STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Technology of computer science**		Code **1010104131010110575**
Field of study **Civil Engineering First-cycle Studies**	Profile of study (general academic, practical) **(brak)**	Year /Semester **2 / 3**
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: **10** Classes: **-** Laboratory: **20** 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		ECTS distribution (number and %)

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	The student knows the problem of mathematics at the secondary level.
2	**Skills**	Student is able to operate a computer (keyboard, mouse).
3	**Social competencies**	The student is able to solve problems himself based on the literature and other materials working in the small (a few persons) team.

Assumptions and objectives of the course:

The aim of the course is to acquaint the student with the issues concerning the foundations of computer science. The course is focused on the operating systems architecture, software applications and programming.

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

Knowledge:

1. History of the computer sinece - [K_W01]
2. Computers architecture - [K_W01]
3. Operating systems architecture - [K_W01]
4. Programming paradigms: structural and procedural - [K_W01]
5. Classification of computer aided engineering tools - [K_W11]

Skills:

1. Use in a clear and conscious way the basic terminology of computer science - [K_U17, K_U18]
2. Work with the Unix operating system - [K_U06]
3. Create simple programs/scripts in the Scilab/Matlab language - [K_U03]

Social competencies:

1. Solve the problems in the small (a few persons) team - [K_K01]
2. Split the work within the group and then merge final results into a homogeneous form of scripting language code Scilab / Matlab - [K_K09]
3. Make a set of workshops to consolidate and extend the knowledge from lectures and laboratory classes - [K_K03]

Assessment methods of study outcomes

Evaluation of the student's work is done on the basis of its activity during laboratory classes:
? number of tasks performed on classes,
? creativity of the proposed solution,
? correctness of the final version of the solution,

The course covers 5 topics.

Assessment of educational outcomes is done on the basis of successful completion tests (for both laboratory classes and lectures), which take place in the last weeks of the semester.

Number of points	grade
91% -100%	5.0
81% -90%	4.5
71% -80%	4.0
61% -70%	3.5
51% -60%	3.0
less than 50%	2.0

Course description

? history of the Computer science ,
? computers architecture,
? operating systems,
? computer networks,
? programming (programming languages, algorithms)
? software applications in civil engineering,
? basics of cryptology and cryptography
? basics of artificial intelligence
? creating of simple algorithms in the field of civil engineering.

Basic bibliography:

1. Leszek Madeja, Ćwiczenia z systemu Linux. Podstawy obsługi systemu Wydawnictwo Mikom, Warszawa 1999, wydanie I, str. 332, ISBN: 83-7158-199-8
2. Jerzy Marczyński, Red Hat Linux 7.2. Ćwiczenia praktyczne, Wydawnictwo Helion , Gliwice 2002, str. 176, ISBN: 83-7197-852-9
3. Cyprian T. Lachowicz, Matlab, Scilab, Maxima : opis i przykłady zastosowań, Oficyna Wydawnicza Opole 2005, str 309
4. Andrzej Brozi, Scilab w przykładach, Nakom 2007, str 259

Additional bibliography:

1. Marek Czajko, Micha Zasada, Elementarz un*x'owy, http://www.janski.edu.pl/~mcj/elementarz_unixowy_v2.pdf
2. Gilberto E. Urroz , SciLab page, http://www.engineering.usu.edu/cee/faculty/gurro/Scilab.html
3. Bruno Pinçon, Wprowadzenie do Scilaba (tłum. Piotr Fulmański, Katarzyna Szulc)

Result of average student's workload

Activity	Time (working hours)
1. Participation in the lectures	30
2. Participation in the laboratory classes	30
3. Preparation for the laboratory classes	12
4. Carrying out and consultation of the projects	30
5. Preparing for the final tests	16

Student's workload

Source of workload	hours	ECTS
Total workload	118	3
Contact hours	70	1
Practical activities	60	2