

Syllabus

MCB 413 Endocrinology: Hormones in Health and Disease
FALL SEMESTER 2018
Tuesday and Thursday 9:30-10:50 AM, 124 Burrill Hall
3 credits

A. COURSE SUMMARY

Endocrinology is a subset of physiology that involves endocrine glands and the hormones they produce. In this course we will cover all of the major endocrine systems, hormones, and signaling pathways through lectures and in class discussion. Special emphasis is placed on endocrine diseases, including diagnosis and treatment. Cutting edge research will also be used to highlight gaps in knowledge and new avenues for disease treatment. This course is meant to be a good preparation for professional schools (medical, dental and graduate programs in biomedical research).

B. LEARNING OBJECTIVES

Upon completion of the course, students will be able to:

- Describe the signaling pathways used by hormones
- List the major hormones and how they are controlled
- Interpret hormone levels to determine the underlying disease
- Evaluate experimental data and critique study design

C. COURSE TIMETABLE:

Classes will be held from 9:30 to 10:50 AM on Tuesday and Thursday at 124 Burrill Hall.

D. COURSE FACULTY

Dr. Lori Raetzman Associate Professor of MIP
Course Coordinator
Office: 535 Burrill Hall (Tel# 4-6233)
raetzman@illinois.edu
<http://mcb.illinois.edu/faculty/profile/raetzman>

Dr. Milan Bagchi Professor and Director of MCB
Office: 534 Burrill Hall (Tel # 4-5054)
mbagchi@life.illinois.edu
<http://mcb.illinois.edu/faculty/profile/mbagchi>

Consultation and office hours should be arranged by appointment.

Ms. Xiyu GE is the Teaching Assistant for the Course. She can be reached at sshahoe2@illinois.edu

E. SUGGESTED TEXTBOOK FOR THE COURSE (none required)

Medical Physiology: a cellular and molecular approach
by Walter Boron and Emile Boulpaep, 3rd Revised Edition, Saunders.
ISBN 1-4377-1753-5

OTHER TEXTBOOKS TO BE USED AS REFERENCE DURING THE COURSE:

Molecular Cell Biology by Lodish et al., 5th Edition
Endocrinology by Hadley, 5th Edition

F. Total points in the course: 300

EXAMINATIONS:

Exam 1: September 26

Exam 2: October 29

Exam 3: December 10

Each exam will count **75** points toward the overall grade. Exams 1, 2 and 3 will be held during regular class hours.

QUIZZES: In addition to these major examinations, the instructors will give three short quizzes during regular class hours. Each quiz will count **20** points toward the overall grade. For the quiz dates, please check the calendar below or the course website.

ATTENDANCE POINTS: **15** points will be set aside to give credit for class attendance (see below for details).

Make-up quizzes and exams will be given only in case of illness or other emergency. A letter from the McKinley Health Center or the Emergency Dean is mandatory. The student must contact the course TA within 48 h after the missed quiz or exam. No exceptions would be made if the student fails to notify the TA within this time period.

G. ACCESSING LECTURE MATERIALS IN THE WEB:

Instructors place their lecture materials on the MCB 413 web site, hosted on the Moodle server. The MCB address is: <https://www.life.illinois.edu/mcb/413/>. The link to the Moodle site is on this page ([learn@illinois](mailto:learn@illinois.edu)).

H. GRADING POLICY

MCB 413 is graded on the basis of total points accumulated throughout the semester. Plus-minus system of grading will be applied. No distinction will be made between graduate and undergraduate students.

| | |
|-----------|------------|
| 100-97 A+ | 79-77 C+ |
| 96-93 A | 76-73 C |
| 92-90 A- | 72-70 C- |
| 89-87 B+ | 69-67 D+ |
| 86-83 B | 66-63 D |
| 82-80 B- | 62-60 D- |
| | Below 60 F |

In the past years, the grades approximated the distribution shown below.

