MAC 2233 (online)
FALL 2022

SYLLABUS

COURSE TITLE: Survey of Calculus 1

CATALOG DESCRIPTION: Geometric and heuristic approach to calculus; differentiation and integration of simple algebraic and exponential functions; applications to graphing, marginal analysis, optimization, areas and volumes.

COURSE 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 and their applications as models (linear, quadratic, rational, exponential, and logarithmic), as well as calculus topics: limits, differentiation and applications of the derivative, introduction to integration and its applications including area (volume is not covered). This course does not cover trigonometry. The course is delivered entirely online.

A minimum grade of C (not C-) in MAC 2233 satisfies three credits of the university General Education quantitative requirement.

PREREQUISITES: Any of the following minimal acceptable score on the online mathematics placement exam, a minimum grade of C in a MAC course numbered 1140 or higher; AP credit on MAC 2311; IB credit for a MAC course numbered 1140 or higher.

MAC 2233 assumes that the students have essential precalculus skills necessary to succeed in calculus and we will review the most important topics of precalculus at the beginning of the semester. We strongly recommend that the students who are having difficulty with the precalculus material consider taking MAC 1140, a 3-credit review of Precalculus Algebra. You may switch courses on ONE.UF during the drop-add period. In an agreement with the Registrar's office, you have one additional week to drop back to MAC 1140 – after the drop-add period, the paperwork to move back to precalculus MAC 1140 must be completed through the Math department (see the Instructor, Dr. Williamson).

INSTRUCTOR:	**Dr. Larissa Williamson**
Office:	LIT 380
Office Hours:	TBA
E-mail:	lwill@ufl.edu
Webpage:	https://people.clas.ufl.edu/lwill/

E-Learning (Canvas):	https://elearning.ufl.edu/

E-MAIL:	**Preferred way** of communication is **e-mail** via Canvas **Inbox** tool

Course Calendar

Fall 2022	Monday	Tuesday	Wednesday	Thursday	Friday
August	22	23	24 M1 L	25	26 M2 L
September	29 M3 L	30	31 M4 L	1 HW&LC M1-3	2 M5 L
	5 Labor Day	6	7 M6 L	8 HW&LC M4-5 Review1 LC due Bonus Project due	9 M7 L **Quiz-Unit1: M1-5**
	12 M8 L	13	14 M9 L	15 HW&LC M6-8	16 M10 L
	19 M11 L	20	21 M12 L	22 HW&LC M9-11	23 M13 L
	26 Review2 L	27 HW&LC M12-13 Review2 LC due	28 M14 L **Exam-Unit2: M6-13**	29	30 M15 L
October	3 M16 L	4	5 M17 L	6 HW&LC M15-16	7 Homecoming
	10 M18 L	11	12 M19 L	13 HW&LC M17-18	14 M20 L
	17 M21 L	18	19 M22 L	20 HW&LC M19-21	21 Review3 L
	24 M23 L HW&LC M22 Review3 LC due	25 **Exam-Unit3: M14-22**	26 M24 L	27 HW&LC M23	28 M25 L
November	31 M26 L	1	2 M27 L	3 HW&LC M24-26	4 M28 L
	7 M29 L	8	9 M30 L	10 HW&LC M27-29	11 Veterans Day
	14 Review4 L HW&LC M30 Review4 LC due	15 **Exam-Unit4: M23-30**	16 M31 L	17	18 M32 L
	21 M33 L	22 HW&LC M31-32	23 Holiday	24 Thanks	25 giving
December	28 M34 L	29	30 M35 L	1 HW&LC M33-34	2 M36 L
	5 Review5 L	6 HW&LC M33-36 Review5 LC due	7 **Quiz-Unit5: M31-36**	8 Reading Day	9 Reading Day

The Final Exam will be offered on MyLab on Saturday, December 10

Delivering Content

TEXTBOOK & ACCESS CODE: We use the following textbook in this course:
Calculus with Applications, 12th edition,
by Margaret L. Lial, Raymond N. Greenwell, Nathan P. Ritchey*

Access code to **MyLab and Mastering** is required in the course. **Access code can be obtained through UF All Access program by authorizing charges to your student financials account and is provided at a reduced price. ** This option will become available starting one week prior to the beginning of the semester and ends three weeks after the first day of class.
If you do not wish to authorize charges to your student financials account, you may purchase access code at the Campus bookstore instead (https://www.bkstr.com/floridastore), which will be more expensive than opting-in.

