



**AE276 Jan. 1:2**

## **Experimental Techniques**

### **Instructor**

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### **Teaching Assistant**

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### **Department: Aerospace**

Course Time: Tuesday, Thursday 2pm -5pm, Wednesday 3pm -4pm

Lecture venue: AE105

Detailed Course Page: -

### **Announcements**

The first lecture will be held on January 11, 2018 at 3:00 pm in AE105

### **Brief description of the course**

This is a core course which introduces to the MTech students the technique of carrying out laboratory experiments. It is a 1:2 credit course with one lecture and two laboratory sessions per week. In the lectures the students will be introduced to the basics of experimentation involving the design of an experiment, various components in an experimental setup, error analysis, data acquisition and analysis etc. The lab sessions will involve a demonstration following by the actual conducting of the experiment by the students. We plan to include four to five different experiments.

### **Prerequisites**

None

### **Syllabus**

Basic Concepts of measurement, Design of Experiments, Error Analysis, Measurement Techniques, Data acquisition, Data processing tools,

Experiments in aerodynamics, structural mechanics, propulsion and control,

Demonstrations in various experimental labs

## **Course outcomes**

The students are expected to learn the art and science of carrying out experimental research. At the end of the course a student should be able to design and carry out an experiment on his/her own. This is an important skill which anybody wanting to do experimental research is expected to possess.

## **Grading policy**

40% Mid-sem test

60% Evaluation based on the performance in conducting experiments

## **Assignments**

This course does not involve any assignment

## **Resources**

Mechanical measurements by Beckwith, Marangoni and Lienhard, Pearson Publications.

Measurement Systems Application and Design by E. O. Doebelin, McGraw Hill.