# MATH 2300 - MULTIVARIABLE CALCULUS - VANDERBILT UNIVERSITY, FALL 2018

**Instructor**: Professor Jesse Peterson
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**Office**: SC 1414
**Office Hours**:
  Wednesdays 1:30 - 3:10pm
  Fridays 2:20 - 3:10pm

**Material**:
  The topics we will cover in this course include: Vectors, curves, and surfaces in space. Functions of several variables, partial derivatives, multiple integrals. Vector integral calculus, including line and surface integrals. Essentially, everything covered in chapters 12-16 of the book **Calculus** by James Stewart, eighth edition. ISBN: 9781285740621

**Website**:
  There is a website for the course which will contains a tentative schedule as well as information about homework, exams, etc. It is accessible from math.vanderbilt.edu/peters10/

**Exam dates (in-class)**:
  There will be three in-class exams during the semester. There is also a comprehensive two hour final exam; no alternate final exam will be given.

Midterm exams:
  **Wednesday, September 19th**: Covering material in sections 12.1-14.4.
  **Wednesday, October 17th**: Covering material in sections 14.5-15.3, and 15.5.
  **Wednesday, November 28th**: Covering material in sections 15.6-16.7.

Final exam (in-class, covering sections 12.1-15.3 and 15.5-16.9)
  **9:00-11:00am: Tuesday, December 11th**.

**Grades**:
  For the course grade, the following scale will be used: A:93-100, A-:90-92, B+:87-89, B:83-86, B-:80-82, C+:77-79, C:73-76, C-:70-72, D+:67-69, D:63-66, D-:60-62, F:0-59. The final grade will be based on the homework (25%), midterm exams (15% each), and final exam (30%). Individual exams may be curved when appropriate but the final grade will not be curved.

**Make-up policy**:
  There will be no make-up tests or homework assignments. The attendance and make-up policy will follow the guidelines set forth by the College of Arts and Sciences.

**Academic integrity**:
  You will all be held to the standards set forth in the Student Handbook.

**Math Department policy regarding adding and dropping a course**:
  The Open Enrollment Period ends on Wednesday, August 29th. This is the deadline for students to add a course or to make other changes in YES. Between August 30th and September 5th, any withdrawals or adjustments in level or in grading status must be completed using the add/drop form. If only the "DROP" section of the form is filled out, the instructor may sign the form. If a student wishes to make any change that involves filling in the ADD section of a drop/add form (whether or not it also involves filling in the DROP section), then the student must see the DUS (John Rafter) or the Assistant DUS (Jakayla Robbins) in person. Per Math Department policy, the only change to a math course that will be approved is a change to the level of the course (e.g. switching from Math 1301 to Math 1300 or vice versa).

**Important Dates**:
**August 29th**: Last day to unconditionally add a class (after this date students can switch math course levels, but not add a class).
**September 5th**: Last day to drop a class with no entry on the record. Also, last day to switch math course levels.
**October 18th-19th**: Fall break.
**October 26th**: Last day to withdraw from a course (with a grade of W).
**November 17th-25th**: Thanksgiving break.
**November 30th-December 6th**: Dead week.
**December 6th**: Classes end.

**Tutoring Services**:
**Calculus Tutored Study Halls**: https://www.vanderbilt.edu/tutoring/helpdesk/mathematics.php
  This is run by the Mathematics department and is available to all students taking calculus (including MATH 2300).

**Drop-in STEM Tutoring**: https://www.vanderbilt.edu/tutoring/helpdesk/engineering.php
  This is run by the Engineering department and is available to all students taking introductory STEM courses (including MATH 2300).

## Homework policy

  Homework must be turned in either at the beginning of class, or during regularly scheduled office hours. I will not accept homework put in my mailbox or slid under my office door. Assignments turned in after the beginning of class on their due date will be considered late.
  You are allowed, and encouraged even, to work in groups on the homework. You must, however, each turn in your own written solutions. You are also allowed to use other resources such as the solution manual, or the internet. Keep in mind, though, that the homework is designed to prepare you for the exams where you will not have these resources, so you should not rely too heavily on the help of others.

**Homework guidelines**:
  The homework you turn in should look neat and professional. The following guidelines must be followed. Otherwise, your homework may be returned ungraded and will be treated as late homework under the guidelines stated above.
  • It must be written on 8.5x11 inch white paper which is either lined or blank. If lined paper is used it should only be three hole punch with no "fringe" as a result of being torn out of a notebook.
  • It must be either printed in pencil or black ink, or typed using LaTeX. No blue ink.
  • It must be stapled.
  • The problems must be answered in the same order as they are presented, each problem being directly below the previous problem. Do not put problems side by side.
  • You homework must not looked crammed; you should leave a bit of space between problems and in the margins.
  • It must not have scratch work or scribbles on it.
  • Your solutions should clearly indicate your reasoning process; credit will not be given if you do not show your work.
  • The problems must be written on your homework directly before your solutions. You do not need to write the problems out verbatim, but it should be clear enough so that someone can understand what is being solved without having to refer to the book.

