BIOL 432 (CRN 20327)
Molecular Endocrinology
Spring 2016
Tues/Wed/Fri 11:30 am - 12:30 pm
Location: SCI/BWC A104

Lecture: SCI A104 Tues/Wed/Fri 11:30 am - 12:30 pm
Office: Cunningham 257 Tues and Fri 10:15 am - 11:15 am

Instructor: Dr. Patrick Walter Email: pwalter@uvic.ca
Dr. Mary Wagner wagnerm@uvic.ca

General Information:
This is an introduction and survey course of general and contemporary endocrinology topics (see below for university calendar description). Following this course, you should have a working understanding of the molecular basis for the synthesis, actions and regulation of hormones and their receptors in healthy and disease states. You should also be able to generally interpret endocrinology papers from scientific literature.

Description from the UVic Calendar:

Units: 1.5, Hours: 3-0
Basic and molecular aspects of endocrinology. Brain hormones and their precursors, insulin and its receptor, gene-associated peptides, new glycoprotein hormones, growth factors, steroids, the superfamily of steroid and thyroid receptors, pheromones, oncogenes, and immunoendocrinology. Lectures and presentations of scientific papers.

Prerequisites: One of: BIOL 360, 365, 305A, BIOC 300A, 300B. (BIOC 299 also acceptable)

Office Hours:
Cunningham 257 10:15 – 11:15 Tuesdays and Fridays – The instructor that teaches the lecture that follows will be present. Dr. Walter is adjunct faculty and therefore has limited time on campus, and Dr. Wagner is not on campus except for this course. If these times conflict with your schedule, e-mail to set up an alternate time.

Moodle Course Spaces:
This course uses the university Moodle learning/teaching resource. To access this course, log onto http://coursespaces.uvic.ca/course/view.php?id=15200#section-1

Use your Netlink ID and password. We will post the course notes outline, journal article guidelines and other important information through this site. We will also post the PowerPoint presentation (in pdf format) for each lecture prior to each class. You may choose to print the slides and add notes to them during class. Please check Course Spaces regularly, as this is where course announcements will be posted.

Top Hat:
We will be using TopHat as an additional resource this year. TopHat will be worth 5% where 2.5% are bonus marks and 2.5% are part of the course total. Review questions, a discussion of a scientific

paper, and in-class questions will be posted using this site. It is recommended that all students purchase a TopHat account.

You can visit tinyurl.com/StudentStartGuide for Top Hat's Student Quick Start Guide which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

Once you have registered and entered in your subscription code, your course can be directly accessed via the following:

Top Hat course name: **Biology 432: Molecular Endocrinology - Spring 2016**
Direct URL: **https://app-ca.tophat.com/e/814383**
6-digit course code: **814383**

Course Text:
Greenspan's Basic and Clinical Endocrinology by Gardner, D.G. and Shoback, D. 9th Edition. ***This text is recommended, but not required.*** This text is now available in a digital format and is a medical text with extensive clinical information. If you intend to continue studying in the field of endocrinology, it would be a good reference text for you to own. We will NOT be covering all the material in the text. The primary source of information will be the lecture slides covered in class. Two copies of the 8th edition of the textbook are on reserve in the library. There also may be second hand copies of the 8th edition which is very similar, available from the Used Book Store.

Journal Articles:
Journal articles will be assigned and some class time will be allocated to going over the papers and taking questions. Short answer questions on each journal article will be tested on the midterms and final exam. Only articles given in a specific section will appear on the exams. For example, you will be responsible for at least 1 article for the first midterm, a different article for the second midterm, and different articles on the final. More details regarding the journal articles and sample exam questions will be available on Moodle Course Spaces. One journal article discussion question will be posted in TopHat and your response will be graded for bonus marks.

Course Evaluation:
24% Midterm I – **Wednesday Feb 3** (50 min in class, cumulative, includes journal article short answer). No make-up tests; a grade of zero will be given unless a medical excuse is provided.
28.5% Midterm II – **Wednesday Mar 2** (50 min in class, non-cumulative but builds on first section's material, includes journal article short answer but only for articles given in this section). No make-up tests; a grade of zero will be given unless a medical excuse is provided.
45% Final exam - Date TBA, Thursday Apr 7th or thereafter (3 hours, cumulative – only in the sense that we build on concepts established in the first 2 midterms, emphasizes material after Midterm II, includes journal article short answer but only for articles given in this section) Must be completed to receive a final grade for the course. Deferred exams will be handled as outlined in the University of Victoria calendar.
2.5% Course Marks for Top Hat activities.
2.5% Bonus Marks for Top Hat activities.

