

**TO: All MEng Students**

**DATE: 22 August 2017**

**SUBJECT: MEng Student Course Selection**

All MEng students are assigned to Professor Craig Steeves, Associate Director, Graduate Studies, as their academic program advisor. New MEng students are encouraged to contact Professor Steeves to arrange an appointment to select their courses.

Please follow these instructions:

1. Consult the [list of graduate courses posted on the UTIAS website](#) to select courses for your entire MEng program, breaking down course selection by term.
2. Complete [the fillable form](#) with your course selections.
3. Email the form to [Professor Steeves](#) (copied to the [UTIAS Graduate Office](#)) and make an appointment for a course selection advice meeting.
4. Once your courses are approved, enrol using ACORN.

## **Selecting MEng Courses**

### *Course requirements*

All MEng students are required to take five Full-Course Equivalents (FCEs). As most graduate courses are considered to be half-courses (0.5 FCEs), this means ten courses. Students may take courses from UTIAS (AER and ROB courses), other UofT engineering departments (MIE, CIV, CSC, etc), or from the Faculty of Applied Science and Engineering (APS). There are several restrictions on which courses may be taken:

1. At least half of the courses must be AER.
2. At least seven courses must be technical. Note that AER 1601H is the only non-technical AER course. Most courses offered by other engineering departments are technical; APS courses are non-technical.
3. At most three courses may be 500-level.

### *Course load limitations by program*

MEng students are registered as full-time, extended full-time or part-time. The maximum course load per session (term) or academic year are determined by the MEng program. Course load limitations for each status are as follows:

1. Full-time: Full-time MEng students are not restricted in the number of courses they may take per academic session or per academic year.

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2. Extended full-time: Extended full-time MEng students may take a maximum of 3 (three) courses per session, and a maximum of 6 (six) courses per academic year. This means that it will take at least five sessions from the start of the program to complete the course requirement.
3. Part-time: Part-time MEng students may take a maximum of 2 (two) courses per session and 4 (four) courses per academic year.
4. All MEng students may take a maximum of 10 (ten) half courses (5.0 FCEs). The only exception is for MEng students wishing to qualify for the [Elite certificate](#), who may take seven technical courses and four non-technical courses. AER 1601 is considered a non-technical course.

*Post-graduation work authorization*

Many international students wish to apply for a Canadian work visa following graduation. To apply prior to convocation requires a Confirmation of Degree Requirements from the School of Graduate Studies stating that all the degree requirements are complete. Before issuing this letter, UTIAS must send a Master's Degree Recommendation to the School of Graduate Studies. **UTIAS cannot under any circumstances send this recommendation before ALL course grades are posted on ROSI.** This applies even if a missing grade is for a course that is surplus to the degree requirements. As a consequence, if you wish to apply for a work authorization as early as possible, it is advisable to avoid selecting courses in the second half of the summer term to ensure that all grades are available as early as possible.

*Thematic course selections*

Many students want to take a selection of courses that follow a particular theme. The following groups of courses are related to the various research themes pursued at UTIAS. They will form only part of the required total of ten courses. It is not necessary to select courses from one of these themes. Students may select any courses from the UofT calendar that satisfy the MEng requirements, but some students find these lists helpful. It is also possible to qualify for an Emphasis, which is recorded on the transcript. The Emphases available to UTIAS students are listed in the School of Graduate Studies calendar

Theme: Robotics

ROB 501	Computer Vision for Robotics	
AER 521	Mobile Robotics and Perception	
AER 1217	Development of Autonomous UAS	
AER 1513	State Estimation for Aerospace Vehicles	not offered 2017/18
AER 1514	Mobile Robotics	not offered 2017/18
CSC 2503	Foundations of Computer Vision	
CSC 2515	Introduction to Machine Learning	

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Theme: Fluid Mechanics and Aerodynamics

AER 1303	Advanced Fluid Mechanics	not offered 2017/18
AER 1308	Introduction to Modern Flow Control	
AER 1310	Turbulence Modelling	
AER 1324	Introduction to Turbulence	
MIE 1201	Advanced Fluid Mechanics	

Theme: Computational Engineering

AER 1316	Fundamentals of Computational Fluid Mechanics	
AER 1319	Finite Volume Methods for CFD	
AER 1410	Topology Optimization	
AER 1415	Computational Optimization	not offered 2017/18
AER 1416	Numerical Methods for Uncertainty Quantification	not offered 2017/18
AER 1418	Variational Methods for Partial Differential Equations	

Theme: Structures and Materials

AER 501	Computational Structural Mechanics and Design Optimization	
AER 1403	Advanced Aerospace Structures	
AER 1410	Topology Optimization	
AER 1415	Computational Optimization	not offered 2017/18
MIE 1804	Finite Element Method in Mechanical Engineering	

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Institute for Aerospace Studies  
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Theme: Propulsion and Combustion

AER 510	Aerospace Propulsion	
AER 1301	Kinetic Theory of Gases	
AER 1304	Fundamentals of Combustion	
AER 1322	Modern Aircraft Propulsion	not offered 2017/18
AER 1324	Introduction to Turbulence	
MIE 1222	Multiphase Flows	

Theme: UAVs and Drones

ROB 501	Computer Vision for Robotics	
AER 1202	Advanced Flight Dynamics	
AER 1216	Fundamentals of UAVs	
AER 1217	Development of Autonomous UAS	
AER 1513	State Estimation for Aerospace Vehicles	not offered 2017/18
CSC 2503	Foundations of Computer Vision	