

Syllabus

Kursbeschreibung

Titel der Lehrveranstaltung	Product development and design
Code der Lehrveranstaltung	47585
Zusätzlicher Titel der Lehrveranstaltung	
Wissenschaftlich-disziplinärer Bereich	
Sprache	Englisch
Studiengang	Master in Industrie- und Maschineningenieurwesen
Andere Studiengänge (gem. Lehrveranstaltung)	
Dozenten/Dozentinnen	Dott. Margherita Molinaro, Margherita.Molinaro@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/43550 dr. Aurora Berni, Aurora.Berni@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/42284
Wissensch. Mitarbeiter/Mitarbeiterin	
Semester	Erstes Semester
Studienjahr/e	2
KP	6
Vorlesungsstunden	32
Laboratoriumsstunden	24
Stunden für individuelles Studium	80
Vorgesehene Sprechzeiten	18
Inhaltsangabe	The course provides insights into the new trends in product development and design. First, students will be guided in the adoption of a managerial view

	to understand how to structure an innovation process and how to incorporate the Voice of the Customer (VOC) in new product development decisions. Furthermore, they will learn how to investigate the patterns of consumer decision making through market research, thus better understanding the utility and desirability of new products. Second, they will be able to understand an engineering view of designing industrial products. Here, students will learn best practices in generation of new product concepts and their subsequent evaluation, which will take place by means of state-of-the-art systems and methods.
Themen der Lehrveranstaltung	Module 1 - Product Development: • The concept of innovation • New product development processes and models • Forecasting techniques for new products • Quality Function Deployment • Conjoint Analysis Module 2 - Engineering and Product Design: • Engineering design cycles • Product planning and specifications • Conceptual design • Design creativity and assessment thereof • Human-product interaction • User Experience • Eye-tracking in design research
Stichwörter	product development; customer needs; engineering design; human-product interaction
Empfohlene Voraussetzungen	none
Propädeutische Lehrveranstaltungen	
Unterrichtsform	Frontal lectures, exercises, laboratory and experimental activities
Anwesenheitspflicht	Not mandatory, but highly recommended
Spezifische Bildungsziele und erwartete Lernergebnisse	Intended Learning Outcomes (ILO) Knowledge and understanding Students should acquire the knowledge and the understanding of:

	• New product development process and related concepts • Essential tools and methods for customer involvement in new product development • Tools and approaches for market research in new product development • Engineering design cycles • Creative conceptual design • User Experience in engineering and product design • Systems to test human-product interaction Applying knowledge and understanding • Ability to frame a product development process and its governance structure • Ability to apply the Quality Function Deployment tool to a simple product • Ability to properly design a Conjoint Analysis • Ability to understand the main drivers behind product development and design • Ability to meditate about concepts instead of rushing to solutions • Ability to identify the main elements to be tested to allow the appraisal of design ideas and new products • Ability to organize tests aimed to evaluate people's experience with new products Making judgements • Ability to transfer the knowledge and methods learned to real practical applications thanks to groupworks, exercises and simulation of experimental activities within product development and design Communication skills • Ability to prepare, conduct and join interactive discussions in class • Ability to structure, prepare, and present arguments related to product development and design Ability to learn • Ability to autonomously extend the knowledge acquired during the study course by reading and understanding
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Spezifisches Bildungsziel und erwartete Lernergebnisse (zusätzliche Informationen)	-
Art der Prüfung	Module 1 is assessed through a project-based work, carried out in groups. The assessment includes a short individual oral discussion aimed at verifying the understanding of the concepts and methods covered in the module and the individual contribution to the project. Module 2 is assessed through a written examination lasting 1.5 hours. The final grade is calculated as the arithmetic mean of the grades obtained in the two modules, each expressed on a 30-point scale.
Bewertungskriterien	The assessment of the project-based work (Module 1) will be based on: • Quality and coherence of the project and problem framing • Appropriate and correct application of the methods introduced in the course • Quality of data analysis, interpretation, and resulting recommendations • Clarity of the work and individual understanding demonstrated during the oral discussion The written examination (Module 2) will consider: • Ability to accurately illustrate concepts about the topics of the course • Clarity of answers • Mastery of specialistic terminology
Pfichtliteratur	Lecture notes and documents for exercises will be available on the Microsoft Teams of the course.
Weiterführende Literatur	Books and articles will be possibly suggested by the lecturers during the course.
Weitere Informationen	-
Ziele für nachhaltige	Nachhaltiger Konsum und Produktion, Industrie, Innovation und

Entwicklung (SDGs)	Infrastruktur
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Kursmodul

Titel des Bestandteils der Lehrveranstaltung	Product Development
Code der Lehrveranstaltung	47585A
Wissenschaftlich-disziplinärer Bereich	IEGE-01/A
Sprache	Englisch
Dozenten/Dozentinnen	Dott. Margherita Molinaro, Margherita.Molinaro@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/43550
Wissensch. Mitarbeiter/Mitarbeiterin	
Semester	Erstes Semester
KP	3
Verantwortliche/r Dozent/in	
Vorlesungsstunden	16
Laboratoriumsstunden	12
Stunden für individuelles Studium	40
Vorgesehene Sprechzeiten	9
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	the-art systems and methods.
Themen der Lehrveranstaltung	Module 1 - Product Development: • The concept of innovation • New product development processes and models • Forecasting techniques for new products • Quality Function Deployment • Conjoint Analysis
Unterrichtsform	Frontal lectures and exercises
Pfichtliteratur	-
Weiterführende Literatur	-

Kursmodul

Titel des Bestandteils der Lehrveranstaltung	Engineering and Product Design
Code der Lehrveranstaltung	47585B
Wissenschaftlich-disziplinärer Bereich	IIND-03/B
Sprache	Englisch
Dozenten/Dozentinnen	dr. Aurora Berni, Aurora.Berni@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/42284
Wissensch. Mitarbeiter/Mitarbeiterin	
Semester	Erstes Semester
KP	3
Verantwortliche/r Dozent/in	
Vorlesungsstunden	16
Laboratoriumsstunden	12
Stunden für individuelles Studium	40
Vorgesehene Sprechzeiten	9
Inhaltsangabe	The course provides insights into the new trends in product

	development and design. First, students will be guided in the adoption of a managerial view to understand how to structure an innovation process and how to incorporate the Voice of the Customer (VOC) in new product development decisions. Furthermore, they will learn how to investigate the patterns of consumer decision making through market research, thus better understanding the utility and desirability of new products. Second, they will be able to understand an engineering view of designing industrial products. Here, students will learn best practices in generation of new product concepts and their subsequent evaluation, which will take place by means of state-of-the-art systems and methods
Themen der Lehrveranstaltung	Module 2 - Engineering and Product Design: • Engineering design cycles • Product planning and specifications • Conceptual design • Design creativity and assessment thereof • Human-product interaction • User Experience • Eye-tracking in design research
Unterrichtsform	Frontal lectures, laboratory and experimental activities
Pflichtliteratur	-
Weiterführende Literatur	-