SUMMER PROGRAMMES

UNDERGRADUATE MODULE SYLLABUS

GENERAL INFORMATION	
Module title	Engineering Design for Start Ups
Module code	
Module level	Level 4 (First year Undergraduate UK Higher Education)
Credit value	Equivalent to 15 King's credits, 7.5 ECTS, 3-4 US Credits
Duration	2 weeks
Workload	45 contact teaching hours + 105 Independent study hours. (See detail below)
Entry Requirements	Standard entry requirements here
Mode of Delivery	Face to face, on campus
Contributing Faculty	NMES
Date last updated	Created 17.10.26

MODULE INFORMATION
Module description
This fast-paced module challenges you to design, build and pitch innovative engineering solutions to pressing global problems.

Working at the intersection of engineering design, engineering and entrepreneurship, you will use human-centred design methods to uncover user needs, reframe problems, and develop bold, creative ideas. You'll rapidly prototype, test and refine your concepts, learning by doing as you move from problem definition to engineering solution.

Along the way, you'll gain hands-on experience in entrepreneurship, working with experts to develop your idea from concept to business proposal. You'll learn how to identify opportunities, understand users and markets, develop a compelling value proposition, and consider the commercial potential of your solution. The module culminates in presenting your idea as a venture-ready concept.

By the end, you will have developed the skills and mindset needed to create, communicate and advanced engineering innovations that make a difference.

Educational aims

This module aims to introduce students to engineering design, enabling them to identify the problem, design and develop innovative engineering solutions and understand how to pitch their idea. The module will cover design thinking frameworks, including user personas, journey mapping, double diamond and ideation. Students will learn how to test their ideas, ensure market compatibility and how their solutions will integrate into existing systems.

The module will teach students about the fundamentals of innovation and entrepreneurship. Students will learn how to integrate their ideas into business proposals for start-up funding, learning about the funding landscape, how to raise capital and how to sell their ideas.

The module seeks to teach students how to develop personal, leadership and employability skills in a real world context.

Learning outcomes

By the end of this module students will be able to:

1. Utilise the Design Thinking approach to develop a user-centred solution.
2. Evaluate the role of engineers in society and the impact of engineering solutions on societal outcomes.
3. Evaluate and investigate existing engineering designs.
4. Assess the commercial potential of engineering solutions by considering factors such as market need, business models, cost structures and value proposition within a start-up context.
5. Explain the fundamental principles of innovation and entrepreneurship.

Teaching methods

The module will typically consist of activities distributed as stated below. Please note that individual tutors may vary this in accordance with discipline-specific requirements.

Lectures	Seminar/ tutorials	Field/lab/studio/ supervised learning	Project work	Other/private study

12 hours	12	21	0	105
Assessment				
Method	Number	Duration/length	Pass mark	% of final grade of module
Pitch	1	10 minutes	40	30
Business Portfolio	1	15 Pages	40	70
Attendance requirements				
Students must attend a minimum of 80% of timetabled contact hours to receive a Record of Agreed Results.				
Reading list				
Design of Everyday Things – Donald A. Norman Seven Skills of an Entrepreneurial Mindset – KCL Entrepreneurship Institute Inspired: How to Create Tech Products Customers Love by Marty Cagan				