Anatomy & Cell Biology 9555/9655 – Advanced Topics in Cell and Neurobiology

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 primary articles are discussed in detail with emphasis on hypothesis development, experimental models and data acquisition and analyses in cell and neurobiology research. Over the course duration, 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 12th, 2019 and is scheduled to end on April 23rd, 2020. 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 Room MSB 447.

Prerequisites: Students are expected to have undergraduate exposure to cell biology or 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.

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 guests for specific topics and will provide feedback and evaluation to the presenting student(s).

Dr. Trevor Shepherd (course coordinator) 
Office: LRCP A4-836 
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COURSE EVALUATION

Evaluation of the course is broken down into several components; a schedule of due dates will be posted on OWL. 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.

Journal Club-style Paper Reviews (12.5% per presentation; 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. 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.

Written Critique (25% of the final grade)
This component will be based on a written critique of one recent pre-print manuscript posted on BioRxiv in a topic of cell biology or neurobiology as selected by the student and approved by the course coordinator. The requirements for the critique will be provided by the course coordinator during the course.

**Grant Proposal (25% of the final grade)**

This component will be based on a written grant proposal (NSERC discovery grant-style). More information will be provided by the coordinator during the course.

**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 methodologies within the papers that they can share with their peers and faculty members.

Written comments on the primary research paper before each class (15%).

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 one-half page, double-spaced.