

BIOL 432 AO1 (CRN 20420)

Molecular Endocrinology

Spring 2021

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

Location: Online TopHat, Zoom and Brightspace

Lecture: Live online TopHat and Zoom Tues/Wed/Fri 11:30 am - 12:30 pm

Lectures will be Synchronous (live) and recorded (Open Book Exams)

<https://uvic.zoom.us/j/88067073591?pwd=R3NCVURsMG1rVzNieEMyeHVkL2pOQT09>

(please Sign in with SSO - to Uvic first – You can ask questions during class verbally [unmute your microphone] or through the zoom chat feature)

TopHat Link: <https://app-ca.tophat.com/e/582700>

Office Hours: Online Zoom Tues and Fri 10:30 am - 11:30 am or by appointment

<https://uvic.zoom.us/j/88067073591?pwd=R3NCVURsMG1rVzNieEMyeHVkL2pOQT09> (please Sign in with SSO - to Uvic first)

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:

Online via zoom 10:30 – 11:30 Tuesdays and Fridays – The instructor that teaches the lecture that follows will be present. If these times conflict with your schedule, e-mail to set up an alternate time.

Brightspace:

This course uses the university Brightspace learning/teaching resource. To access this Course, use your Netlink ID and password and log onto Brightspace from your Mypage area

<https://www.uvic.ca/mypage/> OR directly: <https://bright.uvic.ca/d2l/home/53540>

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 Brightspace 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 10% where 4% are bonus participation marks and 6% 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 <https://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. Also, <https://support.tophat.com/s/> is a great way to get a lot of information as there is a wide variety of articles uploaded there that can help.

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 2021**

Direct URL: <https://app-ca.tophat.com/e/582700>

6-digit course code: **582700**

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:

35% Midterm – Friday February 12th using TopHat at Biology 432: Exams for Molecular Endocrinology - Spring 2021

TopHat Link <https://app-ca.tophat.com/e/117395> (Open Book Exam)

(50 min online, cumulative, includes journal article questions, and will be made up of multiple choice, fill in the blanks, and 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 (see below).

55% Final exam - Date TBA, during the exam period between Thurs Apr 15 -Tues Apr 27 (Open Book Exam)

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.

10% TopHat Online Activities:

6% Course Marks for Top Hat graded activities (6% for correctness).

4% Bonus Marks for Top Hat activities participation (greater than 70% participation).

Students are expected to be present for the midterm and final exam on the specified dates. Failure to write the midterm exam as described above will result in a grade of 0% for the exam unless for illness, accident, or family affliction. Students who miss the midterm exam for one of the legitimate, documented reasons listed will have the to write a deferred midterm exam within approximately 10 business days of the midterm date.

N grades

Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade: The Midterm and the Final Exam.

Failure to complete one or more of these elements will result in a grade of “N” regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student’s GPA as 0. The maximum percentage that can accompany an N on a student’s transcript is 49.

Therefore, you must write the midterm exam and the final exam to pass the course. Furthermore, if you have any emergency or any situation (**That may include but not limited to**; illness, mental health and wellness, or lack of access to information. Please also see the link below on concessions for more details) that will in anyway affect your ability to attend (or have attention to) online classes or exams, please contact me (**there is no need for you to give me any description of your situation**) as soon as possible (email or phone). If it’s after the midterm and affects your ability to complete the course or for the final exam please download and complete an academic concession form from Uvic’s website: <https://www.uvic.ca/registrar/students/appeals/acad-concession/index.php> . Deferral of a final exam must be requested with this Academic Concession form and submitted directly to Undergraduate Records. **Deferred final exams will be arranged by the instructor or the University.** Travel is not an acceptable reason to miss the deferred final exam date.

Your total mark, calculated from the marks on all of the exams and TopHat questions according to the weighting scheme above, will be converted to a percentage and then to a letter grade (please see the grade information below).

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.

Students are expected to take notes during class, copies of slides will be provided on Brightspace before class, however these notes should not be considered complete and students are responsible

for all material discussed online. Plagiarism and copying are all academic offences and submitted material must be your own work. Grading will be based on answering of short and long answer exam questions. The exams will test your ability to think and incorporate concepts and ideas, and design experiments. Understanding of material will be tested and memorizing the lecture handouts will not be sufficient. You are expected to have completed 3rd year Cell biology and Biochemistry, and the onus is on you to review pertinent material as needed.

Territory acknowledgement:

All the instructors involved with Biol 432 acknowledge with respect the Lekwungen peoples on whose traditional territory the university stands and the Songhees, Esquimalt and WSÁNEĆ peoples whose historical relationships with the land continue to this day. Please see:

<https://www.uvic.ca/services/indigenous/facultystaff/territory-acknowledgment/index.php>

Support services:

If you are in need of support, there are support services on campus to help you: Please see any of the following:

Centre for Academic Communication <https://www.uvic.ca/learningandteaching/cac/>

Math-assistance Centre <https://www.uvic.ca/science/math-statistics/current-students/undergraduate/msac/index.php>

Counselling Services <https://www.uvic.ca/services/counselling/>

Health Services <https://www.uvic.ca/services/health/>

Library <https://www.uvic.ca/library/>

Ombudsperson <https://www.uvic.ca/universitysecretary/senate/appeals/ombudsperson/index.php>

Computer Help Desk <https://www.uvic.ca/systems/about/academic/helpdesk/index.php>

Centre for Accessible Learning:

Accessible Learning: The University of Victoria is committed to creating a learning experience that is as accessible as possible. If you anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with me. If you have a disability or chronic health condition, or think you may have a disability, you may also want to meet with an advisor at the Centre for Accessible Learning (CAL). You can find more information about CAL here:

<https://www.uvic.ca/services/cal/>

Online conduct statement:

The University of Victoria is committed to promoting critical academic discourse while providing a respectful and supportive learning environment. All members of the university community have the right to this experience, and the responsibility to help create, such an environment. The University will not tolerate racism, sexualized violence, or any form of discrimination, bullying or harassment.

