



BIOM*4522 Research in Biomedical Sciences

Winter 2023

Section(s): 01

Department of Biomedical Sciences

Credit Weight: 1.00

Version 1.00 - November 07, 2022

1 Course Details

1.1 Calendar Description

This is the second part of the two-semester course BIOM*4521/2. In this course, students will conduct an extensive individual research project on a current topic in any of the biomedical sciences (such as anatomy, physiology, pharmacology, toxicology, genetics, biochemistry). Students work under the supervision of individual faculty. Students should make arrangements to find their own faculty advisor well in advance of course selection. A departmental registration form must be obtained from the course coordinator and signed by the faculty advisor before students can be admitted into the course. This is a two-semester course offered over consecutive semesters. When you select it you must select BIOM*4521 in the first semester and BIOM*4522 in the second semester. A grade will not be assigned in BIOM*4521 until BIOM*4522 has been completed.

Pre-Requisites: BIOM*4521

1.2 Course Description

In this course students will conduct an individual research project on a current topic in any of the biomedical sciences (such as anatomy, physiology, pharmacology, toxicology, genetics, 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.

1.3 Timetable

1.4 Final Exam

2 Instructional Support

2.1 Instructional Support Team

Course Co-ordinator: James Petrik
Email: jpetrik@uoguelph.ca
Telephone: +1-519-824-4120 x54921
Office: OVC 3627

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

3 Learning Resources

4 Learning Outcomes

This research course is designed to expose students to biomedical research, and to teach effective skills for communicating scientific information orally and in writing.

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

4.1 Course Learning Outcomes

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

1. develop an appreciation for research
 2. improve their research skills
 3. develop an awareness of current research techniques
 4. develop and improve their critical thinking skills
 5. develop and enhance their problem solving skills
 6. improve their written and oral communication skills
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5 Teaching and Learning Activities

6 Assessments

6.1 Assessment Details

Formal Seminar Presentation on the entire project (25%)

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.

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 a 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.

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 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, on the entire project (2 reviewers) (25%)

The date given for the final written report (*Semester Deadlines*) is to be used as a guideline. The report should be submitted, in duplicate, for assessment by the supervisor and a second senior reviewer delegated by the supervisor.

Reports should be written in the format of a journal paper of the supervisor's choosing, with the following sections: Title Page, Abstract, Key Words, Introduction, Materials and Methods, Results, Discussion, Conclusions, and References. The final report for BIOM*4522 will be on the entire 2 semester's worth of work.

It is appropriate for the supervisor to read a draft of the report once, and offer constructive suggestions for improvement before the student submits the final version. This feedback is part of the learning process and 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's assessment should 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

Accepting a student involves a commitment to 2 single course equivalents of research taken over sequential semesters. The '0-12' week on the course should be regarded as the minimum time commitment for students. Students can expect that they will have to work irregular hours to complete their research work. 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. Students should also feel free to talk to 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

Two weeks before the end of the semester, students will be asked to complete a course evaluation. Your feedback is vital for us to assess the impact of the research courses and to fine-tune the way these courses are run. All ratings and any comments will be anonymous unless you choose to identify yourself, and will not be provided to the course coordinator until after the end of each semester.

7.4 A CHECK-LIST FOR STUDENTS

1. Criteria for the supervisor's assessment (20% 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. You need to discuss the points raised in the *Seminar Questionnaire*. This form needs to be returned to Kim Best, Room 2633 before the deadline date to facilitate planning the seminar.
5. Complete the course evaluation on-line, during the last 2 weeks of classes,

Direct questions to the course coordinator, Dr Jim Petrik - jpetrik@uoguelph.ca - ext 54921; Rm 3627 or Kim Best - kbestb@uoguelph.ca. - ext 54918; Rm 2633, Biomedical Sciences.

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

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