF Flexible Learning course after drop/add should contact their college advising office to see if they have a free drop remaining. If they have a free drop remaining, they have 14 weeks from the date of enrollment to drop the course, subject to applicable rules of their college and the university. This action is subject to verification that a grade has not yet been assigned.

- All full-term withdrawals must follow University of Florida policies/procedures. An approved withdrawal form must be submitted to the Dean of Student's office for review and final approval. Students must also notify the UF Flexible Learning Office of this request by emailing learn@dce.ufl.edu. Use this link for more information: https://catalog.ufl.edu/ugrad/current/regulations/info/drops.aspx#withdraw

Medical Withdrawals: Here is the link to start the Medical Withdrawal Process:

https://www.dso.ufl.edu/care/medical-withdrawal-process/

Retroactive Withdrawals: Here is the link for retroactive withdrawal information:

http://www.registrar.ufl.edu/currents/petitioninstructs.html

The student needs to notify the Flexible Learning Office of their approved medical or retroactive withdrawal so that we can update their record in our office by emailing a copy of the approval to learn@dce.ufl.edu.

Transfers: You may transfer from one course to another within 30 days of enrollment. This request must be in writing and sent by fax (352-392-6950) or email (learn@dce.ufl.edu). You will receive a receipt by mail. Any difference in tuition will be collected or refunded. There is a $50.00 transfer fee. After the transfer has taken place, the original enrollment and expiration dates will apply. The approval of a dean or academic advisor is required for UF students, which needs to be emailed to learn@dce.ufl.edu or faxed to 352-392-6950.

Book Buy-Back Policy: Textbooks purchased from the UF Flexible Learning Bookstore, except for ones with an access code, which are in continued use by UF Flexible Learning and are in good condition may be repurchased at 50% of the original purchase price 30 days from completion of, or withdrawal from, a course. Contact UF Flexible Learning for more details at 1-800-327-4218.

2k. HOW TO REQUEST A UF TRANSCRIPT. There are two ways to order a transcript:

1. The online ordering system by going to this link: http://www.registrar.ufl.edu/transcript.html

2. If you cannot use the online system, please contact the UF Office of the University Registrar for instructions to mail in a request with a check or money order. They can be contacted by phone Monday-Friday, 8:00 a.m. to 5:00 p.m. at 352-392-1374. Persons with hearing impairments can call FRS # 1-800-955-8771 (TDD).

Please check your "unofficial transcript" first, before ordering your "official transcript", to make certain that your grade has been posted.

3. **TESTING**

3a. SEMESTER EXAMS. During the course, three tests will be given. The exams will be posted in Canvas and administered through ProctorU. You will take the exam in a 100 minute time slot. **You must register with ProctorU** at http://go.proctoru.com for each exam at least 72 hours in advance. A computer with a webcam and built-in microphone is required for the exams and a hard-wired, high speed Internet connection is recommended. See the ProctorU Student Handout located in the "Start Here" section of your course for the instructions and technical requirements or test your equipment at http://www.proctoru.com/testitout/ before you enroll in the course. Each exam will be scored on a scale of 100 points. No books, notes, cell phones, iPads, calculators, etc. will be allowed during the exam.

3b. FINAL EXAM A mandatory, comprehensive final exam will be given. You will need to register with ProctorU at least 72 hours in advance to schedule a 130 minute time block.

IMPORTANT: The final exam is critical to your course grade and is required of all students. The exam score will count as 100 points of your final point total.

We also allow the final exam score to improve your grade on one of the semester exams. That is, if your final exam grade is higher than the lowest of your three semester exam scores, its percent score prorated to 80 points will replace that lowest test. For example, if your lowest semester exam score is 56 and you earn 80% (80 points) on the final, the exam score of 56 will be replaced by 64 (80% of 80 points) in the gradebook. If the final exam score is lower, however, the original test score will remain.

Note: You may not use a calculator or any other study aid for exams. Be sure to read the ProctorU handout thoroughly to understand the exam procedures before you start a test. You are responsible for having a secure connection during the exam. We cannot give makeup work for a failed internet connection.

3c. MAKEUP POLICIES. All makeup work must be approved by the course instructor with documentation provided. **If illness or other extenuating circumstances cause you to miss an exam, contact the instructor as soon as possible (no later than 24 hours after the test) for approval to reschedule the exam.**

4. MAC 2233 PREREQUISITES and FORMULAS

This course assumes that you have a sound precalculus background. The following is a summary of some important concepts used in solving calculus problems. The textbook provides a more complete review of these essential topics.

ALGEBRA

1. Basic Geometric Formulas: (b = base, l = length, h = height, w = width)

Triangle: area = $\frac{1}{2}bh$

Circle: area = πr^2;   circumference = $2\pi r$

Parallelogram: area = bh

Rectangular box: volume = lwh

Sphere: volume = $\frac{4}{3}\pi r^3$;   surface area = $4\pi r^2$

Right circular cylinder: volume = $\pi r^2 h$;   surface area = $2\pi rh + 2\pi r^2$

surface area = $\pi r \sqrt{r^2 + h^2}$ Right circular cone: volume = $\frac{1}{3}\pi r^2 h$;

Facts about similar triangles:

Pythagorean theorem: $x^2 + y^2 = z^2$ 2.

Basic Functions and their graphs:

$$f(x) = x;\ f(x) = x^2;\ f(x) = x^3;\ f(x) = |x|;\ f(x) = \sqrt{x};\ f(x) = \frac{1}{x};$$

$f(x) = b^x$, $b > 0$ and b 6= 1, such as $f(x) = 2^x$

3. Factoring:

$x^3 + y^3 = (x + y)(x^2 - xy + y^2)$ $x^3 - y^3$

$= (x - y)(x^2 + xy + y^2)$

4. Fractions: $\dfrac{a}{b} + \dfrac{c}{d} = \dfrac{ad + bc}{bd}$, etc.

5. Exponents: $x^n y^n = (xy)^n$; $x^n x^m = x^{n+m}$;

$$\frac{x^n}{x^m} = x^{n-m};\ (x^n)^m = x^{nm}$$

6. Roots, including rationalizing the denominator or numerator.

$$\sqrt[n]{x} = x^{1/n};\ x^{-n} = \frac{1}{x^n},\ \text{etc.}$$

7. Inequalities and absolute values:

$|x| \le a$ $-a \le x \le a$;

$|x| \ge a$ $x > a$ or $x < -a$

8. Equation solving: Finding solutions for x if

$ax + b = 0$; $ax^2 + bx + c = 0$; etc.

9. Logarithms: If $x > 0$, $\log_a x = y$ if and only if $x = a^y$

If $m > 0$ and $n > 0$, then $\log(nm) = \log(n) + \log(m)$ log

$$\left(\frac{n}{m}\right) = \log(n) - \log(m)$$

$$\log(n^c) = c\log(n)$$