

M 162 Applied Calc FALL 2020 / MWF 12:00 – 12:50 (NULH), Th: recitation sections

CATALOG DESCRIPTION: M 162 Applied Calculus 4 cr. Prerequisites: appropriate placement score or one of Math 121, 122, 151. Introductory course surveying the principal ideas of differential and integral calculus with emphasis on applications and computer software. Mathematical modeling in discrete and continuous settings. Intended primarily for students who do not plan to take higher calculus.

LEARNING OUTCOMES: Upon completion of this course, a student will be able to (a) Use calculus as a tool for solving applied problems, such as describing change using calculus techniques; (b) Use the basic techniques of differentiation and interpret the meaning of the derivative in real world situations; (c) Use the basic techniques of integration and interpret the meaning of indefinite and definite integrals in real world situations; (d) Model simple real world situations using differential and/or difference equations; (e) Use mathematical software as a tool for applying calculus.

GENERAL EDUCATION LEARNING OUTCOME: Upon completion of the mathematical literacy requirement, a student will be able to apply effectively mathematical or statistical reasoning to a variety of applied or theoretical problems.

PROFESSOR / COURSE COORDINATOR:

Leonid Kalachev. Office: Math 309, Phone: 243-4373, E-mail: kalachev@mso.umt.edu

TEACHING ASSISTANTS:

Howard Grotts; E-mail: howard.grotts@umontana.edu

Christian Lopez Mercado; E-mail: christian.lopezmercado@umontana.edu

OFFICE HOURS: Leonid Kalachev: MWF 12:00 – 12:50 pm. Information on TAs' office hours will be announced in class and on the course website.

TEXT: D. Hughes-Hallett et al., *Applied Calculus*, 5-th ed., John Wiley & Sons, Inc., 2014.

WEBSITE: All the information pertinent to this course will be posted on the M162 moodle page. In particular, the list of homework assignments, current lecture topics information, etc., will be placed there.

SCHEDULE: The main content will be most of Chapters 1 - 6 and Chapter 9 of the text book. A tentative day by day schedule will be posted on the website.

COURSE FORMAT: Video lectures will be posted on the web according to the course schedule. The students are expected to watch the video lectures as soon as they appear on the moodle page of the course. Professor /course coordinator will be available via zoom to discuss content of the lectures and to answer students' questions during the "official" lecture hours: MWF 12:00 – 12:50 pm. Recitation sections will take place on Thursdays; some sections are face-to-face while others are hybrid or online. Please, check the status of your section and let me know if you want to switch.

GRADING POLICIES: There will be three tests of 100 points each (the lowest of the three scores will be dropped). There are no make-up tests. There will be ten quizzes of 10 points each (the lowest two of the ten scores will be dropped). There are no make-up quizzes. After one test is missed, a second missed test will count as a zero except in case of verified illness, or other circumstance pre-approved by the course coordinator. An illness is verified by giving prior notice (for instance, by sending an E-mail to instructor), and by providing a note from the health service (or other physician). It is best to follow the notification/verification procedure for any test missed because of illness. When a test is returned, there is one week from the date of return for contesting the grading. After that period the grade will be accepted as final. There will be 120 point Final exam on Monday, November 23. Total maximal number of points (for 2 exams + 8 quizzes + final) is 400.

THE GRADING SCALE IS:

[360; 400] → A, [320; 360) → B, [260; 320) → C, [220; 260) → D, [0; 220) → F, [220; 400] → CR

Exceptions to the above rules regarding taking tests, etc., may be made by the course coordinator on an individual basis. Also, extraordinary performance on the final may, at the instructor's discretion, be the basis for raising a grade. *If you are taking this course as a general education requirement, you must take it for a traditional letter grade (not CR/NCR). A grade of "D-" is considered passing and will earn you credit for the course, BUT it will NOT fulfill your general education requirement and you will have to re-take the class.*

Hard working students will have an option which avoids taking the final. To qualify for this option (and get an A grade) one must meet *all* of the following criteria:

1. You must take *all three* tests given during the semester, and on every test the score must be above or equal to 90 points.
2. You must take *all ten* quizzes given during the semester.
3. The sum of all the points for tests and quizzes must belong to the A-interval [360; 400].

This option does not automatically take effect; you must confirm your eligibility at the end of the semester with your TA or the coordinator!

HW ASSIGNMENTS AND TESTS POLICIES: Homework assignments from the textbook will be given during the lectures. These assignments will not be graded and they do not need to be handed in. Instead, to check your work on the assigned problems, quizzes will be administered electronically with a small number of selected problems similar to those assigned. The three tests and the final will be given in electronic format as well. All the tests and quizzes are open note. That is, any notes you make during the lectures or at home (reading the text book or solving HW assignment problems) may be used during the tests and quizzes. Calculators/computers are also allowed in tests and quizzes. While out of class group discussions and group work on HW assignments are both encouraged, during the tests you must show your own individual work; you must not help others, and you must not seek help from others. *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. You can find it in the "A to Z Index" on the UM home page.*

IMPORTANT DATES: *Tests:* September 18, October 16, and November 16. *Quizzes:* August 20, August 27, September 3, September 10, September 24, October 1, October 8, October 22, October 29, November 5. *Final Exam:* on Monday, November 23.

SOFTWARE, CALCULATORS, COMPUTERS: You are encouraged to use any hardware (calculators/computers) and software of your choice in this class. While all the assignments and tests may be done by hand, using, e.g., graphing and analytical manipulation capabilities of scientific calculators/computers will be helpful.

ON RESERVE: Usually there is a copy of the text book in the library on reserve (the library usage may be restricted).

ADD / DROP POLICIES: May be found on the web page <https://www.umt.edu/registrar/calendar/autumn-2020.php>. Important: after September 10, 2020 a \$10 fee applies per add or drop of a course. **The final deadline for all changes is November 18, 2020.**

DISABILITY MODIFICATIONS: 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 you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or call 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.

IMPORTANT NOTE: You should not be in this class if you are majoring in Mathematics, Chemistry, Physics, and Computer Science or any other major which requires Math 171-172.

COVID-19 related guidance:

1. Mask use is required within the classroom. View UM's face covering policy.
2. Each student is provided with a Healthy Griz kit by the UM. The students are expected to clean their personal work space when they arrive for class, and before they leave the classroom.
3. Refill stations for cleaning supplies/hand sanitizer will be set up around campus - please learn where they are and use them.
4. Classrooms may have one-way entrances / exits to minimize crowding.
5. Students are discouraged from congregating outside the classroom before and after class.
6. TAs will take attendance during face-to-face recitation sections to support contact tracing efforts.
7. TAs will not allow more students in their classrooms at any time, for any reason, than the maximum approved capacity. Additional seating will not be added to classrooms.
8. Drinking liquids and eating food (which requires mask removal) is strongly discouraged within the classroom.
9. There is high demand for spaces on campus to accommodate students with inadequate Wi-Fi in their homes or quick turnarounds between face-to-face and remote classes. A list of remote learning spaces with the days and times available for student use will be posted on the "Keep on Learning" website. There will be signs posted outside of these buildings and rooms to indicate their availability.
10. Stay home and contact the Curry Health Center at (406) 243-4330 if you feel sick and/or if exhibiting COVID-19 symptoms.
11. If you are diagnosed with COVID-19, follow instructions for quarantine and contact your advisor so they can help you stay on track academically.
12. Students, please remain vigilant outside the classroom and help mitigate the spread of COVID-19.