Next Generation Sequencing (NGS) for Engineers

COURSE TOPICS
• Genomic Landscape circa 2012
• Biological Seq Analysis I – Maxam Gilbert, Sanger, clone-by-clone, cycle, tagged, …
• Biological Seq Analysis II – Genome Assembly
• Mining Data from Genome Browsers
• NGS Technologies – SMRT, PCR, 454 pyro, MPSS, Polony, nanopore, Solexa, SOLiD, RNAP, Ion Semiconductor, VisiGen, …
• NGS on the horizon
• Large Scale Expression Analysis
• Application Areas + Exercises using real NGS Data

WHO SHOULD ENROLL?
Anyone who wants to learn about current NGS technology, application areas, how it works, challenges, NGS data analysis methods, and practices. It is also a required course for MS Bioinformatics majors.

REGISTRATION DETAILS
Course Number: ENGR 230 (Section 01)
Dates: 8/23/2012 – 12/18/2012
Day/Time: Thursdays, 6PM – 8:45PM
Room: TBA

HOW TO ENROLL
Current SJSU Students – Log in to your MySJSU account to search for the course number and section printed above.

Others – Go to the SJSU Open University web page (http://ou.sjsu.edu) and click on the link: How to Register for an On-Site Class.

NOTE: Open Univ. Fall 2012 courses will be visible at the above URL no later than early August 2012.

PREREQUISITES
• Molecular Cell Biology or equivalent
• Org/Bio-Chemistry or equivalent
• Intro Statistics or equivalent
• Basic Computer Programming Skills
• Instructor Consent

PROPOSED TEXTBOOK
Next-Generation Genome Sequencing: Towards Personalized Medicine
Ed. Michael Janitz
ISBN-10: 3527320903