

Course Syllabus
BISC 529 Endocrinology

Instructor: Dr. Christopher Leary
Semester: Fall 2018
Lecture: Shoemaker Room 408
Lecture times: MWF 11:00-11:50

Office Location: Shoemaker Room 416
Office Hours: 9-11:00, MWF
E-mail: cjeary@olemiss.edu
Phone: 915-1087

Course purpose: This course is designed to provide a broad overview of vertebrate endocrinology. Course topics will include the various classes of hormones, sources of hormones, production and synthesis of hormones, receptors and target tissues, mechanisms of action and regulation, and methods used in endocrinology. Lecture and readings from the primary literature will focus on classical endocrine systems.

Learning objectives: Upon completion of this course students should be capable of effectively communicating how endocrine systems function. Students should develop the ability to integrate across multiple endocrine systems to better understand the complexity of endocrine-related disorders. Students should also be capable of critically evaluating information provided by the media and literature on the topic. Lastly, students should gain a general understanding of the approaches used to study various facets of endocrinology.

Text: "Hormones" by A.W. Norman and H.L. Henry, Academic Press 3rd Edition

Attendance: You are responsible for all information and material provided during class. Attendance is expected and may be recorded each day of class. *To comply with attendance verification requirements, a report of your attendance will be made during the first two weeks of class.*

Exam and quiz make-up policy: Students can make-up missed exams or quizzes only under the following circumstances: 1) illness with physician documentation, 2) family emergency with contact person provided, 3) University-sponsored function with written documentation from sponsoring department. I must be contacted either before the exam/quiz or within 24 hours after the exam/quiz is given to arrange a time to make-up an exam/quiz.

Academic integrity: In cases involving academic dishonesty or misconduct, procedures outlined by the University Academic Discipline Committee will be followed.

Cell Phones: The use of cell phones during class will not be tolerated. Please turn your cell phone OFF before entering the classroom.

<u>Date</u>	<u>Text Chapter</u>	<u>Topic</u>
Week 1 (Aug 20-24)	-	Introduction: definitions, a brief history of endocrinology, key figures and research
Week 2 (Aug 27-31)	1	Methods in endocrinology, classes of hormones, cascades and feedback loops
Week 3 (Sept 3-7) (3 rd is Labor Day holiday)	1	Hormone sources, synthesis, receptors and target tissues

		<u>Special topic:</u> Organization versus activation
Week 4 (Sept 10-14)	2	The steroid hormones: sources, structure, synthesis, regulation, receptors and effects on target tissues
		<u>Special topic:</u> Genomic and non-genomic mechanisms
Week 5 (Sept 17-21)	3	The hypothalamus and anterior pituitary
		<u>Special topic:</u> Orphans, polyploids and the evolution of endocrine systems
		EXAM I (100 pts)
Week 6 (Sept 24-28)	3	The hypothalamus and anterior pituitary continued
		<u>Special topic:</u> Anterior pituitary control over gonadal function and development
Week 7 (Oct 1-5)	4	Posterior pituitary
		<u>Special topic:</u> AVT and social behavior
Week 8 (Oct 8-12)	5	Thyroid hormones: structure, control, release and function
		<u>Special topic:</u> Hypo- and hyperthyroidism
Week 9 (Oct 15-19)	6	Pancreatic hormones: Insulin and glucagon
		<u>Special Topic:</u> Diabetes
Week 10 (Oct 22-26)	7, 9	GI hormones and calcium regulation
		EXAM II (100 pts)
Week 11 (Oct 29-Nov 2)	10, 11	The adrenal glands: glucocorticoids, structure and function
		<u>Special Topic:</u> Stress hormones and interactions with other regulatory pathways
Week 12 (Nov 5-9)	12	Androgens
		<u>Special topic:</u> Androgens, gonadal differentiation and free-martins
Week 13 (Nov 12-16)	13, 14	Estrogens and the endocrinology of pregnancy

Special topic: Neuroendocrinology of reproduction

Week 14 (Nov 19-23)

THANKSGIVING HOLIDAY

Week 15 (Nov 26-30)
(Classes end)

15

Hormones related to the kidney

Week 16 (Dec 3-7)
(Finals week)

COMPREHENSIVE FINAL EXAM (200 pts)

**There will be a total of 5 quizzes (10 pts each). All students enrolled in the course are required to write two brief summaries (25 pts each) on topics related to “medical endocrinology”. Topics may include anything that is of interest to you but should focus on medical aspects of endocrinology and must be approved by the instructor.

**There will be several assigned readings that cover “Special topics” indicated above. All students are expected to participate in discussions of the papers. Participation in these discussions is worth a total of 100 pts toward your final grade (see grade distribution below).

**In addition to the above requirements, graduate students enrolled in the course are expected to lead one discussion based on a paper of your choice (pending my approval). A paper will be assigned if you cannot find a paper that is appropriate. This paper should be from the primary literature (i.e., scientific journals) and should be related to one of the “special topics” listed above. It is expected that students presenting papers will pursue additional sources of information and be versed on the topic before presentation (i.e., you should be capable of answering detailed questions about the paper following your presentation). Graduate students enrolled in the course are also required to write a detailed grant proposal on a topic of your choice. This report should be in the general form of a grant proposal to NSF (or other granting agency) and, thus, should be carefully and strategically written to include a thorough background on the topic, the question(s) of interest, why it is important, and what steps you would take (experimental design and techniques) to pursue your question(s). Graduate students are encouraged to consult with me early in the semester to discuss potential ideas.

GRADE DISTRIBUTION

2 Exams (100 points each).....	200 points
Comprehensive Final Exam (200 points).....	200 points
5 Quizzes (10 points each).....	50 points
2 Reports (25 points each).....	50 points
Class participation.....	100 points

Total 600 points

Graduate students:

Presentation (25 points).....	25 points
Grant Proposal (75 points).....	75 points

Total 700 points

Grading Scale: The “plus/minus” grade system is not used in this course. Final grades are calculated based on the percentage of the total points earned.

Final grades: A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 59% or less