

# Mechanical Engineering Fourth-Year Course Selection

## Degree Requirements and Fourth-Year Course Load Requirements

In your fourth year of the Mechanical Engineering program, you are required to take a specified number of Complementary Studies Elective (CSEs) and Technical Elective (TEs) courses. You must also carry a minimum course load in your 4A and 4B terms. Therefore, *to satisfy degree requirements, each student must simultaneously satisfy requirements concerning CSEs, TEs and the fourth-year course load.* The information given below will help you determine whether your selection of courses in your 4A and 4B terms is sufficient to graduate.

**Complementary Studies Electives** (See website at <http://ugradcalendar.uwaterloo.ca/page/ENG-BASc-and-BSE-Complementary-Studies-Engineering>)

A minimum of five CSEs are required for graduation. These must consist of:

- one "List A" course (Impact).
- one "List B" course (Engineering Economics). Note that MSCI 261, which must be taken in 1B, satisfies the "List B" requirement.
- two "List C" courses (Humanities and Social Sciences).
- one additional CSE from List A, C or D (List D includes miscellaneous topics).

Language courses are acceptable, but qualify only as List D CSEs.

## Technical Electives

The TE requirement for graduation is:

- a minimum of nine TEs (ME 400, 500 level courses)
- at least seven of these nine TEs must be Mechanical Engineering TEs (i.e., METEs).

Note that ME 481 is a 4A core course and ME 482 is a 4B core course *effective starting with the 4A S'13 class.*

Also note that some courses are not TEs even though they may appear to be. For instance, ME 401, GENE 412 and MSCI 454 are CSEs. Check the CSE list. If you are uncertain – ask!

It is unusual for an undergraduate student to take 600 or 700 level courses due to the extra work load involved in graduate level courses. However, if you wish to take a 600 or 700 level course, you must first talk to the course instructor to make sure that you have sufficient background and prerequisites to complete the graduate level course successfully. Contact Lynn in E5-3106 regarding the procedure, if you want to be enrolled in a Grad level course.

## Fourth-Year Course Load

All Mechanical Engineering students must satisfy the fourth-year course load requirement. The minimum course load that must be carried over the two fourth-year terms is:

- Nine TEs (including ME 481 to be taken in the 4A term, and ME 482 to be taken in the 4B term)
- 2 CSEs (one taken in 4A, and one taken in 4B)

The most common arrangement is to take 4 TEs and 1 CSE in 4A, followed by 5 TEs and 1 CSE in 4B. It is possible to do the reverse, i.e., 5 TEs and 1 CSE in 4A followed by 4 TEs and 1 CSE in 4B. Other arrangements are discouraged and will only be allowed if there are compelling reasons to do so. Any student who has accrued surplus CSEs in advance of the 4A or 4B term must take additional CSEs (or TEs) during 4A and/or 4B in order to satisfy the fourth-year course load requirement.

## **Faculty Options**

In the majority of cases, the fourth-year course load requirement will be satisfied automatically as long as the CSE and TE requirements are met. However, students enrolled in one of the Faculty of Engineering Options may encounter additional complexity and the course load requirement often comes into consideration. In all cases, however, students must satisfy the minimum course load requirements listed above. Students who are pursuing an Option must complete a Plan Modification form, printable at <http://www.registrar.uwaterloo.ca/forms/PlanModification.pdf>, and submit it to Lynn Crema, in E5-3106.

## **Students Enrolled in the Faculty of Engineering Biomechanics Option**

Please refer to the information regarding the Biomechanics Option which can be found on the web at <http://ugradcalendar.uwaterloo.ca/page/ENG-Option-in-Biomechanics>. Students who want to complete the Biomechanics Option will need to do a two-term, biomechanics-related project in ME 481 in 4A and ME 482 in 4B; and their projects must be approved by the Biomechanics Option Coordinator or delegate (the ME 481/ME 482 Coordinators).

## **Number of ME TEs for Biomechanics Option Students**

Of the nine TEs needed for graduation, Biomechanics Option students are required to take a minimum of **six** METEs instead of the usual minimum of seven. This consideration is given to provide reasonable flexibility in selecting the large number of TEs needed to complete the Biomechanics Option. This allowance is only available to those who successfully complete this option. If a student opts out of the Biomechanics Option, the METE requirement will revert to a minimum of seven METE courses and the Mechanical Engineering degree requirements may not be met. Note that 7 courses in one term will not be allowed.

## **The Welding and Joining Specialization in the Department of Mechanical Engineering**

Please refer to the information regarding the Welding and Joining Specialization which can be found on the web at <http://uwaterloo.ca/mechanical-mechatronics-engineering/current-undergraduate-students-mechanical-engineering/welding-and-joining-specialization>. Students who are interested in completing the Welding & Joining Specialization must complete ME 435 and ME 436 in 4A, and ME 535, ME 538 and ME 526 in 4B. ME 547 is recommended, but not required. Please note that the Welding & Joining Specialization does not entail increased course load and no "Extra" courses are required. A welding-related ME 481 project is recommended, but not required.

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