MUSC College of Graduate Studies
Summer Graduate Course
July 20-Aug 14, 2009
Room EL102, 9:30-11:30 am

Course Director: Besim Ogretmen, Ph.D.

Unit 1. Medical Chemistry

Unit Leader: Craig Beeson, Ph.D.
beesonc@musc.edu, QF309C, 876-5091

Teaching Assistant: Rene' Eslick

Date	Day	Time	Topic	TA/Instructor
July 20	M	9:30-11:30	Covalent bonding and molecular Shape Resonance	Eslick
July 21	T	9:30-11:30	Alkanes/Cycloalkanes Alkenes	Eslick
July 22	W	9:30-11:30	Aromatics Acid/base reactions	Eslick
July 23	Th	9:30-11:30	Nucleophilic substitutions Introduction to mechanisms	Eslick
July 24	F	9:30-11:30	Discussions Problem Solving (Homework assignments)	Eslick

Study Aides available on the web:
http://members.aol.com/profchm/acid_str.html
http://www.chemguide.co.uk/basicorg/bondmenu.html#top
http://www.chemguide.co.uk/basicorg/isomermenu.html#top
http://www.chemguide.co.uk/basicorg/acidmenu.html#top
http://wb.chem.lsu.edu/htdocs/people/sfwatkins/MERLOT/drawlewis/dls.html
http://www.stolaf.edu/depts/chemistry/courses/toolkits/125/js/lewis/
http://web.chem.ucla.edu/~harding/tutorials/resonance/draw_res_str.html
http://www.usm.maine.edu/~newton/Chy251_253/Lectures/Polarity/PolarityFS.html
http://courses.chem.psu.edu/chem38/mol-gallery/hybridization/hybrids.html
http://www.yk.psu.edu/~jhb3/cotw08.htm

A really great tutorial site:
http://www.ochem.com/

Unit 2. Nucleic Acids

Unit Leader: Besim Ogretmen, Ph.D.
ogretmen@musc.edu, BSB 518E, 792-0940

Date	Day	Time	Topic	Instructor
July 27	M	9:30-10:30	DNA, RNA and the Flow of Genetic Information	Cowart
July 27	M	10:30-11:30	Basic Tools of Gene Exploration	Cowart
July 28	T	9:30-11:30	DNA Replication, Recombination and Repair	Cowart
July 29	W	9:30-11:30	RNA Synthesis and Splicing	Ogretmen
July 30	Th	9:30-11:30	The control of gene expression Protein Synthesis	Ogretmen
July 31	F	9:30-10:30	Protein Synthesis	Ogretmen
July 31	F	10:30-11:30	Discussions and problem solving (Assignments and/or final exam)	Ogretmen

Text Book: Biochemistry (5^{th} edition), Berg, Tymoczko, Stryer, W.H. Freeman and Company, New York, NY, Chapters 5, 6, 27, 28, 29, and 31.

Unit 3. Proteins

Unit Leader: Yi-Te Hsu, Ph.D.
hsuy@musc.edu, BSB 512C, 792-0849

Instructors:
Chris Davis, Ph.D. (davies@musc.edu, BSB 518D, 792-1468)
Mirko Hennig, Ph.D. (hennig@musc.edu, BSB 535D, 792-7336)
Yi-Te Hsu, Ph.D. (hsuy@musc.edu, BSB 512C, 792-0849)

Date	Day	Time	Topic	Instructor
Aug 3	M	9:30-11:30	Principles of Protein Structure: Amino Acids, Peptides and Proteins	Hennig
Aug 4	T	9:30-11:30	How Structure Dictates Function – Green Fluorescent Protein	Davies
Aug 5	W	9:30-10:30	Use of Protein Chemical and Physical Properties for Analytical Purposes	Hsu
Aug 6	W	10:30-11:30	How to present scientific papers	Hsu
Aug 6	Th	9:30-10:30	Enzyme Kinetics	Hsu
Aug 6	Th	10:30-11:30	Paper presentations (Assignments)	Hsu
Aug 7	F	9:30-10:30	Paper presentations (Assignments)	Hsu

Unit 4. Cell Biology

Unit Leader: Ed Krug, Ph.D.
krugel@musc.edu, CRI 607, 792-1543

Instructors:
Hiroko Hama, Ph.D. (hama@musc.edu, BSB 518C, 792-6949)
Steven Rosenzweig, Ph.D. (rosenzsa@musc.edu, BSB 318, 792-5841)
Daynna Wolff, Ph.D. (wolffd@musc.edu, Children's Hospital EH222D, 792-3574)

Date	Day	Time	Topic	Instructor
Aug 10	M	1:00-2:00	Cellular Compartmentalization	Hama
Aug 10	M	2:00-3:00	Cytoskeleton and Extracellular Matrix	Krug
Aug 11	T	9:30-10:30	Sorting and Secretion	Hama
Aug 11	T	10:30-11:30	Cell Adhesion and Cell Motility	Krug
Aug 12	W	9:30-10:30	Cell Signaling	Rosenzweig
Aug 12	W	10:30-11:30	Cell Cycle	Matmati
Aug 13	Th	9:30-10:30	Cell Specialization: T-Cell Differentiation and Function (TBA)	TBA
Aug 13	Th	10:30-11:30	Genetic Basis of Disease	Wolff
Aug 14	F	9:30-10:30	Experimental Methodologies	Krug
Aug 14	F	10:30-11:30	Review of Core Curriculum Exam Questions	Krug

Text Book: The Cell: A Molecular Approach. G. M. Cooper, Sinauer Assoc., Inc. Sunderland, MA.