

Math 182 - 2HA Syllabus - Spring 2022

1 General Information

Instructor Information

Name: Rebin Muhammad **Office:** HT (High Technology and Science Center) / Room 223
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Office Hours:

You can come to my office at the following time, or send an e-mail to make an appointment.

Monday	Tuesday	Wednesday	Thursday	Friday
10:30 am - 11:30 am	10:30 am - 11:30 am	10:30 am - 11:30 am	10:30 am - 11:30 am	10:30 am - 11:30 am

Class Meeting Times and Room:

HT (High Technology and Science Center 204)

Monday	Wednesday	Friday
9:00 am- 10:25 am	9:00 am - 10:25 am	9:00 am - 10:25 am

2 Course Information

Welcome! to Calculus II! This is a second course in calculus. Math 182 continuation of MATH 181. Further differentiation and integration of transcendental functions. Methods of integration with applications, indeterminate forms, improper integrals, Taylor's formula; infinite series; polar coordinates.

Students will develop conceptual understanding of the course material in an inquiry-based classroom, which includes a lot of independent work, daily group work, and class discussions. There will be very little traditional lecture. At the end of the course, students should be able to use the tools of differential and integral calculus in a variety of applications.

Mathematics can be fun and challenging at the same time. EVERYONE can learn math to the HIGHEST LEVELS. There is no such thing as a "math person." With hard work, you can reach the highest levels you want to reach. Failure and struggle are essential aspects of math and learning – these do NOT mean you can't do math. Mistakes are valuable and welcomed – every time you make a mistake, your brain actually grows!! This class is about learning, not performing. Math is a growth subject: it takes time to learn, and it is all about EFFORT! As this is a four credit hour course, you should expect to spend at least 8 hours a week outside of class reading the textbook, studying, doing previews/homework, and meeting with a tutor or me or your coach when you have questions... it is essential that you always ask any questions that you have!!! Mathematics is about creativity and making sense. It is important to go deeper than just being able to mimic the solution to a problem... you need to understand why the solution works! Depth is much more important than speed... think slowly and deeply. Creativity is important because there are often different paths to a solution, and you get to create those solution paths that others can explore, discuss, and critique. Mathematics is connected and coherent as a subject, and is all about communication. You can

communicate your mathematical ideas in a variety of ways – words, pictures, graphs, equations – and link them all together!!

Hate, racism, sexism, and other forms of discrimination have no place in my classroom, on this campus, or in our society. Our class is one community. We learn together. We work together. And we will respect one another. I teach all students, regardless of background or beliefs. All students are equally welcome and valued. No one is being asked to leave the table. Everyone is being asked to make room at the table, so that everyone has a seat and a fair chance.

Textbook and Supplies:

- **Single Variable Calculus: Concepts and Contexts (4th edition)**, by James Stewart, Brooks-Cole, 2007. You do not need to purchase a hard copy of this textbook as it comes with the online homework system as an e-book.
- WebAssign (Required): an online course/homework system. We will use an enhanced version of WebAssign that is customized to work specifically with our textbook, and even includes an e-book of the textbook. You can purchase WebAssign access directly from www.webassign.net or from the publisher at www.cengagebrain.com.
- **Active Calculus (Boelkins)** Chapters 5 – 8. This book is available free online: <https://activecalculus.org/single/> or as a PDF: <https://scholarworks.gvsu.edu/books/18/>.

PREREQUISITE(S):

A grade of C or better in MATH 181 or equivalent, or consent of department. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 182.

Learning Objectives:

A full list of the learning objectives for this course may be found online at

https://catalog.montgomerycollege.edu/preview_course_nopop.php?catoid=2&coid=1707

3 Course Policies

Attendance:

Exploration, collaboration, and communication in class are essential for this course. Therefore, regular attendance and active participation are mandatory in this course and recitation. You are expected to be on time and stay in class for the entire 85 minutes or you will be counted absent, unless there is an emergency.

Calculators:

The TI-83, TI-83 plus, or TI-84 plus is recommended. Other calculators may be adequate, but the student cannot expect help from the instructor on the use of these calculators. (No symbol manipulation calculators, such as the TI-89 or TI-92, will be permitted on exams or quizzes.) Students just buying a calculator for this course should buy a TI-84 plus, TI-83, or TI-83 plus.

Makeup Exams:

Students that provide a valid excuse at least 24 hours before an exam other than the final exam will be permitted to take a rescheduled alternate version of the in-class portion of the exam. In all other cases, makeup exams will be given at the instructor's discretion only.

4 Grading Scheme

Preview Activities:[5%]

We will start many sections of our textbook with a short reading and a preview activity on **Desmos** and Web-assign that builds on your prior knowledge and prepares for you for the next day's material. Due dates are listed in BB.

Quiz:[5%]

There will be a weekly Quiz (expect for weeks that we have Quest). The quiz will be happen during the first 10 minutes of each **Friday**.

