

Florida Atlantic University
Mathematical Sciences Department

MAC 2233-04B: Methods of Calculus (CRN: 10783)

3 credits

Fall 2022—Full Term DL Fully Online

08/20/2022 – 12/16/2022

Instructor: Dr. Zvi Rosen
Office Location: SE 224, Boca Campus & Online via Zoom
Phone Number: 561-297-3340 – Use CANVAS email, better than phone.
Email: rosenz@fau.edu.
Please use CANVAS mail. If you must use your FAU email, be sure to state your course and section. Never use another email.

Office Hours: Thursday 10 AM – 12 PM or by appointment. Access via: Zoom tab in Canvas course. Additional appointments available at a mutually convenient time.

These appointments can be made at <https://rosenz.youcanbook.me/>

You will receive a Zoom link prior to the meeting.

Course Prerequisites: College Algebra (MAC 1105) or equivalent, with a minimum grade of C, or other criteria listed when registering. If you find the HW from Chapter 1 is difficult and taking you a long time, consider dropping and enrolling in a preparatory course. Discuss with me and your academic advisor.

Course Description (University Catalog):

A descriptive and intuitive introduction to the methods and applications of differentiation and integration. Primarily for social science and business administration majors. This section is restricted to Business majors only. This is a General Education course and counts toward the Gordon Rule computational requirement.

*This course is required of students who plan to enter the College of Business or wish to remain in the College of Business. A “C” grade must be earned in this course. The College of Business permits 2 attempts to achieve the “C”. **If you are considering taking a W, meet with your instructor first.***

Course Objectives: Students will be introduced to a description of the basic methods of differential and integral calculus, together with illustrations and applications to business and the life and social sciences. Upon successful completion of the course, the students will:

- Define the equation of the tangent line to the curve at a point;
- Calculate limits; Distinguish between continuity and differentiability; Calculate derivatives;
- Identify relative and absolute extremum; Identify where a function is increasing/decreasing; Identify where a function is concave up/concave down and has an inflection point(s); Sketch graphs;
- Solve optimization problems; Interpret and validate results for optimization problems;
- Demonstrate implicit differentiation techniques; Solve problems in related rates; Interpret and validate results in related rates;
- Discover the exponential and natural logarithm properties; Solve problems in exponential growth and decay; Interpret and validate problems in exponential growth and decay;

- Calculate Riemann sums; Interpret results of Riemann sums; Calculate antiderivatives; Calculate the area between curves in the xy -plane; Calculate the average value of a function.

Specific objectives are covered by the assigned HW and may not include all of the topics listed above.

Course Delivery Mode

- Lectures have been recorded by Dr. Roger Goldwyn, and are keyed to homework assignments. See Modules in CANVAS.
- **Please post any questions in DISCUSSIONS on CANVAS. Do not use CANVAS mail or email for this.** If it is a question on a problem from HW, then use the heading of HW number and question number (for example HW 2B Q 5.) The exact version of a question will usually differ from what the student has. If a question on a specific topic, then post that in the heading. If you need to attach a pdf, this has to be in a single pdf, portrait orientation. Remember do not include personal information in the discussion. **You must post in DISCUSSIONS any questions even if you wish to discuss during office hours.** More confidential questions should be addressed via CANVAS mail to the instructor.
- TAs, if assigned to this course, should be available to all students to answer questions and set up personal virtual meetings as requested by student.
- If enrollment is not sufficient for this section, there may not be a TA. You should still post your questions and comments in DISCUSSIONS as stated above and not as an email or CANVAS mail.
- REMEMBER—During office hours, do not discuss in chat or verbally any personal material. It is being recorded.
- *Recordings are not to be shared outside the course – e.g., do not upload them to YouTube.*

Required Text and Materials (Required)

- Business Calculus – Calaway/Hoffman—Available through MyOpenMath (MOM). This is free. Also comes with online learning system linked to CANVAS where problems will be worked. It is free and access is through CANVAS.
- Calculators are required for some calculations, so make sure you know how to use your calculator's functions correctly.
- A computer with internet connection and video camera should be available for all classes and for Exams and Final and Quizzes and Extra Credit Assignments. Make sure it works with CANVAS and MOM by testing it with the Homework Assignments. Be able to connect to Zoom and show your screen.

Course Assessments, Assignments, Grading Policy, and Course Policies

Exams and Final: 6 Exams and the Final taken as scheduled below. You will not be given a copy of what you miss on exams. You can review all in HW. If you have a question on an Exam problem, post it on DISCUSSION using the problem number from HW.

There are 2 exams per chapter. Each exam is comprehensive. The final is comprehensive. Each exam can include questions from the previous HW. All exams come from HW.

