

1.	Field of study	Computer Science
2.	Academic year of entry	2017/2018 (summer term), 2018/2019 (summer term)
3.	Level of qualifications/degree	second-cycle studies
4.	Degree profile	general academic
5.	Mode of study	full-time

Module: Advanced object designing

Module code: 08-IN-IJO-S2-ZPOB

1. Number of the ECTS credits: 2

2. Learning outcomes of the module			
code	description	learning outcomes of the programme	level of competence (scale 1-5)
ZPOB -K_5	Student can co-operate in a team while developing software and share his tasks with executive team.	K_2_A_I_K01 K_2_A_I_K03	1 1
ZPOB -K_6	Student can report, evaluate and discuss the design patterns used and software architecture.	K_2_A_I_K04 K_2_A_I_K06	1 1
ZPOB -U_3	Student can develop software using design patterns and cover the ready code with unit tests.	K_2_A_I_U05 K_2_A_I_U13 K_2_A_I_U14	1 1 1
ZPOB -U_4	Student can differentiate software architecture and use it as well as write his own concept of software architecture.	K_2_A_I_U13 K_2_A_I_U16	1 1
ZPOB -W_1	Student has knowledge in the field of advanced object programming together with standardized and non-standardized design patterns.	K_2_A_I_W06 K_2_A_I_W09 K_2_A_I_W10	1 1 1
ZPOB -W_2	Student has knowledge in the field of software architectures, unit tests and creating libraries supporting software, e.g. in automatic conversion of tables record into object model.	K_2_A_I_W06 K_2_A_I_W10 K_2_A_I_W12	1 1 1

3. Module description	
Description	Aim of the classes described in this module is familiarizing the students with issues of object programming at advanced level. Lectures topics are based on object patterns, software architectures and examples of their use. Also discussed is unit testing. Laboratory classes concentrate on analyses of popular solutions and attempt at developing own software architecture. As a result, the students learn the newest trends in software development and will develop more complex programming solutions at faster pace.
Prerequisites	

4. Assessment of the learning outcomes of the module			
code	type	description	learning outcomes of the module
ZPOB_w_1	Project implementation	Realization of the agreed project thematic in the form taking advantage of author's model of software architecture. The project has to use the chosen design patterns of the ones learned during classes. The project has to be complete together with user interface.	ZPOB-K_5, ZPOB-K_6, ZPOB-U_3, ZPOB-U_4, ZPOB-W_1, ZPOB-W_2
ZPOB_w_2	Documentation	Presenting project documentation concentrated on use of patterns and software architectures.	ZPOB-K_5, ZPOB-U_4, ZPOB-W_1, ZPOB-W_2
ZPOB_w_3	Control tests	Partial programs checking the knowledge of the discussed software architecture models and design patterns.	ZPOB-K_6, ZPOB-U_3, ZPOB-W_1

5. Forms of teaching						
code	form of teaching			required hours of student's own work		assessment of the learning outcomes of the module
	type	description (including teaching methods)	number of hours	description	number of hours	
ZPOB_fs_1	lecture	Presenting educational content in verbal form, with use of content visualization. Presenting theoretical and practical issues connected with software architecture models, unit testing and design patterns.	0	Familiarizing with issues presented during lectures and preparation for laboratory class connected with lectures.	0	ZPOB_w_1, ZPOB_w_2
ZPOB_fs_2	laboratory classes	Detailed discussing of developing software architecture together with acquiring knowledge of built-in supporting libraries mechanisms. Discussing on the examples of unit tests and design patterns.	30	Detailed familiarization with programs discussed during laboratory classes and project execution. Complete execution of programming project according to division of responsibilities agreed by the group.	15	ZPOB_w_1, ZPOB_w_2, ZPOB_w_3