

# **NEUR\*4000, Course Outline: Fall 2016**

## **General Information**

**Course Title:** NEUR\*4000 Current Issues in Neuroscience

### **Course Description:**

This course will consist of guest lectures offered by faculty who are working in the field of neuroscience and will complement the seminars given by the students on topics that they have prepared in studying the primary literature. Students will also prepare a major research proposal on a neuroscience topic.

**Credit Weight:** 0.5

**Academic Department (or campus):** Psychology

**Semester Offering:** Fall 2016

**Class Schedule and Location:** Monday 2:30PM - 5:20PM, MCKN, Room 116

## **Instructor Information**

Instructor Name: Dr. Erin Rock

Instructor Email: erock@uoguelph.ca

Office location and office hours: MCKN 3016, Monday 5:30-6:30 PM

## **GTA Information**

GTA Name: TBA

GTA Email: TBA

GTA office location and office hours: TBA

## **Course Content**

### **Specific Learning Outcomes:**

This course will consist of assigned readings, student presentations, attending research seminars and participating in open class discussion about current issues in the field of neuroscience. Each week, a neuroscientist will be invited to give a seminar on a research topic of their choice. Students will take turns presenting research papers relevant to the weekly seminar and will be expected to participate in and lead an open class discussion on this topic.

Current neuroscience research being performed at the University of Guelph will be covered, emphasizing such topics as: attention deficits in a laboratory model of Fetal Alcohol Spectrum Disorder, models for comparative epilepsy research, the role of the cannabinoid system in nausea, vomiting and Alzheimer's Disease, and microRNAs in CNS disease.

Weekly participation, in the form of 3 submitted questions relating to the assigned reading, will assess the understanding and application of learned material and prepare the students to participate meaningfully in class discussions. On the indicated class periods students will gain oral communication skills as they present an assigned journal article. This will allow further exploration of relevant original research articles and familiarize them with reading these types of publications to extract key points and clearly convey this information to their peers.

As a capstone experience, each student will develop a written research proposal based upon material discussed in class or directly related to neuroscience. This exercise will allow students to explore a research question of interest, through application of critical and creative thinking. Students must assess, evaluate, and integrate the current literature and apply this knowledge to develop a unique proposal to investigate their specific research question. Through a writing services workshop geared towards this research proposal, students will have the opportunity to improve their literacy skills (research and writing) and apply these skills directly in developing their research proposal.

**Lecture Content:**

<b>Week 1</b>	Lecture 1: Sept 12–	Introduction to course, information on assignment of presentation groups/dates/topics
<b>Week 2</b>	Lecture 2: Sept 19–	Writing Services Workshop for Research Proposal
<b>Week 3</b>	Lecture 3: Sept 26–	Student paper presentations, Weekly Participation Questions due Guest speaker: Linda Parker, Psychology Title: The Endocannabinoid System and Nausea and Vomiting
<b>Week 4</b>	Lecture 4: Oct 03–	Student paper presentations, Weekly Participation Questions due Guest speaker: Craig Bailey, Biomedical Sciences Title: Attention Deficits in a Laboratory Model of Fetal Alcohol Spectrum Disorder
<b>Week 5</b>	<b>Oct 10— Holiday--NO CLASSES SCHEDULED -- classes rescheduled to Friday, December 2</b>	
<b>Week 6</b>	Lecture 5: Oct 17–	Student paper presentations, Weekly Participation Questions due Guest speaker: Leah Bent, Human Health and Nutritional Science Title: Keeping Balance; the Role of Skin Receptors in Posture and Locomotion <b>Outline of Research Proposal due at beginning of class</b>
<b>Week 7</b>	Lecture 6: Oct 24–	Student paper presentations, Weekly Participation Questions due Guest speaker: Luis Gaitero, Clinical Studies Title: MicroRNAs in CNS Disease
<b>Week 8</b>	Lecture 7: Oct 31–	Student paper presentations, Weekly Participation Questions due Guest speaker: Fiona James, Clinical Studies Title: Comparative Epilepsy Research

