

Biology 434, Spring 2007
General and Comparative Endocrinology
MWF 9, Science II, rm 119

Instructor:

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Office Hours M, &, W 10 a.m. and by appointment

General Course Content: This course will cover the main vertebrate endocrine systems, including structure, development and evolution, and the function and structure of their hormones. Lecture material, assignments, articles, exam review questions, etc. will be available on the WebCTGold course web page. Follow the links from the ISU homepage.

Basic material you will be expected to learn — control of hormone secretion, target organs, mechanisms of hormone action, cellular and organ-level response to the hormone and integration among endocrine systems. Depending on class interest, a major emphasis will be on human endocrinology, however, we also will discuss the importance of endocrine control in other vertebrate classes.

Other course learning objectives: This course will also emphasize your ability to use the presented material to understand both normal endocrine and pathophysiology, to research and present new information on specialized topics, and to learn to interpret published data and make inferences from such information. To this end we will have the following learning activities:

- 1. Case studies to practice problem solving in endocrine pathophysiology.** You will be presented with some information about hypothetical case studies and asked to interpret the data and suggest other information that should be gathered and possible remedies or treatments.
- 2. Student-led discussion to delve deeply into specialized topics of current interest.** Each student will integrate information on an assigned topic, make a class presentation on the topic, and lead a class discussion. The class will read an assigned article on the topic before class. The class will be expected both to participate in the discussion and be responsible for the basic content of the presentations on exams.
- 3. Classroom participation.** Student discussion will be expected during all class meetings, whether this is during regular lectures, guest lectures, case studies or student-led discussion on special topics (see above). In many cases you will be given outside reading material that you will be expected to read before class and you should come prepared to discuss the material.
- 4. Current endocrine topic in the popular press.** News involving the endocrine systems is a common feature in newspapers, radio, web sources and news magazines. Each of you will be responsible for finding an appropriate articles, preparing a short (10 min) presentation of the topic, including background information and bringing this to the class room for presentation on a day that a regular lecture is scheduled.

Optional Text: David Norris: *Vertebrate Endocrinology*, 2007, 4th Edition. Academic Press.
Other acceptable texts: Berne & Levy: 1998. *Physiology*, Mosby Press OR Hadley & Levine: 2007 *Endocrinology*, 6th edition, Pearson, Prentice Hall.

You may find you want a book to supplement lecture information and to provide background information for article discussions and for the case studies. Most upper-division physiology books will have a good section on endocrine systems. Other text resource can be found in the library and/or ask for other sources. Check the WebCT Gold web site for other resources.

Grading Procedures

Students can earn a maximum of 375 points

a. Two Tests @ 50 points each and cumulative final exam of 70 points = 170 points

Tests will consist of objective, identification and short answer questions taken from lecture material, including articles, case studies, and student-led discussion. Essay questions will be included as well. **A List of potential essay test questions will be provided ahead of time.**

b. Case Studies with written answers to questions

7 case studies @15 points with the lowest score dropped = **90 points**

Case studies and questions will be handed out at least one class period ahead of the scheduled discussion. Written (**TYPED**) answers to discussion questions should be prepared before class and will be collected **at the end of class**. Written answers should be formulated in your own words, using a minimum of medical "jargon". We will discuss the cases and answers to most questions in class and your written answers may be annotated based on class discussion. **Late answers** will be discounted by 2-points/day, beginning with any assignment received after class has been dismissed on the day it is due. (Any excused absences must be arranged **before class** by phone or email).

c. Student-led Discussions (50 points)

Each student will lead a discussion about a major current topic in endocrinology including discussion of a specific paper that everyone will read. I will provide topics, and you will be asked to sign up for a date early in the semester. You should meet with me before your date to discuss what you plan to cover. Each student will make a Power Point presentation on the topic, and the file must be provided to me **NO LATER THAN 5pm on the weekday before your scheduled date** (i.e. on Friday if you are presenting on Monday). I will mount the presentation on the WebCT site for everyone to access before class starts. I will hand out more information about this assignment later.

d. Current topics in endocrinology essay (15 points)

