

M.A.Sc. Guidelines

Overview

The Master of Applied Science (M.A.Sc.) is a graduate-level study program that includes a research investigation and the writing of a thesis. Requirements for the M.A.Sc. include satisfactory completion of 30 credits of graduate-level 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 M.A.Sc. is 24 months and all students must complete the program within 5 years. All M.A.Sc. students are full time students

(<http://www.grad.ubc.ca/current-students/student-status-classification>).

Research Supervisor

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 a 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 M.A.Sc. candidates. The advisor's essential tasks are to provide academic guidance directed toward the completion of a M.A.Sc. thesis of suitable quality, and to assist with the financial planning associated with the program.

The following procedures will be followed for Emeritus and Associate Faculty Members. The Head in consultation with the Graduate Advisor approves the appointment of an Associate Faculty member as Principal Supervisor of a graduate student. An eligible tenure-track faculty member from the appropriate research group is appointed as co-supervisor or advisor at the discretion of Head for each graduate student supervised by an Associate Faculty. It is the duty of the co-supervisor or advisor to ensure that both the 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 Head of the department in consultation with the departmental graduate advisor, within 4 months of the candidate's registration in the program. The membership of the research 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.

Course Registration

The M.A.Sc. program requires completion of at least 30 credits beyond the Bachelor's degree, of which a thesis counts for 12 credits. The combination of the thesis and 500-level courses must total no fewer than 24 credits. Only courses numbered 300 or above can be used for credit. Candidates must obtain a minimum of 68% in each course used for credit or at least 60% in no more than 6 credits of course work used for credit.

Thesis/Seminar:

All research students are required to register in their relevant thesis course all year around (for both winter/summer terms). The seminar course is mandatory only for students who belong to the following research groups in each winter term (no seminar will be held over summer). Please contact the appropriate research chair for more information on your seminar requirements:

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

	<u>Seminar</u>	<u>Credits</u>	<u>Thesis</u>	<u>Credits</u>
M.A.Sc.	MECH 598	2	MECH 599B	12
Ph.D.	MECH 698	3	MECH 699	n/a

Continuing students normally register in the full session section of the course (Term 1-2); the Term 1 section may only be used by students completing their degree in Term 1 of an academic session, and the Term 2 section may only be used by new students starting their program or students returning from leave in January.

All Biomedical Engineering Program students should consult with the BME office for their program requirements (<http://www.bme.ubc.ca/contact-us/>).

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

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

Academic Progress:

Students should review the Graduate Studies Policy at

<https://www.grad.ubc.ca/faculty-staff/policies-procedures/academic-progress>

Thesis Examining Committee

The thesis examination committee is proposed by the supervisor and confirmed by the Departmental graduate advisor. The committee must have at least 3 members, including:

1. The research supervisor
2. The examination chair (a regular faculty member in mechanical engineering)
3. An examiner who is normally a regular faculty member of the university, but could be from an organization with an interest in the student's project. Such organizations include industrial partners and other research institutions. In the case that the 3rd examiner is not a UBC faculty member, it is expected that the examiner have a high level of expertise approximately equivalent to a PhD

Thesis Exam

Before your examination each student is expected to:

- Book an appropriate room for the exam. Typical rooms booked for a defense are CEME 2202 or KAIS 5004. To book CEME 2202, contact reception@mech.ubc.ca or call 604-822-2781. To book KAIS 5004, contact reception@apsc.ubc.ca. When requesting a room, please ensure to provide the purpose of the booking and the supervisor's name, email address and phone number. You will need approximately 3 hours to complete the whole exam process (please consult with your supervisor for timing). AV Equipment such as a projector can also be booked by contacting reception@mech.ubc.ca or calling 604-822-2781
- Send the following details to the Student Services office (students@mech.ubc.ca) at least 2 weeks prior to the examination date. An announcement of the final defense will be circulated to all department faculty together with a copy of the thesis abstract.
 - Thesis title
 - Date, Time & Place
 - Abstract (PDF attachment)
 - Name of supervisor and names of Examining Committee
- 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.

Print off a copy of the Master's Thesis Approval form

(<https://www.grad.ubc.ca/forms/masters-thesis-approval>) and bring it with you to the examination.

Following the examination, bring the completed form to the Student Services office for submission to G+PS.

At the examination: 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 for Mech 599: At the conclusion of the examination, each examination committee member will recommend a mark for the thesis and email it to students@mech.ubc.ca. The marks will be averaged to get the final mark which will be entered on the student's record. 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.

Overall mark	Attributes [approximate % of grades in this band]
95-100%	The research involves some novelty and provides useful developments or answers to important scientific or industrial questions. The as-defended thesis is technically accurate, well structured, well written, has publication quality figures and tables. In producing this work, the student worked independently with normal supervisor involvement. The thesis (or portions of it) is ready to be submitted to a high quality journal. During the defense, the student can competently discuss any aspect of the thesis and has an awareness of the key literature in the field. [5% of theses]
90-95%	As above, but some of the attributes do not apply fully. For example, the work might have required much more than average supervisor input in the research or thesis writing. [15% of theses]
85-90%	The thesis provides useful results for industry or academia. 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. A good quality paper or industrial report will come from the thesis, but possibly with 40-80 hours of additional work from the student. [30% of theses]
80-85%	As above, but there are substantive gaps in the writing or content that will require 20+ hours to remedy and bring the thesis to a standard that would be acceptable for the UBC archives, and it is expected that many hours of supervisor effort is also needed to make the changes. [30% of theses]
68-80%	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. In the defense, the student might show difficulty mastering some of the core principles in the thesis, or a lack of awareness of the relevant literature. 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. [19% of theses]
Below 68%	The thesis is poorly structured, difficult to read and full of errors that minimal effort would have corrected. [1% of theses]

Thesis submission, Program Completion and Graduation

Each candidate must follow the instruction available on the Faculty of Graduate Studies sites:

<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>

Prior to graduation, students will be requested to submit the graduation check list to the department.