MODULE DESCRIPTION

Module code	full-time studies:	**Z-ZIP1-E-632**
	part-time studies:	**Z-ZIPN1-E-632**
Module name	**Products Development in an Enterprise**	
Module name in Polish	**Rozwój wyrobów w przedsiębiorstwie**	
Valid from academic year	**2022/2023**	

MODULE PLACEMENT IN THE SYLLABUS

Field of study	**MANAGEMENT AND PRODUCTION ENGINEERING**
Level of education	**1st degree**
Studies profile	**General**
Form and method of conducting classes	**Full-time and Part-time**
Specialisation	**Production and Innovation Management**
Unit conducting the module	**Department of Production Engineering**
Module co-ordinator	**Aneta Masternak-Janus, PhD**
Approved by:	**Dariusz Bojczuk, PhD, DSc**

MODULE OVERVIEW

Type of subject / group of subjects	**Specialist subject**
Module status	**Non-compulsory**
Language of conducting classes	**English**
Module placement in the syllabus - semester	**Semester VI**
Initial requirements	**No requirements**
Examination (YES/NO)	**YES**
Number of ECTS credit points	**2**

Method of conducting classes		**Lecture**	**Classes**	**Laboratory**	**Project**	**Other**
Per semester	full-time studies:	**15**			**15**	
	part-time studies:	**9**			**9**	

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Category	Symbol	Learning outcomes	Assignations to the directional learning outcomes
Knowledge	W01	A student knows and understands the basic principles of the development of products in the enterprise in the conditions of the market economy.	ZIP1_W15 ZIP1_W16
	W02	A student knows the methods and tools supporting the process of product development in the enterprise.	ZIP1_W16
Skills	U01	A student is able to design a product using the QFD method.	ZIP1_U01 ZIP1_U03 ZIP1_U08
	U02	A student demonstrates the ability to work independently or in a team during the development task.	ZIP1_U02
	U03	A student has basic skills in identifying and resolving dilemmas related to the development of products in the conditions of a market economy.	ZIP1_U01 ZIP1_U11
Social competences	K01	A student is aware of the responsibility for their own work and submits to the rules of working in a team.	ZIP1_K04
	K02	A student is aware of the need to take into account non-technical aspects in the product development process.	ZIP1_K02

TEACHING CONTENTS

Method of conducting classes	Teaching contents
Lecture	Designing a product using the QFD method: the essence of the QFD method, history of creation and practical application, construction of a Quality House. Organization of product development: life cycle, planning stages, traditional and integrated product development, distribution of financial outlays during the implementation of a development task, structural, technological and manufacturing design, market equilibrium price, calculation of production costs and methods of their reduction. Methods of comparing developed products: break-even point, scoring models, present value of cash flows, net present value of the project, internal rate of return. Methods supporting product development: network methods, function and value analysis, FMEA method.
Project	Development of a selected product model using the QFD method: building a questionnaire and conducting surveys, analysis of market needs, competition analysis, building a quality house.

METODS OF ASSESSING TEACHING RESULTS

Symbol	Methods of checking the learning outcomes *(select X)*					
	Oral exam	Written exam	Test	Project	Statement	Other
W01		X				
W02		X				
U01				X		
U02				X		
U03		X		X		
K01				X		X
K02				X		X

FORM AND CONDITIONS OF PASSING

Form of classes	Form of credit	Passing conditions
Lecture	Exam	Obtaining at least 50% of the points of the written examination in the form of a test.
Project	Credit with grade	Obtaining at least 50% of points from a project task carried out in small student teams.

STUDENT WORKLOAD

Balance of ECTS points												
No.	Type of student's activity	Student's workload										Unit
		full-time					part-time					
1.	Participation in the activities	Lc	C	Lb	P	O	Lc	C	Lb	P	O	h
		15			15		9			9		
2.	Other (consultation, exam)	4			2		4			2		h
3.	**Number of hours of a student's assisted work**	**36**					**24**					h
4.	**Number of ECTS credit points which are allocated for assisted work**	**1,4**					**1,0**					ECTS
5.	**Number of hours of a student's unassisted work**	**14**					**26**					h
6.	**Number of ECTS credit points which a student receives for unassisted work**	**0,6**					**1,0**					ECTS
7.	**Work input connected with practical classes**	**25**					**25**					h
8.	**Number of ECTS credit points which a student receives for practical classes**	**1,0**					**1,0**					ECTS
9.	**Total number of hours of a student's work**	**50**					**50**					h
10.	**Punkty ECTS za moduł** *1 ECTS=25 hours*	**2**										ECTS

LITERATURE

1. Bhardwaj J. (2010), *Application of Quality Function Deployment in Product Development*, OmniScriptum GmbH & Co. KG, Saarbrücken.
2. Jamnia A., (2018), *Introduction to Product Design and Development for Engineers*, Taylor & Francis Ltd, Boca Raton.
3. Trott P. (2016), *Innovation Management and New Product Development*, Pearson Education, London (Available online)