University of Montana

ScholarWorks at University of Montana

Fall 9-1-2021

M 172.02: Calculus II

Karel M. Stroethoff
University of Montana, Missoula, karel.stroethoff@umontana.edu

Recommended Citation

This syllabus contains information about this class. Please read this carefully and keep it for future reference (in case you loose it, a copy of the syllabus will be posted on the class Moodle page). In case you have questions, please do not hesitate to ask me. A good time for questions is right after class or during office hours.

CRN: 72447

Class Times: MTWF 1:00–1:50 in MATH 108 in the Mathematics Building

Professor: Karel Stroethoff (Office: MATH 307, Phone: 243–4082)
      Email: karel.stroethoff@umontana.edu

Office Hours: TBA, or by appointment.

Prerequisite: Calculus I (M 171) or equivalent.

Moodle Page: https://moodle.umt.edu/course/view.php?id=44689
      This site will contain all information on this sheet plus more. Homework assignments and other information pertinent to this course (such as office hours and tentative schedule) will be posted at this web site, which will be updated frequently, so you should visit it regularly.

Text: *Calculus: Single Variable*, 6$^{\text{th}}$ edition, by Deborah Hughes-Hallet et al, John Wiley & Sons, 2014 (ISBN 9781118972960).

Graphing Calculator: Recommended. You can use your favorite brand/model. In the classroom I may use a TI-84 or TI-86 or an online graphing calculator such as desmos. Please note that calculators or computers capable of symbolic algebraic computations are not allowed on exams.

Learning Outcomes: Upon completion of this course, a student will be able to:
- Use the integral to find the area between two curves, and calculate volumes of revolution, work, the average value of a function, and arc length;
- Use standard integration techniques, including trigonometric substitution, integration by parts, and partial fractions;
- Identify and calculate improper integrals;
- Use parametrized curves in rectangular and polar coordinates, and calculate their derivatives, arc lengths and enclosed areas;
- Compute limits of infinite sequences, and test for monotonicity and boundedness;
- Compute sums of geometric series and telescoping series;
- Determine convergence, absolute convergence and divergence of infinite series using the standard convergence tests;
- Compute the radius and interval of convergence of power series;
- Compute Taylor series and Taylor polynomial approximation of functions.

GRADING:

- TESTS: There will be three hour tests in addition to a comprehensive final exam. These tests will be given in class on September 28, October 26, and November 23.
- FINAL EXAM: There will be a common final exam on all material covered in the course. This exam is scheduled for Wednesday, December 15, 6:00 pm – 8:00 pm (note this is in the *evening*).
- HOMEWORK: Working hard on the homework is how you will succeed in this course, so please take the homework seriously. There will be daily homework assignments and part of the assigned homework (WeBWorK) will have to be submitted online. As a general rule WeBWorK assignments will be due the second day after they have been assigned. You should check the Moodle page regularly. Since solutions are made available shortly after these assignments are become due, late WeBWorK will *not* be accepted. The two lowest WeBWorK scores will dropped. A list of *all* assigned homework will be posted on the Moodle page for this class.
- QUIZZES: There will be regular quizzes based on assigned homework and examples worked in class. There will be no make-ups for missed quizzes. The lowest quiz score will be dropped. Quizzes will be announced at least two class periods prior to a scheduled quiz.

ASSESSMENT: 15% Homework
15% Quizzes
45% Three Tests
25% Comprehensive Final Exam

GRADE SCALE:

$\geq 93\%$	90%	87%	83%	80%	75%	70%	65%	62%	58%	55%	< 55%
A	A$^-$	B$^+$	B	B$^-$	C$^+$	C	C$^-$	D$^+$	D	D$^-$	F

MAKE-UPS: Make-ups for tests will be given under special and extenuating circumstances such as a family emergency or illness, provided that documentation (from the Health Service or Doctor) is furnished by the student *and* the test is made-up before solutions are made available. It is *your* responsibility to notify me as soon as you know that you will miss a test and to make sure that a make-up is scheduled: if you are unable to contact me by phone, then please send an email so that it will be convenient to get back to you in order to schedule a make-up. Early final exams will *not* be given.

