STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Information Engineering**		Code **1010314411010310388**

Field of study **Power Engineering**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 1**

Elective path/specialty **-**	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: **15** Classes: **-** Laboratory: **15** Project/seminars: **15**	No. of credits **5**

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	ECTS distribution (number and %**)**

Responsible for subject / lecturer:

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Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of computer science.
2	**Skills**	The ability to use the computer and the operating system. Ability to develop algorithms.
3	**Social competencies**	Ability to carry out the tasks in the group. Awareness of the impact of information technology on the surrounding environment.

Assumptions and objectives of the course:

Getting knowledge about structure and configuration of the computer. Understanding rules for computer network design and configuration. The use of computer tools to accomplish tasks and engineering projects. Acquisition and improvement of programming skills. Knowledge of methods of protecting data and computer systems. Utilization of databases for programming task

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Has knowledge of software programming and utilization of tools for completing engineering tasks - [K_W10 +]

2. Has knowledge of use the network infrastructure and databases. - [K_W15 +++]

Skills:

1. Has ability to plan the schedule of individual and team work and skills required for team management - [K_U02 ++]

2. Know how to use available resources for completing task related to conducting and documenting engineering projects - [K_U03 ++]

3. Has a skills required to develop algorithms and applications in different programming environments with miscellaneous software - [K_U09 ++]

Social competencies:

1. Can extend his own knowledge and use of modern information technologies - [K_K01 +]

2. Can use available resources to improve efficiency of engineer?s work and growth economic potential of the company - [K_K05 +]

Assessment methods of study outcomes

Lecture

evaluation of the knowledge and skills on the exam

Laboratory:

tests and written tests,

evaluation of knowledge and skills related to the accomplishment practice task,

evaluation of report from performed exercise.

Project:

evaluation of project progress

evaluation of project task report

Obtainment of extra points for the activity in the classroom, in particular for:

effectiveness of the application of acquired knowledge during studies,

ability to work within a team performing the detailed practice task in the laboratory,

contribution to the achievement of the tasks.

Course description

Construction and operation of the computer, the use of office software, design and configuration of the local network, protect data and systems against loss and unauthorized access, and object-oriented and structured programming (including visual tools), implementation of engineering calculations in computer algebra system environments, the use of graphics and database for web applications. Interactive lectures, stimulating students to actively participate in classes, presentation of practical approach to theoretical problem solving, activating the student's self-reliance in expanding knowledge through additional tasks, supplementing the content with attractive visual addons, activating self-problem solving by the student during a classes, teaching support through wide use of open license software, encouraging alternative sources for self-improvement of knowledge and skills by the student, learning to use individual skills in teamwork, encourage students to independently design equipment, develop experiments and develop programming and go beyond the study program.

Basic bibliography:

1. Cieśla K., Inkscape. Zaawansowane funkcje programu, Helion, 2013
2. Czapla K., Bazy danych. Podstawy projektowania i języka SQL, Helion, 2014
3. DuBois P., MySQL. Vademecum profesjonalisty, Helion, 2014
4. Garcia-Molina H., Ullmann J.D., WidomJ., Systemy baz danych, Helion, 2011
5. Gradias M., Gimp 2.8. Praktyczne wprowadzenie, Helion, 2015
6. Hodges N., Programowanie w języku Delphi, Helion, 2016
7. Lis M., MySQL. Darmowa baza danych. Ćwiczenia praktyczne, Helion, 2008
8. Marciniak A., Turbo Pascal 7.0 z elementami programowania. Część 1, Nakom, 1995
9. Nixon R., PHP, MySQL i JavaScript - Wprowadzenie, Helion, 2015
10. Sedgewick R., Wayne K., Algorytmy, Helion, 2012
11. Sosinsky B., Sieci komputerowe - Biblia, Helion, 2011
12. Stepanov A.A., Rose D.E., Od matematyki do programowania uogólnionego, Helion, 2015
13. Sysło M., Algorytmy, WSIP, 2008
14. Wróblewski P., Algorytmy struktury danych i techniki programowania, Helion, 2003

Additional bibliography:

1. Boduch A., Tablice informatyczne. Delph, Helion
2. Buczek B., Algorytmy. Ćwiczenia, Helion, 2008
3. Gajda Wł., PHP. Praktyczne projekty, Helion, 2009
4. Iglesias M., CakePHP 1.3 - Programowanie aplikacji. Receptury, Helion, 2012
5. Jankowski M., Elementy grafiki komputerowej, WNT, 2006
6. Kubiak M.J., Turbo Pascal. Zadania z programowania z przykładowymi rozwiązaniami, Helion, 2011
7. Overmars M., Berg M., Kreveld M., Geometria obliczeniowa. Algorytmy i zastosowania, WNT, 2016
8. Sosna Ł., Porady i triki w PHP, Nakom, 2011
9. Stephens R., Algorytmy i struktury danych z przykładami w Delphi, Helion, 2008
10. Sportack M.: Sieci komputerowe. Księga eksperta, Helion, 2004
11. Bilski T.: Pamięć. Nośniki i systemy przechowywania danych, WNT, 2008

Result of average student's workload

Activity	Time (working hours)

http://www.put.poznan.pl/

1. participation in class lectures	15
2. participation in laboratory classes	15
3. participation in project classes	15
4. participate in the consultations on the class lectures	4
5. participate in the consultations on the laboratory	4
6. participate in the consultations on the project	4
7. preparation laboratory reports	7
8. preparartion to the laboratory classes	4
9. preparation of home work	4
10. ralisation of project	30
11. preparation for the completion of laboratory	3
12. completion of laboratory classes	2
13. completion of project	1
14. preparation for the exam	10
15. the exam	2
16. student`s selfmanaged work	15

Student's workload		
Source of workload	**hours**	**ECTS**
Total workload	135	5
Contact hours	65	2
Practical activities	101	3