



# NEUR\*4402 Research in Neurosciences

Fall 2020

Section(s): 01

Department of Biomedical Sciences

Credit Weight: 0.50

Version 2.00 - July 28, 2020

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## 1 Course Details

### 1.1 Calendar Description

This is the second part of the two-semester course NEUR\*4401/2.. In this course, students will conduct independent research of a current topic in any of the biomedical neurosciences: (such as anatomy, physiology, pharmacology, toxicology, molecular biology, biochemistry). Students work under the supervision of individual faculty. Faculty consent must be obtained prior to being admitted into the course by the course coordinator. This is a two-semester course offered over consecutive semesters. When you register for this course you must select NEUR\*4401 in the first semester and NEUR\*4402 in the second semester. A grade will not be assigned in NEUR\*4401 until NEUR\*4402 has been completed.

**Pre-Requisites:**

NEUR\*4401

**Restrictions:**

BIOM\*4510, BIOM\*4521, BIOM\*4522, NEUR\*4450. Enrolment restricted to BSC.NEUR major and minor.

### 1.2 Course Description

**Objectives:** This research course is designed to expose students to neuroscience research where information is created, interpreted and integrated with current knowledge, and to teach effective skills for communicating scientific information orally and in writing.

It is important to realize that this course is at the undergraduate level. The research project should be well-defined and have a reasonable likelihood of success. This course is not mini-Masters and certainly should not involve a rigorous series of experiments.

### 1.3 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

### 1.4 Final Exam

Exam time and location is subject to change. Please see WebAdvisor for the latest

information.

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## 2 Instructional Support

### 2.1 Instructional Support Team

**Course Co-ordinator:** Craig Bailey Dr.  
**Email:** baileyc@uoguelph.ca  
**Telephone:** +1-519-824-4120 x54954  
**Office:** OVCE 2602

**Program Advisor:** Kimberly Best  
**Email:** kbestb@uoguelph.ca  
**Telephone:** +1-519-824-4120 x54918  
**Office:** OVCE 2633

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## 3 Learning Resources

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### 4 Learning Outcomes

This course is designed to give the student a realistic view of research by providing an opportunity for “hands-on” research.

#### 4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Develop an appreciation for research.
  2. Improve library skills by researching the literature on a specific topic.
  3. Develop awareness of current research techniques.
  4. Develop the techniques and attitudes of critical thinking through evaluation of research data.
  5. Teach problem solving.
  6. Improve written and oral communications skills.
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## 5 Teaching and Learning Activities

A CHECK-LIST FOR STUDENTS

1. When the semester begins, students should contact their supervisor and begin working on their laboratory project according to his/her directions.

2. Maintain regular contact with your supervisor throughout the semester, to discuss your progress. Many supervisors arrange a regular weekly meeting with students.
  3. You need to discuss with your supervisor the points raised in the *Seminar Questionnaire*. This form needs to be returned to Kim Best (Rm 2633, OVC; kbestb@uoguelph.ca) before the deadline date to facilitate planning the seminar days. If this questionnaire is not received by the date in the deadline dates, 5 marks will be deducted from your seminar.
  4. You will prepare your seminar slides/presentation using PowerPoint and this file will be uploaded by us to a local server. You must submit your PowerPoint presentation file to us for uploading by 8 am the day of your presentation. Files may be submitted by email or USB drive to Dr. Craig Bailey or Kim Best. If files are not received by this deadline, 5% will be deducted from your final grade.
  5. Preview and practice your completed PowerPoint presentation with your supervisor. A sign-up sheet will be posted on the door to the seminar room several days before the practice times are scheduled.
  6. You are expected to participate and critique your colleagues' presentations by completing five peer evaluations during the seminar week. Evaluation forms will be provided during each seminar session. For full marks, these forms must have your name clearly printed on the bottom and be submitted to the daily seminar coordinator or to Kim Best.
  7. We ask that you complete an online course evaluation during the last 2 weeks of classes.
  8. A preliminary draft of your written project report should be submitted to your supervisor for general comments and feedback before the final copy is submitted. Allow time for this to occur, in consultation with your supervisor. The final written project report is due to your supervisor on the specified day indicated in semester deadlines (see *Semester Deadlines* – use date as a guideline).
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## 6 Assessments

Students will not be penalized if a project fails due to circumstances beyond their control. In such cases however, students should give a critical appraisal of the problem(s) encountered, and the emphasis of the project may be re-directed to improving the methodology.

**Please note:** The percentage allocations below contribute to the overall grade for NEUR\*4401 AND NEUR\*4402 together, which will be calculated and provided on your transcript once NEUR\*4402 is completed. An "in progress" INP will appear on your transcript for NEUR\*4401 until NEUR\*4402 is completed, at which time the overall grade will appear for both courses.

## 6.1 Assessment Details

### Formal Seminar Presentation (2nd semester) (25%)

All students are required to give an oral presentation. This formal seminar will be presented using the 10/5 format commonly used in scientific meetings, which is a 10-minute PowerPoint presentation followed by a 5-minute question period. The emphasis in the presentation, and in the evaluation, should be on development of logical ideas and on effective communication.

The structure of your presentation may be designed in consultation with your supervisor. A typical presentation may include the following components:

1. An Introduction - general terms to orient the audience and provide background information.
2. Hypothesis/Objectives - definition of the scope of the experimental project.
3. Methodology/Experimental Design - this will provide an overview of the methods used.
4. Experimental Results.
5. Discussion of Results.
6. Summary/Conclusions - review of the main points and concise conclusions.

