GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Informatics, PG_00039085
Field of study	Chemistry in Construction Engineering

Date of commencement of studies	October 2023	Academic year of realisation of subject	2023/2024
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment

Conducting unit	Department of Physical Chemistry -> Faculty of Chemistry

Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Adam Kloskowski
	Teachers	

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 0.0						

Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
	Number of study hours	30	4.0	16.0	50

Subject objectives	The aim of the course is introduce students with the basic programming tools based on Visual Basic for Applications. Preparing it for use of computer techniques in solving engineering problems and research

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W01] has a basic knowledge from some branches of mathematics and physics useful for formulating and solving simple problems in the field of environmental technologies and modern analytical methods	He knows the basic numerical methods and has the ability to apply them in engineering calculations.	[SW1] Assessment of factual knowledge
	K6_U07	The student can write simple computer programs using the VBA package	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
	K6_K03	Students learn to collaborate in a group when developing more complex tasks.	[SK3] Assessment of ability to organize work [SK1] Assessment of group work skills

Subject contents	Programming Fundamentals: program structure, programming supporting tools: compiler, linker, debugger, compilers and interpreters for example Visual Basic for Applications (VBA). The key elements of the VBA: keywords, data types, simple and user-defined array variables, objects, operators: arithmetic, relational, logical, assignment , conditional and choice instructions; iterative instructions. Use Excel spreadsheet to input data and presentation of results. Structured programming and object-oriented programming selected items in VBA. Numerical methods in engineering calculations: solving nonlinear equations, interpolation, integration, differentiation.
Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	100.0%	50.0%
	Written exam	50.0%	50.0%

Recommended reading	Basic literature	W. Ufnalski, K. Mądry, "Excel dla chemików...i nie tylko", WNT 2000. J. Walkenbach, "Excel 2007 PL. Biblia", Helion 2007. David Bourg, Excel w nauce i technice. Receptury, Helion 2006.
	Supplementary literature	materials on the web, programs" manuals and helps
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	Components of a VBA program
	Algorithmics
	Declaration of variables
	Creating and running macros in the MS Excel environment
Work placement	Not applicable