

Physics 274 Syllabus

- **Instructor:** Zackaria Chacko
Office: PSC3266 **Phone:**(301) 405 1774 **E-mail:**zchacko@umd.edu
- **Class meeting times:** Monday, Wednesday & Friday, 12:00-12:50PM
in Key Hall 1117
- **Class web page:**
<http://terpconnect.umd.edu/~zchacko/Fall16/physics274.html>
- **Grading Criteria:** 20% Homework, 40% Midterms, 40% Final
Homework will be typically assigned on a weekly basis.
- **Textbooks:**
Mathematical Methods in the Physical Sciences, by Mary L. Boas (**required**)
A Guided Tour of Mathematical Methods for the Physical Sciences, by
Roel Snieder (**recommended**)
- **Syllabus:**

Curvilinear Coordinates and Vector Analysis

Curvilinear orthogonal coordinates; cylindrical and spherical coordinate systems; gradients, divergences and curls in curvilinear coordinates and their geometrical interpretation, with examples from physical systems; Gauss's and Stoke's theorems.

Linear Algebra

Linear vector spaces; linear operators and their representation as matrices; matrix algebra; determinants and their application to the solution of linear inhomogeneous equations; inner products; eigenvalues and eigenfunctions with examples of applications to physical problems; infinite dimensional vector spaces.

Dirac Delta Functions

Properties of the delta function; delta function of a function; delta functions in more than one dimension.

- **Attendance:** Attendance in lectures is strongly encouraged, but will not count towards the course grade.
- **Office Hours:** Friday 3.00 PM - 4.00 PM or by appointment.
- **Teaching Assistant:** Simon Riquelme, sdriquel@umd.edu
- **Final Exam:** Monday, December 19, from 8.00 AM to 10.00 AM.
- **Course Related Policies** The university policies on matters related to courses may be found at <http://www.ugst.umd.edu/courserelatedpolicies.html>