WebAssign Homework:[10%]

Homework is intended to help students understand the material and to prepare for exams; in particular, it is the basis for the common final exam. Practicing problems is crucial to doing well. Answers to problems are available after the due date for each assignment. Calculator use will not be permitted for quests/final exam, so I suggest that you not use a calculator for your homework. Homework problems on WebAssign for each section will be due regularly, and will be graded. You have as many attempts as you like, however, if you can't eventually do the problems on your own the first time, then you need to do more work. Access on BB: Due dates listed in WebAssign.

Group Work: [10%]

Every Day you will have a Group Work in which you will engage in group work that will be graded. Group Work are mandatory. Group Work is considered a continuation of class – you will learn new material based on the previous day's material. Group Work work will sometimes require work outside of class. For all graded Group Work assignments, each group will turn in ONE solution paper for the entire group and all group members will receive the same grade. Each member of the group should contribute equally to the group work. Group work will always be due the next immediate class day.

Quest:[45%]

There will be four in-class quests (bigger than a quiz and smaller than a test), tentatively scheduled for **Feb 11, March 4, April 8 and April 29**. Quests will be taken individually. Calculators are NOT permitted on quests. NO make-up quests will be given.

Final Exam: [25%]

The final exam will be held on **May 11 at 8am-10am**. This exam will cover material selected from throughout the course. The final exam will be worth 25% of the student's final grade.

Grading Scale:

The following table maps scores to letter grades. More precisely, if a student's total weighted score is in one of the intervals, the student is guaranteed to receive not less than the corresponding letter grade. The letter grade a student receives may be higher than that indicated by the table, but is never lower.

$[90, \infty)$	—	A
$[80, 89)$	—	B
$[70, 79)$	—	C
$[60, 69)$	—	D
$(-\infty, 60.0)$	—	F

5 Additional Information

Academic Dishonesty:

Academic integrity is critical for students and instructors alike. Being responsible for your work, attendance, and conduct is everyone's duty. Every student is expected to adhere to the [Montgomery College Student Code of Conduct](#). Academic Dishonesty, including dishonesty in assignments or examinations (cheating) and presenting the ideas or the writing of someone else as your own (plagiarism) will not be tolerated. All work must be done by you (or your group for group work assignments). You may use any help that you can find for ungraded work done outside of class, but keep in mind that the purpose of all work is to develop your ability to do such problems on your own. The quests and final exam must be your own work, completed without the aid of books, notes, calculators, phones, etc. Dishonesty will result in a zero on that work, possible failure in the class, and a report to the university judiciaries..

Disability Support Services:

Any student who needs an accommodation due to a disability should make an appointment to see me during my office hours. In order to receive accommodations, a letter from Disability Support Services (G-SA 189; R-CB 122; or TP/SS-ST 122) will be needed. Any student who may need assistance in the event of an emergency evacuation must identify to the Disability Support Services Office; guidelines for emergency evacuations for individuals with disabilities are found at: <http://cms.montgomerycollege.edu/edu/secondary5.aspx?urlid=52>. . Browse Aloud is an easy-to-use screen reader that can be downloaded for free from the MC homepage at www.montgomerycollege.edu or <http://www.browsealoud.com/page.asp?pg;d=80096>.

Additional Resources: Additional terms of the syllabus can be found at:

<http://cms.montgomerycollege.edu/mcsyllabus/>

MAPEL Center

This is where students can get tutoring and other resources:

<https://www.montgomerycollege.edu/academics/support/learning-centers/mapel-center-germantown/index.html>

Taking Care of Yourself

As you are well aware, we will be having class this semester while trying to navigate a global pandemic that seems to change every day, take care of your own physical and mental health during these difficult times. Make sure you are getting sufficient rest, staying connected to friends and family, and giving yourself time and space to do things you enjoy outside of college. [This website](#) lists several good tips for maintaining good self-care in our situation.

Tentative Schedule (subject to change as needed)

Week of	Topic
January 24	Review 5.4 The Fundamental Theorem of Calculus , 5.5 The Substitution Rule
January 31	5.6 Integration by Parts, 5.7 Additional Techniques of Integration
February 7	5.9 Approximate Integration / Quest 1*
February 14	6.1 More about Areas 6.2 Volume
February 21	6.6 Applications to Physics and Engineering
February 28	7.1 Modeling with Differential Equations , QUEST 2*
March 7	5.10 Improper Integrals , Qualitative behavior of solutions to ODEs
March 14	Spring Recess (No Class)
March 21	Optional Topics
March 28	7.2 Direction Fields and Euler's Method, 7.3 Separable Equations 7.4 Separable differential equations,
April 4	7.5 Logistic Equation, 7.6 Predator-Prey Systems, Quest 3*
April 11	8.1 Sequences, 8.2 Series
April 18	8.3 The Integral and Comparison Tests; Estimating Sums , 8.4 Other Convergence Tests
April 25	8.7 Taylor and Maclaurin Series / Quest 4*
May 2	8.5 Power Series
May 9	Final Exam May 11 08:00am-10:00am
	ALL QUESTS ARE IN CLASS ON Friday

The syllabus and schedule are subject to change.