Prof. Patrick F. Dunn  
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Course web site: http://www.nd.edu/~pdunn/www.ame250/ame250.html  
Course Directory path: /afs/nd.edu/coursesp.00/

Required Text: Fundamentals of Measurements and Data Analysis, AME250 Class Notes by P.F. Dunn (available at the Copy Shop).


Course Content: This course introduces you to the fundamental techniques of measurements and data analysis. This material is presented in the class notes. The main topics that will be covered include (1) An Introduction to Experiments, (2) Measurement Systems, (3) Probability and Statistics, (4) Uncertainty Analysis, and (5) Signal Characterization and Analysis.

Course Grade: Your final course grade will be based upon your performance in all aspects of the course. These include:

- Exams (2 at 15% each) 30%
- Laboratory Exercises 35%
- Homework and Class Participation 10%
- Final Exam 25%
- 100%

Homework: There will be 11 required homework sets due on most Mondays. Each set will consist of approximately 5 problems. Solutions to the problems must be professionally done, stapled together and turned in at the beginning of class. Late and illegible problem solutions will not be graded. Each student's homework will be chosen randomly for grading twice during the semester. The total homework grade will be weighted 1/3 for each of the two random grades and 1/3 for the total number of problems worked.

Laboratory Exercises: There will be 5 laboratory exercises this semester. Three will be done outside of class at scheduled times, each taking 2 hours to complete. You are required to be there on time for all of your scheduled lab exercises. Another lab exercise will be done on your own time using Matlab on the UNIX system. The fifth exercise will be done during your own time using the lab facilities if necessary. Each student is required to hand in their own Technical Memos for 2 labs and their
own Results for 2 other labs. The fifth lab requires a team Technical Report. The Results will be graded numerically. Technical Memos and the Report will be graded on a 100-point basis (part for proper presentation and part for technical content). In addition, there is a late period policy for submission: 30% off for 0-24 hours late; 50% off thereafter until beginning of class on the following Friday. The Results, Technical Memos and the Technical Report are due at the beginning of the class on their due date. Any not turned in by the end of the one-week late period will result in a grade of F for the course.

**Exams:** There will be two one-hour exams given during the semester and a two-hour final exam at the end of the semester. The exams will consist of a closed-book multiple choice section and an open-book problem section. The first two exams will cover material presented up to the lecture just before the exam. The final exam will cover all course material but will be weighted slightly toward that material presented following the second exam. All exams will be structured to test whether or not the student has met specific topic objectives as listed on the course web site.

**Assistance:** We will be available throughout the semester to answer questions. The following graduate assistants assigned to this course: Mr. Jim Cicchiello, 122 Hessert Center, 631-4339, jcicchie@nd.edu, Mr. Abdelmaged Ibrahim, 003 Hessert Center, 631-7198, abraham@nd.edu, Mr. Shengjun Yin, 325 Cushing, 631-5688, syin@nd.edu, and Ms. Karinna Vernaza, B25 Fitzpatrick, 631-7230, kvernaza@nd.edu. Mr. Jason Miller, 303 Dillon Hall, 634-1770, jmiller3@nd.edu, an aerospace engineering undergraduate will also assist. DO NOT assume anyone of them will be available if you just stop by. Please call or email ahead to set up a time to see any of us. Also, you can email us any questions that you have.

**Course Policies:**

**Attendance:** You are expected to attend and participate every class. The lectures will supplement material in the class notes, often through examples and discussion. To be prepared, you should read the material related to lecture before class. Attendance will not be taken. In situations in which you cannot make lecture, it is your responsibility to get the class notes from a classmate. However, you must be present for all scheduled exams and labs.

**Honesty:** You are all expected to follow the Academic Honor Code of the University. Honesty in class is a moral issue that is impossible to strictly enforce. Copying (in part or whole) another’s problem solution, computer program or written work (plagiarism), and cheating on exams is considered dishonest and absolutely will not be tolerated. This implies that there should not be the exchange of solutions, etc., on homework, laboratory exercises and exams. Discussions of approaches to homework and laboratory exercise solutions can be held, but with the intent of teaching one another as opposed to allowing your friend to copy a solution because he did not have the chance do their work. It is dishonest to use the work of another student even with his consent if you are being graded on an individual basis. When you write only your name on an assignment, it means only you did the work. This includes the work of those students currently taking this class as well as those who took it previously and gave you their files. If you have any questions about my policies on this matter, it is your responsibility to ask me. Do not hesitate to do so!