Instructor:  Jen Tyne

Class Time & Place:  Online

Contact Info:  232 Neville, 581-3926, jennifer.tyne@maine.edu

Office Hours:  MWF, 9:30 – 10:30, and by appointment

Optional Text:  *Calculus for Scientists and Engineers, Early Transendentals*, by Briggs, Cochran, Gillett, 2013 (Pearson).  The text is optional because it is available entirely online with the access code below.  Copies of the text are available on reserve in the library.

Required Access code:  MyMathLab access code.  The access code can be purchased online at [http://pearsonmylabandmastering.com/](http://pearsonmylabandmastering.com/), or in the bookstore.  You can get 17-day temporary access through the MyMathLab website (I suggest the temporary access if you aren’t sure about the course, or if you are waiting for financial aid).  We will be accessing MyMathLab directly through Blackboard.

Required Course Pack:  There is a course pack that will be available in the bookstore and is required of all students. It contains all the notes from the videos and additional practice problems to prepare for the exams.

Technical Requirements:  Your own PC or Mac, or one for which you have administrator rights, and high-speed Internet access. You also need to have a smart phone with a camera or access to a scanner. For some quiz questions, you’ll need to take a picture (or scan) your written work and upload.

Calculator:  A scientific calculator will be useful for doing calculations on some homework problems.  For most quizzes and exams, a calculator is not allowed. To assist in your understanding of the material, you should have access to a graphing tool – either a graphing calculator, a graphing program, or the use of a website such as Wolfram-Alpha.

Schedule:  A tentative schedule of all required work will be available in Blackboard.  As a general rule, there are assignments due every Sunday and Tuesday.

Communication:  Blackboard will be used for the course.  You will access the MyMathLab resources and homework through the Blackboard site.

Chapters/Sections Covered in Textbook:

- **Chapter 2: Limits**
  - 2.1 The Idea of Limits
  - 2.2 Definitions of Limits
  - 2.3 Techniques for Computing Limits
  - 2.4 Infinite Limits
  - 2.5 Limits at Infinity
  - 2.6 Continuity

- **Chapter 3: Derivatives**
  - 3.1 Introducing the Derivative
  - 3.2 Rules of Differentiation
  - 3.3 The Product and Quotient Rule
  - 3.4 Derivatives of Trig Functions
  - 3.5 Derivatives as Rates of Change
  - 3.6 Chain Rule
  - 3.7 Implicit Differentiation


Chapter 3: Derivatives of Logs and Exponential Functions, 3.9 Derivatives of Inverse Trig Functions, 3.10 Related Rates

Chapter 4: Applications of the Derivative (4.1 Maxima and Minima, 4.2 What Derivatives Tell Us, 4.3 Graphing Functions, 4.4 Optimization Problems, 4.5 Linear Approximation & Differentials, 4.6 Mean Value Theorem, 4.7 L’Hôpital’s Rule, 4.9 Antiderivatives)

Chapter 5: Integration (5.1 Approximating Areas Under Curves, 5.2 Definite Integrals, 5.3 Fundamental Theorem of Calculus, 5.4 Working with Integrals, 5.5 Substitution)

Chapter 6: Applications of Integration (6.1 Velocity and Net Change, 6.2 Regions Between Curves)

Course Description
An introduction to calculus for students in mathematics, engineering, and the sciences. Covers the differential calculus of the algebraic, trigonometric, exponential and logarithmic functions, concluding with the definite integral and the fundamental theorem of calculus. The approach is intuitive and geometric, with emphasis on understanding the basic concepts of function, limit, derivative and integral.

This course satisfies the Quantitative Literacy General Education requirement. Quantitative literacy is the ability to formulate, evaluate, and communicate conclusions and inferences from quantitative information.

Students will demonstrate proficiency in Quantitative Literacy, as defined on the Quantitative Literacy Student Learning Outcomes Rubric (available at http://umaine.edu/mathematics/files/2014/08/QLRubric.pdf), for the following:

1. Translate problems from everyday spoken and written language to appropriate quantitative questions by taking real world situations and translating them into mathematical models through quizzes, tests, and homework.
2. Interpret quantitative information from formulas, graphs, tables, schematics, simulations, and/or visualizations, and draw inferences from that information through quizzes, tests, and homework.
3. Solve problems using arithmetical, algebraic, analytic, geometrical, statistical, and/or computational methods through quizzes, tests, and homework.
4. Analyze answers to quantitative problems in order to determine reasonableness and suggest alternative approaches if necessary through quizzes, tests, and homework.
5. Represent quantitative information symbolically, visually, and/or numerically through quizzes, tests, and homework.
6. Present quantitative results in context using everyday spoken and written language as well as using formulas, graphs, tables, schematics, simulations, and/or visualizations through quizzes, tests, and homework.

Course Structure
Quizzes, tests, and homework will be tied to the student learning outcomes, and will give students the opportunity to translate problems, interpret quantitative information, solve problems, analyze answers, represent quantitative information, and present quantitative results using written language.

Modules: As detailed in the course schedule, the content is designed into modules (one pre-requisite module and five content modules). The content modules are approximately
two weeks long, and consist of online homework and quick quizzes (due each Sunday), and quizzes (due each Tuesday).

