Math 0240 Calculus 3

Fall 2017, University of Pittsburgh

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Lectures: M.W.F. 11:00-11:50 am in G30 Benedum Hall.
Office Hours: W.F. 1:00-2:30pm in 404 Thackeray Hall or by appointment.

Prerequisite

Math 0230 or equivalent, with a grade of C or better.

Text

James Stewart, Essential Calculus, Early Transcendentals (Second Edition).
http://www.stewartcalculus.com/media/13_home.php

Homework and Quizzes

All graded homework will be done online, using the LON CAPA system (homework.math.pitt.edu). In addition, you will be provided with a list of practice problems to do. Although no homework will be collected and graded, you must do ALL of them by yourself before they are discussed in the recitation classes. This is the best way to prepare for quizzes and exams which are modeled on these problems.

The whole class is divided into 3 small groups for recitation classes on Tuesdays and Thursday. The three recitation instructors will help you go over the practice problems as well as review for quizzes and exams.

We will have **biweekly** quizzes on every other Thursday's recitation class which covers the material since the last quiz or midterm exam (see the schedule below). Quiz problems will sometimes be modeled on the practice problems. There is no make-up quiz.

Exams

We will have TWO in-class midterm exams on Tuesday 10/10 and Friday 11/10 (please mark your calendar). No make-up midterm exam will be given. However, in the case of a *well-documented* medical emergency, your scores on the missing midterm exam will be the prorated by your another midterm exam and final exam.

The Final Exam will be held on December 12th, 2:00-3:50 pm.

All exams are closed-book and closed-notes. No formula sheets or graphic calculators are allowed during the exams.

Grades

Your final letter grade will be determined according to the following weights:

Quiz and online homework	20%
Two Midterm Exams	50% (25% each)
Final Exam	30%

Note: According to the department policy, your final letter grade should not exceed your final exam grade by more than one letter grade.

Courseweb

I will put announcements, exams answers and other useful materials on the courseweb (log into my.pitt.edu, there is an access link on the right-hand-side).

For the general guideline for Calculus 3, see http://calculus.math.pitt.edu/syllabi/0240syllabus.html.

Tutoring

Walk in tutoring is available in the Calculus/Engineering Lab and in the Math Assistance Center (MAC) which is located in Room 215 of the O'Hara Student Center. Tutoring hours will be posted outside the lab and the MAC, as well as on the web at http://calculus.math.pitt.edu

Disability Resource Services

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union (412) 624-7890 as early as possible in the semester.

Advices

1. You are expected to browse the new material before each lecture to get a sense: which parts seem easy to you and which need more attention during the class.
2. You are not allowed to leave the class earlier unless you have a certified reason.
3. Please do each practice problem before the recitation class (solutions to the odd # problems are listed in the back of the textbook). Then you can bring your questions, concerns to the recitation class and get helped rather than sitting there copying the answers. Please make the most use of the recitation classes as well as office hours.
4. Make a solid progress in the course: Whenever you encounter difficulties, please visit my office hours as soon as possible. Do not wait until the exams are coming.

Schedule and Practice Problems

- **8/28 Section 10.2 Vectors:** #2, 5-30, 33-37
- **8/30 Section 10.3 The Dot Product:** #2-10, 14-39
- **9/1 Section 10.4 The Cross Product:** #1-9, 13, 17-20, 25-41
- **9/6 Section 10.5 Equations of Lines and Planes:** #1-43, 47-52
- **9/7 Quiz 1**
- **9/8 Section 10.6 Cylinders and Quadric Surfaces**: #3-8, 11-30
- **9/11 Section 10.7 Vector Functions and Space Curves**: #3-22, 33-52
- **9/13 Section 10.8 Arc Length and Curvature:** #1-4, 9-10, 13-21, 23-27, 37-40
- **9/15 Section 10.9 Motion in Space: Velocity and Acceleration:** #1-25
- **9/18 Section 11.1 Functions of several variables:** #1-11 odd, 13-35, 41-50
- **9/20 Section 11.2 Limits and continuity:** #3-28
- **9/21 Quiz 2**
- **9/22 Section 11.3 Partial derivatives:** #1-64
- **9/25 Section 11.4 Tangent planes and linearization:** #1-6, 11-34
- **9/27 Section 11.5 Chain rule:** #1-30

- **9/29 Section 11.6 Directional derivative and the gradient vector:** #1-36
- **10/2 Section 11.7 Maximum and minimum values:** #1-28
- **10/4 Section 11.8 Lagrange multipliers:** 1-19, 29-39 odd, 42-44
- **10/6 Review**
- **10/10 In-class Exam 1**
- **10/11 Section 12.1 Double integrals over rectangles:** 7-26, 29-35
- **10/13 Section 12.2 Double integrals over general regions:** 1-12, 15-32, 43-48
- **10/16 Section 12.3 Double integrals in polar coordinates:** 1-26
- **10/18 Section 12.4 Applications of double integrals:** 1-16
- **10/19 Quiz 3**
- **10/20 Section 12.5 Triple integrals:** 1-20, 23-42
- **10/23 Section 12.6 Triple integrals in cylindrical coordinates:** 1-25, 28-30
- **10/25 Section 12.7 Triple integrals in spherical coordinates:** 1-27, 37-39
- **10/27 Section 12.8 Change of variables in multiple integrals:** 1-10, 15-21, 23-26
- **10/30 Section 13.1 Vector fields:** 1-32
- **11/1 Section 13.2 Line integrals:** 1-22, 37-40, 43
- **11/2 Quiz 4**
- **11/3 Section 13.3 Fundamental Theorem of Line Integrals:** 1-22
- **11/6 Section 13.4 Green's Theorem:** 1-21
- **11/8 Review**
- **11/10 In-class Exam 2**
- **11/13 Section 13.5 Curl and divergence:** 1-30
- **11/15 Section 13.6 Parametric surfaces and their areas:** 1-4, 15-22, 29-44, 46
- **11/17 Section 13.7 Surface integrals:** 1-31
- **11/20 Section 13.8 Stokes' Theorem:** 1-17
- **11/27 Section 13.8 Stokes' Theorem (cont.)**
- **11/28 Quiz 5**
- **11/29 Section 13.9 Divergence Theorem:** 1-30
- **12/1 Section 13.9 Divergence Theorem (cont.)**
- **12/4, 12/6, 12/8 Reviews**
- **12/12 Final Exam 2:00-3:50pm**