<table>
<thead>
<tr>
<th><strong>Course Code:</strong></th>
<th>MECH 3520</th>
<th><strong>Course Title:</strong></th>
<th>Design and Manufacturing II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Course Or Elective Course:</strong></td>
<td>Elective</td>
<td><strong>Terms Offered (Credits):</strong></td>
<td>Fall (3 credits)</td>
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<tr>
<td><strong>Faculty In Charge:</strong></td>
<td>David Lam</td>
<td><strong>Pre/Co-Requisites:</strong></td>
<td>MECH2520</td>
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**Course Structure:** Lecture: 3 hours per week, tutorial: 1 hour per week.

**Textbook/Required Material:**
1. Class notes,

**Bulletin Course Description:**
This is an elective course for the BEng in Mechanical Engineering with Option in Design.

**Course Topics:**
1. Design optimization functions
2. Material failure laws
3. Continuous loading designs
4. Discrete loading designs
5. Material selection
6. Geometry selection
7. Components designs

**Course Objectives:**
1. Understand engineering design methodologies
2. Learn quantitative design tools
3. Apply engineering design methodologies in case studies
4. Quantitative comparison of designs
5. Design recommendations

**Course Outcomes:**
A. Lucid understanding of the interplay of engineering parameters in design
B. Ability to optimize geometry
C. Ability to do continuous loading designs
D. Ability to do discrete loading designs
E. Ability to do material selection
F. Ability to design against fatigue
G. Ability to do component design

**Assessment Tools:**
<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework problems</td>
<td>20%</td>
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<tr>
<td>Projects; Mid-term and Final exams</td>
<td>80%</td>
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</table>