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Syllabi   Course Syllabi

Fall 9-1-2018

M 172.01: Calculus II

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M172 Calculus II – Spring 2018

Instructor information:

Section 01 Instructor: Kelly McKinnie, Associate Professor of Mathematics
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Phone: 243-5694
Office hours: See http://www.umt.edu/people/mckinnie for up-to-date Office Hours.

Section 02 Instructor: Elizabeth Gillaspy, Assistant Professor of Mathematics
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Phone: 243-4126
Office hours: Monday 4:30-5:30 PM; Wednesday 3-4 PM; Friday 8:30-9:30 AM; or by appointment.

Course description:

Offered autumn and spring. Prereq., M 171. Techniques of Integration. Area computations. Improper integrals. Infinite series and various convergence tests. Power series. Taylor's Formula. Polar coordinates. Parametric curves.

Learning Outcomes: The purpose of the courses M171 and M172 is to learn the basic concepts in differential and integral calculus. By the end of M172 students should be able to:

1. 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;
2. Use standard integration techniques, including trigonometric substitution, integration by parts, and partial fractions;
3. Identify and calculate improper integrals;
4. Use parametrized curves in rectangular and polar coordinates, and calculate their derivatives, arc lengths and enclosed areas;
5. Compute limits of infinite sequences, and test for monotonicity and boundedness;
6. Compute sums of geometric series and telescoping series;
7. Determine convergence, absolute convergence and divergence of infinite series using the standard convergence tests;
8. Compute the radius and interval of convergence of power series;
9. Compute Taylor series and Taylor polynomial approximation of functions.

Required textbook: Calculus (Single Variable), 6th edition, by Hughes-Hallett, Gleason, McCallum, et al. Available online and at the UM bookstore.

Calculators: Calculators can be a useful tool for mathematics, making computations less tedious and aiding in exploration of sound mathematical intuition. However, we must be careful. Relying too heavily on calculators can hinder the development of reasoning, estimation, and mental mathematics skills. Plus, it's important to be able to trust your own brain's computational power. Calculators can make mistakes too, and you will never find these mistakes unless you can do enough math in your head to say "That doesn't look right … " For these reasons, **calculators will NOT be allowed or needed on quizzes and exams**.   In class and on homework we will use calculators, desmos.com, wolframalpha.com and Mathematica for calculations and graphs.

Course Calendar:

Dates	Topic
Sept 5	Last day students can add a course on CyberBear
Sept 17	Last day students can drop a course or change grading option
Oct 29	Last day to add/drop course by paper w/o Dean's approval. Last day to change sections.
Dec 7	Last class day and last day to petition to drop/add and change to CR/NCR.
Dec 12	**Final exam** scheduled Wednesday Dec 12, 6-8pm location TBD.

Required assignments and tests:

Homework: Working hard on the homework is how you will succeed in this class, so, take the homework seriously! It is OK to work together with your classmates on the homework assignments, but you are responsible for fully understanding the problem and solution. There will be three components to your homework.

1. **Reading questions**.
   We will expect you to read a section from the textbook almost every day**,** after we've introduced it in class. After reading the section, you will take a quiz on Moodle about the reading.
   These Reading Quizzes will constitute 7% of your grade, and the lowest 4 scores will be dropped.
   Before grading each question with a score between 0 and 1, I will ask myself "can I tell from the student's answer that they read the assigned material and made a solid effort to understand it?"
2. **Written Homework will be assigned weekly**. The **starred** problems on the assignment will be graded for complete work and correct answer. The remainder will be graded for completion. The weekly Quizzes (see below) will be based on the written homework, so **make sure you can do ALL the problems on the written homework!** Any one of them could show up on the Quiz. The lowest 2 scores from the written homework will be dropped.
3. **Online homework (Webwork).** To access the online homework, you can visit the website
   http://lennes.math.umt.edu/webwork2 . From there you will be able to click on our class name (172-Calculus-II) and then login. Your user ID is your last name, your initial password is the last 6 numbers of your student ID. Please change your password. Let me know if you have problems logging in. If you registered for the class late I will need to manually enter you into the system.

Quizzes: Weekly, mostly Fridays, but not always. First 10-15 minutes of class. Quiz problems are taken from the written homework assignment (but not necessarily from the **starred** problems). The lowest 2 quiz scores will be dropped.

Exams:

There will be 3 50 minute in-class exams during the semester (**Friday Sept 21, Friday Oct 19, Tuesday Nov 20**). If you have a legitimate schedule conflict with an exam, please let your instructor know as early as possible.

Final Exam:

The final exam will be held **Wednesday, December 12, 2018, 6:00 PM – 8:00 PM, Location NULH 101**. By enrolling in this course it is understood that you will be present for the final exam. Your final exam score is worth 22% of your final grade.

Course guidelines and policies:

Classroom and Course-related Behavior

University policy requires that all of us in the classroom treat each other with respect, and refrain from behavior that will disrupt the educational process. Please refrain from using any electronics during class that are not directly related to what we are doing. If you would prefer to be called by a different name, or gender pronoun, than is listed on the course roster, please let your instructor know.

Student Conduct Code

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. In particular, discrimination and harassment are not tolerated at the University of Montana. If you feel that you have been subjected to discriminatory or harassing behavior, I'm very sorry to hear it; please contact the Office of Equal Opportunity and Affirmative Action at 243-5710 or http://www.umt.edu/eo/equalop/harassment.php for help in addressing the situation. You can also report the discrimination or harassment to me or to another faculty member you trust.

Academic 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.

Disability modifications

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. 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.

Due Dates and Late Work
Unless stated otherwise, all assignments are due at the beginning of class on the day on which they are due. Late work will receive no credit.

Quizzes/exams cannot be taken late except in exceptional circumstances. (We will drop everyone's lowest 2 quiz scores, to give everyone a buffer for busy weeks and unforeseen circumstances.) If you know you have a conflict with a quiz/exam, please contact your instructor **early** to see what arrangements can be made.

Grading policy

Item	Percentage
Reading Questions	7%
Written Homework (8%) Webwork (12%) Quizzes (12%)	32%
In class exams (3; 13% each)	39%
Cumulative final exam	22%