First half: 01-15-14 - 03-07-14
Second half: 03-17-14 - 04-30-14

BMB 509  Structural and Mechanistic Biochemistry– Ferguson *(required course for BMB students)*
Tu/Th, 10:30 – 12:00 noon, 253 BRB II/III
Prerequisites: BMB 508 and BIOM 600, or permission of instructor.
After some introductory material on macromolecules, lectures will focus on the key biochemical 'task areas' of living cells. The course progresses from primarily molecular level events such as storage & translation of genetic information, creation, control & removal of proteins etc. to higher organization levels such as metabolic pathways, signaling pathways, regulation and homeostasis. The presentation for each topic will be 'vertically integrated'. Each section will cover structure details of the relevant molecules, appropriate binding/catalysis events, regulatory aspects, and how they fit into the relevant pathway(s) and cell function.

BMB 626  Mass Spectrometry and Proteomics – Speicher
M/W, 9 – 10:30 a.m., 214-4 Wistar Institute (second half of semester; ½ credit)
This course will provide a detailed introduction to proteomics and mass spectrometry. The role of mass spectrometry in both characterizing proteins for traditional protein structure–function studies and identification of proteins in proteome studies will be emphasized. Targeted and global proteomes, quantitative protein profiling and compositional proteomics, and applications of proteome studies will be discussed. Intended for first and second year graduate students and others with an interest in proteomics or mass spectrometry.

BMB 619  Protein Folding - Axelsen & Englander
Tu/F, 12:30 – 2 p.m., 1001 Stellar-Chance Labs(second half of semester; 1/2 credit)
Introduction to the folding of mainly soluble proteins but also membrane proteins. Critical readings in the current literature and important earlier literature. Class discussion of papers from the literature with didactic lectures as required. Exposure to principles and use of equilibrium, kinetics, thermodynamics and the range of biophysical technologies as they occur in the scientific literature.

BMB 627  Computer Programming for Biochemists and Biophysicists – Sharp & Van Duyne
Prerequisites: Permission of instructors for non-BMB students
M/W, 10:00 – 11:30 a.m., 1001 Stellar-Chance (first half of semester, 1/2 credit)
An introductory course on programming and algorithms for scientists with an emphasis on applications to biophysics. Students will learn to write, debug, and execute basic programs through lectures, in-class workshops, and programming projects outside of class.

BMB 628  Principles of Scientific Instruments - Liebman *(COURSE CANCELLED)*
Proper use of the tools of one's trade is essential to quality assurance. General confidence in the infallibility of scientific instruments can be the cause of serious misapplication of research effort. This course teaches how to think about and use all SI's intelligently. It reviews first principles of instrumental detection, selection, operation, calibration, truth-testing, trouble shooting and data
Error appraisal and avoidance are analyzed using common laboratory examples. Anyone who cares is welcome. And we should all care. Emphasis sculpted to student needs.

**BMB 650**  **Current Biochemical Topics – Black & Shorter** *(can be taken twice; one time only counts for elective credit)*

(CAMB702)  
Spring, every year  
W, 12:15 – 1:30 p.m. (255 Anat-Chem; Th, 12 – 1:00 p.m. (Austrian Aud., CRB), and Th, 1:00 – 2:00 p.m. (JF Library, 248 Anat-Chem)

This is a discussion-based class in which students study, read, and present the published work of the invited Raiziss Rounds seminar speakers. The goal of the class is to develop the students’ ability to understand the rationale behind the experiments, critically analyze the work, communicate their thoughts to others, and to engage in focused scientific discourse. The Monday classes will run in a journal club format with students giving presentations of the papers for that week’s speaker. Thursday will be the noon seminar by the invited speaker, followed by lunch with the speaker.

**BMB 700**  **Selected Topics in Chemistry – Petersson**

(CHEM700)  
Tu/Th, 9 – 10:30 a.m., 119 Chemistry Bldg.  
(PHRM630) **Prerequisites:** a strong background in undergraduate chemistry is required and at least one semester of biological chemistry is very desirable.

The course will focus on current topics in chemical biology, particularly experiments in which 1) chemical synthesis enables one to probe or control biological systems in novel ways or 2) manipulation of biological systems facilitates novel chemical syntheses. As the goal of the course is to familiarize students with innovative recent experimental approaches and to stimulate them to conceive of their own new methodology, students will be responsible for delivering presentations on topics selected from the literature and generating several novel research proposal ideas, one of which will be elaborated into a full proposal. The prepared seminar will allow students to explore topics not covered in Professor Petersson's lectures or to research one of those topics in more depth. The proposal will be evaluated for creativity, feasibility and impact.

**BMB 705**  **Candidacy Exam Preparation Course** – Lynch, Marmorstein and Nelson *(required course for second year BMB students)*  
First class: Monday, January 13, 2014  
M, 1:30 – 3:30 p.m., F, 2- 4:00 p.m., 104 Anat-Chem *(01-13-14 03-07-14; ½ credit)*

This course is designed for second year BMB students to prepare them for the Candidacy Exam, which must be completed in the spring semester of the second year.

**BMB 699**  **Laboratory Rotation - Kohli** *(3 rotations are required of BMB students)*

Supervised mini-projects for graduate students in BMB, seminar presentation required. Course offered fall, spring and summer semesters.

**BMB 799**  **Independent Study (YRS 1-2)**

**BMB 999**  **Independent Study (YRS 3 – 5)**