Please be advised that by logging into UVic's learning systems and interacting with online resources you are engaging in a university activity. All interactions within this environment are subject to the university expectations and policies. Any concerns about student conduct, may be reviewed and responded to in accordance with the appropriate university policy. To report concerns about online student conduct: onlineconduct@uvic.ca

Copyright:

All course content and materials are made available by instructors for educational purposes and for the exclusive use of students registered in their class. The material is protected under copyright law, even if not marked with a ©. Any further use or distribution of materials to others requires the written permission of the instructor, except under fair dealing or another exception in the Copyright Act. Violations may result in disciplinary action under the Resolution of Non-Academic Misconduct Allegations policy (AC1300).

Provisional Lecture Schedule 2021 (changes will be necessary)

Week 1: SEMESTER STARTS TUES JAN 12 END FRI APR 9 2021

1. Tues Jan 12. Introductions/Outline/Endocrine Overview – Wagner, Walter
2. Wed Jan 13. Endocrine Overview – Walter
3. Fri Jan 15. Endocrine overview - Hormone Mechanisms – Walter

Week 2:

4. Tues Jan 19. Hormone Mechanisms – Walter
 5. Wed Jan 20. Hormone Mechanisms - Hormone biosynthesis - Walter
 6. Fri Jan 22. Hormone biosynthesis, Walter; Hypothalamus and Pituitary – Wagner
- Jan 19 TUES Last day for 100% reduction of second-term fees if drop course**

Week 3:

7. Tues Jan 26. Hypothalamus and Pituitary – Wagner
 8. Wed Jan 27. Hypothalamus / Pituitary, Growth Hormone Axis – Wagner
- Jan 22 FRI Last day for adding courses that begin in the second term**
9. Fri Jan 29. Surface Receptors - Walter
- Jan 31 SUN Last day for paying fees without penalty**

Week 4:

10. Tues Feb 2. Surface and Nuclear Receptors – Walter
11. Wed Feb 3. Diseases of Growth Axis and Growth Factors – Wagner
12. Fri Feb 5. Thyroid Hormone (TH) and Receptor - Paper Wagner

Week 5:

13. Tues Feb 9. Non-genomic Actions of TH and TH Diseases – Wagner
- Feb 9 TUES Last day for 50% reduction of tuition fees for standard courses**
14. Wed Feb 10. Apoptotic receptors – Introduction to Steroid Hormone Chemistry - Review/practice midterm – Walter
 15. Fri Feb 12. Midterm (Walter/Wagner)

Week 6: Feb 15-19 Reading Break

Week 7:

16. Tues Feb 23. Introduction to Steroid Hormones and Glucocorticoids – Walter
17. Wed Feb 24. Glucocorticoid and Mineralocorticoid Hormones – Walter
18. Fri Feb 26. Glucocorticoid and Mineralocorticoid Hormones – Walter

Week 8:

19. Tues Mar 2. Glucocorticoid and Mineralocorticoid Hormones – Walter
 20. Wed Mar 3. Finish Glucocorticoids, Intro Male and Female Reproductive System – Walter
 21. Fri Mar 5. Reproductive system cont. - Walter; PTH, Vitamin D and Calcitonin – Wagner
- Feb 28 SUN Last Day to Drop Courses without Failure**

Week 9:

22. Tues Mar 9. Calcium and Bone Disease – Wagner
23. Wed Mar 10. Female Reproductive System – Walter
24. Fri Mar 12. Menstrual cycle– Walter

Week 10:

- 25. Tues Mar 16. GnRH pulsatile release. Adrenal Hormones and Catecholamines – Walter
- 26. Wed Mar 17. Adrenal Hormones and Catecholamines. Gonadal differentiation - Walter
- 27. Fri Mar 19. Sex and gonadal differentiation - Walter

Week 11:

- 28. Tues Mar 23. Paper review – Low Melatonin, increased Estrogen - the Environment and Breast Cancer - Walter
- 29. Wed Mar 24. Insulin Receptor / paper – Wagner
- 30. Fri Mar 26. Diabetes – Wagner

Week 12:

- 31. Tues Mar 30. Aging and Performance Enhancing Drugs – Walter/Adam Kreek
- 32. Wed Mar 31. Estrogen, Vitamin D, the Environment and Breast Cancer – Walter

GOOD FRIDAY April 2 and EASTER MONDAY Apr 5, the University is closed

Week 13:

- 33. Tues Apr 6. ER α , melatonin slide. Leptin/Fat Hormones and Obesity – Walter
 - 34. Wed Apr 7. Leptin/Fat Hormones and Obesity – Walter
 - 35. **Fri Apr 9. Last Class.** Endocrine Autoimmunity and REVIEW – Walter
- EXAM PERIOD Thurs Apr 15 -Tues Apr 27**