

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 CSS 1113
- **Class web page:**
<http://terpconnect.umd.edu/~zchacko/Fall15/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**)
Vector Analysis, by Spiegel, Lipschutz and Spellman (**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.
- **Final Exam:** Friday, December 18, from 8.00 AM to 10.00 AM.
- **Academic Integrity**

The university has approved a code of academic integrity available on the web. The code prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, or forging signatures. The university senate requires that students include the following signed statement on each examination or assignment: I pledge on my honor that I have not given or received any unauthorized assistance on this examination (or assignment). Compliance with the code is administered by a student honor council, which strives to promote a community of trust on the College Park campus. Allegations of academic dishonesty may be reported directly to the honor council (301-314-9154) by any member of the campus community.