### Module Template for New and Revised Modules

<table>
<thead>
<tr>
<th><strong>Module Code</strong></th>
<th>MEU33BM4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module Name</strong></td>
<td>3D CAD &amp; 3D Printing</td>
</tr>
<tr>
<td><strong>ECTS Weighting</strong></td>
<td>5 ECTS</td>
</tr>
<tr>
<td><strong>Semester taught</strong></td>
<td>Semester 1</td>
</tr>
<tr>
<td><strong>Module Coordinator/s</strong></td>
<td>Assistant Professor Daniel Trimble (<a href="mailto:dtrimble@tcd.ie">dtrimble@tcd.ie</a>)</td>
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</tbody>
</table>

#### Module Learning Outcomes

On successful completion of this module, students should be able to:

1. create 3D models of complex engineering components using CAD software
2. build engineering assemblies of components using CAD software
3. Interpret manufacturing engineering drawings
4. construct manufacturing drawings of components and assemblies using CAD software
5. Analyse engineering components using simulations techniques

**Graduate Attributes: levels of attainment**

- To act responsibly - Choose an item.
- To think independently - Choose an item.
- To develop continuously - Choose an item.
- To communicate effectively - Choose an item.

#### Module Content

- Simple 3D components
- Assemblies
- Holes and fasteners
- Design Tables
- Engineering drawings (components + assemblies)
- Complex 3D components
- Appearance and motional analysis
- Simple Finite Element Analysis

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1. *An Introduction to Module Design* from AISHE provides a great deal of information on designing and re-designing modules.
2. [TEP Glossary](#)
Teaching and Learning Methods

The module is mostly focused on self-directed learning through the completion of weekly lab exercises. Notes and videos are available to progress through the course with the addition of lab clinics and occasional lectures. All content is made available through blackboard.

Assessment Details

Please include the following:
- Assessment Component
- Assessment description
- Learning Outcome(s) addressed
- % of total
- Assessment due date

<table>
<thead>
<tr>
<th>Assessment Component</th>
<th>Assessment Description</th>
<th>LO Addressed</th>
<th>% of total</th>
<th>Week due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>Weekly exercises, MCQ and in-class exams</td>
<td>all</td>
<td>100%</td>
<td></td>
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</tbody>
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Reassessment Requirements

Continuous assessment

Contact Hours and Indicative Student Workload

Contact hours: 44 hours

Independent Study (preparation for course and review of materials):

Independent Study (preparation for assessment, incl. completion of assessment):

Recommended Reading List

- No prescribed texts – class notes and instruction should suffice.
- The following texts may provide useful additional information:

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3 TEP Guidelines on Workload and Assessment
### Module Pre-requisite

### Module Co-requisite

### Module Website

### Are other Schools/Departments involved in the delivery of this module?
If yes, please provide details.

### Module Approval Date

<table>
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<tr>
<th>Approved by</th>
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### Academic Start Year
2021

### Academic Year of Date
2021 - 2022