Fall 9-1-2021

M 162.00: Applied Calculus

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M 162 Applied Calc FALL 2021 / 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:
Bergen Dolan; E-mail: bergen.dolan@umontana.edu
Junwei Liao; E-mail: junwei.liao@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.

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 Friday, December 17. 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 during the recitation sections with a small number of selected problems similar to those assigned. The three tests and the final will be given during the semester. All the tests and quizzes are open note, closed book. 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:* October 1, October 29 and December 3. *Quizzes:* September 2 (Quiz #0), September 9, September 16, September 23, October 7, October 14, October 21, November 4, November 18, December 9. *Final Exam:* on Friday, December 17.

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: There will be a copy of the text book in the library on reserve.

ADD / DROP POLICIES: May be found on the web page https://www.umt.edu/registrar/calendar/autumn-2021.php. Important: after September 21, 2021 a $10 fee applies per add or drop of a course. **The final deadline for all changes is December 10, 2021.**

DISABILITY MODIFICATIONS: The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office for Disability Equity (ODE). If you anticipate or experience barriers based on disability, please contact the ODE at: (406) 243-2243, ode@umontana.edu, or visit www.umt.edu/disability for more information. Retroactive accommodation requests will not be honored, so please, do not delay. As your instructor, I will work with you and the ODE to implement an effective accommodation, and you are welcome to contact me privately if you wish.

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 (may change during the semester; more information at https://www.umt.edu/coronavirus/campus-covid-plan/instruction/default.php):

1. Mask use is required within the classroom. 2. Drinking liquids and eating food is strongly discouraged within the classroom. 3. Stay home and contact the Curry Health Center at (406) 243-4330 if you feel sick and/or if exhibiting COVID-19 symptoms. 4. If you are diagnosed with COVID-19, follow instructions for quarantine and contact your advisor / professor so they can help you stay on track academically.