

MATH 1010 Calculus 1 Sections 5-8,17-20: Course Activities

Course Learning Outcomes: Upon successful completion of the courses, students will be able to demonstrate:

- basic symbol manipulation skills
- the ability to relate Calculus concepts to their graphical, numerical and symbolic representations
- the ability to construct Calculus models of applied problems described in words
- the ability to solve Calculus problems that model real world situations and recover their solutions
- the ability to apply fundamental theorems and rules from Calculus to solve symbolic and graphical problems
- the ability to use and derive some of the basic Calculus definitions and theorems

Lectures: During the classes on Monday and Thursday, new material will be covered. Emphasis will be placed on development of concepts and on working examples. You are expected to attend lectures, and to experience them free of distractions. Please do not have any electronic devices out that are not being used for class activities. Although the class is large, you are strongly encouraged to ask questions, as there are probably ten people wondering the same thing you are.

Problem-Solving: On Tuesdays (sections 5,7,17,19) or Fridays (sections 6,8,18,20), you will meet with your recitation instructor for **recitation** class. In recitation, you may ask any questions you have about the material discussed in lecture and about current assigned homework problems. You are expected to attend recitations, where all exams and quizzes will be returned, and to have worked the current homework problems in advance.

Quiz Block/Skills/Mentoring: Each student registered for Calculus 1 must also register for MATH 1960. On a schedule to be discussed there, problems from the Calculus Skills Problem Set (discussed below) will be worked, quizzes covering these problems will be given, and you will participate in various mentoring activities. You are required to attend these classes whether there is a quiz on a given day or not.

Homework: Suggested homework problems will be given out periodically. You are expected to work on all of the current homework problems so that you are in a position to discuss them during recitation. You will be expected to keep a “homework notebook” which will contain your solutions to all of the assigned homework. As you attend recitations and/or seek help outside of class, you will refine this notebook, so that when it comes time to prepare for an exam you will have a ready-made study resource. Your homework notebook may be checked periodically by your math mentor to make sure you’re working on the homework consistently.

Quizzes: There will be eight quizzes (given during the Quiz Block) consisting of problems from the Calculus Skills Problem Set (discussed below). The dates and coverage of these quizzes will be discussed in quiz block. These quizzes will be graded on a no partial credit basis.

Exams: There will be 4 major exams whose tentative dates are given on the accompanying sheet. These exams will contain primarily problems similar to those in the suggested homework assignments, so it is of paramount importance that you work on all of the assigned homework problems and keep your homework notebook up to date and complete. These will be conventional exams on which partial credit will be available.

Calculus Skills Problem Set: An important goal of Rensselaer Calculus courses is to develop proficiency in basic computational skills relating to Calculus. To develop these skills, a set of Calculus Skills Problems will be made available to you. This is a set of algorithmically generated problems (meaning that different instances of each problem will be structurally similar but will involve different numbers and/or functions), some of which will appear on skills quizzes throughout the semester. All of these problems will be graded with no partial credit, constituting 20 % of the course grade as detailed on the next page.