

Syllabus
Cellular Mechanisms and Integrated Systems III
IBGS 513
Spring Quarter, 2006

Course: IBGS 513
M-Th 2:10 – 4:00; F 12:10 – 2:00
138 AHBS

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Textbook:

Alberts, Johnson, Lewis, Raff, Roberts and Walter. Molecular Biology of the Cell, 4th Edition, 2002. Garland Science, Taylor and Francis Group. ISBN 0-8153-3218-1

Important Dates:

March 27 – First day of class
April 17 – First take-home exam distributed
April 24 – First take-home exam turned in
May 15 – Second take-home exam distributed
May 22 – Second take-home exam turned in
June 5 – Third take-home exam distributed
June 12 – Third take-home exam turned in

Prerequisites

Undergraduate level biology, chemistry, organic chemistry and physics

Objectives:

This course aims to provide graduate students with an integrated understanding of the experimental foundations and current state of modern biomedical science using lectures, literature-based discussions, and problem-solving approaches. The content during winter quarter will focus on cell biology, developmental biology and endocrinology.

Recommended Class Preparation:

Readings from the textbooks or other materials will be assigned for each class, and students will be held responsible for the assigned material before attending class.

Tests and Grading:

Three take-home tests are scheduled: **Test 1 (due on April 24)**, **Test 2 (due on May 22)** and **Test 3 (due on June 12)**. Tests are due at 2:10 pm on the scheduled date. Each of the three take-home tests is non-cumulative and covers only the material presented until the last lecture before the date in which the test is handed out, with the exception of Test 3, which includes material through the end of the quarter. Tests will consist of essay/problem solving-type questions.

The grades for each take-home test will be worth 25% of the final grade. Performance in the Friday journal clubs will also account for 25% of the final grade.

Make-up or Missed Exams:

If the test deadline cannot be met due to special circumstances, permission must be obtained from Dr. Buchholz or Dr. Wright prior to the deadline. If the deadline is missed without obtaining prior permission, a grade of "0" will be assigned.

Academic Integrity:

The scientific enterprise is highly dependent on the integrity and reliability of each of its components. Therefore, understanding and practicing scientific and academic integrity is essential for students at each phase of their education. With regards to this class, examinations are the responsibility of each individual student, and by turning in such an examination, the student is representing that piece of work as having been completed by himself or herself. If other sources are used, they must be clearly identified by accepted referencing practices. Violation of this policy may result in a failing grade.

Attendance Policy:

Attendance will not be taken in class. Students will be responsible for both the material covered in the lectures and in the textbook on the examinations. It is the responsibility of students to be aware of any announcements that may be made in class as well as to obtain any handouts that are distributed during class.

Flexibility:

The course syllabus provides a general plan for the course; deviations may be necessary. If it becomes necessary to alter the dates for the exams or the material covered in these exams, the changes will be announced in class as early as possible.

