



# Design for Manufacture MArch

Programme Information Sheet

This document provides details of the structure and content of this programme.

## Programme overview

Design for Manufacture prepares a new professional workforce of highly skilled, creative and adaptable experts, with tacit and explicit knowledge of design, engineering, material behaviour, analogue and digital craft, and advanced systems operations.

There is an abundance of advanced design and engineering tools in the UK that an elite workforce develops and deploys to export their expertise worldwide. Yet there is currently a shortage of skilled workers at the point of production tasked with delivering increasingly sophisticated and challenging projects by clients, in line with rising expectations of quality and regulation.

This programme will expose students to new forms of advanced design and engineering methodologies – such as robotics and 3D scanning – that are currently reinventing core approaches to shaping, making and refitting the built and manufactured environment.

Our staff are very closely linked to several practices and institutions both outside of and across UCL, in particular:

Arup Buro Happold  
Foster + Partners  
Laing O'Rourke  
Price & Myers  
ScanLAB Projects  
UCL Civil, Environmental and Geomatic Engineering (CEGE)  
UCL Institute for Environmental Design and Engineering (IEDE)

## Programme structure

The programme is taught over 15 months with a three-month period of overlap between outgoing and incoming students. We anticipate that incoming students will be inspired by those approaching the end of their studies during the autumn term.

Collaborative research, learning and working is a central tenet of this programme and its aims. Within this context, the programme is built around clusters of 15 to 20 students, with three clusters seen as the optimum number by 2019. Each design cluster is led by two tutors who will define a distinct territory of research that will evolve over time.

Design for Manufacture clusters may be formed around themes of: 1) autonomous fabrication, 2) experimental structures, and 3) material innovation. Clusters will evolve into research labs, or form links with existing Bartlett School of Architecture labs associated with complimentary programmes.

The curriculum is outlined below:

	Term 1 Sept-Dec	Term 2 Jan-March	Term 3 April-June	Summer July-Sept	Term 4 Sept-Dec
			Interim Port-folio Reviews		Final Examina-tions
DESIGN	<b>15 credits</b> <b>Introductory Workshops</b> Students take 3 workshops. Each student prepares an individual design workshop portfolio. This is formatively marked at the end of term 1.	<b>30 credits</b> <b>Thesis, Prelimi-nary Projects</b> Students work in groups with their specialist design tutor to prepare an initial design portfolio. This is formatively marked at the interim portfolio review.	<b>60 credits</b> <b>Thesis, Final Project</b> Students work in groups with their specialist design tutor to prepare a final design project.		Submit Thesis, Final Project  Internal and External Exams  Exhibition
THEORY	<b>15 credits</b> <b>Theory intro-duction</b> Students write a 2500 word paper comparing the different approaches and indicating a preference, arguing why they consider it most relevant to their further studies. This is formatively marked at the start of term 2.		<b>30 credits</b> <b>Design Thesis Written Report</b> Students work individually to identify a key research question that arises out of the design work in term 2 and research it over term 3 in parallel with their developing design thesis. The dissertation is written up over the summer vacation and is submitted at the start of term.		
SKILLS	<b>30 credits</b> <b>Skills Portfolio</b> Students are directed to learn skills appropriate to the course in general and their chosen preference. Both analytical (simulation and sensing) and synthetic (making) skills are taught. The portfolio is formatively marked at the end of term 2.				
	Previous cohort				Next cohort

## Programme modules

### Term 1

#### Introductory Design Workshops

This module includes presentations by the design teaching staff who run design clusters within the design thesis portfolio module. Students take three of these workshops and subsequently choose which cluster to join for the remainder of the year.

#### Contextual Theory: Design for Manufacture

This module introduces students to the various theoretical and practical positions that can be taken in the subject.

#### Skills Portfolio: Part 1

Students begin with operations that are applicable to the whole programme, such as 3D modelling and machine tooling. Many of these skills are digital-based, whilst others are analogue. In the first instance, students are taught, or reminded of, the basics of design through making, such as the structural behaviour of materials and assemblies, the properties of materials and composites including behaviour within

the manufacturing process, the difference between the drawn and the made, and the flow of information between both.

#### Term 2

In Term 2, students select a design cluster to join for the remainder of the programme. The design cluster is the primary teaching and learning vehicle of the entire programme and mirrors one of the distinguishing elements of teaching as a whole at The Bartlett School of Architecture. Each cluster is led by research-active staff, at least half of whom occupy key positions in practice or industry.

##### Skills Portfolio: Part 2

Students participate in project-specific skills workshops that are led by their design cluster tutors.

##### Design Thesis Portfolio: Preliminary Projects

As the skills module and the design module form intimate ties, students will occupy the workshops on almost a daily basis, engaging with the environment of production as a studio for design through making. This module is formatively marked at the end of Term 2, and definitively marked at the end of year.

#### Terms 3 & 4

##### Design Thesis Report

In this module, students examine a key research question that has arisen from their preliminary design work and which will inform their final project. Report tutors work closely with the design thesis tutors to provide students with support for the design thesis project. Students write up their thesis reports over the summer break with tutorials from their tutors. At the beginning of Term 4, students hand in their submissions and there is a conference where they present a summary of their report to staff and incoming students.

##### Design Thesis Portfolio: Final Project

This part of the programme follows on from the preliminary project as new and related challenge. Students complete their final project in Term 4 and prepare presentations for final marking and a public exhibition at the end of term. Simultaneously, the new cohort begins Term 1 and witnesses the preceding cohort complete Term 4. The new students also assist in preparing the exhibition, which gives them an insight on what lies ahead for them in the next 12 months.

##### Flexible Route

Students can only take modules when they occur in the academic year. Students taking the flexible route will be expected to take all Term 1 modules in Term 1 of their year of entry. They can then choose to continue to both of the Term 2 modules or interrupt, taking the Term 2 modules in Term 2 of a following year. After this they can choose to take the two Terms 3 and 4 modules over a period of one or more years depending on the time available to them. Students choosing to work in this way must submit individual design portfolios.