



## **Module Specification**

### **Design for Manufacture**

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## Part 1: Information

**Module title:** Design for Manufacture

**Module code:** UADBBE-30-2

**Level:** Level 5

**For implementation from:** 2026-27

**UWE credit rating:** 30

**ECTS credit rating:** 15

**College:** College of Arts, Technology and Environment

**School:** CATE School of Arts

**Partner institutions:** None

**Field:** Design

**Module type:** Module

**Pre-requisites:** None

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

**Professional, statutory or regulatory body requirements:** None

## Part 2: Description

**Overview:** Design for Manufacture is a programme specific module for Product Design Technology BSc (Hons).

This module will deliver the learning involved with design detailing and communication of ideas so that a manufacturer can take a design and confidently construct the design to the correct specifications.

**Features:** Not applicable

**Educational aims:** This module will deliver the learning and understanding for students to:

- Develop, test and prototype appropriate ideas within a design process
- Demonstrate material literacy for product manufacture, assembly and quality assurance
- Engage with critical product research and gain user feedback
- Assess the qualities of prototypes with stakeholders and user groups in order to inform final design moves.

**Outline syllabus:** Introduction:

- Understanding materials, properties and processes.

Polymers and polymer processing:

- A range of common plastics
- Thermoplastic, thermosetting and elastomers
- Properties and molecular structure
- The range of common manufacturing processes
- Designing plastic components

Metals and casting/forming processes:

- A range of common metals and alloys
- Properties and microstructure of metals and alloys
- Forming, fabrication, processing and casting of metals
- Designing metal components.

Ceramics and forming processes:

- A range of common ceramic materials
- Properties and structure of ceramics
- Manufacturing processes
- Designing ceramic components.

Other materials, composites and processes:

- Composite and other materials, properties and characteristics, forming and moulding processes

- Designing components.

Colour, material and texture:

- Materials qualities
- Visual and tactile experience
- Coatings, surface finish and post processing.

Sustainability and environmental impact:

- Life cycle assessment, embodied energy, sustainable design strategies and techniques, circular economy and recycling.

Material and processes selection:

- Materials specification
- Materials libraries and data sources
- Systems for developing products or components
- Costing materials, processes and components.

New and emerging materials and manufacturing processes:

- Keeping current with new developments such as additive manufacturing.

### **Part 3: Teaching and learning methods**

**Teaching and learning methods:** The teaching and learning strategy for this module is studio/workshop project-based learning in which a topic demonstration will introduce the students to the assigned or upcoming exercises and/or project which supports and frames their acquisition of topic specific knowledge and skills.

The exercises and projects are designed to facilitate competency acquisition through learning, building knowledge through the introduction of new subject matter and reinvestment of gained knowledge and skills. The studio/workshop is designed for the learner to have access to tutorial support, work in the close proximity of classmates and to self-assess his/her progress through the exercises and/or projects.

Knowledge and skills reinvestment from parallel running modules are formative and essential for progression through the curriculum.

The module is typically delivered via projects, seminars, group critiques, workshops, individual tutorials and independent study.

Teaching sessions in the module are aimed at building students' skills, knowledge and understanding of the different approaches to product engineering.

Emphasis will be placed on establishing a meaningful relationship between conceptual and practical activities. Analytical, evaluative and planning skills will be supported through seminars/tutorials/individual critiques, in order to encourage students to adopt an ongoing engagement with ideas/processes/methods of production beyond the familiar. Critical engagement and reflection on ideas/practices examined within the module will be documented and presented for assessment in the supporting and development work.

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, workshops' fieldwork, external visits, supervised time in studio/workshop.

Students are required to develop a body of work representing their acquired design skills throughout this module and these will form a core part of the learning, teaching and assessment process. Students' portfolios can be hand and / or digital in format and should contain a range of content that includes but is not limited to; physical model making, 2D and 3D drawing, CAD and digital modelling in response to pre-defined project briefs.

