

# Mathematical Physics

## PHY673 (3 CH)

Winter Quarter 2009 Syllabus

Professor: Dr. Lok C. Lew Yan Voon

Office Hours:

Class: M-W, 12:30-1:45PM, 242 Fawcett

### 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

- Recommended text: Arfken

### Tentative Schedule

Week 1 Review of algebra and vector calculus

Week 2 Complex variables

Week 3 Complex variables (contd.)

Week 4 Partial Differential Equations: Separation of variables

Week 5 Ordinary Differential Equations: Series solution. Exam 1

Week 6 Series solution (contd.)

Week 7 Special Functions

Week 8 Green's functions

Week 9 Fourier series

Week 10 Integral transforms

### Evaluation

- Attendance (10%): up to 4 excused absences will be granted; otherwise each absence will cost 2%. After 5 unexcused absences: F.
- Exams (2 in-class, 1 take-home, 60%)
- Homeworks - best 15 (30%); late HW not accepted.

### Grades

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