- **Videos:** I have created videos for each section of the book that are accessible through Blackboard. The course packet has the slides from these videos, and you should take notes in the course pack as you are watching the videos. It is very important that you devote enough time each week to watching (and re-watching if necessary) the videos.

- **Quick Quizzes:** After each of the videos, there is a short multiple choice or True/False “quick quiz”. You will only have one attempt at the quick quiz, and it must be completed at one sitting in five minutes. Watch the video fully, and then take the quiz. The questions are aimed to gauge your understanding of the large concepts in the section (not necessarily the nitty gritty calculations, which you’ll get through the HW questions). The quick quizzes must be completed before each due date and time (the same due date as the corresponding HW). If you don’t do well on the quick quiz, I highly recommend reviewing the answers and re-watching the video before moving onto the homework.

- **Homework:** There will be a graded MyMathLab homework assignment for each section covered (usually two or three per week). The homework must be completed before each due date and time (see schedule; usually Sundays at 11:59pm). Assignments consist of problems and media (videos, animations, etc). **No extension will be given except in extenuating circumstances. If you need an extension, please email me prior to the deadline.** You can re-do the homework problems as many times as you like, asking for help as you work through the problems. There are many help features available in MyMathLab, like “Ask My Instructor”, “Help Me Solve This”, and “View an Example”. Use these, but before moving on make sure you understand the concepts and can do “similar problems” without the help of the help buttons.

- **Weekly Quizzes:** There will be a graded quiz each week in Blackboard, covering the homework sections and media content. The quiz must be submitted prior to the deadline (usually Tuesdays at 11:59pm). Some of the quizzes will have open-ended questions for which you will upload a file of your solutions (either taken with a smart phone camera, digital camera, or scanned). **No extension will be given except in extenuating circumstances. If you need an extension, please email me prior to the deadline.** You only have one try for the quizzes, and it must be completed in one hour. Get the help you need on the homework assignments, and start the quiz when you feel confident. Once again, it must be completed in 60 minutes.

- **Tests & Final:** There are two written and proctored exams and a cumulative final exam. **Tests must be taken at one of the off-campus Testing Sites around the state or on Orono’s campus. If you are out of state, please contact me about arranging an out-of-state proctor in your area.**
  - **For Orono’s Students:**
    - Test #1 Wednesday October 5, 5:30 – 7:30pm, DPC115
    - Test #2 Tuesday November 15, 5:30 – 7:30pm, DPC107
    - Final Exam: Monday December 12, 5:30 – 7:30, DPC107
  - **For off-campus Students in Maine:** The window of dates for exams are as follows:
    - Test #1 October 5 or 6
    - Test #2 November 15 or 16
    - Final Exam: December 12 or 13
Two weeks prior to Test #1 you will register to take the test at one of the testing sites by completing an online form. You will take all exams at the same site.

- **For out-of-state students:** The dates are the same as for off campus students above. It is your responsibility to secure a proctor in your area the first few weeks of classes, and fill out an online form with the proctor’s contact information.

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<th>Course Grades</th>
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<tr>
<td>Test #1</td>
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<td>Test #2</td>
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<td>Final exam</td>
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<td>Homework</td>
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<td>Quick Quizzes</td>
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<td>Weekly Quizzes</td>
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Final letter grades are determined as follows: <60 (F), 60-69 (D), 70-79 (C), 80-89 (B), 90-100 (A). In borderline cases, I use plus and minus grades at my own discretion.

**Makeup Policy**

No makeup work will be allowed for homework, quick quizzes, or weekly quizzes except in extenuating circumstances when I am contacted prior to the due date. Your lowest weekly quiz grade, lowest quick quiz grade, and two lowest homework grades will be dropped to account for any missed assignments due to illness or any other circumstances. If a written exam is missed due to a serious verifiable circumstance, a makeup exam will be scheduled. In order for this to happen, a written excuse with supporting documents must be sent to me within two days of a missed test. Students who must miss work due to official University business must make other arrangements prior to the test.

**Help Options**

The Mathlab is located in 116 Neville Hall. Math faculty, graduate students, and math majors staff it Mon,Tues, Thurs from 10-4 and Wed,Fri from 10-3. It’s a great place to go with homework questions. Take advantage of it!

The Tutor Program is a peer-tutoring program on campus with options for online tutoring. Please see me if you’d like more information, or contact the Tutor Program directly at 581-2351 or 104 Dunn Hall.

Lastly, do not hesitate to contact me at any time. Stop by my office during office hours, make an appointment, or email. I am here to help!
UNIVERSITY OF MAINE POLICY STATEMENTS

Academic Honesty

Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

Course Schedule Disclaimer

In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

Students with Disabilities

If you have a disability for which you may be requesting an accommodation, please contact Disabilities Services, 121 East Annex, 581-2319, as early as possible in the term.

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, your teacher is required to report this information to the campus Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:
For confidential resources on campus: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000.
For confidential resources off campus: Rape Response Services: 1-800-310-0000 or Spruce Run: 1-800-863-9909.
Other resources: The resources listed below can offer support but may have to report the incident to others who can help:
For support services on campus: Office of Sexual Assault & Violence Prevention: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911. Or see the OSAVP website for a complete list of services at http://www.umaine.edu/osavp/