AME 250
Fundamentals of Measurements and Data Analysis
Spring Semester 2002

Prof. Patrick F. Dunn
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Course web site: http://www.nd.edu/~pdunn/www.ame250/ame250.html
Course WebCT path: http://webct.nd.edu
Course file path via NDAccess "I" drive: /afs/nd.edu/coursesp.02/ame/ame250.02

Course Text: "Required-reading" chapters of *Fundamentals of Measurements and Data Analysis* by P.F. Dunn available at the Copy Shop.

Optional Text: A good reference book on MATLAB.

Course Content: This course introduces you to the fundamental techniques of measurements and data analysis. 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 this course. These include:

- Laboratory Exercise 1 Tech Memo 15%
- Laboratory Exercise 2 Tech Memo 15%
- Laboratory Exercise 3 20%
- Quizzes 30%
- Final Exam 20%

Total 100%

Homework: There will be no assigned homework. However, typical "quiz" problems will be made available periodically on WebCT that cover the assigned reading and class lecture material. These will allow you to practice for the on-line quizzes and the final exam.

Laboratory Exercises: There will be 3 laboratory exercises this semester. The first 2 will be done outside of regular class at scheduled lab times in Fitzpatrick B-14, each taking ~2 hours to complete. You are required to be there on time for these scheduled lab exercises. You will work in teams of two for the first 2 exercises. Each team will be required to turn in one technical memo for each of the two exercises. You will have two options for the third exercise. One option will consist of another laboratory exercise, technical memo and quiz, all done individually. The other option will involve an experimental project, technical report and oral presentation, all done in small teams. For the later option, the number of students will be limited and admission will be based on class performance and interest. Written documents will be graded on a 100-point basis (part for proper grammar & presentation and part for technical content). There is a late period policy for...
Submission of written documents: 30% off for 0-24 hours late; 50% off thereafter until beginning of class on the following Friday. Documents 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 and no make-up will be allowed.

**Quizzes and Final Exam:** There will be 6 on-line quizzes taken using WebCT during the first half of the semester. Each will be one-hour hour long. The lowest score will be dropped. Quizzes will be "open notes" and will cover material presented in class, in the required reading and in the laboratory exercises. A final exam will be given and cover all common course material.

**Assistance:** We will be available throughout the semester to answer questions. The following graduate assistants assigned to this course: Mr. Abdelmaged Ibrahim, 003 Hessert Center, 631-7198, aibrahim@nd.edu; Mr. Brett McMickell, B22 Fitzpatrick, 631-3424, mmcmicke@nd.edu; Mr. Eric Matlis, 115 Hessert Center, 631-4330, Eric.H.Matlis.1@nd.edu; Mr. Tom Szarek, 119 Hessert Center, 631-4336, Thomas.R.Szarek.2@nd.edu. DO NOT assume anyone of them will be available if you just stop by their office. 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. Most of the time, email is the easiest way to answer specific questions.

**Course Policies:**

**Attendance and Excuses:** You are expected to attend and participate every scheduled 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 labs and examinations. You will neither be excused nor granted any extension for an assignment unless you obtain an approved "Verification for Absence" by the University's Vice President for Residence Life. The University will mail a copy to me.

**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, quizzes 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. The specific rules for on-line quizzes will be explained to you in class before taking the first quiz. You will be required to sign a form pledging your honesty on taking the on-line quizzes. If you have any questions about my policies, it is your responsibility to ask me. Do not hesitate to do so!