

Syllabus

Syllabus

Titul dl curs	Product development and design
Codesc dl curs	47585
Titul suplementar	
SSD	
Lingaz	Inglese
Curs de laurea	Corso di laurea magistrale in Ingegneria Industriale Meccanica
D'autri cursc de laurea (cursc deberieda)	
Dozenc	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
Assistent didatich	
Semester	Primo semestre
Ann/Agn de stude	2
Credic universitars	6
Ores de insegnament	32
Ores de laboratore	24
Ores de stude individual	80
Ores de riceviment prevedudes	18
Ressumè di contegnus	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.
Argomenc dl curs	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
Paroles clef	product development; customer needs; engineering design; human-product interaction
Prerequisic aconsiés	none
Cursc propedeutics	
Modalité de enseignament	Frontal lectures, exercises, laboratory and experimental activities
Oblianza de frecuencia	Not mandatory, but highly recommended
Obietifs formatifs y competenzes da arjonje	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
Obietifs formatifs y competenzes da arjonje (informazions suplementares)	-

Sort de ejam	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.
Criters de valutazion	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
Bibliografia obligatora	Lecture notes and documents for exercises will be available on the Microsoft Teams of the course.
Bibliografia aconsieda	Books and articles will be possibly suggested by the lecturers during the course.
Deplù informaziuns	-
OSS	Utilizzo responsabile delle risorse, Innovazione e infrastrutture

Modul

Titul	Product Development
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Codesc dl curs	47585A
SSD	IEGE-01/A
Lingaz	Inglese
Dozenc	dott. Margherita Molinaro, Margherita.Molinaro@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/43550
Assistent didatich	
Semester	Primo semestre
Credic universitars	3
Dozent/a responsabel/bla	
Ores de insegnament	16
Ores de labore	12
Ores de stude individual	40
Ores de riceviment prevedudes	9
Ressumè di contegnus	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.
Argomenc dl curs	Module 1 - Product Development: • The concept of innovation • New product development processes and models • Forecasting techniques for new products • Quality Function Deployment • Conjoint Analysis

Modalité de enseignement	Frontal lectures and exercises
Bibliografia obligatoria	-
Bibliografia aconsieda	-

Modul

Titul	Engineering and Product Design
Codesc dl curs	47585B
SSD	IIND-03/B
Lingaz	Inglese
Dozenc	dr. Aurora Berni, Aurora.Berni@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/42284
Assistent didatich	
Semester	Primo semestre
Credic universitars	3
Dozent/a responsabel/bla	
Ores de enseignement	16
Ores de laboratore	12
Ores de stude individual	40
Ores de riceviment prevedudes	9
Ressumé di contegnus	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
Argomenc dl curs	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
Modalité de enseignement	Frontal lectures, laboratory and experimental activities
Bibliografia obligatoria	-
Bibliografia aconsieda	-