

MATH 1210—Calculus I

Section 02, MTWRF, 11:00–11:50 am, NIB 136, CRN: 23622

Spring 2011—5 credits

Instructor: Taylor Jensen

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Office Hours: MTWRF 9:00–9:50 am; TR 11:00–11:50 pm; other times by appointment only

Additional Help: NIB 202 or Browning Learning Resource Center

Required Text: *Calculus: Concepts and Contexts* (4th edition) by James Stewart

Calculator Requirement: You **must** have a graphing calculator. The TI–83 (any version), TI–84 (any version), or TI–89 is recommended.

Prerequisite: You **must** meet at least one of the following minimum requirements. Moreover, this requirement must have been met within the past two years.

- Passed Math 1065 (or both Math 1050 and Math 1060) with a “C” or better.
- Earned ACT math score of 26 or higher.
- Earned a suitable CPT score. [For details on this test, go to http://new.dixie.edu/math/which_classes_should_i_take.php.]

Course Description & Course Objectives

Math 1210 is designed for students intending to earn a Bachelor of Science degree in mathematics, engineering, or other science-based major. Students will gain a basic understanding of calculus, which can be described as the mathematics of motion and change. Topics include limits and continuity, differentiation, applications of differentiation, integration, and applications of integration. Functions are the object of analysis in calculus. The functions studied in Math 1210 include algebraic functions, exponential functions, logarithmic functions, trigonometric functions, and inverse trigonometric functions. Incoming students must have a working knowledge of college algebra and trigonometry. The course is a lecture course with homework assignments, tests, and a comprehensive final exam. Math 1210 is a prerequisite for Math 1220 and Physics 2210.

All classes in mathematics at Dixie State College of Utah support the general education goals of the college. Each mathematics class will:

- Require students to perform mathematical processes including fractions, percentages, decimals, proportions/ratios, algebraic equations, and/or calculus techniques
- Provide students with application problems that use a variety of methods including arithmetical, algebraic, and geometric methods
- Challenge students to make inferences from mathematical models that include formulas, graphs, and tables
- Provide students with real-life applications that use a variety of mathematical functions

Upon successful completion of Math 1210, a student will demonstrate meaningful understanding of the concepts of limit, continuity, differentiability, derivative, and definite integral.

Additionally, such a student will demonstrate the ability to:

- Evaluate limits (including those requiring the application of l’Hospital’s rule)
- Apply knowledge of limits in order to graph functions
- Apply appropriate differentiation formulas
- Find tangent lines to curves
- Find relative and absolute extrema of functions

- Solve related rates problems
- Apply both parts of the Fundamental Theorem of Calculus
- Evaluate definite integrals and find indefinite integrals (including integrals that require techniques such as integration by parts, substitution, partial fraction decomposition, etc.)

Behavior Policies

1. **Your attendance and behavior are expected to reflect your dedication to excellence as a university student.** You are expected to attend class, participate in discussions and group work, and to use class time for Math 1210 activities only.
2. **You must abide by all regulations set forth in the “Student Rights and Responsibilities Code” (DSC Policy 5.33).** These regulations can be found online at <http://www.dixie.edu/humanres/polstu.html> (then click on the link to DSC Policy 5.33). In particular, you should be aware of your obligations pertaining to academic performance (“Academic Performance Responsibilities,” DSC Policy 5.33.5).
3. When completing homework, working together is ok—in fact, I encourage it. However, copying another person’s work is not ok. Furthermore, you should try your very best to do a problem before you look at the solutions manual for help. Most importantly, sharing test information is not ok, and if you’re caught, you’ll receive an “F” for the course.

Homework Policies

The goal of your doing homework should be to gain understanding of basic calculus—above and beyond rote memorization and superficial knowledge of formulas and “facts.” With that in mind, let me present my basic policies:

1. You will read a section from the textbook before attending the scheduled lecture about that particular section. After actively participating in the classroom discussion on the section, you will then complete (as homework) all assigned exercises from that section.
2. Each class day is divided into three time periods: first, you will take a quiz which is based on homework which has already been considered in class; second, I will lecture on the sections which you read before coming to that class session; third, you will ask me questions about homework problems you have completed.
3. Daily attendance is worth 1 point for each class day. If you will be absent for one or more class days, you must ask me for permission to miss those days—beforehand and in writing—so I can decide whether or not to grant you the opportunity to make up the points from the days you will miss. At the end of the semester, your total in attendance points will be rounded down (if necessary), not up. Additionally, up to 5 points will then be added to your attendance total in case you missed one or two class days due to unforeseen circumstances.
4. Homework will be turned in the class day following the closing of every midterm exam as well as on the day the final exam is administered. Each homework “packet” will consist of all the sections covered on the corresponding midterm exam (or final exam). Each packet will be worth 14 points, and I will grade these packets on completeness only, not on correctness.

