

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Information Engineering		Code 1010624171010631297
Field of study Mechanical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 7
Elective path/specialty Internal Combustion Engines	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 10 Classes: - Laboratory: 10 Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 3 100%
Responsible for subject / lecturer: Andrzej Frąckowiak email: andrzej.frackowiak@put.poznan.pl tel. 61652779 Faculty of Machines and Transportation 60-965 Poznan, Piotrowo 3 A1		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	The student possesses basic knowledge of the construction of computer, operating system and the Internet.
2	Skills	The student is able to use the software for office work (word processor, spreadsheet), and the internet. The student is able to deal with specific problems that arise when using the computer.
3	Social competencies	Students can cooperate in a group, taking the different roles. The student is able to define priorities in solving the tasks posed before her/him. The student shows self-reliance in solving problems, acquiring and improving her/his knowledge and skills.
Assumptions and objectives of the course: The aim of the course is to provide students with information concerning the construction of computer, operating systems, and use of the Internet and selected software. Students gain knowledge and skills to: create documents in a word processor, perform calculations using a spreadsheet and create multimedia presentations, learn the principles of web designing and development environment for scientific and technical calculations.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Has an elementary knowledge of the fundamentals of computer science, i.e. computer architecture, binary, decimal, and hexadecimal counting system, the representation of numbers and graphic signs in the computer memory, types of variables, general knowledge of the low, medium and high level programming languages, operating systems, databases, - [K1A_W12]		
Skills: 1. Is able to obtain information from the literature, internet, databases and other sources. Can integrate the information to interpret and learn from them, create and justify opinions. - [K1A_U03] 2. Has the ability to self-educate using modern teaching tools such as remote lectures, webpages and databases, educational software, electronic books. - [K1A_U06] 3. Is able to use office software for word processing of technical information in models and tables, technical and economic calculations using a spreadsheet and keeping a simple relational database. - [K1A_U12]		
Social competencies: 1. Understands the need and knows the possibilities of lifelong learning. - [K1A_K01] 2. Is able to think and act in an entrepreneurial manner. - [K1A_K05]		

Assessment methods of study outcomes		
Written exam of lectures, written and practical credit of laboratory		
Course description		
-Construction of a computer. Operating Systems. Basic functions of a word processor. The text formatting, creating styles, paragraphs, headers and footers, use of the equation editor. Creating simple drawings, importing images from other graphics programs. Advanced text editor: the Mail Merge, creating bibliographies, reviewed text. Creating tables and graphs using a spreadsheet. The processing of numerical data, working with multiple spreadsheets. Creating a multimedia presentation in Power Point or similar. Creating web pages. Basics of HTML. Making scientific and engineering calculations, modeling, simulation and data analysis, graphical visualization of data and calculation results in one of the mathematical environments: Matlab, Mathematica, or Mathcad.		
Basic bibliography:		
1. Bill Jelen, Tracy Syrstad, Microsoft Excel 2010 PL. Język VBA i makra. Akademia Excela, HELION, 2011		
2. Dokumentacja programu Ansys. Tutoriale		
3. Marcin Chruściel, ?Labview w praktyce?, Wydawnictwo BTC, Legionowo 2008		
4. Dariusz Świsulski, Komputerowa technika pomiarowa Oprogramowanie wirtualnych przyrządów pomiarowych w LabView, Wydawnictwo PAK, 2005		
Additional bibliography:		
1. ?ke Björck, Germund Dahlquist: Metody numeryczne, PWN, Warszawa 1983		
Result of average student's workload		
Activity	Time (working hours)	
1. Preparation for the lectures	3	
2. Participation in the lecture	15	
3. Consolidation of the lecture content	10	
4. Consultation	5	
5. Preparation for the pass	5	
6. Participation in the pass	1	
7. Preparation for the laboratory classes	10	
8. Participation in the laboratory classes	15	
9. Consultation	5	
10. Preparation for the pass	10	
Student's workload		
Source of workload	hours	ECTS
Total workload	87	3
Contact hours	45	2
Practical activities	40	1