# MECH3710 Manufacturing Processes and Systems

<table>
<thead>
<tr>
<th><strong>Course Code:</strong> MECH 3710</th>
<th><strong>Course Title:</strong> Manufacturing Processes and Systems</th>
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<tbody>
<tr>
<td><strong>Required Course Or Elective Course:</strong> Elective</td>
<td><strong>Terms Offered (Credits):</strong> Fall or Spring (3 credits)</td>
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<td><strong>Faculty In Charge:</strong> David Lam</td>
<td><strong>Pre/Co-Requisites:</strong> MECH2010, MECH2410, MECH3520</td>
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## Course Structure:
- Lecture – 2 days per week, 3 hours; Lab – 1 day per week, 3 hours

## Textbook/Required Material:
1. Lecture Notes

## Course Description:
This is a required course for the BEng in Mechanical Engineering with Option in Design.

## Course Topics:
1. Overview on manufacturing
2. Process and production planning and control
3. Manufacturing material properties
4. Surface and tolerances
5. Rapid prototyping
6. Metal casting
7. Plastic and Rubber shaping
8. Powder metallurgy
9. Ceramic processing
10. Metal forming
11. Machining product design
12. Coating and depositions

## Course Objectives:
1. To introduce the relationships among the engineering material properties and process variables in a given manufacturing process.
2. To help students understand the principles of traditional and recently developed manufacturing processes.
3. To provide process characteristics, capabilities and limitations; related machinery and equipment.
4. To introduce the automation and common aspects of manufacturing, including metrology and quality assurance.

## Course Outcomes:
A. To be capable to identify manufacturing process according to given products.
B. To master formula and detail flexibility in solving practical problems.
C. To become expert to design and implement the manufacturing processes for different industrial tasks.

## Assessment Tools:
- Homework Assignments 20%
- Lab Assignments 10%
- Mid-term and Final Examinations 70%