* Registration with MyLab gives you an access to an electronic version of the textbook. If you wish to have a print text, you may purchase it at the bookstore.
Please see Course Tools & Technology → Course Materials & Registration Instructions on E-Learning (Canvas) for complete information on obtaining access code through UF All Access and registration with MyLab and Mastering.

LECTURE NOTES: Lectures in this course are delivered using Lecture notes shells which can be printed from each Module on Canvas or from the Canvas page Lecture Notes. Lecture notes shells make note taking easier and are required in the course. The whole set of Lecture Notes (Course Pack) will be available for purchase at Target Copy: it can be either picked up at the location (1412 W University Ave, Gainesville, FL 32603) or ordered online (http://target-copy.com/) and it will be shipped to you.

TEXTBOOK READINGS: Reading the textbook is a part of learning process. The students are strongly recommended to read the corresponding sections of the textbook after (or before) viewing Part I or Part II of a lecture and before doing homework on MyLab or taking the quiz on Learning Catalytics (see Lectures, On-line Homework, and Lecture Participation Quizzes in this Syllabus). The pages of the textbook that match content of the lectures are listed on Canvas Modules.

Course Structure

The Course Management System is E-Learning (Canvas): https://elearning.ufl.edu/

Course material is divided into **5 Units** with a total of 36 conceptional Modules, M01-M36.
(See the last page of this Syllabus for detailed Module Coverage.)

Unit 1	M01 – M05	Review of Algebra
Unit 2	M06 – M13	Functions & Mathematical Models
Unit 3	M14 – M22	Limits & Derivatives
Unit 4	M23 – M30	Differentiation & Applications
Unit 5	M31 – M36	Integration & Applications

MODULES & DUE DATES: It is advisable to complete a Module <u>on or shortly after</u> the date indicated on the Course Calendar as "M# L" or "Review# L", so that you can stay on track and avoid having too many Modules to complete by the Due Date. To start working on a Module, the students need to access it through the Canvas course main page and go through the "To Do" list. Working on M01-M36 requires viewing the Lecture and completing MyLab assignments, which include online Homework (HW) and Learning Catalytics (LC) quiz. Working on a Review module, which is the last one in each Unit, will help you to prepare for an Exam or a Quiz. The MyLab assignment required to be completed for each Review Module is a LC quiz (no HW). (See sections On-line Homework and Lecture Participation Quizzes in this Syllabus.)

TEXTBOOK HOMEWORK: Textbook homework problems are assigned after each lecture. **They will not be graded** but should be considered as an additional tool for mastering the material. Lists of recommended Textbook Homework problems are located in Canvas Modules.

LECTURES: The students view lectures online. A lecture will be recorded on the date indicated on the course Calendar as "M# L" or "Review# L" and will become available on the corresponding Module on Canvas shortly after that.

Assessments

ON-LINE HOMEWORK: Each online **Homework assignment** (HW) is a set of problems assigned on MyLab and numbered according to the Module covered. A HW assignment will give you necessary practice for mastering the material delivered in lecture. Each homework assignment is due at 11:59 pm on the due date which is indicated on the Course Calendar, on Canvas, and on MyLab & Mastering. **A HW will be closed after the deadline and cannot be re-opened without a legitimate reason**. A credit for a HW will be given according to the percent value of the correct work completed. Review of a completed HW is available through MyLab gradebook, but a non-attempted HW cannot be reviewed. There will be a total of 36 homework assignments offered and the **2 lowest scores will be dropped** at the end of the term.

LECTURE PARTICIPATION QUIZZES: Viewing Lectures, which will become available on Canvas on the date indicated in the Calendar as "M# L" or "Review# L", analyzing them, and taking Learning Catalytics quizzes (LC) is considered Lecture Participation and required in the course. The LC software, built within MyLab, will monitor your Lecture Participation. For each Module, there is a quiz on LC: the students will join the corresponding session and answer the questions. Your LC quiz responses will be graded and, <u>after the deadline for the quiz,</u> your score will show on MyLab Gradebook. A total of 41 LC sessions will be offered. There are 2 questions per session. Each question is in a "many choice" format and worth 1 point. The grade will be assigned as 75% for participation and 25% for correctness. Each quiz grade will be counted out of 1.75 points – thus, the student earns the full credit for attempting both questions and answering one of them correctly, and the student earns 2 points for answering both questions correctly, which includes 0.25-point bonus. **The 5 lowest scores on LC quizzes will be dropped at the end of the term**.

<u>**Important**</u>: The due dates for M01-M36 LC quizzes are the same as for the corresponding HW. The due dates for the Review LC quizzes are marked on the course Calendar as "Review# LC

due". **A Learning Catalytics quiz will be closed after the deadline and cannot be re-opened without a legitimate reason.**

For more information on Learning Catalytics quizzes, please visit the Canvas page Course Tools & Technology → Course Materials & Registration Instructions.

