

BIOL 432 AO1 (CRN 20376)

Molecular Endocrinology

Spring 2018

Tues/Wed/Fri 11:30 am - 12:30 pm

Location: Elliott Building 167

Lecture: Elliott Building 167 Tues/Wed/Fri 11:30 am - 12:30 pm

Office: Cunningham 217 Tues and Fri 10:15 am - 11:15 am

Instructor: Dr. Patrick Walter
Dr. Mary Wagner

Email: pwalter@uvic.ca
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 217 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.

CourseSpaces Moodle:

This course uses the university Moodle learning/teaching resource. To access this course, log onto <https://coursespaces.uvic.ca/course/view.php?id=44507>

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. TopHat will be worth 5% where 2.5% are bonus participation marks and 2.5% are a graded 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 also post questions to us on TopHat.

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 - Jan-May 2018**

Direct URL: <https://app-ca.tophat.com/e/464839>

6-digit course code: **464839**

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:

37% Midterm – Friday February 23 (50 min in class, cumulative, includes journal article questions, and will be made up of short answer questions). If the midterm is missed with a medical excuse, there will be a makeup exam at a scheduled date. If you feel that we should be made aware of any special circumstances or accommodations for your participation in the course, please notify us.

58% Final exam - Date TBA, Monday Apr 6th or thereafter 3 hours, cumulative – only in the sense that we build on concepts established before the first midterm, emphasizes material after the Midterm, includes journal articles (but only for articles given in this section) and is made up of short answer questions. Must be completed to receive a final grade for the course. Deferred exams will be handled as outlined in the University of Victoria calendar.

In Class TopHat Questions:

2.5% Course Marks for Top Hat graded activities (% of 2.5% for correctness).

2.5% Bonus Marks for Top Hat activities participation (greater than 70% participation).

Your final overall mark in the course will be given as a percent based on the following

guidelines: A+ = 90-100%, 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)

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 2018 (changes may be necessary)

Week 1: SEMESTER STARTS WED JAN 3 END Fri APR 6th for 2018

1. Wed Jan 3. Introductions/Outline/Endocrine Overview – Wagner, Walter
2. Fri Jan 5. Endocrine Overview – Walter

Week 2:

3. Tues Jan 9. Endocrine overview (cont.) – Walter.
4. Wed Jan 10. Endocrine overview - Hormone Mechanisms – Walter
5. Fri Jan 12. Hormone Mechanisms – Hormone biosynthesis - Walter

Week 3:

6. Tues Jan 16. Hormone Mechanisms - Surface Receptors - Walter
- Jan 16 Tues Last day for 100% reduction of second-term fees**
7. Wed Jan 17. Nuclear Receptors – Walter. Growth Hormone Axis – Wagner
 8. Fri Jan 19. Diseases of Growth Axis and Growth Factors - Wagner
- Jan 19 Fri Last day for adding courses that begin in the second term**

Week 4:

9. Tues Jan 23. Hypothalamus and Pituitary – Wagner.
10. Wed Jan 24. Hypothalamus and Pituitary – Wagner
11. Fri Jan 26. Thyroid Hormone (TH) and Receptor - Wagner

Week 5:

12. Tues Jan 30. Non-genomic Actions of TH – Wagner
- Jan 31 Wed Last day for paying fees without penalty**
13. Wed Jan 31. TH Diseases – Wagner
 14. Fri Feb 2. Introduction to Steroid Hormone Chemistry – Walter

Week 6:

15. Tues Feb 6. Steroid Hormone Chemistry – Walter
- Feb 6 Tues Last day for 50% reduction of tuition fees for standard courses**
16. Wed Feb 7. Glucocorticoid Hormones – Walter
 17. Fri Feb 9. Adrenal Hormones and Catecholamines – Walter

Week 7: Feb 12 -16 Reading Break

Week 8:

18. Tues Feb 20. Male Reproductive System – Walter
19. Wed Feb 21. Female Reproductive System – Walter
20. Fri Feb 23. **Midterm (Walter/Wagner)**

Week 9:

21. Tues Feb 27. Reproductive System – Walter
- Feb 28 Tues Last Day to Drop Courses without Failure**
22. Wed Feb 28. Finish Reproductive system; PTH, Vitamin D and Calcitonin – Wagner
 23. **Fri Mar 2. Calcium and Bone Disease – Wagner**

Week 10:

24. Tues Mar 6. Sex and gonadal differentiation – Walter
25. Wed Mar 7. Sex and gonadal differentiation, Estrogen Receptor – Walter
26. Fri Mar 9. Estrogens the Environment (LAN) and Breast Cancer – Walter

Week 11:

- 27. Tues Mar 13. Estrogen the Environment and Breast Cancer - Walter
- 28. Wed Mar 14. Paper review - Estrogen the Environment and Breast Cancer - Walter
- 29. Fri Mar 16. Vitamin D - Breast cancer, Walter - Pancreas, Insulin and Glucagon; GLP-I Paper – Wagner

Week 12:

- 30. Tues Mar 20. Insulin Receptor – Wagner
- 31. Wed Mar 21. Diabetes – Wagner
- 32. Fri Mar 23. Aging and Performance Enhancing Drugs - Walter

Week 13:

- 33. Tues Mar 27. Leptin/Fat Hormones and Obesity - Walter
- 34. Wed Mar 28. Leptin/Fat Hormones and Obesity – Walter

Fri Mar 30. Good Friday, no class, Uvic is closed

Week 14:

- 35. Tues Apr 3. Leptin/Fat Hormones and Obesity – Walter
- 36. Wed Apr 4. Endocrine Disrupting Compounds – Walter
- 37. Fri Apr 6. Last Class. Endocrine Autoimmunity – Walter Review**

EXAM PERIOD Fri Apr 9- Tues Apr 24

GOOD FRIDAY Mar 30 and EASTER MONDAY Apr 2, the University is closed