COURSE DESCRIPTION CARD – SPECIMEN

<table>
<tr><td colspan="10">Faculty of Mechanical Engineering</td></tr>
<tr><td>Field of study</td><td colspan="6"></td><td colspan="2">Degree level and programme type</td><td>Bachelor's degree/Master's degree</td></tr>
<tr><td>Specialization/ diploma path</td><td colspan="6"></td><td colspan="2">Study profile</td><td>general</td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Advanced course of programming in Python</td><td colspan="2">Course code</td><td>IS-FME-00179W</td></tr>
<tr><td colspan="2">Course type</td><td></td></tr>
<tr><td rowspan="2">Forms and number of hours of tuition</td><td>L</td><td>C</td><td>LC</td><td>P</td><td>SW</td><td>FW</td><td>S</td><td>Semester</td><td>winter</td></tr>
<tr><td>15</td><td></td><td></td><td>30</td><td></td><td></td><td></td><td>No. of ECTS credits</td><td>3</td></tr>
<tr><td>Entry requirements</td><td colspan="9">mathematics, computer science,</td></tr>
<tr><td>Course objectives</td><td colspan="9">To prepare the students with the knowledge of concepts of object oriented programming in Python, get started with Tkinter with a basic application, Work with widgets, such as buttons and text boxes, control your application layout with geometry managers and make applications interactive</td></tr>
<tr><td>Course content</td><td colspan="9">Object-oriented programming: creating classes and using objects; Introduction to GUI programming using Tkinter; Widgets and Layouts; Geometry managers; Commands with buttons and timers; Events and bindings; Menu Bar; Other widgets</td></tr>
<tr><td>Teaching methods</td><td colspan="9">depending on number of students enrolled: • lectures or classes : 1-8 students - self-study under supervision of a teacher; 9 and more students - lectures given by a teacher or classes with a teacher</td></tr>
<tr><td>Assessment method</td><td colspan="9">lecture – written exam; project – project completion, presentation and discussion</td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="8">Learning outcomes</td><td>Reference to the learning outcomes for the field of study</td></tr>
<tr><td>LO1</td><td colspan="8">student: knows the basic concepts of object-oriented programming</td><td>M2_W06, M2_W12</td></tr>
<tr><td>LO2</td><td colspan="8">can build an object and use it in an application environment</td><td>M2_W06, M2_U20</td></tr>
<tr><td>LO3</td><td colspan="8">uses inheritance to modify objects</td><td>M2_W06, M2_U05</td></tr>
<tr><td>LO4</td><td colspan="8">can handle application errors</td><td>M2_W06, M2_U18</td></tr>
<tr><td>LO5</td><td colspan="8">can write a simple GUI program</td><td>M2_U01, M2_K1, M2_U18</td></tr>
<tr><td>LO6</td><td colspan="8"></td><td></td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="8">Methods of assessing the learning outcomes</td><td>Type of tuition during which the outcome is assessed</td></tr>
<tr><td>LO1</td><td colspan="8">written exam, project tasks evaluation, activity during project</td><td>L</td></tr>
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	classes	
LO2	written exam, project tasks evaluation, activity during project classes	L, P
LO3	written exam, project tasks evaluation, activity during project classes	L, P
LO4	written exam, project tasks evaluation, activity during project classes	L, P
LO5	written exam, project tasks evaluation, activity during project classes	L, P
LO6		
Student workload (in hours)		No. of hours
Calculation	lecture attendance	15
	participation in classes, laboratory classes, etc.	30
	preparation for classes, laboratory classes, projects, seminars, etc.	10
	working on projects, reports, etc.	20
	participation in student-teacher sessions related to the classes/seminar/project	5
	preparation for and participation in exams/tests	2
	TOTAL:	82

Quantitative indicators	HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation	47	2
Student workload – practical activities	35	1

Basic references	Graphical User Interfaces with Tk; https://docs.python.org/3/library/tk.html Python GUI with Tkinter; https://coderslegacy.com/python/python-gui/ TkDocs Tutorial; http://www.tkdocs.com/tutorial/index.html	
Supplementary references	Allen Downey (2015), Think Python: How to Think Like a Computer Scientist, http://cs.williams.edu/~cs134/thinkpython2.pdf Python 3.9.5 documentation; https://docs.python.org/3/	
Organisational unit conducting the course	Department of Applied Informatics and Mechanics	Date of issuing the programme
Author of the programme	Adam Adamowicz, Phd.	18.05.2021

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar