# MIE1001 Winter 2018
## Advanced Dynamics

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Eric Diller</th>
<th>E-mail</th>
<th><a href="mailto:ediller@mie.utoronto.ca">ediller@mie.utoronto.ca</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>MC310</td>
<td>Office Hours</td>
<td>Thursdays 9:30-11:30 am</td>
</tr>
</tbody>
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**TIME, LOCATION:**
- Tuesdays 9am-11am  
  BA1240
- Thursday 1pm-2pm  
  BA2179

*No lecture reading week (February 22, 22)*

**MARKING SCHEME:**
- Homework: 20%
- Quizzes: 30%
- Final exam: 50%

**EXAMS:**
- Tentative quizzes: February 9, March 16
- Tentative Final Exam: April 17

**TEXTBOOK (highly suggested):** *Principles of Dynamics* (Second Edition)  
Donald T. Greenwood, 1988

Additional notes will be posted to Blackboard

**REFERENCE BOOK:** *Methods of Analytical Dynamics*  
Leonard Meirovitch, 1970

**TOPICS:**
- Kinematics of rigid body motion
- Work, energy, momentum
- Variational principles and Lagrange´s Equations
- Hamilton´s principle
- Hamilton´s equations
- 3D rotations: Euler angles, quaternions