Syllabus for ME3511
Measurement Systems Laboratory
Fall, 2006

Course Information

Instructor:	Dr. Maurizio Porfiri Email: mporfiri@poly.edu Office: RH504A Phone: 718-260-3681 Office Hours: Thursday 12:30-1:30	
Lectures:	Thursday 9:00-11:50	RH514B
Webpage:	My Poly	

Course Goals

The student who completes this course should be able to use computer-based data acquisition hardware and software to acquire, condition, and analyze experimental data.

Required Text

Laboratory Experiment Manual, Marcio S. de Queiroz, Polytechnic University, 1999.

Required Material

Every laboratory group should be responsible of bringing floppy diskettes for storing their data (USB storage devices are not supported by current desktops).

Laboratory Rules

Food and drinks are not allowed in the room. Students should help keeping the room clean and well organized. Students cannot touch other experiments. Chatting, e-mail checking, browsing web, and any other form of distraction are forbidden.

Reports

A laboratory report should consist of the following sections:

- **Cover page**. The cover page should indicate the following items: Class title, Laboratory number and title Date, Group number, Members' ID number, Members' name
- **Table of contents**. The TOC should show the page numbers.
- **Abstract**. The abstract is a brief summary (less than 200 words) of the entire report. It should be comprised of : a brief introduction to the subject, a concise statement of the problem, highlights of the results, major conclusions.

- **Introduction**. In the introduction the students are required to clearly identify the subject of their report. It should not be a reproduction of the textbook/laboratory manual.
- **Background**. The background should present the fundamental theoretical/conceptual tools needed for the experiment along with a comprehensive discussion of the equipment and instruments used.
- **Equipment list**. This should be a mere list of the used equipment.
- **Laboratory procedure**. This section should report the laboratory procedure. The laboratory manual can be used as a source, but students are required to express the concepts in their words describing the procedure they actually followed in the laboratory.
- **Data and analysis**. In this section, students are required to report data taken acquired during the experiment with the proper units. The analysis generally might include: graphs, calculations, and observations.
- **Conclusions**. In the conclusions, students should clarify what they learnt on the field and comment on their data and analysis.
- **References**. Acceptable format for the references is: Author, Book title with edition, Publisher, Publishing area, Publishing year.

Everything in a laboratory report should be typewritten. Handwritten parts will not be graded.

Exams

There will be a set of quizzes. These will be administered in class and will test the student's comprehension and ability to apply material both learned in class and assigned for reading. All quizzes are in-class, closed book, closed notes. During quizzes, before beginning to solve assigned problems, students should briefly restate the problem and list the data given. Also, students should list the important concepts and formulae used to arrive at the final solution along with detailed work. Every page of every quiz submission should have the student full name and section number. Illegible work and loose sheets will not be graded. Students must complete all quizzes on their own. If a student cannot attend a quiz due to a medical condition, certified by a doctor, he/she must notify the instructor in advance. In such a case, no makeup quiz will be offered. Instead, the weight of the missed quiz will be added to the following quiz (if there is one remaining). Unexcused absence from an exam/quiz will result in a grade of 0 for that quiz.

Grading

This is a 1 credit course.

Policy

Laboratory attendance:	20%
Laboratory report:	65%
Quizzes:	15%

The attendance grade of students that join the class late will be half.

Letter Grade Policy

A: 95+, A-: 90+, B+: 87+, B: 83+, B-: 80+, C+: 77+, C: 73+, C-: 70+, D+: 65+, D: 60+, F: <60.

Tentative Laboratory Schedule

During the first laboratory, students will be divided into two groups (A and B). Students are responsible for reading the listed sections before each lecture and quizzes will test their understanding.

Lecture	Topic of the day
Laboratory 0 9/7/06 (R)	Welcome and motivation. (All students must attend)
Laboratory 1A 9/14/06 (R)	Basic Electric Components/Measurements and Traditional Instruments
Laboratory 1B 9/21/06 (R)	Basic Electric Components/Measurements and Traditional Instruments
Laboratory 2A 9/28/06 (R)	Temperature Measurements
Laboratory 2B 10/5/06 (R)	Temperature Measurements
Laboratory 3A 10/12/06 (R)	Modern Data Acquisition and First-Order Systems
Laboratory 3B 10/19/06 (R)	Modern Data Acquisition and First-Order Systems
Laboratory 4A 10/26/06 (R)	Operational Amplifier Circuits
Laboratory 4B 11/2/06 (R)	Operational Amplifier Circuits
Laboratory 5A 11/9/06 (R)	Position and Velocity Measurements
Laboratory 5B 11/16/06 (R)	Position and Velocity Measurements
Laboratory 6A 11/30/06 (R)	Acceleration Measurements
Laboratory 6B 12/7/06 (R)	Acceleration Measurements

ABET a-k criteria compliance

	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*	*k*
ME3513	✓	✓	✓	✓	✓	✓	✓		✓	✓

(a) an ability to apply knowledge of mathematics, science, and engineering
(b) an ability to design and conduct experiments, as well as to analyze and interpret data
(c) an ability to design a system, component, or process to meet desired needs
(d) an ability to function on multi-disciplinary teams
(e) an ability to identify, formulate, and solve engineering problems
(f) an understanding of professional and ethical responsibility
(g) an ability to communicate effectively
(h) the broad education necessary to understand the impact of engineering solutions in a global and societal context

(i) a recognition of the need for, and an ability to engage in life-long learning
(j) a knowledge of contemporary issues
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.