I want each of you to find a short article published or presented in the current popular press that in some central way deals with endocrinology. This could be anything from an endocrine disruptor, new treatment for diabetes, new type of contraceptive, a behavior influenced by hormones, an effect of hormones on aging, a wildlife issue involving hormones, etc. The possibilities are almost endless and the goal is to make you aware of how often endocrine issues impact our lives. **If your last name begins with A-C, this exercise must be done before spring break; otherwise it must be done before the end of classes on 27 April.** You must let me

know that you plan to do your current topic presentation the day before class. Don't wait until the last day to do this!

e. Attendance and Participation (50 points)

Your attendance is expected at all classes. Roll will not be taken directly, but with a small class I am able to note those not in attendance. Please let me know when you will be absent, and email if you are ill.

Each class member will be expected to contribute to the discussion of all case studies and all student-led discussions and I will keep track of your participation. No questions are considered "bad" and no comments are "stupid". We are all here to learn and often discussing a topic is the best way to determine whether or not we understand a concept. Questions and comments are welcome during all lectures, and guest lecturers will be expecting you to make comments and ask questions as well.

Grading Scale:

A=90-100%

B=80-89

C=70-79

D=60-69

F= below 60

A plus and minus grading system will be used.

Course Policies:

1. Attendance and notes

Attending lecture is EXPECTED and will optimize your learning. You are expected to take notes even if lecture notes are provided, because not all information for which you are responsible is necessarily available on Power Point slides.

2. Missed Exams

Make-up exams similar to the regularly scheduled exam will be given only to students with valid excuses. See me immediately upon returning to class if you have such an excuse and need to schedule a makeup. (I expect this will be within one week after the missed exam unless exceptional circumstances prevail). If you know that you will be off-campus during a scheduled exam, it may be possible to schedule an exam up to one day early if you contact me ahead of a time.

3. Common courtesy and respect for everyone in the classroom is expected at all times. This includes not being late, coming prepared, listening to others and respecting the right of everyone to have their own viewpoint.

Special Needs & Disabilities. If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me soon. Please request that a Disability Resources staff send a SAAR form verifying your disability and specifying the accommodation you will need.

Tentative Course Schedule – 2007

Class Period	Date	Topic
1	Jan 8	Introduction

2	10	Hormone Classes
3	12	Mechanism of Hormone Action – Dr. Eugenia Farrar, EEOB
	15	No class Martin Luther King, Jr. Day
4	17	Hypothalamus and Anterior Pituitary
5	19	Case Study 1
6	22	Posterior Pituitary
7	24	“Student”-led Discussion - CV
8	26	Thyroid
9	29	Thyroid
10	31	Case Study 2
11	Feb 2	Calcium Regulation
12	5	Student-led Discussion 1
13	7	Guest Lecture – Amanda Sparkman, EEOB, IGF-1 and its role in aging
14	9	Pancreatic Hormones and Metabolic Regulation
15	12	Metabolic regulation continued
16	14	Case Study 3
17	16	EXAM ONE
18	19	Student-led Discussion 2
19	21	Adrenal Medulla
20	23	Guest lecture — Dr. Michael Spurlock, FSHN, Hormones & metabolism
21	26	Student-led Discussion 3
22	28	Adrenal Cortex and Stress
23	Mar 2	Case Study 4
24	5	Guest lecture – Gaby Palacios, EEOB, Immune function and endocrinology
25	7	Student-led Discussion 4
26	9	Salt and Water Balance
		Spring Break Mar 12-16
27	19	Case Study 5
28	21	Student-led Discussion 5
29	23	Female Reproduction
30	26	Female Reproduction II
31	28	Pregnancy & lactation
32	30	EXAM TWO
33	April 2	Student-led Discussion 6
34	4	Case Study 6
35	6	Male Reproduction
36	9	Sex Differentiation
37	11	Student-led Discussion 7
38	13	Control of seasonal reproduction
39	16	Hormonal control of behavior
40	18	Student-led Discussion 8
41	20	Case Study 7
42	23	Endocrine Disruptors
43	25	Student-led Discussion 9
44	27	Catch up and review

Final Exams Our final is tentatively scheduled for Monday April 30 from 7:30-9:30 am