Math 160: Calculus for Scientists and Engineers I, Spring 2017

Course Coordinator:  Dr. Mary E. Pilgrim (mpilgrim@rams.colostate.edu)
Math160 Web Site:  http://www.math.colostate.edu/~calc/MATH160/index.html

Prerequisites: Math 124 and Math 126 with a grade of B or better

Calculator: Access to a graphing calculator or app (such as desmos.com, wolframalpha.com, etc.) is recommended for homework, labs, and other course activities. Only scientific calculators such as the TI-30X IIS will be allowed on exams. Graphing or symbolic calculators WILL NOT be allowed on exams and quizzes. You must provide your own calculator; you may not use a laptop computer or smart phone. Be aware that some quizzes may prohibit the use of a calculator.

If you are unsure if your calculator is allowed or acceptable, please talk to your instructor.


Important Dates:
Last day to add without override:  Jan 22
Last day to add with override:  Feb 1
Last day to drop:  Feb 1
Last day to withdraw:  March 20

Grading:
Exam 1: 14%
Exam 2: 14%
Exam 3: 14%
Final Exam: 28%
Written Homework: 12%
Ximera Homework: 8%
Labs: 5%
Quizzes & Other Class Assignments: 5%

Grade Distribution  The grade distribution will be no stricter than the following:
A: 90%-100%
B: 80%-89%
C: 70%-79%
D: 60%-69%
F: Below 60%

**Important Notes**

1. If your final exam grade is less than 50%, your final grade in the course can be no higher than a D.

2. You receive the grade you earn in this class. For example, if your grade is an 88%, then you will receive a grade of B. There are no exceptions, so do not email your instructor or the course coordinator asking to be “bumped up.”

3. You have no more than 2 weeks after a homework or exam/quiz has been passed back in class to have your score altered due to a recording error or grading mistake. Please take prompt responsibility for ensuring your grades are properly recorded in Canvas.

4. No make-up exams or make-up work is allowed unless in the case of a documentable emergency or documentable university approved absence due to a university sponsored event.

-We are unable to offer alternate exams for other situations such as work commitments or travel plans. Students who feel they are in a special situation not covered by these general rules should contact the course coordinator.
Ximera Homework (8%): The online homework for this course is via Ximera, which you can access through your Math 160 Canvas section.

Note: Since only a small number of problems are assigned from each section, these problems are not necessarily inclusive of all material, so be sure to study class notes, the text book, labs and all other course materials!

Ximera Due Dates:
Exam 1 content: Wednesday, February 8, 2017 at 5pm.
Exam 2 content: Wednesday, March 8, 2017 at 5pm.
Exam 3 content: Wednesday, April 12, 2017 at 5pm.
Post Exam 3 content: Wednesday, May 3, 2017 at 5pm.

Technology Labs (5%): There will be 4 technology labs this semester. The first three labs (Tolerance, Linear Approximations, and Optimization) will be accessed through canvas via the Ximera Lab module. The fourth lab will be posted on the course website. Labs 1-3 will be graded at 5pm on their respective due dates. However, these labs will remain accessible for studying, BUT no grade updates will be made based on any changes made after the due date.

Grading in Ximera: There are 3 types of Ximera cards - title cards, exercise cards, and general content cards.
5% of the Ximera grade will come from title cards.
40% of the Ximera grade will come from exercise cards.
55% of the Ximera grade will come from general content cards.

Exams: There will be 3 evening exams and a cumulative final exam. All exams must be taken at the time stated on the syllabus or in class. Exam times are listed with the tentative schedule on the last page of the syllabus.

Alternate Exams: All exams must be taken at the time stated on the syllabus or in class. The only exceptions are conflicts with any university approved absence (for which a special letter is required) or events beyond your control that cannot be rescheduled (e.g. hospitalization). In either case it is the student’s responsibility to inform the instructor in due course (well ahead of a conflict with a university events, or as soon as possible in case of a medical emergency) of this conflict and to provide written documentation.

