

MODULE DESCRIPTOR

Module Title

Advanced Design for Sustainable Manufacture

Reference	EN4506	Version	2
Created	March 2024	SCQF Level	SCQF 10
Approved	August 2023	SCQF Points	15
Amended	April 2024	ECTS Points	7.5

Aims of Module

To enable students analyse the design process and understand the manufacturing, assembly, cost, quality, sustainability and ethical issues in the design process

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Illustrate understanding of the design process.
- 2 Critique a product and related system in the context of design for manufacture and assembly principles
- 3 Justify product design and the important issues in design for cost, quality, and sustainability.
- 4 Examine the ethical considerations for design and manufacture.

Indicative Module Content

Design process; Material and manufacturing selection, feedback and iteration in the design process, opportunities and limits, strategies, methods and mean of the design process; Reliability driven product design; maintainability, environmental issues and design, ethics obligation and code of conduct. Sustainable product design, strategies and principles to reduce impact, service design process models, product-service systems, sustainable design standards and sustainable materials and manufacturing

Module Delivery

The module is delivered by means of lectures, tutorials and self-guided study and is integrated with applications in the laboratory.

Indicative Student Workload	Full Time	Part Time
Contact Hours	46	N/A
Non-Contact Hours	104	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type: Coursework Weighting: 100% Outcomes Assessed: 1, 2, 3, 4
 Description: Report

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The module has 1 component and to gain an overall pass, a minimum D grade must be achieved.

Module Grade	Minimum Requirements to achieve Module Grade:
A	A
B	B
C	C
D	D
E	E
F	F
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module EN3108, EN3109
 Corequisites for module None.
 Precluded Modules None.

INDICATIVE BIBLIOGRAPHY

- Dym, Clive L., 2008, Engineering Design.3rd Ed. Wiley ISBN 10: 0470225963 ISBN 13: 9780470225967
- Kuashik Kumar, Divya Zindani, J Paulo Davim., 2021. Sustainable manufacturing and Design 1st Edition. Elsevier
- J Paulo Davim., 2010. Sustainable manufacturing, 1st Ed. John Wiley & sons, Inc.
- Sarbjeet Kaushal, Ishbir Singh, Satnam Singh, and Ankit Gupta Sustainable,2022. Advanced Manufacturing and Materials Processing Methods and Technologies. 1st edition CRC Press, Taylor & Francis Group, LLC