Shanghai Jiao Tong University

MA080 Calculus I

Term: July 3 – August 3, 2017
Instructor: Guofu Yu
Home Institution: Shanghai Jiao Tong University
Email: gfyu@sjtu.edu.cn
Class Hours: Monday through Thursday, 120 minutes each day
Discussion session: 2 hours each week
Total Contact Hours: 66 contact hours (45 minutes each, 3000 minutes in total)
Credit: 4 units

Course Description

This course concerns with differential calculus, including applications and the underlying theory of limits for functions and sequences. Topics in differentiation and integration of single variables will be covered, including the Fundamental Theorem of Calculus.

Required Text

Thomas Calculus: Early Transcendentals (13th edition), Weir and Hass, Pearson.
http://www.coursesmart.com/thomas-calculus-early-transcendentals-thirteenth/georgeb-thomas-maurice-d-weir-joel-hass/dp/9780321884138

Grading Policy

Assignments and examinations will be graded according to the following grade scale:

Number grade	Letter grade	GPA
90-100	A	4.0
85-89	A-	3.7
80-84	B+	3.3
75-79	B	3.0
70-74	B-	2.7
67-69	C+	2.3
65-66	C	2.0
62-64	C-	1.7
60-61	D	1.0
≤59	F (Failure)	0

In this course, grading will be based on the following:

Quizzes 20%

Midterm Exam 40 %
Final Exam 40 %

Homework will be assigned after each lecture, and quiz problems will be based on homework problems. Test problems will be similar to homework problems or examples given in class.

Course Schedule

Week 1 (Chapters 1 and 2): functions and their graphs, inverse functions, rates of change and tangents to curves, and limits of functions.

Week 2 (Chapters 2 and 3): limits and continuity, derivatives of functions, trigonometric function.

Week 3 (Chapters 3): chain rule, implicit differentiation, derivatives of inverse functions, related rates, differentials.

Week 4 (Chapter 4): Extreme values of functions,
mean value theorem, curve sketching, L'Hopital's rule, Newton's method.

Week 5 (Chapter 5): Indefinite integrals, fundamental theorem of Calculus