**Late homework**:
  It is your responsibility to have your homework turned in by the beginning of class on the day it is due. This is the case even if you are unable to attend the class yourself. I will accept late homework without penalty but only if it is turned in during regularly scheduled office hours no more than one week after its due date. I will not accept any late homework more than a week after it is due. If you turn in late homework you will also have to present on the blackboard a problem of my choosing.

**Grading the homework**:

For each assignment I will ask the grader to carefully grade 5 problems. While this means that most of the problems you submit will not be graded, the advantage is that by focusing on a relatively few number of problems the grader may better utilize their time in order to give you more meaningful feedback.

Due to the generous late homework policy, I will not ask the grader to grade an assignment until a week after it is due. This means that it may take up to two weeks from the due date to have the graded homework returned to you. Please keep this in mind. If it is less than two weeks from an exam, you may want to take photocopies of your completed assignments before you turn them in.

| Section | Problems | Due Date |
|---|---|---|
| 12.1 | 6, 8, 16, 24, 42, 45, 47 | Optional |
| 12.2 | 21, 26, 29, 42, 45, 48, 51 | Do not turn in |
| 12.3 | 28, 31, 47, 53, 56, 62 | August 31 |
| 12.4 | 13, 17, 20, 30, 44, 53 | |
| 12.5 | 9, 19, 23, 33, 53, 62, 73 | |
| 12.6 | 33, 37, 38, 45, 46, 47 | |
| 13.1 | 1, 6, 10, 18, 27, 31, 44, 50 | September 7 |
| 13.2 | 10, 15, 19, 21, 24, 31, 37, 42, 53, 56 | |
| 13.3 | 3, 5, 13, 17, 19, 31, 47 | September 14 |
| 13.4 | 8, 13, 19, 22, 25 | |
| 14.1 | 9, 15, 18, 25, 28, 45, 49, 67 | |
| 14.2 | 9, 13, 18, 25, 29, 37 | |
| 14.3 | 17, 26, 32, 44, 50, 61, 68, 97 | September 21 |
| 14.4 | 3, 5, 11, 14, 19, 21 | |
| 14.5 | 7, 10, 13, 21, 39, 40, 52 | September 28 |
| 14.6 | 4, 8, 11, 22, 32, 42, 54, 63 | |
| 14.7 | 8, 15, 16, 34, 36, 43, 48 | October 5 |
| 14.8 | 5, 8, 11, 20, 22, 32, 49 | |
| 15.1 | 11, 13, 16, 21, 29, 31, 38, 41, 49 | |
| 15.2 | 7, 9, 18, 19, 21, 26, 30, 37, 52, 65 | October 12 |
| 15.3 | 8, 11, 15, 17, 19, 25, 40, 41 | |
| 15.5 | 3, 6, 9, 12, 24 | Wednesday October 17 |
| 15.6 | 4, 9, 13, 19, 20, 33, 38, 53 | |
| 15.7 | 9, 18, 21, 22, 30 | October 26 |
| 15.8 | 7, 8, 9, 21, 23, 27, 28, 36, 48 | |
| 15.9 | 3, 7, 11, 13, 16, 17, 25, 26 | November 2 |
| 16.1 | 4, 15, 16, 17, 18, 23, 29, 30, 31, 32 | |
| 16.2 | 3, 11, 13, 19, 22, 33 | November 9 |
| 16.3 | 6, 7, 14, 18, 19, 35 | |
| 16.4 | 3, 5, 7, 9, 11, 13 | November 16 |
| 16.5 | 4, 7, 12, 13, 17, 19, 21, | |
| 16.6 | 3, 21, 23, 33, 39, 45, 49, 63 | Wednesday November 28 |
| 16.7 | 4, 5, 9, 11, 17, 23, 27 | |
| 16.8 | 2, 5, 7, 9, 18 | Optional Do not turn in |
| 16.9 | 5, 7, 9, 12 | |
| 12 Review Exercises | 1, 4, 5, 6, 9, 10, 16, 18, 20, 21, 23, 25, 27, 31, 34, 35, 37 | |
| 13 Review Exercises | 1, 2, 3, 5, 8, 9, 10, 12, 17, 19 | |
| 14 Review Exercises | 2, 4, 6, 10, 14, 15, 18, 25, 26, 28, 31, 35, 36, 42, 43, 45, 47, 52, 54, 55, 60, 62, 63 | |
| 15 Review Exercises | 3, 5, 7, 15, 18, 19, 22, 23, 25, 28, 29, 30, 31, 35, 37, 44, 45, 53, 55, 56 | |
| 16 Review Exercises | 3, 7, 9, 12, 14, 16, 18, 19, 21, 25, 27, 29, 32, 33, 34 | |

All problems refer to the book **Calculus** by James Stewart, eighth edition. ISBN: 9781285740621