

MECH3830 – Laboratory

Spring 2022/23

Syllabus of the lectures.

1. Course introduction
2. Basic concepts and terms
3. Design of experiments
4. Data acquisition and analysis
5. Data analysis with Matlab
6. Measurement tools
7. Vibration
8. A review of material mechanics, fluid mechanics, and heat and mass transfers

Lab content.

1. Data acquisition and data analysis
2. Free and forced vibration measurements
3. Strain measurement and stress concentration
4. Flow through a Venturi meter
5. Convective heat transfer
6. Refrigeration and air conditioning
7. Boundary layer
8. Measurement of fracture toughness

Grading policy.

- Lab reports 38%
- Lab performance 32%
- Homework 15%
- Midterm exam 25%