WEBWORK: Online homework given through WeBWorK. To access this homework, go to the webpage https://lennes.math.umt.edu/webwork2/172-Calculus-II_Stroethoff_2021F/, to bring up a login window. As username use your last name (lowercase); your initial password is the last 6 digits of your student ID (with no dashes). Please change your password after logging in the first time by clicking "Password/Email" from WeBWorK's Main Menu.

MATH LEARNING CENTER: Free tutoring is available in the Math Learning Center (MLC) located in room Math 011 in the basement of the Math Building. No appointment is needed, but capacity is limited to meet physical distance requirements. Note that face masks are required to use the MLC.

MLC Hours

Monday – Thursday	10 am – 7 pm
Friday	10 am – 1 pm

For more information (including online "drop-in" via Zoom and by appointment) see https://www.umt.edu/MLC.

UM COVID-19 Face Covering Policy: In order to help ensure the health and safety of the University of Montana (UM) community and the public, unless specifically exempted as outlined in the Procedures, all individuals on the UM campus are strongly encouraged to wear masks in indoor public settings. (https://www.umt.edu/coronavirus/mask-policy.php).

Safety for In-Person Instruction:

- Mask use is required within the classroom.
- Class attendance will be recorded to support contact tracing efforts.
- No drinking of liquids or eating of food within the classroom.
- Class sessions are being recorded.
- Stay home if you feel sick and/or if exhibiting COVID-19 symptoms, and please contact the Curry Health Center at (406) 243-4330.
- Up-to-Date COVID-19 Information from the University of Montana:
    - UM Coronavirus Website: https://www.umt.edu/coronavirus
- Please remain vigilant outside the classroom in mitigating the spread of COVID-19.

Some Important Dates:

Aug	30 (Monday):	First day Autumn Semester instruction
Sep	6 (Monday):	Labor Day: No Class
Sep	20 (Monday):	Last day to drop or change grading option from letter grade to Credit/No Credit or vice versa via Cyberbear.
Sep	28 (Tuesday):	Test 1
Oct	26 (Tuesday):	Test 2
Nov	1 (Monday):	Last day to drop or change grading option from letter grade to Credit/No Credit or vice versa using paper form. After this date a student is allowed to make these changes only by **petition**.
Nov	23 (Tuesday):	Test 3
Nov 24–26 (Wed-Fri):		Thanksgiving Break
Dec	10 (Friday):	Last class day and last day for petitions to drop or change the grading option.
Dec	15 (Wednesday):	Final Exam, 6:00 pm – 8:00 pm, TBA.

Study Advise: (i) Read through the material to be covered in the lecture before coming to class. This will be very helpful for taking notes in class and you will get more out of the lecture. The course will move rapidly. Daily reading in the textbook *with paper and pencil in hand to verify the calculations* (math books are *not* read as novels!) and doing all assigned problems will go a long way towards success in this course. You should plan to spend 2 hours outside of class for each hour in class (and *more* if you have missed a class!). (ii) Do *not* equate understanding what the instructor does in class with being able to work (or solve) a problem yourself. When a problem or concept is explained in class you may

understand this, but that does *not* imply that you can do a similar problem. You must work out the homework problems from beginning to end (without any help, see (iii)). The best way to learn mathematics is to do, to ask, and to do again.

(iii) Before starting your homework go over the concepts and examples from class and from the textbook. Memorize the formulas, algorithms, definitions, notations, etc. Then work through a few problems which have answers in the back of the book. Do the rest of your homework without using the book or your class notes.

HONESTY: All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at https://www.umt.edu/student-affairs/community-standards/student-code-of-conduct-2021-pdf.

ACCOMMODATION: The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors and Disability Services for Students (DSS). If you think that you may have a disability adversely affecting you academic performance, and you have not already registered with DSS, please contact DSS in Lommassen 154. I will work with you and DSS to provide an appropriate accommodation.

SEATING: To assist COVID-19 contract-tracing we will record attendance. It will be useful if you sit in the same location throughout the term. Following is a seating chart to indicate where you sit in the class room. On the chart that will be passed through the class please indicate the location where you are seated by writing your initials.

Classroom MATH 108

door

front of classroom (screen)