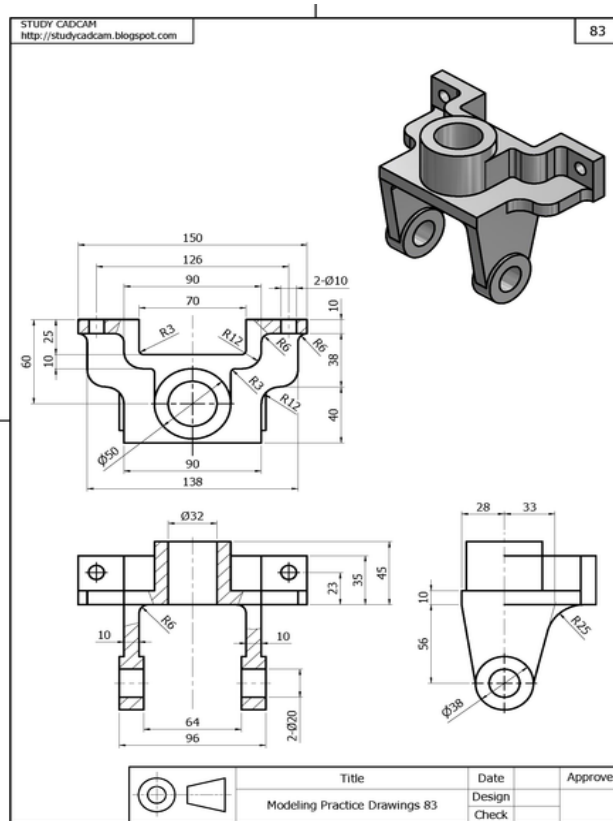


Computer Aided Engineering Design - ACMA4011

Module Introduction

Jordan R. Jenkins

Module Aims and Learning Outcomes



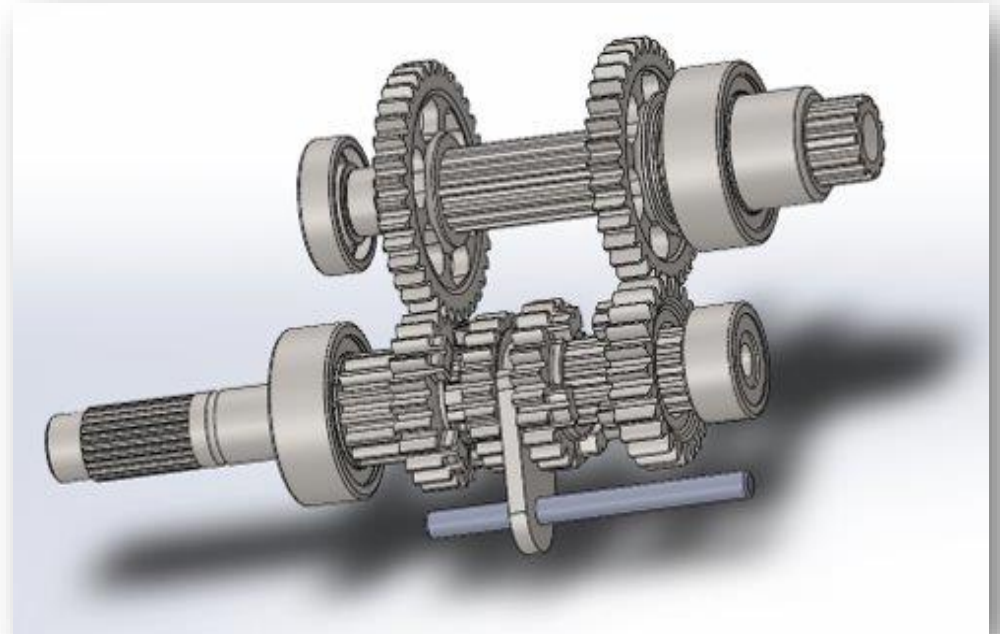
1. To provide students with an introduction to the engineering design process.
2. To develop an understanding of the fundamentals of Computer Aided Engineering Design software applications.

Upon the successful completion of this module, you should be able to:

- Demonstrate the application of basic functions within contemporary Computer Aided Design software along with
- Understanding of the role which such software applications play in the engineering design and development cycle.

