Syllabus for Math 180 – Fall 2016

Instructors
Klaus Widmayer (Sections 1 and 3), Zhou Fang (Section 2)

Text
“Thomas’ Calculus” by Thomas, Weir and Hass; 13th edition

Topics and Learning Goals
We plan to cover most of Chapters 12-16:

- Vectors and the Geometry of Space: Three-Dimensional Coordinates and Vectors, Dot and Cross Product, Surfaces in Space
- Vector-Valued Functions and Motion in Space: Curves and Tangents, Integrals of Vector Functions, Arc Length, Curvature and Normal Vectors of a Curve
- Partial Derivatives: Functions of Several Variables, Limits, Partial Derivatives and Differentiation Rules, Extreme Values, Lagrange Multipliers, Taylor’s Formula
- Multiple Integrals: Iterated Integrals in Various Coordinates, Area
- Integration of Vector Fields: Line Integrals, Surfaces and Area, Stokes’ Theorem

Requirements and Grading
We will have weekly homeworks, quizzes in discussion section, a two-hour midterm and a three-hour final exam. Aids such as books, notes or calculators will not be allowed for the quizzes, midterm and final exam. The code of academic honesty applies.

The schedule of topics for each week will be posted online to allow you to prepare for class. In order to benefit the most, you should come to class having read the relevant chapters before they are covered in class. This includes going through examples in the sections to be discussed.

Please be aware that this course will proceed at a fast pace and that you cannot expect to be able to follow it without solid work, both during the class and discussion sections as well as on your own.

Homework  Homework problems will be mostly selected from the textbook. Your weekly homework is due at the beginning of the discussion section you attend. You are encouraged to discuss the homework problems with your fellow students, but you must write up the assignments on your own. Please write legibly (including your name), staple all pages together, form clear sentences and circle your answers whenever appropriate.

Quizzes  Over the course of the semester, four quizzes of 20 minutes each will be held in the discussion sections.

Midterm Exam  Before breaking for Thanksgiving we will have a two-hour midterm exam (the precise date will be specified later).

Final Exam  The final exam will take place on December 17, 2016. It will take three hours.
Grading  Your grade will be determined at the end of the term by weighting contributions from your work over the course of the semester in the following way:

- Homework (excluding your two lowest scores): 15%
- Quizzes: 15%
- Midterm Exam: 25%
- Final Exam: 45%

Absences  You should inform your instructor of any foreseeable conflict of schedule at least one week in advance. In the event of an inevitable absence from a quiz with legitimate reasons, a make-up quiz will be offered in the same week of the original quiz.

Accommodations  Please inform your instructor if you have a disability or other condition that might require accommodations or modification of any of these course procedures.

Course-Related Work Expectations

Over 14 weeks, students will spend 3 hours per week in class and 1 hour per week in discussion section (56 hours total). Homework and other out-of-class work is estimated at around 7 hours per week (154 hours total). In addition, we will hold four quizzes in recitation, for which a preparation time of one hour each is estimated. There will further be a 2-hour midterm exam and a 3-hour final exam, for which approximately 7 and 10 hours (respectively) of review are assumed (180 hours total).