

# MASc Program Guidelines

## Overview

The Master of Applied Science (MASc) is a graduate-level study program that includes a research investigation and the writing of a thesis. Requirements for the MASc include satisfactory completion of 30 credits of courses, original research under the supervision of a faculty member, and a thesis. The thesis is assigned 12 credits and is counted as part of the coursework requirement. A typical completion time for the MASc is 24 months and all students must complete the program within 5 years. All MASc students are full time students (<http://www.grad.ubc.ca/current-students/student-status-classification>).

## Supervision

At the time of admission to the program, the student will be assigned a research supervisor who is interested in supervising the student's research project. The research supervisor or co-supervisor must be a full-time, regular faculty (at least at the rank of Assistant professor) or associate faculty member in the department.

In cases of absence from the campus of a month or more, the faculty advisor should appoint an acting advisor for each of his/her MASc students. The advisor's essential tasks are to provide academic guidance directed toward the completion of a MASc thesis of suitable quality, and to assist with the financial planning associated with the program.

An Emeritus or Associate Faculty Member, or Instructor can be appointed as Principal Supervisor by the Department Head in consultation with the Graduate Advisor. In this case, an eligible research-track faculty member from the appropriate research group is appointed as co-supervisor or advisor. It is the duty of the co-supervisor or advisor to ensure that both the Instructor/Emeritus/Associate Faculty and the graduate student are familiar with the current policies, practices and expectations of the Department.

## Research Supervisory Committee

The program of each student is overseen by a committee of not less than 3 members including the student's supervisor, who normally acts as chairman of the committee. This committee is nominated by the student's supervisor and approved by the Graduate Advisor, within 12 months of the student's registration in the program. The membership of the supervisory committee may be altered during the program with the approval of the Faculty of Graduate Studies. Meetings of the committee, at least annually, are to be scheduled by the student.

## Coursework

The MASc program requires completion of at least 30 credits, of which the thesis counts for 12 credits. The combination of the thesis and 500-level courses must total no fewer than 24 credits. A maximum of 6 credits of undergraduate courses (300 or 400-level only) may be taken.

Special Advanced Courses (MECH 550): Students are allowed to take up to 6 credits of special topics courses throughout their program.

Directed Studies in Mechanical Engineering (MECH 575): Students are allowed to take up to 3 credits of directed studies courses throughout their program.

### Thesis/Seminar Course:

All MASc students are required to register in the thesis course all year around (for both winter & summer terms). The student should select the section ID that corresponds with their research group (ie. MM0 = Mechatronics & Manufacturing). The seminar course is mandatory for students who belong to the below research groups in each winter term (no seminar will be held over summer). Please contact the research chair for more information on your seminar requirements:

- Biomedical
- Design & Applied Mechanics
- Mechatronics & Manufacturing
- Thermofluids (Energy Group only)

### Academic Progress

The progress of all students is reviewed regularly by the graduate program and the Faculty of Graduate and Postdoctoral Studies. A student may be required to withdraw if progress has not been satisfactory as shown by coursework, progress on the thesis, or other requirements of the graduate program or the faculty.

The minimum passing grade in any course taken by a student enrolled in a master's program is 60%. However, only 6 credits of courses with grades in the 60-67% range may be counted towards a master's program. For all other courses, a minimum of 68% must be obtained.

Where a failing grade (below 60%) is obtained in a course, and on the recommendation of the graduate program and the approval of the Faculty of Graduate and Postdoctoral Studies, the student may repeat a course for higher standing or take an alternate course. If the graduate program does not make such a recommendation, or if the recommendation is not approved by the Faculty of Graduate and Postdoctoral Studies, the student will be required to withdraw. A student who obtains a grade of less than 68% in more than 6 credits will normally be required to withdraw for inadequate academic progress. The student will be informed of unsatisfactory academic progress in writing before any action regarding withdrawal is taken.

## The Thesis Defence

Before your final thesis defence each student is expected to make the following arrangements:

1. Book an appropriate room for the exam. Typical rooms booked for a defence are CEME 2202 or KAIS 5004.
  - To book CEME 2202, contact [reception@mech.ubc.ca](mailto:reception@mech.ubc.ca) or call 604-822-2781.
  - To book KAIS 5004, contact [reception@apsc.ubc.ca](mailto:reception@apsc.ubc.ca).

When booking a room, please ensure to provide the purpose of the booking and the supervisor's name & contact details. You will need approximately 3 hours to complete the whole exam process (please consult with your supervisor for exact timing). Equipment such as a projector can also be also booked by contacting [reception@mech.ubc.ca](mailto:reception@mech.ubc.ca) or calling 604-822-2781

2. Send the following details to the Student Services office ([students@mech.ubc.ca](mailto:students@mech.ubc.ca)) at least 2 weeks prior to the defence date. An announcement of the defence details will be circulated to all department faculty together with a copy of the thesis abstract.
  - Thesis title
  - Abstract (pdf attachment)
  - Date, Time & Location
  - Names of your supervisor and examining committee members
3. Send a copy of your final thesis (PDF is preferred) to each member of the examination committee at least one week prior to the exam. The candidate should be available to send an additional copy to the Student Services office should other parties be interested in it.
4. Print off a copy of the Master's Thesis Approval form (<https://www.grad.ubc.ca/forms/masters-thesis-approval>) & your Academic History (available on the SSC) and bring it with you to the defence. Following the defence, bring the completed Approval Form to the Student Services office in CEME 2205 for submission to G+PS.