Your final overall mark in the course will be given as a percent based on the following guidelines: A+ = 90-l00%, A = 85-89.9%, A- = 80-84.9%, B+ = 77-79.9%, B = 73-76.9%, B- = 70-72.9%, C+ = 65-69.9%, C = 60-64.9%, D = 50-59.9%, F = 0-49.9% (if all requirements completed), N (if not all requirements completed)

If a midterm is missed with a medical excuse, the marks will be split between the other midterm and the final. If you feel that we should be made aware of any special circumstances or accommodations for your participation in the course, please notify us.

You are not allowed to cheat or plagiarize in this course, as outlined in the University of Victoria calendar. This course will strive to be an inclusive and safe learning environment recognizing the diversity of the students and their opinions as outlined in the University calendar.

For questions regarding lecture material, students should go to the instructor for that particular topic. General concerns and questions about marks should be addressed to Dr.Walter as course administrator.

Provisional Lecture Schedule 2016 (Changes may be necessary)

Week 1: SEMESTER STARTS MON JAN 4 END FRI APR 1st for 2016

1. Tues Jan 5. Introductions/Outline/Endocrine Overview – Wagner, Walter
2. Wed Jan 6. Hormone biosynthesis – Walter.
3. Fri Jan 8. Hormone Mechanisms - Surface Receptors – Walter

Week 2:

4. Tues Jan 12. Hormones and Cell Death – Walter
5. Wed Jan 13. Hormone Mechanisms - Nuclear Receptors – Walter
6. Fri Jan 15. Growth Hormones – Wagner

Jan 17 Sun Last day for 100% reduction of second-term fees

Week 3:

7. Tues Jan 19. Hormones as Growth factors – Wagner
8. Wed Jan 20. Hypothalamus and Pituitary – Wagner

Jan 20 Wed Last day for adding courses that begin in the second term

9. Fri Jan 22. Hypothalamus and Pituitary – Wagner.

Week 4:

10. Tues Jan 26. Hypothalamus and Pituitary – Wagner
11. Wed Jan 27. Pancreas, Insulin and Glucagon – Wagner
12. Fri Jan 29. Insulin Receptor – Wagner

Jan 31 Sun Last day for paying feed without penalty

Week 5:

13. Tues Feb 2. Diabetes – Wagner
14. **Wed Feb 3**. **Midterm I (Walter/Wagner)**
15. Fri Feb 5. Introduction to Steroid Hormone Chemistry – Walter

Feb 7 Sunday Last day for 50% reduction of tuition fees for standard courses

Week 6:

Feb 8 -12 Reading Break

Week 7:

16. Tues Feb 16. Glucocorticoid Hormones – Walter
17. Wed Feb 17. Adrenal Hormones and Catecholamines – Walter
18. Fri Feb 19. Male Reproductive System – Walter

Week 8:

19. Tues Feb 23. Female Reproductive System – Walter
20. Wed Feb 24. Reproductive System – Walter
21. Fri Feb 26. Finish Reproductive system; PTH, Vitamin D and Calcitonin – Wagner

Feb 29 Mon Last Day to Drop Courses without Failure

Week 9:

22. Tues Mar 1. Calcium and Bone Disease – Wagner
23. **Wed Mar 2. Midterm II (Walter/Wagner)**

24. Fri Mar 4. Sex and gonadal differentiation, Estrogen Receptor – Walter

Week 10:

25. Tues Mar 8. Estrogen the Environment and Breast Cancer Feeding and Energy Balance – Walter
26. Wed Mar 9. Estrogens the Environment and Breast Cancer – Walter
27. Fri Mar 11. Estrogen the Environment and Breast Cancer

Week 11:

28. Tues Mar 15. Leptin/Fat Hormones and Obesity - Walter
29. Wed Mar 16. Thyroid Hormone (TH) and Receptor – Wagner
30. Fri Mar 18. Non-genomic Actions of TH – Wagner

Week 12:

31. Tues Mar 22. TH Diseases – Wagner
32. Wed Mar 23. Obesity - Aging and Endocrine Disrupting Compounds – Walter

FRIDAY MAR 25 NO CLASS ON GOOD FRIDAY

Week 13:

33. Tues Mar 29. EDCs and Hormones for Therapy - Walter
34. Wed Mar 30. Hormones and Cell Death and Autophagy; Endocrine Autoimmunity – Walter
35. Fir Apr 1. Last Class. Endocrine Autoimmunity – Walter

EASTER BREAK Fri Mar 25 to Mon Mar 28
EXAM PERIOD Tues Apr 7- Mon Apr 25