**PCL297H1 PROJECT COURSE**

**RESEARCH EXPERIENCE IN PHARMACOLOGY & TOXICOLOGY**

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| ***STUDENT, PLEASE READ CAREFULLY***   * You are responsible for contacting the researchers of your choice to verify that research projects are available and to request a position***. It is advisable to forward a copy of your resume or curriculum vitae (C.V.) with a suitable cover letter before meeting your potential supervisor. Most professors will also ask you to forward your academic transcript***. *You must also provide the potential supervisor with the List of Guidelines on pages 2-3 of this document.* * Students are required to participate in active research for the equivalent of a minimum of **60 hours of laboratory time in a 12-week period/term (6-weeks for summer sessions).** Students who do not meet the minimum 60 hours requirement will receive a Fail. This minimum varies from supervisor to supervisor. Therefore, please discuss your expected on-site research schedule with your supervisor and be clear about the expected time commitment. Please arrange your course timetable accordingly. * All project students are required to attend safety training sessions as indicated by their supervisors on the completed ballot form. These sessions must be completed at the beginning of your project course. * To receive permission to enrol in a project course, the appropriate ballot completed and signed by you and your project supervisor must be submitted by email to [undergrad.pharmtox@utoronto.ca](mailto:undergrad.pharmtox@utoronto.ca) by the deadline stated in the Arts & Science registration handbook. Ballot forms will be examined for approval as they are received. It is advisable to submit this form at least two weeks before the academic session begins to ensure timely registration in safety training programs and the receipt of specific course information. Once approval for enrolment has been granted, you will be notified by the Department of Pharmacology and enrolled in the course by the Undergraduate Program Officer (i.e., you cannot enrol directly through ACORN). Please note that students may not be enrolled immediately following acceptance into the course as ACORN has certain time periods for allowed data entry. * It is important that you read the attached Guidelines for Research Experience Course Students. More detailed information about the course will be provided to you once you are registered in the course. |

**GUIDELINES FOR RESEARCH EXPERIENCE IN PCL297H1**

1. This course is part of the Research Experience Program in Pharmacology and Toxicology (PCL297H1). This course consists of supervised research with reading assignments and a written report (to be submitted both to the supervisor and the Department of Pharmacology) by special arrangements with professors in the Department of Pharmacology, or other associated Departments at the University of Toronto.
2. **ENROLMENT:** A student is permitted to enrol only with the prior consent of the Pharmacology Department. It is the student's responsibility to search for a suitable supervisor and to complete all preparations before the session starts. **PLACES ARE LIMITED**. A fully completed ballot, countersigned by the prospective supervisor, must be submitted by the student to the undergraduate office for departmental approval before registration in the course will be permitted.
3. **PROJECT:** The research can take a variety of forms, which must be clearly discussed and outlined during the initial student/supervisor interview process and approved by the Department. This is an opportunity for students to gain hands-on experience and develop their skills within a research laboratory setting. Students will have a chance to become familiar and efficient at good lab practices, develop critical thinking and evaluations skills while applying their knowledge and developing trouble shooting skills to practical research questions. Projects can be conducted off-campus (hospitals, research institutes, industrial labs, fieldwork, etc.
4. **SUPERVISOR:** By accepting a student into a research project, the supervisor makes the implied commitment to keep the student under supervision throughout the fall/winter academic year. Supervisors must discuss with their students, at appropriate times during the project, their assessment of performance and expectations, so that the students will be aware at all times of their relative standing in the course. The budget of the Department of Pharmacology does not provide for reimbursement of expenses incurred by the student's work, nor may the student be held responsible for such expenses. Any required vaccinations (e.g., Hepatitis B) or other project-related expenses are the financial responsibility of the supervisor.
5. **STUDENT:**

* Students are expected to devote a minimumof 60 hours of laboratory time in a 12-week period/term (6-weeks for summer sessions) to the project; the actual distribution of time is flexible as determined by the nature of the project, the environment in which the work is performed, and other course commitments as the case may be. Productivity is part of the assessment.
* Students must discuss with their supervisors, at appropriate times during the session, their assessment of performance and expectations, so that they are aware at all times of their relative standing in the course.

1. **DEPARTMENT:** The Department will be vigilant in maintaining academic standards and in assuring fairness through relatively uniform methods of student assessment. Because this course has no final examination, in matters of dispute, it is the duty of the Undergraduate Officer and the Department, in consultation with the coordinators of the courses, to provide advice and interpretation of policy.
2. **EVALUATION:** **This course is a PASS/FAIL.**
3. **Assignment 1-Research Objectives/Project hypothesis** **(10% of final mark);** (1-2 pages due 1 week prior to drop date)
4. **In-Course Assessment (55% of final mark):**

* Comprehension of project (scientific basis; literature; objectives)
* Ability to follow directions (initiative; aptitude; perception)
* Ability to be critical (analysis of own work; scientific integrity)
* Productivity (time spent on project; motivation; identification with work)

1. **Assignment 2- A choice of either Annotated Bibliography or Research Manuscript format agreed upon by both the supervisor and the student (35% of final mark):**
   1. **Annotated Bibliography**
      * Requires a critical review of literature in field of study of at **least 6 primary research articles**.
      * The paper must also evaluate the significance of the article within the field as a whole and in relevance to research carried out by the student. (maximum 6 pages)
   2. **Research Manuscript format:**
      * Final project report organized as an original research article, following the accepted general journal instructions to authors (i.e., Intro, Methods, Materials, Results, Discussion, Figures, Tables, Bibliography) (maximum 6 pages)
2. **FALL SESSION:** ***(Please* *Check Arts & Science Timetable for specific dates)***

* In-course assessment: **September - December**
* Completion of work and data collection: **Mid-November**
* Research objectives/Project hypothesis: **1 week prior to drop date**
* Assignment 2: **Last week of term in December**
* Final mark reported by the supervisor to department **One week after submission of report**

1. **WINTER SESSION:**  ***(Please* *Check Arts & Science Timetable for specific dates)***

* In-course assessment: **January - April**
* Completion of work and data collection: **Mid-March**
* Research objectives/Project hypothesis: **1 week prior to drop date**
* Assignment 2: **Last week of term in April**
* Final mark reported by the supervisor to department **One week after submission of report**

1. **FIRST SUMMER SESSION:** ***(Please* *Check Arts & Science Timetable for specific dates)***

* In-course assessment: **May - June**
* Completion of work and data collection: **TBD**
* Research objectives/Project hypothesis: **1 week prior to drop date**
* Assignment 2: **Last week of term in June**
* Final mark reported by the supervisor to department **One week after submission of report**

1. **SECOND SUMMER SESSION:**  ***(Please* *Check Arts & Science Timetable for specific dates)***

* In-course assessment: **July - August**
* Completion of work and data collection: **TBD**
* Research objectives/Project hypothesis: **1 week prior to drop date**
* Assignment 2: **Last week of term in August**
* Final mark reported by the supervisor to department **One week after submission of report**

**GRADE: PASS FAIL**

Please note that although a Pass grade will not affect the overall GPA, a Fail grade will be considered as less than 50% and will have an impact on the GPA.