

Syllabus

**MCB 413 Endocrinology: Hormones in Health and Disease
FALL SEMESTER 2024**

**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. See attached for items covered every course and dates of assessments.

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
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Dr. Milan Bagchi	Professor of MIP and Director of MCB Office: 534 Burrill Hall (Tel # 4-5054) mbagchi@illinois.edu http://mcb.illinois.edu/faculty/profile/mbagchi
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Consultation and additional office hours should be arranged by appointment.

Ms. Tanya Pattnaik is the Teaching Assistant for the Course. She can be reached at tanyap2@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 a reference during the course:

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

Review articles are posted on the class Canvas site.

F. COURSE GRADING

Total points in the course: 300

EXAMINATIONS:

Each exam will count **75** points toward the overall grade. Exams 1, 2 and 3 will be held during regular class hours. They are a blend of short answer, fill in the blank and multiple choice questions, written on paper.

QUIZZES:

Each quiz will count **20** points toward the overall grade. Quizzes will be taken in class 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, other medical provider that is not a relative, or the Office of the Dean of students 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 ONLINE:

Instructors place their lecture materials on the MCB 413 web site, hosted on the Canvas server. The MCB address is: <https://www.life.illinois.edu/mcb/413/>. The link to the Canvas site is at canvas.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+	79.9-77 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

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. You may also use the iClicker app.

J. STUDENTS WITH DISABILITIES

To obtain disability-related academic adjustments and/or auxillary aids, students 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 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.

L. STUDENT WELLNESS SUPPORT

As a Community of Care, we know that students sometimes face challenges that can impact academic performance (examples include mental health concerns, food insecurity, homelessness, personal emergencies). Should you find that you are managing such a challenge and that it is interfering with your coursework, you are encouraged to contact the Student Assistance Center (217-333-0050) or online at odos.illinois.edu/community-of-care/referral/ in the Office of the Dean of Students for support and referrals to campus and/or community resources.

Safety and Emergency

University Police Department, Emergency, 9-911; Non-emergency, 217-333-8911

University Fire Department Emergency, 9-911

Crisis Line, 217-359-4141

Emergency Dean, 300 Turner Student Services Bldg., 610 E. John St., 217-333-0050

Counseling Center, 110 Student Services Bldg., 610 E. John St., 217-333-3704

McKinley Health Center, General Information, 217-333-2701

McKinley Mental Health Center, 1109 S. Lincoln, 217-333-2705

Dean of Students, 300 Turner Students Services Bldg, 610 E. John St.,
217-333-0050

Local Sexual Assault Center, RACES, 217-384-4444

Women's Resources Center, 703 South Wright Street, 2nd Floor, 217-
333-3137

Rape Crisis 24-hour Hotline, 217-384-4444

Suicide & Psychological Emergency, Suicide Prevention Team, 217-333-
3704

SafeRides (free nighttime campus ride program), 217-265-RIDE (265-
7433)

SafeWalks (free walking escort service by Student Patrol), 217-333-1216

SCHEDULE OF LECTURE TOPICS AND ASSESSMENTS
MCB 413 (Endocrinology: Hormones in Health and Disease)
Fall 2024

Tuesday and Thursday: 9:30-10:50 AM, 124 Burrill Hall

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: Gastrointestinal Hormones: Raetzman

September 24: Calcium Regulation: Parathyroid Hormone & Vitamin D: 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: Androgens and Prostate Cancer: Raetzman

November 14: Breast Cancer: Raetzman

November 19: Quiz and review: (Raetzman)

November 21: Endocrine Disruptors: Raetzman

Fall Break (November 23 - December 1)

December 3: Adrenal Hormones: Raetzman

December 5: Adrenal and PCOS: Raetzman

December 10: Exam 3: (Raetzman)