Exam Policies

1. **Exams cannot be made up for any reason.** Midterm exams will be administered in the Testing Center, while the final exam will be administered in our regular classroom.
2. You must bring the following items to each midterm exam: (a) #2 pencil (not mechanical); (b) photo ID. Moreover, you are allowed to bring your graphing calculator as well as one “cheat sheet” (8½ by 11 inches, front and back) to each midterm exam. **Important:** You should photocopy the cheat sheet before you take a midterm exam if you wish to have a permanent copy, because the Testing Center staff will not allow you to take it with you after you complete the exam (for test integrity purposes).
3. A 10% penalty will be given to any student showing up more than 10 minutes late for the final exam. A 30% penalty will be given to any student missing the exam period by more than an hour. (This is to ensure students do not “hang back” and study longer than their classmates.)

Grading

Attendance	70 points
Homework	70 points
Midterms (60 pts. each)	300 points
Final Exam (comprehensive)	120 points

There are 560 total points possible. Your grade will be determined according to the percentage of points you earn in this course.

≥ 92.0% A	≥ 89.0% A–	≥ 86.0% B+	≥ 82.0% B
≥ 79.0% B–	≥ 75.0% C+	≥ 70.0% C	≥ 67.0% C–
≥ 64.0% D+	≥ 60.0% D	< 60.0% F	

Disability Resource Center

If you are a student with a documented physical or mental impairment that will substantially limit a major life activity, please contact the Disability Resource Center (DRC) on the main campus. The Center Coordinator and staff will assist you in evaluating your eligibility for services. If you are deemed eligible, reasonable accommodations that are appropriate for your disability will be assigned. If you have any questions concerning this process, please contact the Center at (435) 652–7516 or go to the DRC on the ground floor of the Financial Aid Office.

Website Resources

Library	http://library.dixie.edu/
Writing Center	http://new.dixie.edu/english/dsc_writing_center.php
Testing Center	http://new.dixie.edu/testing/
Tutoring	http://dsc.dixie.edu/tutoring/index.htm
Career Center	http://new.dixie.edu/career/

Communication Policy

Important class and college information, including lecture notes, syllabus changes, etc. for this class, will be sent to either the preferred email account you submitted to Dixie State College

when you began school here or to your “Dmail” account. This information includes your DSC bill, financial aid and scholarship notices, notification of dropped classes, reminders of important dates and events, and other information critical to your success in this class and at DSC in general. You will be held responsible for any emailed information sent to you by me or by DSC, so please check your email account often. When trying to get in contact with me, the best option is to email me or call my office phone and leave a message.

My Teaching Philosophy

I believe every future scientist or engineer, including **you**, can learn the material taught in this course. I am confident that learning this material will make a **vital** difference in your ability to apply mathematical reasoning to help solve the complex problems facing our world. Learning about mathematics should be **fun!** If we’re not having fun while we learn, we’re not really learning! ☺

Note about Final Grades

I am only willing to change a student’s final grade if I have made a recording error on my gradesheet. In order to be fair to all students, I must assign each student’s grade based on his or her overall performance in the class. It is not right for a teacher to change a student’s grade for any subjective reason once that grade has been assigned; hence, I will not do it.

Lecture Schedule

MATH 1210—Spring 2011

<u>DATE</u>	<u>LECTURE</u>	<u>DATE</u>	<u>LECTURE</u>
1/10	Intro	3/7	4.1
1/11	1.1	3/8	4.1
1/12	1.1	3/9	Review
1/13	1.2	3/10	Review
1/14	1.3	3/11	Topic: "Rho" Fns.
1/17	MLK Jr. Day	3/14	Spring
1/18	1.3	to 3/18	Break
1/19	1.5		
1/20	1.6		
1/21	App. C		
1/24	1.7	3/21	4.2
1/25	Review	3/22	4.3
1/26	Review	3/23	4.5
1/27	Topic: Hyperbolic Fns.	3/24	4.5
1/28	2.1	3/25	4.6
1/31	2.2	3/28	4.6
2/1*	2.3	3/29	4.7
2/2	2.4	3/30	4.8
2/3	2.5	3/31	4.8
2/4	2.5	4/1	Review
2/7	2.6	4/4	Review
2/8	2.7	4/5	Topic: Proofs
2/9	2.8	4/6	5.1
2/10	Review	4/7	5.2 5.2 5.3
2/11	Review	4/8	5.3 5.3 5.4
2/14	Topic: Sequential Limits	4/11	5.4 5.5
2/15	3.1	4/12	5.5 5.5 5.6
2/16	3.2	4/13	5.5
2/17	3.2	4/14	5.6 5.6
2/18	3.3	4/15	5.6 5.6 5.7
2/21	Presidents Day	4/18	5.7 5.7 5.10
2/22	3.3	4/19	5.7
2/23	3.4	4/20	5.10
2/24	3.4	4/21	5.10
2/25	3.5	4/22	Review
2/28	3.6	4/25	Review
3/1	3.6	4/26	Topic: Accumulation Fns.
3/2	3.7	4/27	Final Review
3/3	3.8	4/28	Final Review
3/4*	3.9		

Note: Midterm exams open on the **second** class day in which we review a chapter. They close **two days** later. The final exam will be at 9:30 am on Friday, April 29th (in our regular classroom).

* The last day you may drop the class without a "W" appearing on your transcript is Tuesday, February 1st. The last day you may drop the class is Friday, March 4th. Other important dates on the academic calendar for this semester can be found online at <http://dixie.edu/reg/?page=spring2011>.