

Design Thinking Product Innovation

Module Information

2022.01, Approved

Summary Information

Module Code	4263PDE
Formal Module Title	Design Thinking Product Innovation
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

Learning Methods

Learning Method Type	Hours
Lecture	22
Workshop	22

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	The main aim of this module is to offer students a broad perspective on Design Thinking as an integral part of product innovation.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Understand the organisational aspects of product development and its implications for managing and developing innovative products

MLO2	2	Understand and apply Design Thinking frameworks for innovation in a product design and development setting
MLO3	3	Apply Design Thinking tools and practices for technological innovation
MLO4	4	Identify and reflect upon the following aspects of personal development: strengths and weaknesses, motivations and values, ability to work with others

Module Content

Outline Syllabus	<p>Design Thinking The critical need for Design Thinkers within innovation processes. Its underlying philosophies, fundamental principles, process, practices and mind-set. Case studies to highlight key organisational perspectives of Design Thinking. Visual Thinking The need to think and behave visually during innovation processes. Concept mapping, affinity diagrams, user journey and storyboarding. Systems Thinking System Thinking acting has a complimentary process to the Design Thinking approach. Present and future state systems mapping, behaviour over time graphs, causations versus correlation, cause and effect diagrams, Pareto Analysis and nine windows to innovation grids. Discovery Research Product design research. Complimentary differences of primary and secondary research methods. Common ethnographic and participatory design research methods. Empathy: interviewing and mapping. Experts and extreme users. Define Framing and reframing problems to develop a point of view (POV), "how might we" (HMW) statements and the design challenge. Product design specification (PDS). User Persona boards, rich pictures and storyboards. Ideation The associative and Bissociative thinking models. The use of analogy and metaphor to enhance creativity. Nominal group and idea generation techniques. Decision making in design and idea selection techniques. Prototyping Prototypes and prototyping defined. Principles and practices of prototyping. Types of prototypes Testing Product testing Defined. Introduced to anthropometric data and ergonomic principles. User experience tests. Planning product Test. Feedback grids. Future Focus As part of the LJMU Future Focus activity, students will explore their development as a designer; reflect on where they have come from, how they will develop while at LJMU and where they ultimately see themselves positioned in their profession in the future. Encouraged to plan and record self-learning and development as the foundation for lifelong learning/CPD.</p>
Module Overview	<p>Aims The main aim of this module is to offer students a broad perspective on Design Thinking as an integral part of product innovation.</p> <p>Learning Outcomes After completing the module the student should be able to:</p> <p>1 Understand the organisational aspects of product development and its implications for managing and developing innovative products. 2 Understand and apply Design Thinking frameworks for innovation in a product design and development setting. 3 Apply Design Thinking tools and practices for technological innovation. 4 Identify and reflect upon the following aspects of personal development: strengths and weaknesses, motivations and values, ability to work with others.</p>
Additional Information	<p>UN Sustainable Development Goals This module includes content that relates to the following UN Sustainable Development Goals: SDG08 – This module introduces the topic of increasing diversity in the creative sector and thus promotes decent job creation, entrepreneurship, creativity and innovation.</p>

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Future Focus e-learning task	Reflective Essay	10	0	MLO4
Test	Timed computer assessment	10	0	MLO1, MLO2
Presentation	Group Video Presentation	80	0	MLO1, MLO2, MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Adam Papworth	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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