

## MA401, Fall 2010

**Textbook:** Partial Differential Equations with Fourier Series and Boundary-value Problems, by N. Asmar

**Instructor:** Professor K. Ito, Room 3270, HA, x57140

**Homework:** Accumulated homework assignments for each week are due the following Thursday.

**3 Term Exams** Three Term Exams, to be announced.

**Final Exam:** Comprehensive, Dec. 14 (Tuesday)

**Grade:**  $3 \times 150$  points (for Term Exams), 200 points (Final Exam) and 100 points (Homework).

**Lectures:**

Introduction and Basic method of solution, 1.1–1.2

Orthogonality and Fourier Series, 6.1 and 2.1–2.5

P.D.E. in Rectangular Coordinates,

3.1-3.2 (Examples), 3.3 (Separation of Variable), 3.3–3.4 (Wave equation),  
3.5-3.6 (Heat equation)

3.7-3.9 (Higher dimensional equations and Laplace's equation)

Sturm-Liouville theory and Eigen-function expansion, 6.1–6.2

P.D.E. in Polar Coordinates, 4.1–4.6

Fourier Transform Method, 7.1–7.7

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