

Syllabus

MCB 413 Endocrinology: Hormones in Health and Disease
FALL SEMESTER 2021
Tuesday and Thursday 9:30-10:50 AM, 217 Noyes
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 217 Noyes.

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

Consultation and additional office hours should be arranged by appointment.

Ms. Xiyu Ge is the Teaching Assistant for the Course. She can be reached at xiyuge2@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 (2nd Edition would also be fine)

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 23
Exam 2: October 26
Exam 3: December 7

Each exam will count **75** points toward the overall grade. Exams 1, 2 and 3 will be held during regular class hours. Exams will be taken on Moodle and timed for 80 minutes.

QUIZZES:

Quiz 1: September 14
Quiz 2: October 14
Quiz 3: November 16

Each quiz will count **20** points toward the overall grade. Quizzes will be taken on Moodle and timed for 30 minutes.

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. Students who test positive for COVID-19 or have had an exposure that requires testing and/or quarantine should contact the instructor about making up the work.

G. ACCESSING LECTURE MATERIALS ONLINE:

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).

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+	79.9-77 C+
96.9-93 A	76.9-73 C
92.9-90 A-	72.9-70 C-
89.9-87 B+	69.9-67 D+
86.9-83 B	66.9-63 D
82.9-80 B-	62.9-60 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 and participate during in class discussions. 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 obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact DRES as soon as possible. DRES can be reached at 1207 S. Oak St., Champaign, IL, at 217-333-4603, or at disability@illinois.edu. To be assured that disability-related concerns are properly addressed from the beginning, students with disabilities are asked to see Dr. Raetzman as soon as the classes starts. 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 or quiz, may result in a grade of zero for the entire exam or quiz, for all persons involved.

LECTURE TOPICS AND SYLLABUS

MCB 413 (Endocrinology: Hormones in Health and Disease)

Fall 2021

Tuesday and Thursday: 9:30-10:50 AM, 217 Noyes

August 24: Introduction to the Course: Raetzman
August 26: Basic Principles of Hormonal Regulation: Bagchi
August 31: Gastrointestinal Hormones: Raetzman
September 2: Signaling by Cell Surface GPCR Receptors: Bagchi
September 7: Signaling by Growth Factors and Insulin Receptor: Bagchi
September 9: Signaling by Calcium-Calmodulin- Phospholipids: Bagchi
September 14: Quiz and Review: Bagchi and Raetzman
September 16: Signaling by Steroid Hormone Receptors: Bagchi
September 21: Calcium Regulation: Parathyroid Hormone & Vitamin D: Raetzman
September 23: Exam 1: (Bagchi & Raetzman)
September 28: Pancreatic Hormones: Insulin & Glucagon: Raetzman
September 30: Control of Blood Glucose & Diabetes Mellitus: Raetzman
October 5: Regulation of Appetite & Obesity: Raetzman
October 7: Pituitary Hormones: Raetzman
October 12: Growth Hormone Physiology and Pathology: Raetzman
October 14: Quiz and review: (Raetzman)
October 19: Biosynthesis and Physiology of Thyroid Hormones: Raetzman
October 21: Diseases Associated with Thyroid Dysfunction: Raetzman
October 26: Exam 2: (Raetzman)
October 28: Male and Female Reproduction: Raetzman
November 2: Pregnancy Hormones and Birth Control: Raetzman
November 4: Menopause and HRT: Raetzman
November 9: Androgens and Prostate Cancer: Raetzman
November 11: Breast Cancer: Raetzman
November 16: Quiz and review: (Raetzman)
November 18: Endocrine Disruptors: Raetzman
Fall Break (November 20-November 28)
November 30: Adrenal Hormones: Raetzman
December 2: Adrenal and PCOS: Raetzman
December 7: Exam 3: (Raetzman)