



NEUR*4450 Research in Neurosciences

Winter 2022

Section(s): 01

Department of Biomedical Sciences

Credit Weight: 1.00

Version 1.00 - January 05, 2022

1 Course Details

1.1 Calendar Description

In this course, students will conduct independent laboratory research on 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.

Pre-Requisites:

14.00 credits

Restrictions:

BIOM*4510, BIOM*4521, BIOM*4522, NEUR*4401.

NEUR*4402. Instructor consent required. 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.

2 Instructional Support

2.1 Instructional Support Team

Course Co-ordinator: Tarek Saleh Dr.
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Program Advisor: Kimberly Best
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3 Learning Resources

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. Criteria for the supervisor’s assessment (25% component of the final grade) should be discussed and agreed upon at the first meeting with your supervisor.
2. When the semester begins, contact your supervisor and proceed according to his/her schedule.

3. Arrange a time each week to meet with your supervisor to discuss your progress.
 4. Review the Seminar Questionnaire, with your supervisor, and schedule a day/time for your seminar presentation. This form needs to be returned to Kim Best before the deadline date to facilitate planning the seminar.
 5. Complete the course evaluation, on-line, during the last 2 weeks of classes
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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.

6.1 Assessment Details

Formal Seminar Presentation (30%)

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 - a 10 minute presentation and 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. Ideally, the seminar should include the following components:

- Introduction
- Objectives/Hypothesis
- Methodology/Experimental Design
- Summary of Literature
- Discussion of Literature
- Summary/Conclusions

Seminar Preparation

Supplemental audiovisual aids are not permitted and “presenter view” may not be

available. The presentations will be timed.

Specific rehearsal times will be provided the week prior to the seminars. A sign-up sheet will be posted and you will be notified when this is available to reserve your timeslot. Students are strongly encouraged to verify the performance of their presentation on the classroom computer during rehearsal time.

Students are required to upload their presentation with a deadline of 8a the day of the presentation. If not received by 8a, 5% will be deducted from your final grade.

Seminar Presentation:

The second last week of classes has been designated for the seminar presentations. After soliciting student/supervisor input (*Seminar Questionnaire*), a schedule will be made up (please note that every attempt will be made to accommodate your first choice of day/time). It is important that your presentation be thoroughly rehearsed to ensure that it meets the time restrictions for the assignments. Presentations that significantly run overtime will be halted and marked accordingly.

Evaluation of your colleagues' seminars (5 in total) (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 5 evaluations for their peer presentations. These evaluation forms must be filled in correctly to receive the full marks. Attendance can be at any presentation throughout the week.

Only seminar scores provided by faculty, supervisors, supervisor's designates, and TAs present will be used in determining the grade for the presentation. All evaluation forms will be returned to the student and their supervisor. It is the supervisor's responsibility to review these with the student.

Final Written Report in the form of a research project paper (35%)

The date given for the final written report on the *Semester Deadlines* is to be used as a guideline.

The report should be submitted, in duplicate, for assessment by the supervisor and by a second senior reviewer delegated by the supervisor.

The literature review should be arranged in a logical manner which allows development of the topic. The format is flexible, and again, this is a guideline, but there should be a Title Page, Abstract, Key Words, Introduction, appropriate sub-headings, Summary and Conclusions, and References. The references should be in the format of one of the principle journals consulted during your research project.

It is proper for the supervisor to read a draft of the project final report once, and offer constructive suggestions for improvement before the student submits the final version. This feedback is part of the learning process and should be part of their research project course experiences 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 (30%)

The supervisor provides an overall assessment of the student's work over the semester. 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.

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. 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 make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

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, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. 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

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.
