Part time laboratory research in an area of molecular biology or biochemistry under the direction of a faculty member. MBB 491-5 can be taken by MBB majors as a stand-alone course, or as the first of two courses, MBB 491-5/MBB 492-10, for Option B of the honours thesis. Prerequisites: MBB 308 or MBB 309W and permission of the MBB department. Usually upper level standing in an MBB major or honours program is required.

Students wishing to take MBB 492-10 following MBB 491 may do so provided they meet the MBB 492 prerequisites: MBB 491, enrollment in the MBB honours program, a minimum of 3.0 cGPA and 3.0 uGPA and permission of the MBB department. Typically both courses are done on the same research project with the same supervisor.

- Attach a copy of your advising transcript to this form before seeing the instructor.
- Toward the end of the preceding semester find a supervisor: an MBB faculty member, MBB associate or adjunct faculty member; a member of another department may be permitted pending approval by the MBB Departmental Undergraduate Curriculum Committee (DUCC).
- In consultation with the supervisor, prepare a one page Letter of Intent (LOI) describing the goal(s) and outlining experiments for your proposed research project. Use the template provided. If you plan to take MBB 492 following MBB 491, the project will span both semesters. The LOI should be submitted to the MBB office by the end of the last day of exams of the semester preceding the Directed Research semester.
- The student will be registered for this course once the LOI, advising transcript and signed form have been received and approved by the chair of the MBB DUCC.

Note that students cannot hold an NSERC or VPR USRA while taking MBB 491.

Student Name: ____________________________________________________________
Student Number: ___________________________ E-mail address: _____________________

MBB ☐ Major ☐ Minor ☐ Honours

Faculty Supervisor: _______________________________________________________

(signature)

DUCC Chair ___________________________ Date: ____________

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MBB 491 Letter of Intent

Name: ________________________________

Background (Why is this research important?)

Research Question (or Hypothesis/Aims) (What question are you trying to answer?)

Scientific approach (How will you attempt to answer this question?)

Resize sections as needed within a single page. Use 12 pt font size.

Revised: May 30, 2019
MBB 491 Directed Research course guidelines

**In the semester preceding your Directed Research semester:**
You will need to find a faculty member willing to supervise you. The supervisor can be an MBB faculty member, MBB associate or adjunct faculty member, or a member of another department pending approval by the MBB DUCC chair. **The sooner you arrange this, the more options are available to you, as labs do fill up.** Your prospective supervisor should provide information regarding potential research projects. In consultation with your supervisor you should prepare a one page LOI describing the goal(s) and outlining possible experiments for your proposed research project. Hand in the signed approval form and LOI to the MBB office by the last day of exams of the preceding semester for approval by the chair of the MBB DUCC. Keep a copy for your reference. Once your LOI is approved you will be registered in this course.

**MBB honours students:** Typically you will have the same supervisor for both MBB 491 and MBB 492 and your research project will span two semesters.

**Before you begin your Directed Research semester:** Your supervisor will outline expectations regarding lab work. Typically, a 5 unit Directed Research semester means working one-third of full-time in the lab on your project (i.e. 11-13 hours per week). You should keep a good record of your experimental work and you will likely attend lab meetings at which you may be asked to present your work in progress. Your lab performance will constitute 40% of your final grade for MBB 491. Students working in a research lab are required to take the lab facilities tour and the complete set of SFU safety workshops; these are typically scheduled in the second week of each semester.

**By the end of the second week of classes of the Directed Research semester:** A written proposal (maximum of 5 pages of double-spaced text, plus figures and references) must be provided to your supervisor. Please also send an electronic copy to the MBB Undergraduate Program Assistant at mbbugrad@sfu.ca. It is expected that this proposal will be prepared in consultation with your supervisor. The proposal should provide a description of the proposed research, including the research problem in question, the objective/aims of the proposed research, relevant background information, the scientific approach to addressing the research problem and the expected outcomes. References should be included. It may also be helpful to provide an approximate timeline of experimental goals through the semester. Note that the proposal will not count toward your final grade.

**Towards the end of the Directed Research semester:** You should start writing your final report - the first part may be an expansion of the initial proposal, followed by sections outlining results and discussion (separate or combined), conclusions and possibly a prospectus (future experiments). The grade for the report will constitute 30% of your mark for MBB 491.

**MBB honours students:** The report you prepare for MBB 491 may form the basis of your proposal for MBB 492.

**At end of the Directed Research semester:** Oral presentation: at or near the end of the semester, you will give a 30 minute talk on your research to your lab members. This talk will usually follow the outline of your report (introduction, results, discussion etc.). This will be followed by questions from your supervisor and lab members. Your performance in this oral defense will constitute 30% of your mark for MBB 491. **Summary of grade distribution:** lab performance, 40%; final report, 30%; oral presentation, 30%.

Revised: May 30, 2019