| | | | | |
|-------|-------|-----|----|----|
| A | B | C | D | F |
| 37.5% | 37.5% | 17% | 7% | 1% |

I. ATTENDANCE POLICY

Students are strongly advised to attend all lectures. Attendance will be recorded in each class via iClicker. **A total of 15 points will be set aside to give credit for regular class attendance.** In order to qualify for this credit, a student must attend at least 25 out of 29 classes offered during the semester. A student having more than 4 unexcused absences during the semester will forfeit **all** credit for class attendance.

iClicker: This course will use iClicker to take attendance. Each student remote has a unique serial number printed on the back. This number is referred to as the clicker ID. You must register your clicker ID in order to receive credit for participation in pop quizzes, which will register your attendance. To register, go to www.iclicker.com, click on REGISTER and enter your personal information (use your UIN in the Student ID field) and iClicker ID.

J. STUDENTS WITH DISABILITIES

To be assured that disability-related concerns are properly addressed from the beginning, students with disabilities who require reasonable accommodations to participate in this class are asked to see Dr. Raetzman as soon as the classes start. More information about University of Illinois disability services can be found here: <https://www.disability.illinois.edu/>

K. STATEMENT ON ACADEMIC INTEGRITY

Any form of cheating on any graded work in this course is unacceptable, and will be dealt with in accordance with the University-wide standards in the Code of Policies and Regulations Applying to All Students (<http://studentcode.illinois.edu/>). On exams, the answers that you turn in for grading must be your own, formulated during the exam from your own understanding of the material and without any supporting information, be it written, verbal or electronic. Copying the work of another student, or allowing another to copy your work, or copying work from any other source, is unacceptable. Since we cannot always monitor you as you complete your work, we must rely upon appearance of your work from which to judge. If the work you submit resembles that of another student or another source too closely, we may conclude that it was not your original work. Always make a conscious effort to complete your work on your own and to protect it from the view of others, in order to ensure that it will be seen as your own. Failure to adhere to these standards, for any portion of an exam, may result in a grade of zero for the entire exam or quiz, for all persons involved. Texting, or the use of a cell phone for any purpose during an exam, is prohibited. Doing so may earn you a zero on the exam, or a more extreme penalty at the discretion of the instructor. Use of any social or electronic media to share information, request information or make confidential information public is prohibited. Failure to adhere to these standards, for any portion of an exam, may result in a grade of zero for the entire exam, for all persons involved.

Lecture Topics and Schedule Fall 2019

August 27: Introduction to the Course: Raetzman

August 29: Basic Principles of Hormonal Regulation: Bagchi

September 3: Signaling by Steroid Hormone Receptors: Bagchi

September 5: Signaling by Cell Surface GPCR Receptors: Bagchi

September 10: Signaling by Growth Factors and Insulin Receptor: Bagchi

September 12: Signaling by Calcium-Calmodulin- Phospholipids: Bagchi

September 17: Quiz and Review: Bagchi

September 19: Calcium Regulation: Parathyroid Hormone & Vitamin D: Raetzman

September 24: Gastrointestinal Hormones: Raetzman

September 26: Exam 1: (Bagchi & Raetzman)

October 1: Pancreatic Hormones: Insulin & Glucagon: Raetzman

October 3: Control of Blood Glucose & Diabetes Mellitus: Raetzman

October 8: Regulation of Appetite & Obesity: Raetzman

October 10: Pituitary Hormones: Raetzman
October 15: Growth Hormone Physiology and Pathology: Raetzman
October 17: Quiz and review: (Raetzman)
October 22: Biosynthesis and Physiology of Thyroid Hormones: Raetzman
October 24: Diseases Associated with Thyroid Dysfunction: Raetzman
October 29: Exam 2: (Raetzman)
October 31: Male and Female Reproduction: Raetzman
November 5: Pregnancy Hormones and Birth Control: Raetzman
November 7: Menopause and HRT: Raetzman
November 12: Adrenal Hormones: Raetzman
November 14: Adrenal and PCOS: Raetzman
November 19: Quiz and review: (Raetzman)
November 21: Steroid Hormones and Breast Cancer: Raetzman
Thanksgiving week (November 23-December 1)
December 3: Androgens and Prostate Cancer: Raetzman
December 5: Endocrine Disruptors: Raetzman
December 10: Exam 3: (Raetzman)