

Objectives

These research courses are designed to expose students to Neuro research where information is created, interpreted and integrated with current knowledge, and to teach effective skills for communicating scientific information orally and in writing.

Goals

The specific goals of these courses are to: (a) develop an appreciation for research, (b) improve library skills by researching the literature on a specific topic, (c) develop awareness of current research techniques, (d) develop the techniques and attitudes of critical thinking through evaluation of research data, (e) teach problem solving and (f) improve written and oral communications skills. The courses are designed to give the student a realistic view of research by providing an opportunity for “hands-on” research .

It is important to realize that these courses are at the undergraduate level where the emphasis should be on a small well-defined problem. These courses are not mini-Masters and certainly should not involve a rigorous series of experiments. Students will not be penalized when 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 in the project may be re-directed to improving the methodology. Once again, the research projects should be well-defined and have a reasonable likelihood of success.

Faculty and Student Commitments

Neuro minors may require one of the double-weighted courses for their programs. 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, like, double 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. Students should also feel free to talk to the course coordinator.

“Animal Utilization Protocol” Approval

Some projects may require working with live animals. Individual faculty are responsible for obtaining the appropriate Animal Utilization Protocol 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

Academic Misconduct

The University of Guelph has adopted a set of policy guidelines to deal with academic misconduct. Please see: <http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>. It's the students responsibility to be aware of and following these regulations.

Course Evaluation (important feedback - Please do not neglect!)

At the time of their seminars, students will be asked to **anonymously** complete a course evaluation by going to the CCS evaluation web site and completing the evaluation for your particular course.

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. It will be used by the course coordinator to make improvements to the course .

Methods of Evaluation

- NEUR 4450:**
- Formal seminar presentation - 30%.
 - Evaluation of your colleagues' seminars within your group - 5%
 - Final written report in the form of a research project paper -35%
 - Assessment by the supervisor* - 30%

- NEUR 4401/2:**
- Interim report (1st semester) - 15% ---7.5% for seminar and 7.5% for written report
 - Evaluation of your colleagues' seminars within your group - 5%
 - Formal seminar presentation (2nd semester) - 30%.
 - Final written report in the form of a research project paper (30%).
 - Assessment by the supervisor* - 20% . .

* The supervisor's assessment might include factors such as: interaction with others on 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.**

The Formal Seminar

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 utilizing MS Powerpoint 2007 only.

Ideally, the seminar should include the following components:

1. An Introduction - general terms to orient the audience and provide background information.
2. Objectives/Hypothesis - 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.

Seminar Preparation:

All seminars are to be computer-generated presentations using the program, MS Powerpoint 2007 only. Supplemental audiovisual aids are **NOT** permitted. The presenter must keep in mind the time restrictions for the seminar. The presentations will be timed.

All students registered in the Neuro Research Project courses **require** a network account (free of charge). To set this up after the course begins, go to webpage:

With this network account, students have access to the computers in the **OVC Computer Laboratory in Population Medicine (Rm. 2500, OVC)**. Students will be able to use these computers for: (a) word processing; (b) searching the literature (c) organizing your references (save references from searches to Ref Works); (d) producing visual materials for your seminars (use Powerpoint 2007), and (e) sending and receiving e-mail (We will use e-mail to correspond with you during the semester). The course computer in the seminar room (Rm 3648, Biomedical Sciences) has been upgraded to Windows XP and Powerpoint 2007. Specific rehearsal times using that computer are provided in the week before the seminars. A sign-up sheet is placed on the door of Rm 3648 a day or two before rehearsals begin.

***NOTE: All final seminar presentations must be brought to Tim Bast on disk OR forwarded via the "V-drive/Workgroup Shares/Biomed Research Presentations/Place presentations here" to Tim Bast, for loading on the 'V' drive /Workgroup Shares/Biomed Research Presentations by 23:59 pm the day before your seminar session.** If not received by the required time, 5 marks will be deducted from your final average. This process precludes rebooting the computer between presentations. **Use of Laptop computers or flash cards are NOT permitted during seminar presentations.**

Seminar Presentation:

Specific days have been designated for the seminar presentations. After soliciting student/supervisor input (Seminar questionnaire), a program will be scheduled for a specific morning(s) and/or afternoon(s) of these days. Seminars will be at 15 minute intervals, with every attempt being made to accommodate your first choice of day/time (am/p.m.). It is important that your presentation be thoroughly rehearsed to ensure that it meets these time restriction. Presentations **will not** be allowed to run overtime.

Students are required **to be present for the duration of their session** to assist with the evaluation of their colleagues' presentations and to participate in the question periods. Each students must submit evaluations for all the peer presentations in their group. These evaluations **MUST** have their name **CLEARLY PRINTED** on the bottom of the page to receive the five marks. All present in the audience will be asked to evaluate and grade each seminar. Only seminar scores provided by the Faculty present will be used in determining the grade for the presentation. All evaluation forms will ultimately be returned to the student's supervisor, and **the supervisor will be expected to review these with the student as a means of providing feedback on the oral presentation**

The Final Written Report

The **final written report** on the experimental project is due on the specified date (See current semester deadlines). The report must be submitted in duplicate for assessment by the supervisor and by a second senior reviewer not from their laboratory chosen by the supervisor.

Reports should be written in the format of a Neuro journal paper 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 types of report should be in the format of the chosen journal.

It is proper 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. Graduate faculty provide advice 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 these research project courses experiences as well. Students should schedule this preliminary reading with their supervisors well in advance of the due date of the report.

