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M 162.50: Applied Calculus (Online)

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Catalog Description:

M 162 Applied Calculus 4 cr. Prereq. 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) Apply calculus as a tool for solving applied problems, such as describing change using calculus techniques; (b) Demonstrate the basic techniques of differentiation and meaning of derivative; (c) Demonstrate the basic techniques of integration and meaning of indefinite and definite integral; (d) Apply basic elementary modeling in terms of differential and/or difference equations; (e) Demonstrate some mathematical software as a tool for applying calculus.

General Education Learning Outcomes:

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

Textbook:

D. Hughes-Hallett et al., Applied Calculus, 6th edition., John Wiley & Sons, Inc., 2018. A graphing calculator with symbolic capability, such as a TI-89, TI-92 or anything CAS will not be allowed on tests. Access to WileyPlus is also required. In an effort to help drive down the costs, your faculty member and The Bookstore has worked with the publisher to bring your course materials at a lower cost through the school's Inclusive Access program. The cost of these materials has been charged to your student account. You still have the right to Opt Out and find these materials at the market rate. If you do so, your access will be cancelled and The Bookstore will issue a refund for the fee assessed to your tuition bill. **Do NOT opt-out unless you think you will end up dropping this class.** This all inclusive program will give you access to WileyPlus which provides an e-book as well as supplemental learning programs. There is a print on demand option as well. If you decide you need a printed copy of the textbook, you can go to The Bookstore and request a copy from the textbook department. If you are not in Missoula, you can arrange, through The Bookstore, for this printed copy to be shipped to you. **To access the textbook: You will use the link on the class moodle page (www.wileyplus.com/class/781585) this link gives access to WileyPLUS which includes your text and all of the resources.** Please note our **course ID# 781585**
A calculator is also required. Demonstrations will be given on a TI-84.

For a video introduction to the WileyPlus system, please see:

<https://drive.google.com/file/d/1LWEMHzABHLMZMPDmioL2HYcZEA8DipAc/view?ts=5ae39240>

How the Course is Run:

Online courses require a lot of self-teaching. In order to make this process easier on you, Lauren has made videos where she lectures each of the sections covered in this class. That way you will get somewhat of an "in-class" experience, watching her explain each topic, as well as working many examples. Another advantage of watching the videos is you can see the types of material I emphasize....this will be especially helpful as we do not cover all of the material in each of the sections. The videos are available at the following link:

https://www.youtube.com/channel/UC-HFFIg04hlFMqzJmVmBiUQ/videos?view=0&sort=dd&shelf_id=0

I would recommend that you start learning each section in the following manner.....first skim through the section in the textbook. Next, watch Lauren's videos(s) for that section. Then go and work the homework problems. If you wish to work additional textbook problems for extra practice, please let me know and I will be happy to provide additional exercises!

All homework assignments will be completed on WileyPlus. You are allowed 4 attempts per question so this should allow you ample opportunity to complete the assignments successfully. At times the program is rather picky (they may want fractions as opposed to decimals, for example). If you believe that the program has made an error or you are unsure why your answer is

incorrect PLEASE email me and I will get right back to you on what you did wrong (if anything) or how to enter your solutions correctly. I assure you that I am very quick at responding so please do not hesitate to email me. I will also add that you want to complete the homework assignments in the order that the class moves (see the calendar below), **not** in the order that they appear on WileyPlus.

All exams need to be taken in a proctored environment. The exams are written so as to enable you to get partial credit. I have attached the Proctor Form to our Moodle page and that specifies the proctoring environments that are OK. These include schools and libraries. Essentially, I need to be sure it is *you* that took the test and that you did *not* cheat on it. Proctors, if at all possible, should not be friends or family members; and your proctor **MUST** have access to a scanner and printer. Once we have the proctor set-up for you, I will scan the tests to the proctor for you to take and they will return it to me for grading (again by scanning and emailing). If you have your test proctored over zoom, the proctor must still be the one to mail me an exam for it to be accepted. Please note that I do **NOT** set a time limit for the tests! Exam feedback and grades will be posted in Moodle.

This class is a semester long course. At the end of this syllabus I have included a suggested calendar for you to complete the class. Within this time frame, you can work through this course at your own pace (as long as everything is completed on or before 11/25). I would suggest you work through this in an organized fashion....once all of the homework is completed for chapters 1 and 2, take test 1; next when you have completed all of the homework for chapters 3 and 4, take test 2, etc. See below for the class schedule. PLEASE note that November 25th is **NOT** an artificial deadline and PLEASE do not fall into the procrastination trap. That is the quickest way to place yourself in a less than optimal position to complete the course with any measure of success.

Suggestions/Advice:

1. It is strongly recommended that you check your campus email daily.
2. You should begin each chapter by reading the assigned sections in your textbook and watching the corresponding section videos. Some students find it useful to watch the videos first, and then read the text (and maybe watch the videos again). Please note that the videos can be accessed at the following link:
https://www.youtube.com/channel/UC-HFFIg04hlFMqzImVmBiUQ/videos?view=0&sort=dd&shelf_id=0
3. Coursework should be done daily. There is no time limit on homework assignments. You can attempt the same question up to 4 times and still receive full credit. Use your notes from the videos as well as your textbook when needed.
4. If any questions arise, PLEASE contact me. Your success in this course will depend upon the amount of time and effort you are willing to spend with the material. You should plan to spend at least 10 hours per week reading your text, reviewing notes, working on homework, completing quizzes, and studying for exams.
5. It is assumed that you are able to use the basic features of your calculator and that you have a working knowledge of all material covered in the prerequisite course. While I understand that some of the material was not mastered by all students in the prerequisite course or that the prerequisite course was taken years ago, it is your responsibility to seek assistance if it is needed. You should start by reading the textbook and its examples. You will find that the material comes back quickly. You are strongly encouraged to ask questions.