No alternate exams will be allowed for class conflicts. If you have a class meeting during the time of an evening exam, you must make arrangements to miss that class in order to take the Math 160 exam.
Written Homework (12%): Written homework will be assigned regularly (see tentative schedule for due dates), and each assignment will consist of 3-5 problems. There will be 14 written homework assignments. Your lowest homework assignment will be dropped. Each homework assignment will be worth 30 points: 10 points based on the completeness of the assignment and 20 points based on the correctness of a graded subset of problems.

**How to earn 3 points back on a written homework assignment:**
For each written homework assignment, you will have the option to earn up to 3 points back on the assignment. To do this, you must do the following NO LATER THAN ONE WEEK AFTER THE GRADED HOMEWORK ASSIGNMENT WAS PASSED BACK IN CLASS:

1. Go to one of the calculus help hours and discuss what you missed on your homework assignment. You must do this with a Math 160 instructor. You will NOT get points back for problems that you did not attempt.

2. The instructor present in calculus help hours will discuss this with you and will put your name on a list to get the credit.

Note: You cannot get more than 100% on a homework assignment.

RDS: Students working with RDS should make themselves known early (no less than one week prior to an exam) and have their forms ready to be filled out by the course coordinator. Only one form is required for all Midterms, and one form for the Final.

Calculus Help Hours: A schedule for Math 160 Calculus Help Hours can be found here: http://www.math.colostate.edu/~calc/MATH160/CalculusHelpHours_Sp2017.pdf

You are required to have access to an instructor in the lab at least one hour per week outside of scheduled class times. The schedule for lab and help hours can be found here: http://www.math.colostate.edu/~calc/MATH160/CalculusHelpHours_Sp2017.pdf

TILT Tutoring: Free tutoring is available for this course through the Arts & Sciences Tutoring Program. The program is located in the Russell George Great Hall in The Institute for Learning and Teaching (TILT), and runs 5 p.m. to 10 p.m., Sunday-Thursday evenings during the academic year. No appointment is necessary and all students are welcome. For more information and tutoring schedule, please visit: http://tilt.colostate.edu/learning/tutoring/

Discussion Forum: We will use Piazza for discussions. Use this forum to ask your questions. Someone will answer! You can access Piazza through Canvas. Note that there is a free Piazza app for tablets and smartphones.
Academic Integrity:
Courses in the department adhere to the Academic Integrity Policy of the Colorado State University General Catalog and the Student Conduct Code (which can be found in section 1.6 of the course catalog).

By handing in homework, lab reports, and exams you certify that this is your own work. You are encouraged to discuss homework solution strategies and laboratory write-ups with fellow students, but the final write-up must be your own. Misrepresenting someone else’s work as your own (plagiarism; this includes submitting work from a Solutions Manual or an on-line homework web site as your own), possessing or using unauthorized reference information in any form that could be helpful while taking an exam (for example a calculator not explicitly permitted), or doing Ximera problems with the aid of a computer algebra system are examples of cheating.

Using a calculator capable of symbolic manipulation or graphing on an exam or quiz is an example of cheating.

Students judged to have engaged in cheating may be assigned a reduced or failing grade for the assignment or the course and may be referred to the Office of Conflict Resolution & Student Conduct Services for additional disciplinary action.

Email Etiquette:
[http://www.math.colostate.edu/programs/undergraduate/policies.shtml#email](http://www.math.colostate.edu/programs/undergraduate/policies.shtml#email)
**EXAM SCHEDULE:**

Exam 1 (14%): Thursday, February 9 5pm-6:50pm
Exam 2 (14%): Thursday, March 9 5pm-6:50pm
Exam 3 (14%): Thursday, April 13 5pm-6:50pm
Final Exam (28%): Wednesday, May 10 7:30am-9:30am

