

Physics 2920
Mathematical Physics, Spring 2012

Instructor: Dr. David Murdock, Bruner 221, [372]-3044 (Office)
E-Mail: MURDOCK (That is, murdock@nttech.edu)

WWW page: <http://iweb.nttech.edu/murdock/ph2920/ph2920.html/>

Open office hours!

Meeting Time: MWF, 9:05am–10:00pm, Br 224.

Textbooks: “Required” are the Schaum’s Outline Series books on *Linear Algebra* (Lipschutz & Lipson (!), 4th ed), *Vector Analysis* (Spiegel, 2nd ed.) and *Complex Variables* (Spiegel, 2nd ed.). I wanted you to have these because they contain the basic material, they have *tons* of problems to solve and are extremely cheap (\$13 each from Amazon), making them some of the best applied-math book values to be had anywhere. Actually our linear algebra material sits somewhere between L & L and another Schaum book, *Matrix Operations* by Bronson, but I opted for the former as it has more to say on abstract vector spaces.

“Optional” for the course¹ is a more advanced and incredibly complete book on mathematical methods in physics, *Mathematical Methods for Physics and Engineering* by Riley, Hobson and Bence, 3rd ed. This is also a good value (about \$73 from Amazon for the paperback when I last checked) considering the amount of material in there. I believe that later on you won’t regret owning it.

Prerequisites: Phys 2110-2120. Everyone is expected to have access to a computer calculation and graphics system like Maple. Help will be provided in using such software.

Course requirements: Problem sets to be given out about every 1.5 weeks, making about 10 in all; some problems will include the use of software math packages. Three exams (including the Final).

Grading: 60% of grade based on the exams. 40% from the problems sets. For the sake of completeness, I will quote percentages for which I will *guarantee* the following grades:

A: 80%–100%, B: 65%–80%, C: 50%–65%, D: 30%–50%.

but I will adjust the cutoffs downward if I see fit!

Attendance: Not required but it will help you to show up! I will provide comments and material to supplement the text and help with the homework.

Course Material: Vector algebra; vector spaces and matrices (the rudiments of linear algebra); vector calculus; complex numbers.

The Point of All This: To give you some competence and familiarity with the math that is used in advanced physics; to give you the *mad ninja skillz* necessary to compete in today’s physics hood.

Students with a disability requiring accommodations should contact the Office of Disability Services (ODS). An Accommodation Request (AR) should be completed as soon as possible. The ODS is located in the Roaden University Center, Room 112; phone 372-6119.

¹In the usual sense, not the TTU Bookstore sense.