

Mathematical Physics
PHY4730/PHY6730 (3 CH)

Fall 2012 Syllabus

Professor: Dr. Lok C. Lew Yan Voon
Office Hours:
Class: MW

Prerequisites

undergraduate calculus (up to BVP), physics (CM,EM)

Course Objectives

- Reinforce traditional mathematics and physics courses
- Illustrate application of mathematical tools in physics
- Present different areas of physics

Course Material

- Textbook: Arfken

Tentative Schedule

Week 1 Vector Calculus
Week 2 Vector Calculus (contd.)
Week 3 Partial Differential Equations: Separation of variables
Week 4 Ordinary Differential Equations: Series Solution
Week 5 Series Solution (contd.)
Week 6 Special Functions
Week 7 Special Functions (contd.)
Week 8 Sturm-Liouville Theory
Week 9 Green's Functions
Week 10 Fourier Series
Week 11 Integral Transforms
Week 12 Integral Transforms (contd.)
Week 13 Calculus of Variation
Week 14 Calculus of Variation (contd.)

Evaluation

- Attendance (10%)
- Exams (2 in-class, 1 take-home, 60%)
- Homeworks - best 12 (30%); late HW not accepted.

Grades

- A: 86-100%, B: 71-85%, C: 60-70%, D: 50-59%, F: < 50%