Instructor: Sergio E. Ulloa  
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Email: ulloa@ohio.edu

Class times: 9-10 am, M,Tu,Th,F  
Off. hours: 2:30–4 pm Tue or by appointment

Course Description (from the catalog):  
Mathematical methods, such as multivariate calculus, differential equations, and Fourier analysis, will be discussed and applied to a variety of physics problems. The emphasis in this course is on problem solving using these techniques, and on their unity across the discipline of physics.

Textbook:  

Other useful texts:  

Topics to be covered:  
We will cover material from the first eight chapters in the text and some more from chapter 11. The depth and detail of the different topics will vary significantly, depending also on how fast the class makes progress in the discussion of the material. The goal of the course is to develop a set of mathematical skills that will be useful in advanced graduate courses.

Grading:  
In addition to the typical midterm and final examinations, as well as homework assignments, the course grade will depend on performance on quizzes to be given approximately every week. The tentative schedule for quizzes is every Monday, and each is to cover the material seen throughout the previous week. Changes of date and/or topics covered will be announced in class as appropriate.

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<th>Weights for PHYS 416</th>
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Notice that for students in 516, the final grade will also include work on final projects that will be assigned after the first midterm, may require computational work, and a final written report.
**Homework:**
The homework sets will be given approximately weekly, with a due date commensurate with the length and difficulty level of the set. **Late homework will not be accepted,** unless you have a university valid excuse.
Partial credit will be given for incomplete solutions, as well as for solutions that provide no explanation of the reasoning involved. All intermediate steps and assumptions made should be clearly and fully explained. It is important that the solution be clearly read – a set of formulas only, even if correct, will not be considered a full solution.

**Exams:**
Exams will be on closed book, with no notes or books available.

Midterm (tentative): Monday, October 13, 9am
Final: Friday, November 21, 8am

**Academic misconduct:**
Let me remind you that academic misconduct is a Code A violation of the Ohio University Code of Student Conduct. If you are found to be involved in academic misconduct regarding this course, you will receive F on the pertinent work and possibly for the entire course and/or a referral to the Director of Judiciaries. Procedures for judicial actions will be invoked as described in the Student and Faculty Handbooks.
Collective discussions prior to writing your homework solutions are a good idea and I would even encourage them. However, each written report should be worked out individually. No discussion or sharing of information is allowed during exams or quizzes.

Homework Set #1. Due: Monday, 15 September, 9am.

In textbook, problem x, section y (i.e., x.y):

Problems
1.1, 1.13, 1.16,
2.1, 2.3, 2.5, 2.7, 2.9,
4.1, 4.6,
5.3, 5.5, 5.7, 5.11
6.4, 6.10, 6.11, 6.12, 6.18, 6.20, 6.22,
7.2, 7.4, 7.8,
9.1, 9.5, 9.9, 9.14