Getting Help:

In terms of seeking extra help, you have many options available:

1. There is free tutoring in the Math Learning Center located in the basement of the Math Building on the Mountain Campus every Monday-Thursday from 10-5, Friday from 10-1, and several Zoom options.
2. I have found that when students have questions over specific homework problems or concepts, I am able to answer them via email. I can write up detailed solutions showing each step while providing explanations of how and why, then scan, and email that to you. Students have found this to be very helpful, so please take advantage of this option. Barring unforeseen circumstances, you will get a response to your questions within 24 hours.
3. Lastly, I (Caleb) will be holding online office hours on Zoom via the link <https://umontana.zoom.us/j/96812238464> on Tuesdays and Wednesdays from 6-8 pm. These are essentially “walk in” hours. If you need help outside of these hours, just email me and we’ll work something out.

Grading:

Your course grade will be based on 3 exams (70% of your grade) and 25 homework assignments (30% of your grade). There is no final exam. Your exam grades will be in Moodle, but your cumulative grades will be kept in the Wiley Plus website used for HW.

<i>Grade</i>	<i>Grading Scale by Percentages</i>
A	85%+
B	84-75%
C	74-60%
D	59-50%
F	Less than 50%
CR	

*** 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***. A grade of **C or better** is needed to fulfill the math literacy requirement.

Add/Drop Policy:

The last day to add/drop or change grading option to Audit by Cyberbear is **9/9**. The last day to change sections and to change grading options is **10/21**. This is also the last day to drop. Changes after this deadline and until **11/18** must be done by Petition to Drop/Add after deadline and approved by me, your advisor and the appropriate Dean. Approval requires genuine extenuating circumstances as listed in the university catalog.

Extenuating circumstances are:

1. Missing a substantial number of classes due to illness, accident or family emergency.
2. A change in work schedule that makes it impossible to attend class or devote adequate time to the course.
3. Registration in the course by error and never attending class.

Reasons that are not satisfactory include:

1. Forgetting to turn in a drop slip.
2. Protecting your grade point average.

Incomplete (I) Grades:

To be eligible for an “I”, the following conditions must be met:

1. The student must have been in attendance and passing the course up to 3 weeks before the
 1. semester ends; and
 2. The student is unable to complete the course due to extenuating circumstances, which usually means serious illness or death in the family.

Incompletes are not given under any other circumstances and are always given at the discretion of the instructor. See the 2019-2020 catalog for further information.

Misconduct:

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](#). Available for review online at <http://www.umt.edu/SA/VPSA/index.cfm/page/1321>.

Cheating will not be tolerated! You are expected to personally complete any work that is submitted with your name on it. While I encourage students to discuss homework solutions, you should not discuss particular solutions to questions that will be graded. Instead, find a similar question to discuss or use an example from the textbook or notes. It is never acceptable to copy another person’s work or to allow another student to copy your work.

Special Accommodations:

Students with disabilities will receive reasonable accommodations in this online course. To request course modifications, please contact me as soon as possible. I will work with you and Disability Services in the accommodation process. For more information, visit the [Disability Services website](#) or call 406.243.2243 (Voice/Text).

Student: As a student, you may experience a range of challenges that can interfere with learning, such as health: strained relationships, increased anxiety, substance abuse, feeling down, difficulty concentrating, and/or lack of motivation. These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. Counseling is available and treatment does help. The professional staff at Curry Health Center offers free confidential counseling to full-time students. I am always happy to help you find the resources you need.

Important University-Wide Info and Dates:

- Monday, 7 September: Labor Day. No school.
- Tuesday, 3 November: Election Day. No school.
- Wednesday, 11 November: Veteran’s Day. No school.

Week	Sections	Test Dates
8/24 – 8/28	1.1, 1.2, 1.3	
8/31 – 9/4	1.5, 1.6, 1.8	
9/7 – 9/11	1.8, 1.9, 1.10, 2.1	
9/14 – 9/18	2.1, 2.2, 2.3	
9/21 – 9/25	2.4, Test 1, Ch. 2 FOT	Test 1
9/28 – 10/2	3.1, 3.2, 3.3	
10/5 – 10/9	3.3, 3.4, 3.5	
10/12 – 10/16	4.1, 4.2, 4.3	
10/19 – 10/23	4.4, 4.8, Test 2, 6.2	Test 2
10/26 – 10/30	6.2, 6.3, 6.6, 6.7	
11/2 – 11/6	6.7, 5.1, 5.2, 5.3	
11/9 – 11/13	5.4, 5.5, 5.6	
11/16 – 11/20	9.1, 9.2	
11/23 – 11/25	9.4, 9.5, Test 3	Test 3