Textbook Information

Math 207 GH – Calculus and Analytic Geometry I
Fall 2017

Lecture Notes, Worksheets

Most topics covered in the class will be presented via handouts. These will be available at the **class's web site**, as pdf files. All students must monitor the class's web site for handouts and announcements.

Textbook

The class's textbook policy is as follows. **Students must have a textbook but it does NOT have to be the official textbook designated for this course.** This policy is intended to lower textbook costs. Usually students can purchase a textbook for the course under $40. Students are welcome to use any previous edition at a much lower cost. Students also may rent or purchase e-versions of a calculus book.

The Mathematics Department selected Calculus 7E by Hughes-Hallett. Due to price considerations, the use of this book will not be mandatory in this class.

As this is an excellent text, students are encouraged to buy a previous edition of this textbook. Students also may use other calculus books. However, it is essential that students use a text that is labeled **early transcendentals**. (That is what the E stands for in 7E.) Other, excellent texts include any early transcendental version (any edition) of calculus textbooks written by:

Soo T. Tan	Jerrold E. Marsden
George B Thomas	James Stewart
Ron Larson	William Briggs

Open source textbooks are also available. Open source means free pdf download, in this case, here: **https://openstax.org/subjects/math**. Students are encouraged to download and use the open source calculus textbooks.

Online Homework

Homework will be assigned on MyOpenMath, an open source online platform. The use of MyOpenMath is completely free, and students can register at **https://www.myopenmath.com**. The use of MyOpenMath will be mandatory in the class.

Contents of Textbook

15. Optimization: Local and Global Extreme
15.1 Critical Points: Local Extreme and Saddle Points
15.2 Optimization
15.3 Constrained Optimization: Lagrange Multipliers

16. Integrating Functions of Several Variables
16.1 The Definite Integral of a Function of Two Variables
16.2 Iterated Integrals
16.3 Triple Integrals
16.4 Double Integrals in Polar Coordinates
16.5 Integrals in Cylindrical and Spherical Coordinates
16.6 Applications of Integration to Probability

17. Parameterization and Vector Fields
17.1 Parameterized Curves
17.2 Motion, Velocity, and Acceleration
17.3 Vector Fields
17.4 The Flow of a Vector Field

18. Line Integrals
18.1 The Idea of a Line Integral
18.2 Computing Line Integrals Over Parameterized Curves
18.3 Gradient Fields and Path-Independent Fields
18.4 Path-Dependent Vector Fields and Green's Theorem

19. Flux Integrals and Divergence
19.1 The Idea of a Flux Integral
19.2 Flux Integrals for Graphs, Cylinders, and Spheres
19.3 The Divergence of a Vector Fields
19.4 The Divergence Theorem

20. The Curl and Stokes' Theorem
20.1 The Curl of a Vector Fields
20.2 Stokes' Theorem
20.3 The Three Fundamental Theorems

21. Parameters, Coordinates, and Integrals
21.1 Coordinates and Parameterized Surfaces
21.2 Change of Coordinates in a Multiple Integral
21.3 Flux Integrals Over Parameterized Surfaces