EXAMS & QUIZZES: There will be <u>three</u> Unit Exams, <u>two</u> Unit Quizzes, and the Final Exam offered on MyLab & Mastering during the term.
All exams and the Unit Quizzes have to be taken from within MyLab & Mastering on the dates indicated on the Calendar. Review of a completed Exam/Quiz will become available after the deadline and can be accessed from MyLab Gradebook.

All exams in our course are proctored through ProctorU. You can schedule your session on the ProctorU site for any available time between 12 am and 9 pm on the date of the exam. You should schedule your session ahead of time (numbers of appointments are limited) and at least 72 hours prior to the exam date to avoid "late scheduling" fee. Each Exam opens on MyLab at 12 am on the date of the exam and closes at 11:59 pm on the same day. Each Exam contains 22 multiple-choice questions at 4 points each, which includes 2 bonus questions. The student will have 90 minutes to complete an exam and is only permitted to use pencils, pens, eraser, and scratch paper while exam is in progress. Each Exam will be graded by MyLab software out of 88 points upon submission, but the grade on Canvas will be assigned out of 80 points (which includes bonus).

The 50-minute MyLab Unit Quizzes, Quiz-Unit1 and Quiz-Unit5**,** are mandatory but <u>not proctored</u>. They are "open notes" quizzes. Each Quiz contains 10 multiple-choice questions at 4 points each and will be graded out of 40 points (no bonus).

The Final Exam is cumulative: it covers Units 1-5. The score for the Final Exam will appear **twice** on Canvas Gradebook, one time, as the **Final**, and, second time, as the **MakeUp** (please read section Makeup Policy on Exams in this Syllabus).

<u>Important</u>: While taking your exam with ProctorU, you cannot use calculators, notes, or open ANY other program or file on your computer except the ones that are required. If you open a program or a file such as Calculator, MyLab homework, or Lecture Notes, the ProctorU will send an Incident Report to the Instructor.

For more information on Exams, Unit Quizzes, and ProctorU, please visit the link Exam Information on the Canvas course main page.

Software Policy

Scientific calculators are required in the course.
A graphing calculator is needed for some homework problems but it can be replaced with a suitable software, such as MATLAB which is available via UF Apps.
Calculators are not allowed on Exams!

The students will have a possibility to learn the MATLAB programming environment in relation to the topics covered in the course, but **it is not required**. There will be a **Bonus MATLAB Project** offered at the beginning of the term which is worth 10 points - the points earned on the Project will be added to your score for the **Quiz-Unit1**.

For more information on the Bonus MATLAB Project, please visit the link MATLAB Project on the Canvas course main page.

Makeup Policy

MAKEUP POLICY ON ONLINE HOMEWORK AND QUIZZES**:** If you are not meeting the deadline for a homework assignment, LC Quiz, or Unit Quiz on a **legitimate reason** (being sick, being away on the UF business, family emergency, or religious holidays), you may send an email to Dr. Williamson via **Canvas Inbox** tool either prior to the deadline or within three (3) days after the deadline and request an extension. **Late requests will not be accepted**!
Missing a **Unit Quiz** without a legitimate reason and making it up at a later date will result in a 5-point penalty - the request for an extension has to be sent no later than within three (3) days after the deadline for the Quiz.

MAKEUP POLICY ON EXAMS: It may be necessary to miss a Unit Exam during the term or you may not be satisfied with your grade earned on Unit Exams. For these reasons, the **Final** Exam will be counted second time as the **MakeUp** Exam: **the best 3 out of the 4 scores** on the Unit Exams 1–3 and **MakeUp** will count towards the grade on the category Unit Exams.

If you are missing a Unit Exam due to a legitimate reason (being sick, being away on the UF business, family emergency, or religious holidays), you can request to take an early make-up and save the MakeUp option of the Final. To take an early make-up, you need to send a request to Dr. Williamson **via Canvas E-mail** either prior to the deadline for the exam or immediately afterwards – **we will not accept any late requests**. Upon receiving student's request for an early make-up, the student will be informed that a **one-week testing window, starting with the date of the actual exam,** has been set on the ProctorU and on MyLab – the student has to make an appointment on the ProctorU and complete the early make-up on MyLab within that window.

Missing the **Final** without a legitimate reason and making it up on a later date will result in a 10-point penalty - a request for making it up has to be sent no later than within one (1) day after the deadline for the Final.

