

## MA512, Advanced Calculus II, Spring 2006

**Textbook:** Advanced Calculus, 3rd Ed. by Taylor and Mann.

**Instructor:** Professor K. Ito, Room 310, HA, x57140

This course will provide a more rigorous treatment of calculus. General theorems of partial differentiation; implicit function theorems; vector calculus in 3-space; line and surface integrals; classical integral theorems will be examined in more detail with attention to precision. You will learn the vector calculus which has many important applications in sciences and engineering in details and also find careful explanations of concepts and many examples. An important part of this course is to gain the training and experience on constructions of mathematical reasoning from explicit assumptions and definitions.

**Office Hours:** MWF 11:10-12:00 a.m., otherwise Appointment.

### **Grading:**

Homework: 20% Ten Assignments.

3 Tests 50%

Final Exam: 30% Comprehensive

### **Lectures:**

Chapters 4-7: Partial Differentiation

Chapters 8-9: Implicit Function Theorems

Chapters 10-12: Vector Calculus

Chapters 14-15: Line and Surface integrals

Chapters 13,15: Green and Stokes Theorems