The Interim Report (NEUR 4401 students only)

Students taking the two semester course will be required to provide an interim report for the first semester on their progress to date. This report consists of two components: an oral presentation (a 5 minute Powerpoint presentation followed by 5 min question period) on one of the regularly scheduled seminar days for that semester **and** a written (2 page single spaced report) provided to the supervisor on the same date that all the other reports are handed to the supervisors. The purpose of the interim report is primarily to identify the objectives/hypothesis being tested in the EP, the research protocol for the project and any progress to date. The formal seminar given in the second part of the course (NEUR 4402) concentrates more on the results and discussion of the overall project.

A CHECK-LIST FOR STUDENTS

1. You are responsible for finding a Professor to supervise your work. Arrange to meet with potential supervisors (from websites, past professors, professors working in an area that you now find interesting) to obtain agreement on a project (part of their research program). If you have a special project that you would like to pursue, ask the course co-ordinator for suggestions for a supervisor. Departmental Web sites or the Graduate Studies Office WWW site are also excellent because they list faculty and their interests. **This should be done as far in advance of the start of the semester as possible.**
2. Once you have arranged for a supervisor, have the supervisor sign your “SIGN-IN QUESTIONNAIRE” indicating his/her agreement to supervise your project. Students should indicate clearly whether they plan to do an experimental project in one or two semesters. **Return this form to one of the course coordinators along with your course registration forms and then he /she will sign a waiver form which allows you into the research courses.** Criteria for the supervisors assessment (the 20 -30% component of the final grade) should be discussed and agreed upon at the first meeting with your supervisor.
3. When the semester begins, **YOU** contact your supervisor and proceeding according to his/her directions.
4. Arrange a time each week to meet with your supervisor to discuss your progress.
5. You need to discuss the points raised in the “SEMINAR QUESTIONNAIRE”. This form needs to be returned to the course coordinator Tim Bast Rm 1685 (complete all blanks please) before the deadline date to facilitate planning the seminar days. The sooner it is returned the greater the chance of getting your first choice of time. Students taking NEUR 4401 should indicate that this will be the interim report.
6. All seminars will be prepared using Powerpoint 2007 (See “The Seminar”). Assistance with Powerpoint can be obtained from Tim Bast, Rm 1685,OVC.
7. **Preview your completed computer-generated presentation** with you supervisor in the seminar room. Book a time(s) on the “sign-up sheet” that will be posted on the seminar room door Rm 3648 several days before the practice times are scheduled.
8. You are **required to be present for the entire session** in which you are scheduled to give your presentation. You are expected to participate in the question periods and to critique your colleagues’ presentations. Evaluation forms for every one in your group must be completed and submitted. These evaluations **must** have the students name **clearly PRINTED** on the bottom to get the 5 marks.
9. Complete a course evaluation on line at https://courseeval.uoguelph.ca/CEVAL_LOGIN.php.
10. A preliminary draft of your EP report should be submitted to your supervisor for general comments and feedback before the final copy is submitted. Allow time for this to occur. Two copies of the final report on your EP are due to your supervisor **on the specified day (see semester deadlines).**
- 11) Direct questions to the course coordinators
Tim Bast, ext 54239, Room 1685, Biomedical Sciences. tbast@uoguelph.ca

A CHECK-LIST FOR SUPERVISORS

1. Read section on course objectives and goals. Students may do a laboratory research projects double weighted in a single semester or single weighted in each of 2 adjacent semesters.
2. Sign the student's "SIGN-IN QUESTIONNAIRE" indicating your agreement to supervise the student. This must be returned by the student to the course coordinators no later than the introductory session for the course (See Semester deadlines) so that a waiver may be signed allowing them in to course.
3. In the initial meetings with your student, focus on opening up lines of communication because regular one-on-one meetings with a professor are likely to be a new experience. Students may feel intimidated and be reluctant to ask or respond to questions. Discuss your expectations of the student and be sure to clearly identify the criteria you will use in assessing the student's performance (ie. the supervisor's assessment component of the overall evaluation). Discuss with NEUR 4401/2 students, the requirements for the interim report (oral **and** written format).
4. Arrange weekly meetings with the student to discuss progress, assign tasks or just have a short chat. Try to monitor regularly the time that your student is spending on the course.
5. Discuss the questions posed on the **SEMINAR QUESTIONNAIRE** that your students needs to return to the course coordinator before the specified deadline. **Supervisors are expected to attend their student's oral presentation and to help evaluate other seminars in the time block selected.**
6. If you have to be away from campus for a significant period of time, arrange for the supervision of your student in your absence.
7. Preview your student's presentation before seminar day on the computer in the seminar room (Room 3648). Practice times are scheduled during the week preceding the seminars. The emphasis should be on a clear development of ideas relating to their project.
8. Discuss the seminar evaluations with your student when they are returned to you.
9. Be prepared to help your student meet your expectations if he/she is having to spent considerably more than 6 or 12h/wk on assigned tasks. We need to maintain a standard but the students also have to maintain other courses: help them with the balancing act. These courses should not develop into high pressure stressful exercises that put students off of research.
10. Provide specific comments when your student asks you to review the preliminary draft of the final report. We help MSc and PhD students in such a way and should therefore provide written feedback to these research students.
12. Two copies of the student's final report are due in your hands by the specified deadline. Find a senior colleague (not from your lab in order to provide independent objective assessment) to mark the second copy of the report. You will submit the two individual grades out of 100%.
13. Marks must be submitted to the course co-ordinator Tim Bast by e-mail or hand delivered **by 9:00 AM on the specified deadline** so that student grades can be compiled by the course coordinator for submission to the Registrar's Office
14. Give marks out of 100%. We will calculate the final grade.

Direct questions to the course coordinators

Tim Bast, ext 54239, Room 1685, Biomedical Sciences. tbast@uoguelph.ca