

MAE 2381 Section 001  
Spring 2009  
Monday, Wednesday  
11:00 a.m. – 11:50 p.m.  
WH 221

- 1. Instructor:** Frank K. Lu  
**2. Office Location:** 214B WH  
**3. Office Hours:** Open door policy or by appointment (via email)  
**4. Phone:** 2-2083  
**5. Fax:** 2-5010  
**6. Mailbox:** 19018  
**7. Email:** franklu@uta.edu  
**8. Instructor WWW Site:** www-woolf.uta.edu  
login: 2381lu, password: 86aering78
- 9. Link to Additional Course Info:**  
**10. Course Prerequisites:** MATH 2425

**11. Required Readings/Materials:**

R.S. Figliola and D.E. Beasley -- Theory and Design for Mechanical Measurements, 4th ed., Wiley

Course notes -- posted on course website

Lab manual -- posted on course website

**12. Course Description:**

Introduction to data analysis, incorporating statistics and probability, design and planning of engineering experiments for error prediction and control. Measurement and instrumentation, basic instruments, their calibration and use.

**13. Course Learning Goals/Objectives:**

\*To provide a background in engineering measurements and measurement system performance

\*To convey the principles and practice for the design of measurement systems and measurement test plans, including the role of statistics and uncertainty analyses in design

\*To introduce data analysis and reduction

**14. Attendance and Drop Policy:**

4 absences = 1 grade reduction

9 absences = F

Attendance is mandatory for all labs. Any missed labs must be made up **immediately**

**15. Tentative Lecture/Topic Schedule (course content):**

Basic concepts of measurement methods -- hardware and software

Report writing and presentations

Experimental planning

Ethics  
Dynamic characteristics of signals  
Measurement system behavior  
Uncertainty analysis  
Probability and statistics

### Specific Course Requirements with descriptions

**1. Quizzes** (number and type):

none

**2. Examinations** (number and type):

One midterm (coverage – first half of semester)

One final (coverage – second half of semester)

Both are multiple choice

**3. Other Graded Assignments (Homework / Projects / Labs / Research Papers):**

**4 HW assignments 10%**

**4 projects 30%**

**9 labs 30%**

**Midterm 15%**

**Finals 15%**

**4. Missed Exams, Quizzes and Makeup Work:**

- Missed labs and exams must be made up immediately and subjected to tardiness policy – 10% for a one week delay and then a grade of 0
- No missed homework or projects will be accepted

**Key Assignments – This course specifically assesses your ability to understand how hardware and software are used in data acquisition, and data processing using software tools, amongst other abilities. Therefore, certain related assignments in this course must be passed in order to pass the course. During the semester, these assignments will be designated as key assignments. In order to pass this class you must pass all key assignments. If any key assignment that is not passed by the end of the course, you will not pass the class even if you score perfectly on all exams and other assignments. Key assignments will be specifically announced. Tardy key assignments will be accepted with penalties as per other assignments, namely, -10% for one week and then a grade of 0. Late key assignments will not be accepted during examination week.**

**5. Grading Format Weighting / Point Value of Assignments and Examinations:**

TBD

**6. Other Information:**

Students will perform labs in a group of 2 or 3. Lab sections in 319 WH.