- Week 9**      Lecture 8: Nov 07–      Student paper presentations, Weekly Participation Questions due  
Guest speaker: Francesco Leri, Psychology  
Title: TBA
- Week 10**      Lecture 9: Nov 14–      Student paper presentations, Weekly Participation Questions due  
Guest speaker: Ray Lu, Molecular & Cellular Biology  
Title: Deficiency of Luman/CREB3, a Transcription Factor that Alters  
Glucocorticoid Signaling, Results in Stress Resilience in Mice
- Week 11**      Lecture 10: Nov 21–      Student paper presentations, Weekly Participation Questions due  
Guest speaker: John Vessey, Molecular & Cellular Biology  
Title: Molecular Biology of Neural Precursor Cells and the Developing  
Cortex
- Week 12**      Lecture 11: Nov 28–      Student paper presentations, Weekly Participation Questions due  
Guest speaker: Bettina Kalisch, Biomedical Sciences  
Title: Cannabinoids and Alzheimer's Disease
- Week 13**      Lecture 12: Dec 02–      **NOTE THAT THIS IS A FRIDAY**  
No Student paper presentations  
Guest speaker: Erin Rock  
Title: Phytocannabinoids in Animal Models of Nausea and Vomiting  
**Final Research Proposals due at the beginning of class**

**Course Assignments and Tests:**

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Weekly Participation Questions	Weekly on the indicated Guest Speaker class dates <b>(due at the end of class)</b>	10% (7, each worth 1.43%)	Identify main concepts of journal articles and apply this knowledge to formulate questions to participate in discussion
Oral Research Paper Presentation	Date/topic/group assigned Sept 12, 2016	25%	Oral communication skills; synthesis and presentation of scientific publication material for peers
Outline of Research Proposal	October 17, 2016 (due at beginning of class)	15%	Develop research question and discuss how you will test it; gain feedback to improve final proposal
Final Research Proposal	December 02, 2016 (due at beginning of class)	40%	Critical and creative thinking; learn to assess, evaluate, integrate literature; improve literacy skills

## **Additional Notes:**

### ***Oral Research Paper Presentation (25%):***

The presentations will be based on assigned scientific research papers that will be provided by the invited neuroscientist and posted to CourseLink two weeks before the class. Papers will be presented in groups of two or three students each and students will earn the same grade for their presentation. It is entirely up to those students to distribute their efforts for their presentation. Please let me know well before your presentation date if there are any issues with the degree of effort being made by a presentation member.

An overview of the full research paper should be presented, including the Introduction, Methods, Results and Discussion. The Introduction and Methods should clearly describe the background information and rationale for performing the research study (including any particularly relevant recent findings that lead directly to the current study), as well as the key primary methods employed in the research study. The Results and Discussion should clearly describe the main results, their implications in light of other relevant studies, and the authors' conclusions. You may include any information from the assigned research papers including their figures, and should also include information obtained from other sources such as other published research papers. The evaluation of the presentation will be based on both style and content. It is important that students demonstrate a clear understanding of the material being presented and that this material is clear to the audience. Overly flashy presentations will not earn extra points if the material covered is highly superficial and/or poorly communicated. For full marks, students should endeavor to go beyond a surface level presentation of the assigned material, incorporating additional readings and their own critical thoughts and, ideally, clearly describing empirical findings that support the arguments being made. The findings of the assigned paper should be discussed in the broader context of the research field.

Another important aspect of the presentation will be for the presenters to stimulate a good class discussion. While your marks won't suffer if the class is quiet that day, your effort to foster discussion and participation from the class will be considered in your mark for this exercise.

Each presentation should be approximately 15 minutes long, and allow for 5-7 minutes of questions and class discussion. These times will be strictly enforced. The mark of the presentation will suffer if it is shorter than 10 minutes or longer than 20 minutes. Please use PowerPoint to make your presentation slides.

***The day before you present***, one group member must have emailed me your presentation file (in powerpoint) so that it can be loaded and ready to go for the classroom. Failure to do so by **7 PM Sunday**, will result in a **5 point** deduction.

### ***Participation (20%):***

Each student is expected to read all of the assigned research papers provided by the invited neuroscientist (to be posted in CourseLink) before each class and is expected to actively participate and contribute to the group discussion both after the student presentations and the invited speaker's seminar presentation. Participation in this course will be evaluated by two distinct mechanisms:

(i) At the end of each class, students will submit a list of three important questions that they thought of while reading each of that week's research papers. This list will only be accepted by hard copy and only at the end of class. Early, late and emailed submissions will not be accepted. There are nine weeks of presentations, so to account for illness and other potential emergencies, students are required to submit

seven of these reports for the semester. They are worth 1.43% each for a total of 10% of the final grade in this course.

(ii) At the end of the semester, the course instructor will assess an overall participation mark for each student. This mark will be worth 10% of the final grade in this course. Each student will start with a mark at the 5% level and this may be adjusted down (if student does not participate at all, is disruptive, spends time on their laptop focusing on endeavors not related to class, etc.) or this may be adjusted up to a maximum of 10% (if student participates regularly in class, provides valuable contributions to class discussions, etc.).