**Tentative Schedule:**

<table>
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<th>Week 1 Jan 16-20</th>
<th>Monday</th>
<th>Tuesday</th>
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<th>Thursday</th>
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<tbody>
<tr>
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<td><em>University Holiday</em></td>
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<td><em>Syllabus</em></td>
<td><em>Lab 1 opens in Ximera</em></td>
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<td>Week 2 Jan 23-27</td>
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<td><em>HW 01 Due</em></td>
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<td><em>HW 02 Due</em></td>
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<td>Week 4 Feb 6-10</td>
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<td><em>Review Ximera Due</em></td>
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<td><em>HW 05 Due</em></td>
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<td>Week 7 Feb 27-Mar 3</td>
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<td><em>Lab 2 opens in Ximera</em></td>
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<td><em>HW 06 Due</em></td>
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<td>Week 8 March 6-10</td>
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<td><em>Catch Up HW 07 Due</em></td>
<td><em>Review Lab 2 Due Ximera Due</em></td>
<td><em>Exam 2 5-6:50pm</em></td>
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<td>Mar 13-17</td>
<td><em>Spring Break</em></td>
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<td><em>HW 09 Due</em></td>
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<td><em>Catch Up HW 11 Due</em></td>
<td><em>Review Lab 4 Due In Class Ximera Due</em></td>
<td><em>Exam 3 5-6:50pm</em></td>
<td>No Class</td>
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<td>Week 14 April 24-28</td>
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<td><em>HW 13 Due</em></td>
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<td>Week 15 May 1-5</td>
<td>6.3</td>
<td><em>Review HW 14 Due</em></td>
<td><em>Review Ximera Due</em></td>
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<td>Review</td>
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Syllabus Addendum MATH 1xx

Academic Integrity

This course will adhere to the CSU Academic Integrity Policy as found on the Student’ Responsibilities page of the CSU General Catalog and in the Student Conduct Code.

At a minimum, violations will result in a grading penalty in this course and a report to the Office of Student Resolution Center.

Learning Objectives

This class satisfies the competency criteria for GT Pathways:Quantitative Literacy (QL) and GT Pathways:Problem Solving (PS), as well as the Content Criteria for Mathematics (CC), as defined and approved by the Colorado Commission on Higher Education on June 2, 2016. In this, it delivers the following learning outcomes.

Students who complete this course successfully will be able to:

QL1. Interpret Information
a. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words)

QL2. Represent Information
a. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

QL3. Perform Calculations
a. Solve problems or equations at the appropriate course level.
b. Use appropriate mathematical notation.
c. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.

QL4. Apply and Analyze Information
a. Make use of graphical objects (such as graphs of equations in two or three variables, histograms, scatterplots of bivariate data, geometrical figures, etc.) to supplement a solution to a typical problem at the appropriate level.
b. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
c. Make judgments based on mathematical analysis appropriate to the course level.

QL5. Communicate Using Mathematical Forms
a. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).

PS1: Define a problem
a. Construct a detailed and comprehensive problem statement or goal.
b. Identify relevant contextual factors.

PS2: Propose a Strategy
a. Identify reasonable approaches to solving the problem within the given context.

PS3: Evaluate Potential Strategies
a. Provide an evaluation of the potential strategy(ies) which may include:
   i. the history of the problem,
   ii. the logic behind the potential strategy(ies),
   iii. the feasibility of the proposed strategy(ies), and
   iv. the potential impacts of the proposed strategy(ies).
b. Choose a feasible strategy.

PS4: Apply a Strategy
a. Implement chosen approach(es).
b. Gauge success of the chosen strategy(ies) and revise as needed.
PS5: Evaluate Results

a. Discuss and review results relative to the context of the problem.
b. Make recommendations for further work (where applicable).

CC a) Demonstrate good problem-solving habits, including:
   • Estimating solutions and recognizing unreasonable results.
   • Considering a variety of approaches to a given problem, and selecting one that is appropriate.
   • Interpreting solutions correctly.

CC b) Generate and interpret symbolic, graphical, numerical, and verbal (written or oral) representations of mathematical ideas.

CC e) Communicate mathematical ideas in written and/or oral form using appropriate mathematical language, notation, and style.

CC d) Apply mathematical concepts, procedures, and techniques appropriate to the course.

CC e) Recognize and apply patterns or mathematical structure.

CC f) Utilize and integrate appropriate technology.

We have been informed that explicitly listing these criteria verbatim will improve the learning experience for all students.

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