This course is only available to MBB honours students who have completed MBB 491-5 (Option B).

Two-thirds of a full-time commitment to laboratory research in an area of molecular biology or biochemistry for preparation of a thesis for the honours degree in MBB.

Prerequisites: MBB 491, MBB 308, MBB 309W and MBB 331, enrollment in the MBB honours program and permission of the MBB department. Minimum 3.0 cGPA and udGPA.

Note that students cannot hold an NSERC or VPR USRA while taking MBB 492.

- Establish that your supervisor for MBB 491 is willing to supervise you for MBB 492.
- In consultation with your supervisor, revise your MBB 491 Letter of Intent (LOI) as appropriate, including any progress made in MBB 491 that is relevant to the MBB 492 research project.
- You and your supervisor will recruit two other faculty members to serve on a committee that will determine your grade in the course. At least one member of the committee must be an MBB faculty member.
- Sign this cover page and obtain signatures from your supervisor and other committee members.
- Submit the signed cover page, LOI and a copy of your advising transcript to the MBB office. You will be registered for these courses once the application has been approved by the Chair of the MBB Departmental Undergraduate Curriculum Committee (DUCC).

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Student: ____________________________________________ (print and sign name)

Student Number: ___________________________ E-mail address: ____________________________

Faculty Supervisor*: ________________________________ (print and sign name†)

Committee member*: ________________________________ (print and sign name†)

Committee member*: ________________________________ (print and sign name†)

DUCC Chair ________________________________ Date: ________

*Committee members: By signing this form you indicate that you approve of the LOI and agree to serve as supervisor/committee member. This entails providing feedback on the research proposal, evaluating the thesis and participating in and grading the oral defense, which will be held during the final exam period. If you are not available during this time you must inform the student, who may wish to find another committee member. In some cases the oral defense may be deferred until the first week of classes for the following semester, but this should be established before the application is finalized.

† or email confirmation to the student, the supervisor, the MBB Undergraduate Program Assistant (mbbugrad@sfu.ca) and the DUCC Chair (mbb_ducc@sfu.ca)

Revised: March 11, 2020
MBB 492 Letter of Intent

| Name: ____________________________________ |

| Background (Why is this research important?) |

| Research Question (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 11 pt font size.

Revised: March 11, 2020
Registration in MBB 492: Typically MBB 492 constitutes a continuation of the research project started in MBB 491 and is done under the supervision of the same faculty member as for MBB 491. You and your supervisor will need to recruit two other faculty members to serve on a committee that will determine your grade in the course. At least one member of the committee should be an MBB faculty member. You should prepare a one page LOI describing the goal(s) and outlining possible experiments for the MBB 492 portion of your research project. This LOI may be very similar to the LOI submitted for MBB 491. Email the LOI to your committee members, who will read and approve this document and sign the application form. Submit the signed application form, LOI and transcripts to the MBB office, ideally by the last day of exams of the preceding semester, for approval by the DUCC Chair. Once your application is approved you will be registered in these courses.

Course plan: Typically, a 10 unit Directed Research course means working two thirds of full-time in the lab on your project (i.e. 23-26 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 492.

Within the first few weeks of the semester students should arrange with their committee a time and place for the oral thesis defense, which typically occurs during the final exam period.* Email this information to the MBB Undergraduate Program Assistant (mbbugrad@sfu.ca). Further information regarding defense scheduling can be found at the MBB Honours Program website.

Research proposal: Prepare a research proposal describing background information, the research question, your hypothesis, the specific aims to test the hypothesis, the scientific approach and the expected outcome (maximum of 5 pages of double-spaced text, plus figures and references). It may be helpful to include an approximate timeline of experimental goals through the semester. The proposal may be very similar to your final report for MBB 491 with an emphasis on the work that will be performed in the current semester. The proposal should be completed by the end of the second week of classes and emailed to your committee members and to mbbugrad@sfu.ca. Your committee members will provide feedback on your written proposal by the end of week 4 but the proposal will not count toward your final grade. You are encouraged to seek feedback if it is not provided.

Honours thesis: Lab work should be completed by the last day of classes†, but you may begin at any time during the semester to write your thesis, starting with the background. The thesis builds on your Research Proposal and is typically organized as Abstract, Introduction (including hypothesis and aims), Methods, Results and Discussion/Conclusions. It may include a prospectus (future experiments). More detailed information on thesis preparation can be found at the MBB Honours Program website. The thesis should be emailed to committee members 3 working days before your thesis defense. The grade for the thesis will constitute 30% of your mark for MBB 492.

Thesis defense: You will give a 30-minute presentation on your research to your committee and to interested members of the department/public. This talk typically follows the outline of your thesis (intro, methods, results, discussion). Your presentation will be followed by questions from your committee. Your performance in this oral defense will constitute 30% of your mark for MBB 492.

Summary of grade distribution for MBB 492: lab performance, 40%; thesis, 30%; thesis defense, 30%.

*In some circumstances the supervisor or committee members may not be available during the exam period. In this case the defense can be scheduled no later than the fifth day of classes of the following semester provided this is acceptable to all parties.

†The intention of directed research courses is to educate students and provide hands-on experience in a research setting. While it is desirable to achieve all research goals this is not always possible in the 13-week time frame due to the unpredictable nature of research. Nonetheless, the laboratory component of the course is expected to end by the last day of classes and students should write their thesis with the results they have obtained to that point. If desired, students can request a short extension to their research term from the DUCC Chair (mbb_ducc@sfu.ca). Students may opt to continue their research on a volunteer or paid basis or through MBB 498-3, with the consent of their supervisor.

Revised: March 11, 2020