No makeups for missed exams or final unless for an official university legitimate absence as stated in attendance policy. Similar for other exams. Final must be taken.

Each exam has 12 questions and a time limit of 60 minutes.

You may use your notes during the exam. Do not access MOM material during the exam.

Extra Credit Quizzes through the SAM Lab at the MLC

After taking each exam but ***before the next HW is due (for EXAM 3B before 11pm on 11/23/2022 Boca Time)***, students may go to the MLC, either online or in person (information on the MLC can be found in this syllabus). No appointment is necessary, just drop-in. Let the SAM Lab tutors know you are there to get the selection from HW problems and extra credit quiz. The tutors will provide you with 5 HW questions from the previous HW section, which will serve as a review, and you can work alone or with tutor's assistance in preparation for the extra credit quiz (ECQ) at the end of your visit. The extra credit quiz will be one of the questions from the HW problems you just completed and you will have 10 minutes to complete it.

If you attend the SAM Lab **in person**:

- You will need to work out each problem on paper and discuss with the SAM Lab tutor(s) before receiving the PW for access to the extra credit quiz
- Upon completion of the HW problems, SAM Lab staff will enter the password for the quiz (ECQ) in MOM. Quiz is graded in MOM---same as in HW.

If you attend the SAM Lab **online**:

- You will need to work out each problem on paper and discuss/share with the SAM Lab tutor(s) before receiving access to the extra credit quiz (show them your paper via the camera)
- Upon completion of the HW problems, SAM Lab staff will place you in a zoom breakout room and give you the password for the quiz in MOM

Please be aware that sharing of any passwords will be considered as academic **dishonesty**.

The Final has 30 questions and has a limit of 150 minutes.

Students can review what they miss from HW, but you won't be given a copy of what is missed on an exam or ECQ.

There is no additional extra credit. The TOTAL in CANVAS is rounded up before letter grade is assigned.

Lectures:

When you login to CANVAS or remote connection for the course, you should use your FAU email id.

There are a number of modules in CANVAS that will be helpful: Welcome, Syllabus, and A Guide to Study. You are expected to read and understand the online book with the examples presented. If you don't understand a topic, promptly post question in DISCUSSIONS or send me a CANVAS email.

****Announcements and Discussions: Check at least once a day** You are responsible for all the material assigned in homework and in the text – even if this material is not covered in the lecture videos.** I assume students will *read* and *study* the text and the *examples* in the text, *complete* all homework assignments as soon as possible, *ask* for help when needed, and *study* for exams.

Reading and understanding the material before viewing the lecture videos indeed helps as you will be more familiar with the terminology being used and have some idea of what is coming and locate the hard spots.

Homework (HW): See the table and follow the calendar.

Exercises will be assigned and graded in MOM. Homework assignments have a due date and time, so students should pay close attention to both date and time. Schedule changes will be announced. It is the student's responsibility to be aware of any schedule changes announced by the instructor.

All HW is due before the due date and time.

All HW has unlimited opportunity (multiple versions for each problem) to complete by the due date. There are 2 attempts on each version of the HW. HW is open for review before the next exam and the final.

All times are times in Boca. All HW is due by 11 pm on a Tuesday. All exams are due by 11 pm on a Thursday. After the due date for HW, you can continue to review the HW until the start of the next exam. It will not change your grade==up or down. It is just for practice.

I have made MOM videos available where they exist to help you understand the specific problems. I recommend you attempt the problem first without using the MOM help. If you miss, then use the MOM help before your next trial.

A worksheet WS may be used for each section of the book. It is available online. Go to the Module for the chapter and you will find a ZIP file for all of the worksheets. The WS may be covered as part of the class lecture material. No answer sheet is available for problems in the text.

Course Grade Weights:

All HW Group Total (weighted by number of problems in each HW)	20%
Exam Group Total (6 exams)	60%
Final Exam Group Total (1 final exam)	20%
TOTAL	100%
Extra Credit Quiz Group Total (6 ECQs)	5%
TOTAL on CANVAS is out of 105%. Assumes all ECQs are done. The final grade is out of 100% and you can reach this without doing any ECQs. Doing ECQs does not lower your final grade—it can only help it.	105%

Note:

- If you do not take the final, you will receive an F in the course.
- No homework, exam, final grades will be dropped. Grades will be maintained in MOM and will show in CANVAS. Please check your grades regularly and notify me immediately should there be a discrepancy. Grades are weighted as shown.
- All grades show a 0 at the start of the term and will increase from 0 as you do the work.
- You should use WHAT IF to project your TOTAL. You can always ask me if I think, based on your work, that your WHAT IFs are reasonable. Talk to CANVAS HELP TO SEE HOW TO DO WHAT IF.
- CANVAS HELP can also explain how interim TOTALS and Group Totals are computed on an interim basis during the term and how they are computed at the end of the term. Ask them.

