POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Engineering automation using VBA

Course

Field of study	Year/Semester
Production Engineering and Management	1/2
Area of study (specialization)	Profile of study
Computerisation of Production	general academic
Level of study	Course offered in
Second-cycle studies	Polish
Form of study	Requirements
full-time	elective

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
Tutorials	Projects/seminars	
	30	

Number of credit points

2

Lecturers

Responsible for the course/lecturer:	Responsible for the course/lecturer:
Radosław Wichniarek	
email: radoslaw.wichniarek@put.poznan.pl	
tel. 61 665 27 08	
Faculty of Mechanical Engineering	
ul. Piotrowo 3, 60-965 Poznań	

Prerequisites

Student has knowledge of information technology. Can use a spreadsheet. Can work in the project team, is responsible for his tasks, understands the need to acquire new knowledge.

Course objective

Students become familiar with the possibility of using VBA to automate the engineering work related to the processing and use of data and the design and manufacturing.

Course-related learning outcomes

Knowledge

1. Student is able to describe the algorithm of program for engineering automation.

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2. Student enumerates the typical elements of VBA and know their sample applications.

3. Student describes the rules for the selection methods of automation due to the type of engineering problem.

Skills

1. Student can gain knowledge about new objects in VBA.

2. Student is able to create the code for the applications that work directly in industrial environments.

3. Student prepares documentation for his VBA code.

Social competences

1. The student is open to the implementation of modern information technologies in engineering.

2. The student is able to independently develop his knowledge and skills.

3. The student is able to think and act in a way that is focused on efficient execution of tasks.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Partial marks:

Based on the assessment of the current progress of given tasks.

Summary mark:

Based on the student's preparation for individual classes, assessment of practical skills during independently performed project tasks and the final version of the project.

Programme content

Project:

1. Use of spreadsheet software for automatic creation of macros based on the actions performed by the user.

2. Defining new and editing existing macros for different ranges in a spreadsheet.

3. Creating and verification of code in VBA macros, in particular with the use of objects dedicated to spreadsheets.

4. Designing of graphical user interfaces, which enable to easy access to macros and influencing the parameters of their calling process.

5. Creation of programs which implements automatic solutions for engineering problems.

Teaching methods

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Project part: presentation by the teacher of practical issues related to the automation of engineering work with the use of VBA, discussion in project groups and independent work of students at computer workstations with supervision of the teacher.

Bibliography

Basic

1. W. Wrotek, VBA dla Excela 2010 PL : 155 praktycznych przykładów, Helion, Gliwice 2011

2. J. Walkenbach, Excel 2010 PL : programowanie w VBA, Helion, Gliwice 2011

3. Dokumentacja programu EXCEL

Additional

1. M. Lewandowski, VBA dla Excela 2010, Helion, Gliwice 2012.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation)[1]	20	1,0

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[1] delete or add other activities as appropriate