

SPRING 2013 COURSE ANNOUNCEMENT

Bioengr 188: Machine learning & data-driven modeling in bioengineering

Course ID#: XXX-XXX-XXX (Dis 1A)

(Course counts as elective towards degree requirements)  
  
Prerequisite: Prior programming experience

Lecture

Days: Tuesdays & Thursdays

Time: 2:00 – 3:50pm

Location: XXXX Boelter Hall

Discussion/Laboratory  
Dis 1A: Fridays  
Time: 2:00pm – 3:50pm

Location: XXXX Boelter Hall

Instructor: Prof. Aaron Meyer

**Course Description:** Manipulating biological systems requires techniques to interpret complex measurements. This project-based class will introduce techniques for inferring biological meaning from experimental measurements using computational and analytical techniques. The objectives of this course are (1) to give students a working knowledge of techniques for rigorously analyzing complex data sources, (2) to illustrate the frontier and open challenges in computational systems biology and bioengineering, and (3) to ensure familiarity with the necessary tools to effectively apply computation as part of an individual or group research effort. Lectures will introduce foundational applied machine learning and statistics techniques. Laboratory session will involve hands-on implementations from recent literature. Homework will be primarily project-based using recent literature-derived applications. There will be a midterm exam and final design project. The final projects will involve novel analysis of data derived from the literature using techniques from the course. Instructors will guide focus and development of the project.

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