- ATTEND OFFICE HOURS. I CAN HELP YOU REVIEW WHAT YOU HAVE MISSED OR JUST HELP YOU UNDERSTAND.
- The best review for exams or final is the HW. Questions are chosen at random. So a review sheet would be misleading.

Grading Scale: Numerical grades will translate to the following letter grades:

Percent Score	90-100	87-89	83-86	80-82	77-79	73-76	67-72	60-66	0-59
Grade	A	A-	B+	B	B-	C+	C	D	F

Attendance Policy: This course is online, so you may choose the optimal time for your work. The only exception is exams for which you have an eight-hour window. All lectures and assignments and HW and the dates of all exams and final are posted at the start of this term. *There are no makeups unless documented and within the guidelines of the university.*

Make sure your connection and computer are able to connect to MOM or locate another computer well before the start of a class (or exam) so you can get any problems resolved. See the Attendance section of the FAU Catalog. Written proof must be provided for an absence. Excerpt from FAU Catalog: “Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student’s responsibility to give the instructor notice prior to any anticipated absence and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student’s final course grade as a direct result of such absence.”

Late Homework Assignments: No extensions for any reason. All dates posted at start of term. All HW assignments are posted at start of term. Lectures are recorded. Don’t wait for something unexpected to happened. Start and finish well before the due date to be safe. You have a chance to improve your score until the due date/time.

FREQUENTLY ASKED QUESTIONS AND OTHER REMARKS:

1. Follow directions in problem as to how to express your answer. If none given, then follow what’s below.
2. If answer is $7/3$, for example, leave it as $7/3$. 2.33333 may not be marked as correct.
3. If answer is $\ln(15)/5$, leave it in this form. System is also smart enough to count as correct if $\ln(15)/5$ is expressed with 4 decimals appropriately rounded.
4. Sometimes safest to use 4 decimals if there is not an exact way to write the answer.
5. Unless stated in the problem and you have decimals, there should be 4 rounded significant figures to the right of the decimal point. Example: 2.0000343663 should be left as 2.00003437.
6. Rule is that if answer is rational, express the exact answer as a rational number.
7. If problem says round to the nearest whole number, then 6.456888 should be rounded to 6.
8. There is no need to simplify algebraic expressions unless problem states to do this.
9. A few problems do not have explanation videos. I have made all videos available.
10. You can get additional generated similar problems after the due date of an assignment. Of course, work then does not count in your grade even if you have attempts left.
11. On timed material, you must complete and submit before the expiration of the time. Exams must be taken in the available time window. Each exam is 1 hour long.

12. All Exams and Finals are comprehensive.
13. You are allocated enough time on the exam to check and double-check that you have entered your answers correctly. I do not check scratch paper. **There is no “manual” partial credit even if “correct” on your scratch paper. IF YOU HAVE TROUBLE FINISHING IN THE ALLOCATED TIME, YOU NEED TO PRACTICE THE HW MORE.**
14. MyOpenMath is an application integrated with Canvas. There is no need to go to the MyOpenMath website. To create an account for MyOpenMath all you need to do is select the first HW assignment and Canvas will automatically create the account for you. **If you are asked for MOM id or PW, then you have not followed the directions for accessing MOM.**
15. Read the Preface of the textbook. It has information on entering answers.

Communication Policy

GETTING HELP: If you are struggling with a particular homework problem, please send a picture of what work you have already tried on the problem. I will not just give answers. Usually, a response is given within 6 hours and never more than 48 hours. Answers are not given the day of an exam. Plan to ask your questions earlier. Remember the SAM lab mentioned below. It is for Methods of Calculus.

Expectations for Students

- Announcements
 - You are responsible for reading all announcements posted by the instructor. Check the course announcements each time you log in.
- Email
 - You are responsible for reading all of your course email and responding in a timely manner.

Instructor’s Plan for Classroom Response Time & Feedback

- Email Policy
 - Except for Saturdays, Sundays, and holidays, instructor typically will respond to messages within 48 hours. Such messages should only be used to communicate personal or confidential matters; otherwise, post in the discussion board.
- Assignment Feedback Policy
 - Feedback will be provided on submitted assignments within one week of the submission date. Some assignments may require a longer review period, which will be communicated to students by the instructor.
- Course-Related Questions
 - Except Saturdays, Sundays, and holidays, questions will, generally, be answered by instructors within 48 hours.

