TO: All MEng Students  
DATE: 16 August 2018  
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. You may enrol using ACORN as soon as you have selected your courses; you need not wait for approval. Changes to course selection can be made up to the add / drop dates for the relevant term.

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 or ROB.
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. If you are unsure whether a course is technical or non-technical, contact the Graduate Office for advice before the course starts.
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.

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 requirements.

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
- ROB 521 Mobile Robotics and Perception
- AER 1217 Development of Autonomous UAS
- AER 1513 State Estimation for Aerospace Vehicles
- AER 1514 Mobile Robotics

Excludes AER 1514

Excludes ROB 521

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CSC 2503  Foundations of Computer Vision
CSC 2515  Introduction to Machine Learning

Theme: Fluid Mechanics and Aerodynamics

AER 1303  Advanced Fluid Mechanics
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
AER 1416  Numerical Methods for Uncertainty Quantification  not offered 2018/19
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
MIE 1804  Finite Element Method in Mechanical Engineering

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## Theme: Propulsion and Combustion

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<tbody>
<tr>
<td>AER 510</td>
<td>Aerospace Propulsion</td>
</tr>
<tr>
<td>AER 1301</td>
<td>Kinetic Theory of Gases</td>
</tr>
<tr>
<td>AER 1304</td>
<td>Fundamentals of Combustion</td>
</tr>
<tr>
<td>AER 1322</td>
<td>Modern Aircraft Propulsion</td>
</tr>
<tr>
<td>AER 1324</td>
<td>Introduction to Turbulence</td>
</tr>
<tr>
<td>MIE 1222</td>
<td>Multiphase Flows</td>
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*Note: AER 1322 is not offered 2018/19*

## Theme: UAVs and Drones

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<tbody>
<tr>
<td>ROB 501</td>
<td>Computer Vision for Robotics</td>
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<tr>
<td>AER 1202</td>
<td>Advanced Flight Dynamics</td>
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<tr>
<td>AER 1216</td>
<td>Fundamentals of UAVs</td>
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<tr>
<td>AER 1217</td>
<td>Development of Autonomous UAS</td>
</tr>
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