***Outline of Research Proposal (15%):***

The proposal topic must be different from the student's assigned research paper but may be related to one of the more general topics covered in class.

Each student will first prepare a two-page double-spaced outline (with references on an additional third page) of their research proposal and submit it by hard copy at the **beginning of class on Monday, October 17. No late submissions will be accepted.** Be on time!

The outline must identify your proposed research topic/question, briefly describe how you will answer this question (methods), along with a list of references containing at least 5 journal article references that are directly relevant to answering your specific research question. A handout detailing requirements will be provided on CourseLink.

Constructive feedback on the outline will be provided, which will help in revising and improving the final ten-page written proposal.

***Final Research Proposal (40%):***

Students will write a 10-page double-spaced (plus references) research proposal and submit a hard copy due **Dec 02, 2016** at the **beginning of class**. Be on time!

For each day late, the grade will be penalized by 7 out of the 40 points (~18%).

Each proposal will outline the design of an experiment to address a question related to a topic in neuroscience. The topic must be different from the student's assigned research paper but may be related to one of the more general topics covered in class, or it can be from any other topic in neuroscience.

The proposal will be written in the format of a scientific article, using ***The Journal of Neuroscience*** style, including a Title Page, Abstract, Introduction, Methods, Expected Results, and References.

The ***Introduction*** should be no longer than five pages and should refer to material from at least ten peer reviewed primary references (i.e. journal research papers) based on an independent literature search. Non peer-reviewed publications (e.g. Wikipedia) are not acceptable references.

The ***Methods*** section should describe the proposed experimental methodology and data analysis in sufficient detail to be replicated and should be written in the future tense.

The ***Expected Results*** should include mock data, graphs and/or tables to demonstrate the type of data that are expected to be generated from this experiment.

The ***References*** should be formatted according to ***The Journal of Neuroscience***, and a full list of references in alphabetical order at the end of the proposal.

More details will be posted on Courselink.

## **Course Resources**

### **Other Resources:**

Any additional resources will be provided on Courselink.

## **Course Policies**

### **Grading Policies**

### ***Oral Presentation***

Both content and style will be evaluated for the group presentations.

***The day before you present***, one group member must have emailed me your presentation file (in powerpoint) so that it can be loaded and ready to go for the classroom. Failure to do so by **7 PM Sunday**, will result in a **5 point** deduction.

### ***Preliminary Research Proposal***

Due Oct 17, 2016. No late (after the beginning of class) submissions will be accepted.

### ***Final Research Proposal***

Due Dec 02, 2016 at the beginning of class. For each day late the grade will be penalized by 7 out of the 40 points.

### **Course Policy on Group Work:**

Students will work in groups for the oral presentations. Each group member must evenly contribute to the presentation preparation, as well as the in-class presentation of the material. Failure to do so will be reflected in a student's grade for this component of the course. Please let me know well before your presentation date if there are any issues in the degree of effort being made by a presenting group member.

## **Course Policy regarding use of electronic devices and recording of lectures:**

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

## **University Policies**

### **Academic Consideration**

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration:

[Academic Consideration, Appeals and Petitions](#)

### **Academic Misconduct**

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

[Academic Misconduct Policy](#)

### **Accessibility**

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the [Student Accessibility Services](#) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email [csdexams@uoguelph.ca](mailto:csdexams@uoguelph.ca) or the [Student Accessibility Services Website](#)

### **Course Evaluation Information**

Please refer to the [Course and Instructor Evaluation Website](#) .

### **Drop date**

The last date to drop one-semester courses, without academic penalty, is **November 04, 2016**. For regulations and procedures for Dropping Courses, see the [Schedule of Dates in the Academic Calendar](#).  
[Current Undergraduate Calendar](#)

### **Additional Course Information**

Course instructors are allowed to use software to help in detecting plagiarism or unauthorized copying of student assignments. Plagiarism is one of the most common types of academic misconduct on our campus. Plagiarism involves students using the work, ideas and/or the exact wording of other people or sources without giving proper credit to others for the work, ideas and/or words in their papers. Students can unintentionally commit misconduct because they do not know how to reference outside sources properly or because they don't check their work carefully enough before handing it in. As the 2014/15 Undergraduate Calendar states: "Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it" (p. 31).

In this course, your instructor will be using Turnitin.com to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to prevent plagiarism in the College of Social and Applied Human Sciences.

A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing misconduct. In this course, you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your assignment.