## The Examination Committee

The thesis examination committee must be comprised of at least 3 members, and is normally the same as the Supervisory Committee. An examiner other than the Principal Supervisor will act as Chairman.

This defense is open to any interested person, although the Chairman may restrict the active participation of those not on the examination committee. The candidate will present his/her thesis to the examination committee at the final defense, for a time of 20-35 minutes, and will then respond to questioning from the members, and at the discretion of the Chairman, from others present.

Grading:

Each examination committee member will recommend a grade for the thesis and email it to [students@mech.ubc.ca](mailto:students@mech.ubc.ca). The grades will be averaged to get the final grade for the thesis course. Any formal comments received by committee members will be added to the student's file. A mark of at least 68% must be obtained for the completion of the degree. The grade given for the thesis should reflect the student's work during their studies, culminating in the written thesis and oral defense. The examiners understand that the challenges faced by students vary widely from project to project, but there is an agreement on the attributes of good research work, articulated in the mark bands below.

MASc Thesis Marking Rubric					
	Nominal Score	Research work	Thesis document	Student ability	Student performance during the defense
<b>Exceeds expectations</b>	25	The research is unusually novel for an MASc thesis, and could easily be extended to be a PhD thesis. It provides useful developments or answers to important scientific or industrial questions. Part or all of the thesis is appropriate for publication / has been published in a quality journal.	The as-defended thesis is technically accurate, well written and has publication-quality figures and tables.	The student worked much more independently than usual, with little need for tactical or strategic guidance.	The student demonstrated a strong command of both the thesis work and other related ideas in the field.
<b>Meets expectations for future PhD student</b>	22-24	The research involves some novelty and provides useful developments or answers to important scientific or industrial questions. Part of the thesis is suitable for publication / has been published in a journal or conference.	The as-defended thesis has no substantial technical errors and only minor errors in writing. Figures and tables are of good quality, though some may need improvement.	The student worked more independently than usual, with less need for guidance on day-to-day (tactical) matters.	The student can competently discuss any aspect of the thesis and has an awareness of the key literature in the field.
<b>Meets expectations for MASc student</b>	19-21	The thesis provides useful results for industry or academia. A good quality conference paper or industrial report will come from the thesis, but possibly with 40-80 hours of additional work from the student.	The as-defended thesis has no errors that affect the conclusions, and none that require significant new work to correct. The thesis is mostly well-written and presented, but might require a typographical correction on each page as well as improvement to many of the figures.	The student worked partially independently with normal supervisor involvement.	The student showed a reasonable level of mastery of principles directly related to thesis, including some of the relevant literature.
<b>Marginally meets expectations for an MASc student</b>	16-18	There was an attempt to address an important problem, but the quality of the results do not allow useful conclusions to be drawn at the end.	The thesis reflects substantial effort from the student, consistent with a 12 credit course, but major changes (in content and/writing) are required before it can be considered acceptable.	The work required more than average supervisor input in the research or thesis writing.	The student had difficulty showing mastery of some of the core principles in the thesis, or had a lack of awareness of the relevant literature.
<b>Does not meet expectations</b>	15 or lower	There was an attempt to address an important problem, but the quality of the results do not allow useful conclusions to be drawn at the end.	The thesis is poorly structured, difficult to read, and full of errors that minimal effort would have corrected.	The work required much more than average supervisor input in the research or thesis writing.	The student had extensive difficulty with relevant core principles of the thesis and/or no clear idea of the place of their work within the field.
<b>Enter Scores here:</b>					
<b>TOTAL SCORE</b>					

## Program Completion and Graduation

Your program cannot be closed and you will not be eligible to graduate until the thesis has been submitted and accepted into cIRcle and you have received an official email from the Faculty of Graduate Studies confirming final approval of your thesis.

Students are able to have their degrees awarded on any one of four dates in a given year; dates in September, November, February, and May. Once the degree has been awarded by Senate, a notation will appear on the transcript. However, formal conferral at Congregation ceremonies and official degree parchments will remain available in May and November only. This process is known as rolling graduation.

There are important steps you need to complete in order to officially graduate:

- Apply to graduate on the SSC.
- Make sure that your thesis, Master's Thesis Approval Form and Cover Sheet have been submitted to the Faculty of Graduate and Postdoctoral Studies.
- Make sure that all courses you have taken have a grade entered for them.
- Make sure your UBC financial account is settled.

Detailed information can be found on the Faculty of Graduate Studies website within the links below:

<http://www.grad.ubc.ca/current-students/final-dissertation-thesis-submission>

<http://www.grad.ubc.ca/current-students/graduation/program-completion>

<http://www.grad.ubc.ca/current-students/graduation>