

IB 138: Biology of Chemical Mediation, or “Comparative Endocrinology”

Instructor: PTBD

GSI: TBD

Texts: The recommended textbook for IB 138 is Norris, D.O. (2006). "Vertebrate Endocrinology" 4th edition, Academic Press, ISBN 0120887681. This book is **not required**, but may aid in your understanding of the material presented in class.

Course Objective:

This course will introduce students to the evolution and diversity of endocrine control of physiological systems using a comparative approach. The primary goal of this course is to provide students with a broad understanding of hormonal regulation of physiological systems in several vertebrate systems. Students will gain an understanding of the experimental methods used in endocrine research and become familiar with current research in the field.

Course Outline:

Lecture: MWF 12-1 pm in 130 Wheeler

Areas to be covered (sequence is subject to change):

- 1) Overview of Chemical Regulation (categories, organization and origins of hormones)
- 2) Molecular Bases for Chemical Regulation (groups, structures and metabolism of hormones)
- 3) Endocrine Research Methods (experimental design, methods of analysis)
- 4) Organization of the Mammalian Hypothalamo-Hypophysial System (hypothalamus, adenohypophysis, neurohypophysis, some clinical aspects)
- 5) Comparative Aspects of the Hypothalamo-Hypophysial system (fishes, other non-mammals)
- 6) Hormones of the Pars Nervosa
- 7) Thyroid – Mammalian and Comparative Aspects (development, organization, biological actions, evolution)

- 8) Adrenal system – Mammalian and Comparative Aspects (glucocorticoids, mineralocorticoids, physiological roles, evolution of adrenal hormones)
- 9) Reproduction – Mammalian and Comparative Aspects (overview, cycles, disorders, fishes, amphibians, reptiles and birds)
- 10) Digestive system (hormones of the gastrointestinal tract; regulation and comparative aspects)
- 11) Metabolism (major elements of metabolism, pancreas, nonpancreatic hormones and nonmammalian vertebrates)
- 12) Calcium and Phosphate regulation (importance in mammals and nonmammals, some clinical disorders).

Discussion:

Section 101: Monday 1pm-2pm in VLSB 3083

Section 102: Monday 2pm-3pm in Dwinelle 223

Discussion Objectives

IB 138 discussions will be devoted to enhancing your knowledge on how to read, interpret and present primary literature. We will also offer the opportunity to clarify the material being covered in lectures, but be aware that we will not review lectures. We will use a variety of methods to achieve these ends and we will do everything in our power to help you learn and enjoy this experience. Therefore, we will work for you, but we ask you to work with us in return. So it is important that you take responsibility for going through the material and actively advocate for help when you don't understand concepts. The success of the discussion will depend on your participation and on the presence of a respectful environment (i.e. please don't interrupt, be courteous to one another, turn off cell phones, arrive on time, etc.).

Policies

Attendance:

Your attendance in all lectures and discussions is required, and we will take attendance in discussion. Please be punctual. You may be called on during lecture to answer questions to reinforce previously learned concepts; participation is the key to doing well in the class! If you have a reasonable excuse to miss a class, please obtain medical verification from your health provider. You are responsible for coordinating with your group to complete any assignments for that week.

Academic Honesty:

We have a zero tolerance policy for academic dishonesty. Adjudicating a case of plagiarism or cheating is a long and painful process for all involved. The consequences will haunt you anywhere from a semester to a lifetime...consider that before you cheat...

UC Berkeley defines cheating as "fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question." The

university defines plagiarism “as use of intellectual material produced by another person without acknowledging its source.”

These definitions are drawn from the Campus Code of Conduct and are available via: <http://students.berkeley.edu/osl/sja.asp>. It is your responsibility to familiarize yourself with this code and cite all sources. While all assignments you complete must be derived from your own intellectual work, we encourage you to use and cite outside sources to generate and support your thinking. When in doubt, cite a source and/or seek outside advice from a GSI or professor prior to completing the assignment. Please remember that we are here to facilitate your learning and are happy to help you understand the rules of proper attribution.

Students with Disabilities:

If you have a documented physical or learning disability, please identify yourself to any of us and the course coordinator as soon as possible so that we can accommodate your needs. Students needing extra time on exams will need to provide documentation from the D.S.P. Please discuss these accommodations and/or any emergency medical or evacuation requirements with us in a confidential setting after class or in an office.

Grading:

Your letter grade will be determined by the total number of points you get during the semester. The breakdown is as follows:

Midterm 1: Friday, February 16th	= 100 points
Midterm 2: Friday, March 23rd	= 100 points
Final: Wednesday, May 9 th	= 100 pts
Group Presentation	= 50 pts
Discussion	= 100 pts
Total	= 450 pts

The letter grade will be determined at the end of the semester. The usual cut off for letter grades are A=>90%, B=>80%, C=>70%, D or F<69%.

Within the 100 points possible in the discussion, the breakdown is as follows:

- = 20 points from assignments
- = 30 points from quizzes
- = 25 points from attendance/participation
- = 25 points from presentation

Wherever possible, we will use a grading rubric that we will make available to you. No late activities will be accepted and missed quizzes cannot be made up. In the event of a grade dispute, you must submit a request for re-consideration and the specifics of the issue to us over email. We will then review the material and we will revise accordingly. Please note that your grade may be lowered or raised as a result.

Group Work:

You will be given the opportunity to form groups of your choice. Everyone in the group is responsible for the work that is turned in regardless of his/her level of contribution.

In general, all the students in the group will get the same grade on an exercise. If during the course of the semester you are having trouble with a group member or your group as a whole, please speak with us. All comments will be confidential and we will discuss potential solutions.

Assignments:

Over the course of the semester we will give you two small assignments to complete. We specifically design these assignments to be simple and straightforward so that they will not terribly detract from your ability to have a life outside of academics. Assignments are to be turned in at the beginning of the class period and late assignments will not be accepted under any conditions.

Quizzes:

Quizzes will be given during discussion with the intent of reinforcing material from lecture or discussion. Announced and unannounced quizzes will be given throughout the semester. As we understand that circumstances occasionally dictate missing or performing poorly on a quiz, we will drop your lowest quiz grade at the end of the semester. Quizzes are not meant to make you writhe on the floor in pain, but rather will serve as another learning tool, as a reward for your preparation and as a way to keep us aware of where you stand and how we can help you improve.

Contact Information:

We encourage you to come speak with us and discuss any questions, problems or concerns you have regarding the course. If you are responsible and willing to advocate for what you need to be successful in the course, we will do our best to assist you in return.

You may also contact us via email. We will check email once a day and the Monday morning following the weekend. We will use bCourses for the dissemination of important group information.

Further Resources

Student Learning Center- <http://slc.berkeley.edu/general/index.htm>

Counseling Services- <http://www.uhs.berkeley.edu/students/counseling/cps.shtml>

Disabled Students Program- <http://dsp.berkeley>