

Math 222, Sections 3-4 (Fall 2009)

Calculus II

Instructor: **Danrun Huang, Ph.D.**

Office: **ECC 144**

Phone: **320-308-2237**

Email: **dhuang@stcloudstate.edu**

Course Web: **<http://web.stcloudstate.edu/dhuang/math222/222.html>**

My office hours (or by appointment) and the teaching schedule:

Time\Day	Mon	Tues	Wed	Thurs	Fri
9:30-10:45		M423/523		M423/523	
10:50-11:50		Office		Office	
12:30-13:00	Office	Office	Research	Office	Office
13:00-13:50	M 222-3	M 222-3		M 222-3	M 222-3
14:00-14:50	M 222-4	M 222-4		M 222-4	M 222-4
15:00-16:00	Office	Office		Office	Office

Course Description: This is the second-semester introductory course of calculus in one variable. The topics include techniques and applications of integration, parametric equations and polar coordinates, infinite sequences and series, etc.

Text: *Single Variable Calculus Early Transcendentals* (6th Ed, 2008), by James Stewart

Student Solution Manual: (odd-numbered problems): Optional but useful.

Prerequisite: A solid background of Math 221 or the equivalent.

Homework: [Homework](#) is assigned weekly. This semester we do not have graders due to a budget cut. So generally the homework will not be collected except a special collection is announced by the instructor. When submitting homework, students should show all details to reach the answer. Neatness is also counted. The problems should be listed in order, even for those that you can't solve. **Late or unstapled homework will not be accepted.**

Quizzes / Worksheets: Frequent, preannounced or unannounced. Two lowest quizzes can be dropped.

Group work/Class activities: Most are not preannounced. Each worth 3-10 points.

Midterm Exams / Final Exam: There are two midterm exams, each worth 100 points. The comprehensive Final Exam will be given at the end of semester and is worth 100-150 points.

Project: Possibly one, using technology, worth 30-50 points.

Attendance: Mandatory and will be taken randomly. Always bring the textbook to class.

Makeup: Make-up quizzes or exams will not be given, unless a student can present written evidence that an absence was caused by serious illness, a death in the immediate family, religious observance, or participation in University activities at the request of University authorities. Students should have **prior approval** for a makeup quiz or exam.

Bonus points: Some “free points” could be given, without advance notice, to students for solving some extra “hard” problems in quizzes and exams, for group activities in class, or sometimes just for attending class.

Grading:

Homework	5%
Exams & Projects	55%
Quizzes & Worksheets	30%
Class Activities	5%
Attendance	5%
Total	100%

A: 90-100%; B: 80-89%; C: 70-79%; D: 60-69%; F: below 60%.

Shaded (+/-) grading is also utilized for finer evaluations. However, a significantly inconsistent score on the comprehensive final exam may limit a student’s final course grade.

Free tutoring: Free tutoring from the Math Department is available. See the schedule attached. The tutoring rooms are **ECC 134** and **ECC 127D**.

The only way to learn mathematics is to do mathematics. – Paul Halmos

You cannot have the success without the failures. – H. G. Hasler

Chance favors only those minds which are prepared. – Louis Pasteur

MATH 222

Course Learning Outcomes

(Department of Mathematics)

Program Learning Outcome	Elaboration/Examples	Assessment
Students will demonstrate mastery of a body of mathematical knowledge.	Students will read material and work graded exercises in Calculus II. Topic content of Calculus II covers integration techniques, improper integrals, approximate integration (with computer/software appropriately), volumes of solids, arc length, parametric equations, polar coordinates and curves (their area and arc length), conic sections, sequences, series, convergence tests, power series as functions, Taylor series	Homework Quizzes Examinations Special projects at the discretion of the instructor.
Students will reason mathematically.	Problem solving, from elementary problems to challenge problems forces students to absorb new ideas and reason in new ways. For example, 3-space is introduced with volumes. New uses of the limit are seen. "Time" becomes a parameter in parameterization, and a new coordinate system with polar coordinates is seen. Sequences and series add to a new understanding of the infinite, culminating with the Taylor series which gives a new understanding of function. Students are required to reason with these new systems of thought.	Homework Quizzes Examinations Special projects at the discretion of the instructor.
Students will apply mathematics to solve	Exercises in the text expose students to different methods	Homework

<p>problems using analytic, graphing, and numerical methods.</p>	<p>of solving, using charts, graphs, tables, equation manipulation, approximations, error estimates.</p>	<p>Quizzes Examinations Special projects at the discretion of the instructor.</p>
<p>Students will communicate in the language of mathematics both orally and in writing.</p>	<p>Students must read complex text material and handouts from the instructor, assimilate the material and be able to use it in problem solving and explanations of the theory. They are encouraged to ask questions, do board work at times, seek help from tutors and instructor, and graders require precision with explanation for homework.</p>	<p>Homework Quizzes Examinations Special projects at the discretion of the instructor.</p>
<p>Students will demonstrate an understanding of the breadth of mathematics and the connections between mathematics and other disciplines.</p>	<p>Students in reading the text, going to lectures, solving problems, working (at discretion of the instructor) with software or calculator, are exposed to the incredible depth of Calculus and also its value as an introduction to higher mathematics (differential equations, multivariable calculus). Problems offer applications to other disciplines.</p>	<p>Homework Quizzes Examinations Special projects at the discretion of the instructor.</p>
<p>Students will undertake individual, creative work.</p>	<p>Homework assignments, particularly when challenging, and extra projects create opportunities for individual and creative work. Problems that are open-ended, from the text or suggested by the instructor or other students, stimulate creativity. Class discussions also encourage creativity and self-assurance necessary for success in other fields.</p>	<p>Homework Quizzes Examinations Special projects at the discretion of the instructor.</p>