IMPORTANT NOTE: You can discuss with your Instructor a Unit Exam, Unit Quiz, HW, LC quiz, MATLAB Project **within three (3) days** and the Final Exam – **within one (1) day** upon receiving the grades if there is a grading error or any other problem**. Late requests will not be considered!**

All issues with Canvas, MyLab & Mastering, ProctorU and UF Apps/MATLAB have to be reported immediately in order to be eligible for an extension or a retake.

Grades

COURSE GRADE: The course grade is assigned based on the student's performance on the following weighted categories:

36	Lecture Participation	@	63 points	11.15 %
34	On-line homework	@	102 points	18.05 %
2	Unit Quizzes	@	80 points	14.16 %
3	Unit Exams	@	240 points	42.48 %
1	Final Exam	@	80 points	14.16 %
	Total:		565 points	100 %

The course grade is the grade satisfying the conditions below and **will be adhered** to:

	Minimum %			Minimum %
A	90 %	C		66 %
A-	86 %	C-		62 %
B+	82 %	D+		58 %
B	78 %	D		54 %
B-	74 %	D-		50 %
C+	70 %	E		0 %

<u>Note</u>**: We have 0.5% round up margin towards a higher letter grade.**

GRADE POSTING: All grades will be posted in a timing manner on E-Learning (Canvas) at https://elearning.ufl.edu/. You are advised to check regularly whether your grades are handled and recorded properly. **You should immediately report any problem with your grade to the instructor.**

Miscellaneous

Help: Please visit Resources & Help link on the Canvas Homepage for the information.

Grades: Grading will be in accord with the UF policy stated at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Honor Code: "UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor 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." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class."

Class Attendance: "Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx "

Accommodations for Students with Disabilities: "Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/
It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester."

Online Evaluations: "Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/."

Contact information for the Counseling and Wellness Center: https://counseling.ufl.edu/
392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Course Content and Module Coverage

Unit 1: Review of Algebra

M 01	Polynomials & Factoring (Sect. R1, R2)
M 02	Polynomial Division & Rational Expressions (Sect. R3)
M 03	Equations: Linear, Quadratic, and Rational (Sect. R4)
M 04	Inequalities: Linear, Quadratic, and Rational (Sect. R5)
M 05	Exponents & Radical (Sect. R6, R7)

Unit 2: Functions & Mathematical Models

M 06	Slopes & Equations of Lines (Sect. 1.1)
M 07	Linear Functions & Applications; The Least Squares Line (Sect. 1.2, 1.3)
M 08	Properties of Functions (Sect. 2.1)
M 09	Quadratic Functions; Translations & Reflections (Sect. 2.2)
M 10	Polynomial and Rational Functions (Sect. 2.3)
M 11	Exponential Functions (Sect. 2.4)
M 12	Logarithmic Functions (Sect. 2.5)
M 13	Applications: Growth & Decay; Math in Finance (Sect. 2.6)

Unit 3: Limits & Derivatives

M 14	Limits (Sect. 3.1)
M 15	Continuity (Sect. 3.2)
M 16	Rates of Change & Tangent Line (Sect. 3.3, 3.4)
M 17	Definition of the Derivative & Graphical Differentiation (Sect. 3.4, 3.5)
M 18	Techniques of Differentiation (Sect. 4.1)
M 19	Derivatives of Product and Quotient (Sect. 4.2)
M 20	The Chain Rule (Sect. 4.3)
M 21	Derivatives of Exponential Functions (Sect. 4.4)
M 22	Derivatives of Logarithmic Functions (Sect. 4.5)

Unit 4: Derivatives & Applications

M 23	Increasing and Decreasing Functions (Sect. 5.1)
M 24	Relative Extrema (Sect. 5.2)
M 25	Higher Derivatives, Concavity, Second Derivative Test (Sect. 5.3)
M 26	Curve Sketching (Sect. 5.4)
M 27	Absolute Extrema & Applications (Sect. 6.1, 6.2)
M 28	Business Applications of Extrema (Sect. 6.2, 6.3)
M 29	Implicit Differentiation, Related Rates (Sect. 6.4, 6.5)
M 30	Differentials: Linear Approximation (Sect. 6.6)

Unit 5: Integration and Applications

M 31	Antiderivatives (Sect. 7.1)
M 32	Method of Substitution (Sect. 7.2)
M 33	Area & Definite Integral (Sect. 7.3)
M 34	The Fundamental Theorem of Calculus (Sect. 7.4)
M 35	The Area between Two Curves (Sect.7.5)
M 36	Numerical Integration (Sect. 7.6)