Module Indicative Content

- Fundamentals of Engineering Drawing
- Fundamentals of Technical Product Specification
- Fundamentals of Assembly Modelling
- Introduction to Creative Problem Solving
- Introduction to the Engineering Design Process



Computer Aided Engineering Design

The study time for the module is divided as follows:

- 10 credit module
- 24 scheduled learning hours (12 weeks)
- 76 Independent learning hours.

Activity type	Hours	Percentage
Scheduled learning	24	24%
Independent learning	76	76%
Placement learning	0	0
TOTAL	100	100%

Computer Aided Engineering Design

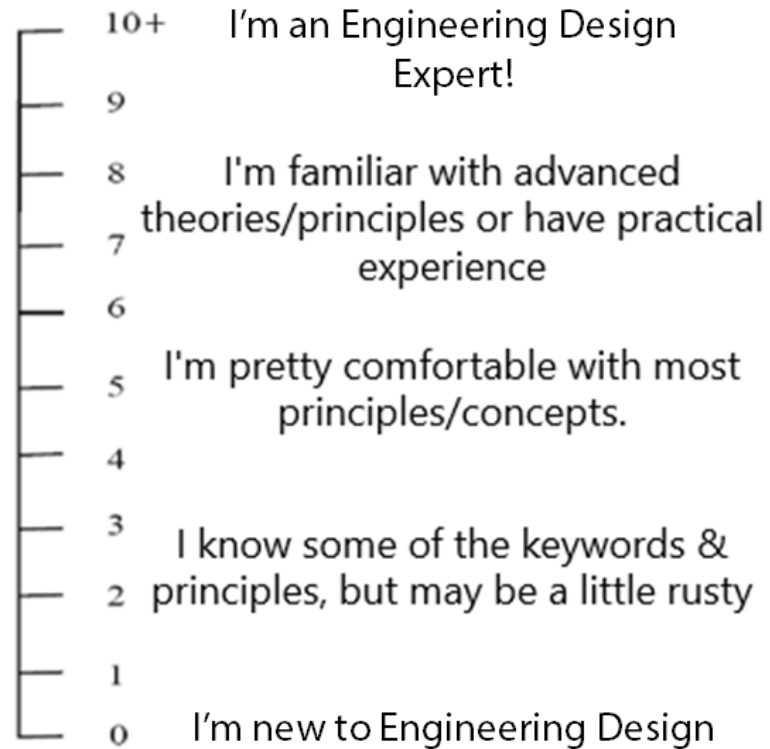
Assessment:

Mode of Assessment	Volume	Weight	Credits
Practical Assessment (Lab/Software Based)	Equivalent to 2000 words	100%	10

Reading list (Essential):

- | | Library Availability |
|--|----------------------|
| 1. Haik, Y. and Shahin, T. (2017) Engineering Design Process, CL Engineering | ✓(Online) |
| 2. Simmons, Simmons, C. H. Maguire, et al. (2020) Manual of Engineering Drawing: British and International Standards, Butterworth-Heinemann | ✓(Online) |
| 3. Almattar, T. (2020) Learn Solidworks 2020: A hands-on guide to becoming an accomplished SOLIDWORKS Associate and Professional, Packt Publishing | ✓ (Online) |

Question - On a scale of 1-10, how familiar are you with the following topics?



- Geometric dimensioning and tolerancing (GD&T)
- Solid modelling using computer aided design software (SolidWorks or other)
- Design optimisation methodologies (i.e. parametric & topology optimisation)
- Primary vs secondary manufacturing processes
- Process & Material selection
- Drafting (technical drawing) methodologies
- Technical Product Specifications (TPS)

Installing SolidWorks on a Personal Device

SolidWorks is available on all PCs within the IQ and Y Fforwm, but you also have access to an academic licence of the software allowing you to install it on a suitable personal device (strongly recommended).

1. Go to the Hwb website
<https://hwb.uwtsd.ac.uk>
2. Go to the Student Dashboard
3. Click on 'Helpdesk & Report Issues'
4. Click on 'IT Helpdesk'
5. Select Request Type as 'Request for Software & Devices'
6. Select SolidWorks from the list
7. Input contact number
8. Input your Course Title
9. For 'Expected Completion Date' put the year you will graduate
10. Tick to agree to terms & conditions
11. Click Save
12. You will receive an email with the activation code & download link