Support Services and Online Resources

Office of Information Technology Online Help Desk:	Link to FAU Help Desk
Math Learning Center: Some material there is for all courses. For specific information for this course, see Modules mentioned above.	http://www.math.fau.edu/mlc/
Student Accessibility Services:	Link to FAU Student Accessibility Services
eLearning Success Coordinator	Link to FAU Center for Learning And Student Success eLearning Success Coordinator

FREE MATH TUTORING

The MLC provides the following FREE tutoring for all FAU students in their math courses:

- **ONLINE:** Please see <http://www.math.fau.edu/mlc/remote/index.php> for available days/times and links to online tutoring. All tutoring is drop-in (no appointments are needed) and is available via Zoom.
- **IN PERSON:**
 - Drop-in tutoring in the MLC GS211 during all hours of operation
 - Monday – Thursday: 10am – 5pm
 - Friday: 10am – 4pm
 - Small group tutoring by appointment
 - Appointments can be made in TutorTrac by going to <https://tutoring.fau.edu/>. Login with your FAU ID and password and click on ‘Search for Availabilities.’ For Center, choose ‘Math Learning Center.’ (or ‘SAM Lab’ for Methods of Calculus). Choose your section (class) and click ‘Search.’ Choose your time and then click ‘Save.’
 - Each session is 50 mins in length, maximum three students.
 - Students may make a MAXIMUM of TWO appointments per week for any course they are currently enrolled in (based on availability).
 - Cancellation policy: You can cancel your appointment no less than two hours prior to the appointment by logging into TutorTrac (<https://tutoring.fau.edu/>) and clicking the “X” next to your appointment on your home screen. Missing an appointment without cancelling is called a no-show. If you accumulate 2 no-shows during the semester, all appointment privileges will be suspended and you will only be able to use the drop-in or online tutoring for the remainder of the semester.

Please email mlc@fau.edu should you need further information or have questions.

Disability Policy Statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU’s campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses.

Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU’s Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

Code of Academic Integrity policy statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the University’s mission to provide a high-quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual

trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.

Faculty Rights and Responsibilities

Florida Atlantic University respects the rights of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions which do not impede their exercise. To ensure these rights, faculty members have the prerogative:

- To establish and implement academic standards.
- To establish and enforce reasonable behavior standards in each class.
- To refer disciplinary action to those students whose behavior may be judged to be disruptive under the *Student Code of Conduct*.
- Instructor reserves the right to adjust this syllabus as necessary

Course Schedule

This syllabus is subject to change at the discretion of the instructor.

All times are times in Boca. All HW is due by 11 pm on a Tuesday. All exams are due by 11 pm on a Thursday. After the due date for HW, you can continue to review the HW until the start of the next exam. It will not change your grade, up or down. It is just for practice.

Date	Day/Time	Pacing
8/20	Sat	Classes begin
8/26	Fri	Last day to Drop/Add
8/30	Tue, 11 pm	HW 1A DUE —Covers sections 1.1 through 1.4
9/1	Thu, 11 pm	EXAM 1A (1hr, 12 questions) Take in 8-hour window between 3pm and 11pm.
9/5	Mon	Labor Day, University closed
9/13	Tue, 11 pm	HW 1B DUE —Covers sections 1.5 through 1.8
9/15	Thu, 11 pm	EXAM 1B (1hr, 12 questions) Take in 8-hour window between 3pm and 11pm.
10/4	Tue, 11 pm	HW 2A DUE—Covers sections 2.1 through 2.5 Note: LONG ASSIGNMENT
10/6	Thu, 11 pm	EXAM 2A (1hr, 12 questions) Take in 8-hour window between 3pm and 11pm.
10/18	Tue, 11 pm	HW 2B DUE—Covers sections 2.6 through 2.11 Note: LONG ASSIGNMENT
10/20	Thu, 11 pm	EXAM 2B (1hr, 12 questions) Take in 8-hour window between 3pm and 11pm.
11/01	Tue, 11 pm	HW 3A DUE —Covers sections 3.1 through 3.3
11/3	Thu, 11 pm	EXAM 3A (1hr, 12 questions) Take in 8-hour window between 3pm and 11pm.
11/11	Fri	Veteran’s Day (FAU closed)
11/15	Tue, 11 pm	HW 3B DUE —Covers sections 3.4, 3.6, 3.7
11/17	Thu, 11 pm	EXAM 3B (1hr, 12 questions) Take in 8-hour window between 3pm and 11pm.
11/24 - 11/27	Thu-Sun	Thanksgiving Recess (FAU closed)
12/3	Sat	Classes End
12/5 - 12/7	Mon	Reading Days
12/8	Thu, 11 pm	FINAL EXAM THIS SECTION (2.5 hours, 30 questions) Take in 8-hour window between 3pm and 11pm on 12/8. BE SURE TO PRACTICE ALL HW.
12/16	Fri	Semester Ends