The development of critical, analytical and evaluative skills is supported and encouraged through (for instance) the use of inclusive resources, discussion in group critiques and activities, and through individual tutorials. Students are encouraged and supported in the development of their visual, verbal and written communication skills through all aspects of the teaching and learning process and

will have access to a range of Study Skills support available centrally.

Independent study/self-guided study includes hours engaged with creative, academic and technical development, visual and textual research, workshop activity and any learning via the VLE outside of taught sessions.

The reading and resource list for this module will be accessible via a live link on the VLE and will also be available via the module handbook and Talis Library systems.

The reading and resource list is inclusive and accessible and has been designed to amplify a diverse range of critical and creative voices, ensuring representation across multiple perspectives and disciplines. It is designed inspire curiosity and to support a broad range of Learners through the inclusion of source material across diverse formats, media and platforms, ensuring accessibility for all learning styles and needs.

**Module Learning outcomes:** On successful completion of this module students will achieve the following learning outcomes.

**MO1** Evaluate and select appropriate components for a design.

**MO2** Critically evaluate physical materials and process selection.

**MO3** The ability to evaluate cost drivers for both recurring and non-recurring costs and evaluate the cost implications of differing production volumes.

**MO4** Evaluate and apply knowledge of Sustainable Design to broadly-defined problems including disassembly, repair, recycling.

**Hours to be allocated:** 300

**Contact hours:**

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

**Reading list:** The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://readinglists.uwe.ac.uk) via the following link

<https://rl.talis.com/3/uwe/lists/849DDA9C-6A17-91F6-C83D-4D9FB44483A7.html?lang=en-GB&login=1>

## Part 4: Assessment

**Assessment strategy:** The assessment strategy of the programme that this module contributes to reflects the School of Art's philosophy, which considers assessment to be an active part of the learning process and is regarded as a tool for learning.

This module takes a programmatic approach to assessment. Summative assessment is via portfolio submission which includes a collection of related work developed over a period of time which may include aspects of drawing, writing and research, and a strong practical element.

This would include:

- Individual presentation of work
- Material engagement
- Practical experiments and tests (including a critically written evaluation of each)
- Supporting documentation and research.

The portfolio assessment in this module is inclusive and is designed to foster and demonstrate the value of a process-centric approach to learning. The module will include a (regularly reviewed) combination of diverse formats and / or modes of assessment (including physical / digital) and has been designed to offer students of all learning styles the maximum opportunity to demonstrate the skills, knowledge and experiences that they have gained throughout the module.

Within the submission students are expected to present evidence of work that demonstrates engagement with the minimum number of contact hours for the module, as well as the minimum number of independent study hours. The portfolio work will evidence personal developmental activities and assessment is designed to reduce issues of plagiarism.

Students will receive regular feedback formatively via midpoint group presentations as well as during group tutorials. This provides students with timely and detailed understanding of their progress and provides clear feed-forward guidance regarding

future development. The formative feedback and summative assessment processes of this module are embedded into studio pedagogy and as such establish an authentic, inclusive approach to assessment that builds students' confidence as they progress.

Self and peer evaluation constitute an important part of formative feedback in this module and are embedded to facilitate the progression towards autonomous learning.

At Level 5 assessment is via numerical grading. This assessment structure is designed to enable students to achieve and evidence the learning outcomes of the module. Students receive personalised feedback against the module learning outcomes. The module is assessed holistically.

Summative assessment feedback provides students with detailed understanding of their progress and achievement of the learning outcomes and provides clear feed-forward guidance regarding future development. As part of the summative assessment process students are supported in developing individual 'Action Plans' based on their assessment feedback.

Students who do not pass at the first sit will be given a re-sit opportunity. The re-sit assessment requirements will be the same as the first sit.

**Assessment tasks:****Portfolio (First Sit)**

Description: Presentation of Final Body of Work and supporting materials.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

**Portfolio (Resit)**

Description: Presentation of Final Body of Work and supporting materials.



Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

## **Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Product Design Technology [Bower] BSc (Hons) 2025-26