# Course Aim

To enable students to analyze engineering components and solve engineering problems using computer aided design tools and to effectively use protocols created for the CNC machine code and to test using computer simulations.

## Course Outline

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Practical</th>
<th>Application of knowledge</th>
<th>Theoretical</th>
<th>Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use specialist CAD (computer aided Design) skills in advanced geometry feature creation methods and techniques to create solid and wire frame models.</td>
<td>Practical</td>
<td>Application of knowledge</td>
<td>Theoretical</td>
<td>Understanding</td>
</tr>
<tr>
<td>2. Analyse components using finite element analysis for structural, fluid and thermal problems, and critically analyse the solution to carry out design modification.</td>
<td>Practical</td>
<td>Application of knowledge</td>
<td>Theoretical</td>
<td>Understanding</td>
</tr>
<tr>
<td>3. Critically analyze the concept of FMS (Flexible manufacturing system) and CIMS (Computer Integrated Manufacturing Systems)</td>
<td>Theoretical</td>
<td>Understanding</td>
<td>Theoretical</td>
<td>Understanding</td>
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<tr>
<td>4. Integrate CAD/CAM tools and develop and synthesize APT (Automatically Programmed Tool) programming for machining</td>
<td>Theoretical</td>
<td>Understanding</td>
<td>Theoretical</td>
<td>Understanding</td>
</tr>
</tbody>
</table>

## Course Details

- **Short Title**: EN8909
- **Faculty**: EDICT
- **Credits**: 15
- **Pre-requisites**: 60 Credits at level 7 in BEngTech (Mechanical) and EN6904 (or ENB5904)
- **Co-requisites**: None
- **Anti-requisites**: None
- **Effective From**: September 1, 2016
- **Version**: 2
- **Indicative NQF Level**: 8
- **Student Contact hrs**: 60
- **Self-directed hrs**: 90
- **Other directed hrs**: 0
- **Total learning hrs**: 150

## Notes

- Enrolment: 60 Credits at level 7 in BEngTech (Mechanical) and EN6904 (or ENB5904)
- Version: 2