

UTSW BME Course Offerings
Fall 2015

| Course Director | BME Course Number and Title | Building & Room Number | Monday | Tuesday | Wednesday | Thursday | Friday |
|-------------------|--|------------------------|---------------|-----------------|--------------|-----------------|---------------|
| Mason, Ralph | BME 5101 BME Seminar* | K2.610 | | | | | 12:00p-1:00pm |
| Chen, Christopher | BME 5312 Biomechanics in Human Disease | K2.610 | 1:00pm-4:00pm | | | | |
| Merritt, Matthew | BME 5371 Introduction of NMR Spectroscopy | NE2M.116 | 10am-11:15am | | 10am-11:15am | | |
| Zhao, Dawen | BME 5372 Introduction to Biomedical and Molecular Imaging | NE2M.116 | | 10:30am-11:45am | | 10:30am-11:45am | |

UTSW Course Offerings for Fall 2015

BME 5101 – BME Seminar

This course is open for enrollment for students who are doing their research at UTSW. Students are required to enroll in BME Seminar and BME WIPS (Works in Progress, which is offered in the Spring Term). This course requires all enrolled students to present their Works in Progress at some point in the academic year on the presentation date that is assigned to them. One part of the course is listening to fellow students present their Works in Progress while the other part is attending seminars presented by guests from the university and beyond. Students who do not want to present are more than welcome to attend the seminars and WIPS, but will not get credit for the course.

BME 5312 – Biomechanics in Human Disease

The objective is to provide bioengineering students with a quantitative understanding of the biomechanical properties of hard and soft human tissues in their physiological and pathological aspects, and of methods to measure and analyze these properties. The fundamental principles of solid mechanics are introduced and applied to selected human tissues. Normal tissue biomechanical characteristics are presented and contrasted with changes due to pathological conditions. Current corrective treatments are described by guest clinicians. Students are expected to provide critical reviews on current challenges and novel developments in selected topics.

BME 5371 – Intro to Nuclear Magnetic Resonance

Introduction to NMR is intended to provide a fundamental understanding of magnetic resonance and the associated phenomena of relaxation and coherence excitation. Using both a vector model and product operators, a general method for describing the current state of the art magnetic resonance experiments is developed.

BME 5372 – Molecular Imaging

The purpose of the course is to provide students with basic understanding of the widely applied biomedical imaging methods including X-ray, CT, Ultrasound, Magnetic Resonance Imaging and Nuclear imaging. With the ultimate goal of biomedical imaging to enable the visualization of cellular and molecular events in living organisms, the course will introduce current concepts and the cutting-edge techniques of Molecular Imaging.