

## Registration Information for MEng Mechanical Engineering: Computational Engineering

Welcome to the **Computational Engineering** specialization of the Master of Engineering in Mechanical Engineering (MEng MECH)!

Below you will find an overview of your program and important information about registering for courses. For any questions or concerns about your program requirements or course registration, please email [students@mech.ubc.ca](mailto:students@mech.ubc.ca).

Registration for graduate students typically opens in June of each year ([registration dates](#)). All students are expected to register for their courses as soon as possible to maintain their spot in the program. **Note: All students must register for courses by August 1 to maintain their registration priority in MECH courses.** After August 1, registration will be opened to students outside of our department and we will no longer be able to guarantee you access to your core MECH courses for your program.

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### *Degree Requirements*

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All MEng MECH students are required to complete a minimum of 30 credits for their degree. Within these 30 credits, students must satisfy both the general MEng requirements, as well as their specialization-specific requirements.

#### General MEng Requirements

All students completing a Master of Engineering must satisfy the following general MEng requirements:

- At least 24 credits must be at the 500-level.
- A minimum of 18 of the 24 credits must be in the program area at the 500-level, including the project, if applicable.
- A maximum of 6 credits may be taken at the 300-/400-level.
- A maximum of 6 credits of 500-level directed studies courses may be counted toward the program requirements.

For more information on general MEng requirements, please refer to the Academic Calendar: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,195,838,0>

## Specialization-Specific Requirements

Below you will find the detailed specialization-specific course requirements for the Computational Engineering specialization, broken down into core courses and elective courses. Students are responsible for registering themselves in their courses and ensuring that they have planned out their schedule to be able to satisfy all of their degree requirements within the 12-month program length.

Some courses may have prerequisites, so be mindful when choosing the order and type of courses, especially for your elective courses. Note that the Mech Student Services Office can only assist with MECH-coded registration requests, any registration requests related to courses in other departments must be handed directly by the student with that department.

### Core Course Requirements

All core courses are mandatory - students must register for all of the core courses listed below.

<b>Core Course Requirements (13 credits)</b>
MECH 558 (1) – Professional Responsibility for Engineers
MECH 559 (2) – Engineering Project Management
MECH 587 (4) - Computational Fluid Dynamics
MECH 503 (3) – Linear Elasticity
MECH 514 (3) - Linear FEA in Solids and Heat Transfer

### Elective Course Requirements

Electives provide students with the ability to choose additional courses that complement their core requirements and align with their individual interests. Note that all elective choices must comply with the following restrictions:

- At least 6 credits must be 500-level MECH courses
- No more than 6 credits can be from 300/400/500-level courses within UBC Engineering
- No more than 6 credits can be from 500-level graduate courses within UBC

<b>Electives Course Requirements (17 credits)</b>
MECH 597 (6) – Project for MEng Studies*
<i>Two of:</i> MECH 358 (3) - Engineering Analysis MECH 502 (3) - Fluid Mechanics MECH 588 (3) - Advanced Topics in Computational Fluid Dynamics CHBE 552 (3) - Optimization Methods CPSC 516 (3) - Computational Geometry CPSC 517 (3) - Sparse Matrix Computation CPSC 521 (3) - Parallel Algorithms and Architectures CPSC 522 (3) - Artificial Intelligence ELEC 542 (3) - Nanoscale Modelling and Simulations MATH 521 (3) - Numerical Analysis of Partial Differential Equations
Open electives (5) – student’s choice

\* Students who were admitted without a supervisor can only participate in the MECH 597 project course if they are able to secure a faculty member to provide and supervise a project. Otherwise, students without program supervisors should substitute 6 credits of open electives in place of this requirement.

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*Academic Progress*

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The progress of all students is reviewed regularly by the program. At UBC, a minimum passing grade in any course taken by a student enrolled in a master's program is 60%, and students are only permitted up to 6 credits of coursework with grades between 60-67%.

MEng students will be required to withdraw from our program should their academic progress be deemed unsatisfactory. Examples of unsatisfactory academic progress include, but are not limited to:

- Failing one or more courses (obtaining a course grade of less than 60%)
- Obtaining between 60-67% in 6 credits or more

Students will be informed of unsatisfactory academic progress in writing before any action regarding withdrawal is taken. Program withdrawal will happen immediately following the academic term where unsatisfactory progress is made – students will not be allowed to stay in the program to finish the remainder of the academic session. In rare and exceptional circumstances, the Program Director may allow a student with unsatisfactory academic progress to remain in the program if they repeat failed courses or take approved alternative courses.

*Course Planning Checklist*

Indicate the courses in which you are registered below, and then check the boxes in the right-hand column to ensure you meet both the Specialization and MEng program requirements

*\*Note: You are not required or expected to fill in every row of every table.*

**Core Course Requirements:**

Course code	Credits	Registered
MECH 558	1	<input type="checkbox"/>
MECH 559	2	<input type="checkbox"/>
MECH 587	4	
MECH 514	3	<input type="checkbox"/>
MECH 503	3	<input type="checkbox"/>
<b>Total Credits</b>	<b>13</b>	

**Required and Open Elective Courses:**

Course code	Credits
<b>Total Credits</b>	

**Specialization Elective Requirements:**

- At least 2 of the following:
  - MECH 358 (3)      - MATH 521 (3)
  - MECH 502 (3)      - MECH 588 (3)
  - CHBE 552 (3)      - CPSC 516 (3)
  - CPSC 517 (3)      - CPSC 521 (3)
  - CPSC 522 (3)      - ELEC 542 (3)
- At least 9 credits of Mech 500-level courses
- No more than 6 credits in UBC Engineering (300, 400, 500 level)
- No more than 6 credits in UBC 500-level graduate courses

**MEng Requirements:**

- 500-level credits<sup>†</sup> ≥ 24
- 500-level MECH credits<sup>†</sup> ≥ 18  
*†includes MECH 597*
- 300-/400-level credits ≤ 6
- Directed studies credits ≤ 6

**The courses listed here have been discussed with my supervisor or with the program director.**

**Student Signature:\_\_\_\_\_**

\_\_\_\_\_ Date:

**Supervisor/Program Director Signature:\_\_\_\_\_**

\_\_\_\_\_ Date: