Anatomy & Cell Biology

9555/9655

Advanced Topics in Cell and Neurobiology

Course Coordinator: Trevor Shepherd, Ph.D.
Department of Anatomy & Cell Biology

2022

Fall/Winter
1.0 Credit
COURSE DESCRIPTION

The course offers an opportunity for critical evaluation of current research in numerous areas of cell and neurobiology including cell interactions, development and differentiation, intracellular dynamics, and cell pathology including cancer biology. During each session, current articles and reviews are discussed in detail with emphasis on hypothesis development, experimental models and data acquisition and analyses in cell and neurobiology research. Students will learn important research skills on how to review, criticize, write, discuss and present experimental results.

COURSE ADMINISTRATION

The course begins on Thursday, September 15th, 2022 and is scheduled to end on April 20th, 2023. Complete schedule of classes, topics, and due dates will be posted on OWL. **Class sessions are held on Thursday mornings from 9:30 AM – 12:00 PM in MSB447.**

**Prerequisites:** Students are expected to have undergraduate exposure to cell and neurobiology. In the event that a student has not taken an introductory cell biology course, the student’s supervisory committee along with their supervisor will determine the best course of action, be it independent reading or an undergraduate course available at Western that can be taken concurrently.

This course is a mandatory requirement of the ACB graduate program for students involved in cell biology research. It is complementary to ACB 9550/9650 (Advanced Topics in Integrative Neuroscience) required for students in the field of neuroscience research.

If an incoming PhD candidate has taken a similar course at the graduate level previously (i.e., during MSc studies), then they may seek an exemption from ANATCELL 9655. Special permission must be obtained from the Chair of the Graduate Affairs Committee, Dr. Shawn Whitehead.

COURSE INSTRUCTORS

The course coordinator is Dr. Trevor Shepherd. All questions related to the course should be directed to him. Contact information can be found below. Many of the faculty members in the Anatomy & Cell Biology graduate program that conduct cell biology and neurobiology research will participate in the course as invited instructors and will provide feedback and evaluation to the presenting student(s).
COURSE EVALUATION

Evaluation of the course is broken down into several components. In addition, participation at ALL SESSIONS is required. Advanced notice must be given, supported by a valid reason, if you cannot attend. Illness is understandable but be aware that medical documentation may be requested in certain cases. Only under exceptional circumstances can a student miss more than two sessions in any given term.

Paper Reviews (25% of final grade)
This component will be based on two oral presentations of recently published papers in areas covered by the course. Students will select the papers and submit it to the course coordinator for approval prior to presentation. Every student will give one presentation per term. Graded evaluations on the paper review and presentation will be made by the course coordinator; additional feedback will be given by invited faculty (if in attendance) and fellow classmates (via Qualtrics).

Written Critique (25% of the final grade)
This component will be based on a written critique of one recent publicly-available preprint on biorxiv in a topic of their choice in cell biology or neurobiology. The requirements for the critique will be provided by the course coordinator during the course. This will be due near the end of Fall Term.

Grant Proposal (25% of the final grade)
This component will be based on a written grant proposal based upon the research area of the student’s thesis. More information will be provided by the coordinator during the course. This will be due at the end of the Winter Term.

Participation (25% of the final grade)
Participation and critical discussion of the selected material in class (10%).
It is expected that students will have read the papers and come prepared with critical reflections of the findings and methodology within the papers that they can share with their peers and faculty members.

Written comments on the provided research paper before each class (10%).
The purpose of the written comments will vary from week-to-week and may include summaries of the rationale of the study, the hypothesis & main objective of the paper, or experimental plan, the conclusions, or a personal opinion of the paper’s strengths and weaknesses. Each written comment should be approximately ½ page, double-spaced and will be submitted via Dropbox on OWL.

Peer evaluations and feedback on presentations (5%).
An important objective of this course is to develop one’s presentation skills. Receiving critical feedback, both strengths and limitations, is crucial to improve this skill. All students are required to submit comments on the paper presentations by their peers, which will be done via Qualtrics. Comments will be made anonymous prior to forwarding the feedback to the presenting student.

PLAGIARISM

Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/handbook/appeals/scholoff.pdf

PLAGIARISM CHECKING

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).