

Course Syllabus – BENG 355L (F17)

BENG355L is offered in three sections per week --
Monday 1pm-5pm, Friday 9am-1pm, and Friday 1-5pm.

This is the first semester of a full year lab course designed to give an introduction to the experimental techniques that cover a wide range of topics in Biomedical Engineering, including:

- biosignals: basics of signal processing, ECG, nerve & muscle excitation
- biotransport: dialysis, respiratory system
- biomechanics: bone mechanics
- biomedical imaging: ionizing radiation, gamma camera, nuclear magnetic resonance, ultrasound, image processing

to give hands-on experience with engineering tools used to study quantitative life sciences problems. Laboratories are designed to give familiarity with instrumentation and procedures for bioengineering research, including data acquisition, analysis and interpretation. This course is intended for junior biomedical engineering students.

Instructors

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Teaching Assistants

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Reading

Handouts and web page reading will be assigned. Preparatory materials and laboratory procedures are available on the the BENG355L Class Webpage at Canvas. **Please read these materials in preparation for lab.**

Labs and Reports

Experiments will be conducted in groups. Note, many of these labs involve physiologic measurements and will not always give clean "textbook" results. It is valuable to process your data as you go in order to verify that you are making your measurements properly.

Lab reports will be written separately. Grading for the course will be based primarily on lab reports but also on lab performance. Lab reports are due one week after the second week of each lab. Please use the lab report short form, which requires you to answer a few questions related to either background knowledge or interpretation of experimental observation, supply some key results and present quantitative data analysis. Late reports will be penalized.

Grading Summary:

[Final Exam](#)

[Lab 1 Reports](#)

[Lab 2 Report](#)

[Lab 3 \(Neuromuscular\) Report](#)

[Lab 4 \(Respiratory\) Report](#)

[Lab 5 \(Bone Mechanics\) Report](#)