Course Syllabus

I. General Information

Course name	Utility software applications
Programme	Informatics
Level of studies (BA, BSc, MA, MSc, long-cycle MA)	BA
Form of studies (full-time, part-time)	Full-time
Discipline	Computer and information sciences - discipline indicated, information and communication technology, mathematics, philosophy, management and quality studies
Language of instruction	English

Course coordinator/person responsible	Rafał Lizut

Type of class *(use only the types mentioned below)*	Number of teaching hours	Semester	ECTS Points
lecture			1
tutorial			
classes			
laboratory classes	15	I	
workshops			
seminar			
introductory seminar			
foreign language classes			
practical placement			
field work			
diploma laboratory			
translation classes			
study visit			

Course pre-requisites	Basic knowledge of IT

II. Course Objectives

Introduce students to scientific software for calculations and mathematical and statistic research on the example of MATLAB/SciLab software or an equivalent.
Introduce students to certain tools for editing documents in science (LaTeX environment)
Introduce students to certain methods of a representing data (PREZI and LaTeX)

III. Course learning outcomes with reference to programme learning outcomes

Symbol	Description of course learning outcome	Reference to programme learning outcome
KNOWLEDGE		
W_01	The student has general knowledge of data representing and scientific software and understand necessity to present them in an appropriate form	K_W01, K_W05
W_02	The student has a knowledge about selected symbolic computation software	K_W05
SKILLS		
U_01	The student can create, edit, present and analyze simple textual, numeric, multimedia and mathematical data employing appropriate tools	K_U01, K_U02, K_U17
U_02	The student can conduct symbolic calculations utilizing MatLab or SciLab software	K_U03, K_U04
SOCIAL COMPETENCIES		
K_01	The student can determine the sequence of actions leading to realization of particular goals - creation of a document, a spreadsheet, a presentation or performing calculations, etc.	K_K01

IV. Course Content

Typetting text documents in LaTeX: title page, table of contents, division of text into chapters, sections, subsections and paragraphs, including pictures and mathematical formulas into the text of the document, footnotes, bibliography, marking out fragments of text, marking out and numbering of definitions and theorems.
Multimedia presentations in Beamer: templates, tables, the frame environment, graphical elements, videos, soundtracks.
Introduction to creation of multimedia presentations in Prezi.
Creation of large documents containing table of contents; title page; page, illustrations and equations numbering; bibliography ; hyper links; personal styles; mathematical equations; graphical elements, pictures, indices.
Mathematical calculations in SciLab: data input in a form of matrices and mathematical calculations on the basis of this data, calculations based on line and trigonometric functions, plots, writing scripts in SciNotes (subprogram of SciLab) to automate working in the environment of the software.

V. Didactic methods used and forms of assessment of learning outcomes

Symbol	Didactic methods *(choose from the list)*	Forms of assessment *(choose from the list)*	Documentation type *(choose from the list)*
KNOWLEDGE			
W_01	Practical classes	Written test	Evaluated written test
W_02	Practical classes	Written test	Evaluated written test
SKILLS			
U_01	Practical classes	Preparation of the project	Project rating card
U_02	Practical classes	Written test	Evaluated written test

SOCIAL COMPETENCIES			
K_01	Practical classes	Preparation of the project	Project rating card

VI. Grading criteria, weighting factors.....

Presentation and defense of 2 projects (40% of the final score) at the end of the LaTeX part of the class; defense of Prezi presentation (20%) and SciLab colloquim (40%).

(5.0): 90 – 100%,

(4.5): 80 – 89%,

(4.0): 70 – 79%,

(3.5): 60 – 69%,

(3.0): 50 – 59%,

(2.0): < 50%

VII. Student workload

Form of activity	Number of hours
Number of contact hours (with the teacher)	**15**
Number of hours of individual student work	**45**

VIII. Literature

Basic literature
Stefan Kottwitz, LaTeX Cookbook, Packt Publishing, 2015 Pinçon B. Introduction to SciLab (pl), Institut Elie Cartan Nancy, available online from: http://www.iecn.u-nancy.fr/~szulc/intrscilabdoc.pdf
Additional literature
https://www.udemy.com/ultimate-guide-to-creating-engaging-presentations-with-prezi/ https://www.udemy.com/get-started-with-matlab-simulink-an-intro-for-beginners/ https://www.udemy.com/matlab-basics-for-beginners-learn-from-top-experts/ https://en.wikibooks.org/wiki/LaTeX, https://github.com/oetiker/lshort https://cran.r-project.org/doc/manuals/