SPRING 2015
Biological Applications of Nanomaterials and Nanostructures [14:635:410]

BME 116
Tuesdays & Thursdays 3:20-4:40 PM

Office Hours
Wednesdays 3-5 PM, CCR 216

Instructor: Dr. Laura Fabris lfabris@rci.rutgers.edu (Tel) 848.445.5606

Description: This course is for advanced undergraduate students with a working knowledge of materials and biological systems. The materials or substrates discussed will typically consist of ceramics, polymers, and metals whereas the biological systems may consist of cells, genes, and proteins. Methods and mechanisms to engineer interfaces on the nano- and micro-scale will be focusing on two avenues: i) preparing substrates with nano- and/or micro-scale features (fabrication or "top-down" approach); and ii) creating nano- and/or micro-scale substrates (synthesis or "bottom-up" approach). The underlying rationale of this course is to provide a sound understanding of the key principles to design materials-based biointerfaces. This course integrates biointerfaces across size scales, from nano- to micro-scales. Each lecture will encompass advantages and limitations of techniques to engineer nano- and micro-features and substrates.

Course Projects: Undergraduate students will take two written exams, one following each course module. If you note a grading discrepancy on your exam, you must submit your concerns in writing along with your exam to be regarded within one week of receiving your corrected/graded exam. Exams will be made available by the instructor but the originals will not be given back to the students. Students interested in looking at their corrected exams can meet the instructor during office hours. Alternatively they can make an appointment with the instructor. In addition, FOUR quizzes will be given throughout the semester and will be cumulatively worth 20% of the grade.

Homework: Homework will be assigned on a biweekly basis. It can be turned in either as hard copy or via Sakai. Homework assignments will be worth 10% of the grade.

Grading: Grades will be based on the following:

Midterm	30 pts
Quizzes	20 pts
Final	30 pts
Homework	10 pts
Attendance	10 pts

Text: No textbook is required. Readings will be taken from current scientific literature and posted online. The instructor will suggest books on a case-by-case basis.

Access to secure class website is necessary:
https://sakai.rutgers.edu

Exam: Final exam has been scheduled for May 8th at 12 PM. If you predict conflict please notify the instructor with significant advance so that accommodations can be made. If a student cannot attend the final exam for unexpected sickness, the instructor should be immediately notified to avoid failing the class.