Date	Day	Lecture Title	Lecturer
3/27/06	Monday	Neuroanatomy – Histology and Peripheral Nervous System	D Bellinger
3/28/06	Tuesday	Neuroanatomy – Spinal Cord and Brain Stem	D Bellinger
3/29/06	Wednesday	Neuroanatomy – Diencephalon and Telencephalon	D Bellinger
3/30/06	Thursday	Summary of Sensory and Motor Systems	J Zhang
3/31/06	Friday	Clinically Based Case Studies in Neuroscience	J Zhang/D Bellinger
4/3/06	Monday	Molecular Physiology of Ion Channels	D Hessinger
4/4/06	Tuesday	Propagation of Action Potentials	D Hessinger
4/5/06	Wednesday	Types of Synapses	J Buchholz
4/6/06	Thursday	Synaptic Release of Transmitters	J Buchholz
4/7/06	Friday	Literature Discussion – Measurement of Neurotransmitter Release	J Buchholz
4/10/06	Monday	Cardiophysiology – Anatomy of heart and blood vessels	W Pearce
4/11/06	Tuesday	Capillary Exchange	W Pearce
4/12/06	Wednesday	Smooth Muscle Function, Receptor Coupling	W Pearce
4/13/06	Thursday	Biochemical Aspects of Vascular Physiology	W Pearce
4/14/06	Friday	Literature Discussion – Receptors	W Pearce
4/17/06	Monday	Blood Pressure Control: General concepts Test 1 Distributed	W Pearce
4/18/06	Tuesday	Blood Pressure Control: antihypertensives	L Zhang
4/19/06	Wednesday	Arrhythmias, antianginal, CHF drugs	L Zhang
4/20/06	Thursday	Pharmacology: General Concepts	J Buchholz
4/21/06	Friday	Literature Discussion	W Pearce
4/24/06	Monday	Dose Response Relationships Test 1 Due	L Zhang
4/25/06	Tuesday	Dose Response Relationships (math concepts, ligand binding)	L Zhang
4/26/06	Wednesday	Examples of Agonists/Antagonists	L Zhang
4/27/06	Thursday	Examples of Agonists/Antagonists (systems)	L Zhang
4/28/06	Friday	Literature Discussion	L Zhang
5/1/06	Monday	Pharmacodynamics: General Concepts	J Buchholz
5/2/06	Tuesday	Pharmacodynamics (drug-receptor to response)	J Buchholz
5/3/06	Wednesday	Pharmacokinetics (absorption, elimination)	J Buchholz
5/4/06	Thursday	Pharmacokinetics (metabolism, renal elimination)	J Buchholz
5/5/06	Friday	Literature Discussion – FDA Approval Process	J Buchholz
5/8/06	Monday	Pathology/Lifestyles: Introduction and Epidemiology	? Beeson
5/9/06	Tuesday	Diet, Exercise and Disease	B Connell/B Rea
5/10/06	Wednesday	Neuro-Immune Connections and Disease	D Bellinger/S Thyagarajan
5/11/06	Thursday	Addictive Behaviors: Alcoholism and Smoking	M Ask

5/12/06	Friday	Literature Discussion – Neurodegenerative Diseases/Alzheimers	W Kirsch
5/15/06	Monday	Metabolic Syndrome/Diabetes Test 2 Distributed	A Firek/W Langridge
5/16/06	Tuesday	Congestive Heart Failure/Wound Healing	L Werner/D Miles
5/17/06	Wednesday	Cardiovascular Disease: Hyperlipidemia and Plaque Formation	A Hauck/J Cao
5/18/06	Thursday	Immunology – Autoimmunity & Transplantation	A Escher/M DeLeon
5/19/06	Friday	Introduction to Nerve Injury and Pain Literature Discussion –	K Oberg
5/22/06	Monday	Pathology, Viral and Bacterial: Introduction, CDC/SARS/Bird Flu Test 2 Due	N Taylor-Bates
5/23/06	Tuesday	HPV/HIV	P D-Hughes/J Lewis
5/24/06	Wednesday	Oral Hygiene: Caries, Bacteria in CVS	Y Li/H Lu
5/25/06	Thursday	Cancer: Cytology/Histology/Epidemiology of Cancer	A Victorio
5/26/06	Friday	Literature Discussion – Viral Origins of Cancer	P D-Hughes
5/30/06	Tuesday	Cancer: Senescence/Telomerase/Apoptosis/Survival	M Lilly
5/31/06	Wednesday	Cancer: Response to negative Signals (TGF β)/Failure of Cell Cycle Check	M Lilly
6/1/06	Thursday	Cancer: Invasion/Angiogenesis	M Lilly
6/2/06	Friday	Literature Discussion –	M Lilly
6/5/06	Monday	Cancer: Hormone Regulated Tumors (Breast/Prostate) Test 3 Distributed	D DeLeon/M Lilly
6/6/06	Tuesday	Cancer: Leukemia/Cardiogenesis/Radiation	M Lilly/G Nelson
6/7/06	Wednesday	Cancer: Treatment Approaches	M Lilly
6/8/06	Thursday		
6/9/06	Friday	Literature Discussion –	M Lilly
6/12/06	Monday	Test 3 Due	