Module Template for New and Revised Modules[1]

Module Code	MEU33BM4
Module Name	3D CAD & 3D Printing
ECTS Weighting[2]	5 ECTS
Semester taught	Semester 1
Module Coordinator/s	**Assistant Professor Daniel Trimble (dtrimble@tcd.ie)**
Module Learning Outcomes with reference to the Graduate Attributes and how they are developed in discipline	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

[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[3]
Please include the following:

- **Assessment Component**
- **Assessment description**
- **Learning Outcome(s) addressed**
- **% of total**
- **Assessment due date**

Assessment Component	Assessment Description	LO Addressed	% of total	Week due
Continuous Assessment	Weekly exercises, MCQ and in-class exams	all	100%	

Reassessment Requirements	Continuous assessment

Contact Hours and Indicative Student Workload[3]	**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: ○ SolidWorks 2013 Bible, Matt Lombard, 1st Edition, ISBN-13: 978-1118508404

[3] TEP Guidelines on Workload and Assessment

	○ Introduction to Solid Modelling Using SolidWorks, William Howard, Joseph Musto, 10th Edition, ISBN-13: 978-0078021244. ○ Introduction to Finite Element Analysis Using SolidWorks Simulation 2014, 1st Edition, ISBN-13: 978-1-58503-857-2
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	
Approved by	
Academic Start Year	2021
Academic Year of Date	2021 - 2022