

Request for Research Mentorship in Biology

GENERAL DESCRIPTION: Biology 538 (3.0 unit), 539 (3.0 unit) and 540 (6.0 units [a full-year two-term research mentorship]) offer individual students the opportunity to undertake a laboratory research practicum under the supervision of a Biology faculty member. In addition to volunteer work in the host lab, students will normally attend BIOL537 seminars (Fall and/or Winter) and conduct research to present both as a major paper and seminar. The research practicum would normally include 60h of laboratory or fieldwork in the host lab per 3.0 units of credit (x2 for 6.0). The total number of learning hours should be commensurate with the course weight (i.e., 110 – 130 LH/3.0 units). Though the lab practicum may be conducted in the Spring, Summer, Fall, or Winter terms, students must formally obtain approval for the course prior to commencing the lab work. Registration is subject to availability of a supervisor and approval by the Undergraduate Chair in Biology.

PREREQUISITE AND EXCLUSIONS. Open to students in a four-year Degree Plan, with priority given to Biology Honours students (Major or SSP, including EBIO, BIPS or BIMA). Students will normally be enrolled in their fourth year of their Program, having completed the third-year core requirements of their Plan. Students enrolled in BIOL537 are excluded from taking these courses concurrently. BIOL 538 is a prerequisite to BIOL 539 - which is intended for students who wish to do a second follow-on 3.0 units research mentorship after completing BIOL 538.

SPECIAL TRAINING. All students in this course will obtain the appropriate training and certification required for the laboratory or fieldwork, including (as appropriate) WHMIS, Off-Campus Field Safety, and Animal Care.

DETAILS OF EVALUATION. Below is the suggested format for evaluation in the course based upon participation (volunteer work, seminar attendance) and communication (essay, seminar). Additional and/or alternative forms of evaluation may be implemented at the discretion of the Faculty mentor, conditional on approval by the Undergraduate Chair in Biology. Note that from Spring 2024 onwards, a second 'external' grader (faculty member) must be identified in the application who will be responsible (along with the supervisor) for marking at least 30% of overall course grade. Supervisor and external faculty member are to work out the details, but at least one component of the practicum should be graded by both parties and averaged for inclusion in the final course grade.

- **Lab and/or Field Practicum:** Students are engaged as research trainees under the mentorship of a faculty member and associated personnel – e.g. graduate students, post-doctoral fellows, research technicians – with hands-on learning experience in the methodology and equipment used in the day-to-day activity of research planning and execution, including exposure to issues of team cohesion and laboratory management. Total contact time (in the lab or field) over the course of the term is to be arranged in consultation with the Faculty mentor.
- **Seminar Attendance:** As a way of enriching the breadth of exposure to science in the department, students will be normally be required to attend the BIOL537 seminars in Fall and/or Winter terms, or participate in an alternative seminar series (e.g. QUBS). Students are encouraged to submit a poster for the BIOL537 poster day, and will have the same requirements for attendance and evaluation as the BIOL537 students.
- **Major Paper:** At the direction of the Faculty mentor, the student will prepare a major paper based upon a literature review and/or theoretical/methodological development related to the research area of the lab. This may or may not include presentation of original data from empirical work.
- **Seminar:** Students will prepare and present the findings from their independent research after completing the lab practicum. The audience may include other students in this course, the supervisors, and any interested parties from the host labs.

Application for Research Mentorship

Student Name:

Student Number:

Supervisor(s):

Date:

Course code and weight:

BIOL538 (3.0)

BIOL539 (3.0)

BIOL540 (6.0)

Term or Session (two for BIOL540):

Fall

Winter

Spring

Summer

Project Outline:

i) **AIMS.** *What are the learning and training objectives of the mentorship?*

ii) **NATURE OF PRACTICUM ACTIVITIES.** *Briefly describe the location and nature of work to be undertaken.*

iii) **SPECIAL REQUIREMENTS.** *Are there safety courses that need to be completed? Are there required readings? Travel?*

iv) DETAILS OF EVALUATION.

- **Lab or Field Practicum (typically 30 - - - 40%):** *Briefly describe the location and nature of work to be undertaken.*

- **Seminar Attendance (max 10%):** *Participation in a seminar series. Please note how attendance will be verified and if active participation is required (Provide details, if required).*

- **Major Paper & Due Date (typically 30 - - - 40%):** *What is the topic of the paper, how long is it, and when is it due? A late policy should also be stated here, which supervisor and student agree upon in signing this document.*

- **Seminar (max 10%):** *A short presentation (12 – 20 minutes) is recommended. Who will hear the seminar and when will it be?*

- **Other (%):** *Briefly describe the nature of the learning activity and its evaluation.*

v) LEARNING HOURS SUMMARY.

| | <i>Activity</i> | <i>Hours on task per week</i> | <i># weeks</i> | <i>Total hours</i> |
|--|-------------------------------------|-------------------------------|----------------|--------------------|
| MENTORSHIP HOURS | Field or Laboratory Work | | | |
| | Seminar attendance | | | |
| | Laboratory meetings | | | |
| | Other (specify) | | | |
| INDEPENDENT STUDY HOURS | Literature research & private study | | | |
| | Off--campus activity | | | |
| | Online activity | | | |
| TOTAL HOURS | | | | |

v) Signatures:

Faculty supervisor(s) signature(s)

I agree to supervise this independent study program and provide the final grade:

I agree to co-supervise this independent study program (if two supervisors):

'External' second faculty grader agreement and signature

I agree to advise on this independent study program and to provide an assessment mark for the following component(s) of the overall final grade (must be at least 30% of total):

Component(s): _____

Total % of final grade: _____

Name:

Signature:

Student signature

I agree to the terms and deadlines outlined above:

Student signature

Student Number

Date

Departmental Approval:

Department Head or Chair of Undergraduate Studies

Date