Specific days have been designated for the seminar presentations. After soliciting student/supervisor input (*Seminar Questionnaire*), your presentation will be scheduled for a specific morning or afternoon session. Every attempt will be made to accommodate your first choice of day/time (am/pm).

Students are strongly encouraged to present and practice your PowerPoint oral presentation with your supervisor. Practice rehearsal times will be available the week before the seminars, and a sign-up sheet will be placed on the door to the seminar room 1-2 days before rehearsals begin. An e-mail will be sent out indicating when this is available. Students are strongly encouraged to verify the performance of their presentation on the classroom computer during rehearsal time. Supplemental audiovisual aids are NOT permitted and PowerPoint "presenter view" will not be available. The presenter must keep in mind the time restrictions for the seminar, as each presentation will be timed.

Students are required to submit their PowerPoint presentation file for uploading, with the deadline being 8am the day of the presentation. Files may be submitted by email or USB drive to Dr. Craig Bailey or Kim Best. If files are not received by this deadline, 5% will be deducted from your final grade.

**Evaluation of your colleagues' seminars (5 in total) (2.5%)**

Students are required to assist with the evaluation of their colleagues' presentations and to participate in the question periods. Each student must submit a minimum of 5 peer evaluations each semester. These evaluations must have your name clearly printed on the bottom of the page to receive the full marks. The presenter's seminar mark will be calculated as the average of all faculty scores submitted, however, presenters and supervisors will receive a copy of all faculty + peer evaluations, in order to evaluate all feedback provided for the presentation. Students are encouraged to review this feedback with their supervisor.

**Final Written Report in the form of a research project paper (25%)**

Your supervisor will mark this report and arrange for a second faculty member to also mark it. Your mark for this assignment will be the average of these two faculty members.

The date given for the final written report on the experimental project is given as a guideline (*Semester Deadlines*). The report can be submitted electronically or in paper format (depending on the supervisor's preference) for assessment by the supervisor and by a second senior reviewer not from their laboratory - chosen by the supervisor. \*\*An alternate due-date can be agreed upon by the student and supervisor - as long as both evaluators have sufficient time to grade the paper. Marks MUST be submitted to the course coordinator no later than the date indicated on the *Current Semester Deadlines* page.

Reports should be written in the format of a Neuroscience journal of the supervisors choosing, with the following sections: Title Page, Abstract, Key Words, Introduction, Materials and Methods, Results, Discussion, Conclusions, and References. The emphasis will be on the presentation and discussion of the research data generated during the semester. The references for this report should be in the format of the chosen journal.

It is appropriate for the supervisor to read a draft of the project final report once, and offer specific suggestions for improvement before the student submits the final version (faculty supervisors provide advice and feedback to their graduate students when the latter are drafting MSc or PhD thesis). This feedback is part of the learning process and should be part of the research project course experience as well. Students should schedule this preliminary reading with their supervisors well in advance of the due date of the report.

### **Assessment by the Supervisor (20%)**

The supervisor provides an overall assessment of the student's work over the two semesters for NEUR\*4401/2. This supervisor assessment might include factors such as: interaction with others in the laboratory, organization of time, preparation for meetings, development of technical competence and quality of laboratory notes, etc. The student should discuss the specific criteria for this assessment with the supervisor before the project begins.

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## **7 Course Statements**

### **7.1 Faculty and Student Commitments**

Neuroscience minors may require one of the University's double-weighted research courses for their major program. The '0-6' and '0-12' hr/week labels on the courses should be regarded as the minimum time commitment for students. In other courses, students are expected to work on course material after lectures and laboratories are finished. Research course students can expect that they will have to spend more than the listed time/week to complete their research work. Students may have to deliberately limit the time that they devote to these courses if they find the work particularly interesting or demanding. If a student feels that a problem is arising, he/she must talk to the supervisor about either becoming more efficient, or limiting the workload.

If a student wishes to perform their research off-campus, they must secure a co-supervisor who is a faculty member of the University of Guelph.

If a student has questions or concerns regarding any aspect of the research or academic aspects of this course, they are encouraged to talk with the course coordinator.

## 7.2 'Animal Utilization Protocol' Approval

Some projects may require working with live animals. Faculty supervisors are responsible for obtaining the appropriate Animal Utilization Protocols to cover the work being done by Research project students under their supervision. Students should be aware of these protocols and understand their purpose. Discuss these with your supervisor.

## 7.3 Course Evaluation

Course evaluations will be turned on the last 2 weeks of classes - [https://courseeval.uoguelph.ca/CEVAL\\_LOGIN.php](https://courseeval.uoguelph.ca/CEVAL_LOGIN.php)

If you see ways that the course could be improved, please say so on the evaluation form. Your feedback is vital for us to assess the impact of the research courses and to fine tune the way we operate. This feedback will be provided to the course coordinator ONLY after the final grades have been submitted to the Registrar's Office and will be used to make improvements to the course.

# 8 University Statements

## 8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

## 8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals  
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration  
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions  
<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

### 8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

### 8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

### 8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website

<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website

<https://www.ridgetownc.com/services/accessibilityservices.cfm>

### 8.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

## 8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

## 8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

## 8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## 8.10 Illness

The University will not require verification of illness (doctor's notes) for the fall 2020 or winter

2021 semesters.

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