Mother Theresa University- Skopje

Faculty of Informatics

STUDY PROGRAME: **Applied Software Engineering**

THE SECOND CYCLES OF STUDIES

Review for representation of subject programs (subject) by semesters

Study program and its description	**Applied Software engineering (2 years, 120 ECTS)** The study program of Applied Software Engineering represents Master second cycle studies focused on academic skills research oriented with some orientation to practical skills through elective courses that have been decided in close contact with the industry, while the core courses involves activities such as analysis, developing understanding, generating algorithms, verification of requirements of algorithms including their correctness and resources consumption, and implementation.
Purpose of the study program	Applied Software Engineering studies will produce staff trained for professional professional and diverse and specific uses for the IT industry, programming, design and maintenance of software, implementation, design and maintenance of various software systems and their integration. The justification for introducing a study program in Applied Software Engineering is derived from the modern tendencies of global computing that impose the need of educated staff capable of accepting the challenges of new technologies. In this regard, students are trained in the design, programming and implementation and testing of computer software components used for information processing, communications and storage - embedded in larger engineering systems. - enabling students to acquire specific and applicable knowledge and a high level of understanding of a range of issues in the field of applied Software Engineering.
Future goal	To design a modern curriculum in accordance with the requirements of the industry in Macedonia and alignment with the current trends in 100 ranked Universities according to Shangaj list. Also take under consideration of the global perspective as well European trends and with the demands of the economy. To include compulsory practical work that will be valued by the ECTS.
Cycle	2nd Cycle of University studies Master-graduate
ECTS credits	120
Years of Study	2
Obtained title after graduation	In Albanian language: Magjister i Shkencave *i diplomuar në inxhinerine softuerike te plaikuar* In Macedonian language: *Магистер по применето софтерско инженерство* In English language: *Master of Science in Applied Software engineering*

Semester	Number of the obligatory subjects	Number of the election Faculty subjects	Number of the University subjects	Total subjects
I	3	0	2	5
II	3	1	2	6
III	5	1	0	6
IV	3	2	0	5
Total	24/41=0,585	13/41=0,317	4/41=0,097	41
	(58,5 %)	(31,7 %)	(9,7%)	

UNIVERSITETI "NËNË TEREZA" - SHKUP
УНИВЕРЗИТЕТ "МАЈКА ТЕРЕЗА" - СКОПЈЕ
"MOTHER TERESA" UNIVERSITY - SKOPJE

UNIVERSITY "MOTHER THERESA" – SKOPJE

Faculty of Information Science

Description of the study program

APPLIED SOFTWARE ENGINEERING

Second cycle studies (2 years, 120 ECTS credits)

Curriculum and program of second cycle of studies in APPLIED SOFTWARE ENGINEERING, Faculty of Information Sciences - UNIVERSITY "MOTHER TERESA" - SKOPJE

Code	COURSES	Hours	Contact classes	Total. hours of Enagement	Credit
	Required courses	11 + 8	**315**	**720**	**30**
FIP7O1	Research Methodology	3 + 2	75	180	6
FIP 7O2	Applied Software Engineering	3 + 2	75	180	6
FIP 7O3	Advanced Algorithms and data structures	2 + 2	60	180	6
FIP 7O4	Practical seminar work	2 + 3	60	180	6
	Elective subject from List 1	2 + 2	60	180	6
	Electives List 1	**2 + 2**	**60**	**180**	**6**
FIP 7Z1	Object Oriented Design	2 + 2	60	180	6
FIP 7Z2	Data Warehouses and Analytical Processing	2 + 2	60	180	6
TOTAL		**14 + 9 = 21**	**315**	**900**	**30**

Code	COURSES	Hours	Contact classes	Total.hours of Wholesale.	Loans
	Required courses	9 + 5	**210**	**600**	**30**
FIP 8O1	Advanced Databases	3 + 2	75	180	6
FIP 8O2	Applied software Testing	3 + 2	75	180	6
FIP 8O3	Human-computer interface	3 + 1	60	180	6
	Elective subject from List 2	2 + 2	60	180	6
	Elective subject from university list	2 + 1	45	120	4
	Teaching practice (compulsory)	2 + 1	45	120	2

	Electives List 2	**2 + 2**	**60**	**180**	**6**
FIP 8Z1	Applied Programming on Mobile Devices	2 + 2	60	180	6

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FIP 8Z2	Semantic Technologies	2 + 2	60	180	6
	Elective subject from university list	2 + 1	**45**	**120**	4
	Teaching practice (compulsory)	2 + 0	**60**	**60**	2
TOTAL		**14 + 7 = 21**	**315**	**900**	**30**

Code	**COURSES**	**Hours**	**Contact classes**	**Total. hours of Wholesale.**	**Loans**
	Required courses	9 + 5	**210**	**600**	**30**
FIP 9O1	Applied Web Engineering	3 + 2	75	180	6
FIP 9O2	Applied Web Programming	3 + 2	75	180	6
FIP 9O3	Service Oriented Software architectures	3 + 1	60	180	6
FIP 9O4	Software Project management	2 + 2	60	180	6
	Elective subject from List 3	2 + 2	60	180	6
	Electives List 3	**2 + 2**	**60**	**180**	**6**
FIP 9Z1	Programming in the Cloud	2 + 2	60	180	6
FIP 9Z2	Applied Artificial intelligence	2 + 2	60	180	6
FIP	Agile Engineering	2 + 2	60	180	6

9Z3	Practices				
TOTAL		**13 + 8 = 21**	**315**	**900**	**30**

Code	COURSES	Hours	Contact classes	Total. hours of delivery.	Loans
	Required courses	2 + 0	**1 80**	**180**	**2**
FIP 10O1	***Teaching practice (mandatory)***	2 + 0	180	180	2
	Elective Master Thesis	3 + 4	45	180	12
	Elective course from List 6	2 + 2	45	180	6
	Elective course from List 6	2 + 2	45	180	6
	Elective subject from university list	2 + 1	45	120	4

	Elective courses List 6 2 + 2		**90**	**300**	**10**
FIP 10Z1	Management of information systems	2 + 2	45	150	6
FIP 10Z2	Designer Thinking for Business Innovation	2 + 2	45	150	6
FIP 10Z3	Big Date - Big Data	2 + 2	45	150	6
FIP 10Z4	Individually Applied Software Project	2 + 2	45	150	6
FIP 10Z 0	*Elective* Master Thesis	3 + 4	45	180	12
	Elective course from a university list	2 + 1	**45**	**120**	4
	Teaching practice (mandatory)	2 + 0	**30**	**120**	2
TOTAL		**15 +**	**315**	**930**	**30**

	6 = 21			

The candidate who successfully will them lay exams from second cycle on master studies and will selected master's degree labor are gains with title Graduated Master of Science in Applied SOFTWARE ENGINEERING.

The part-time study program is realized with 50% of the contact hours envisaged in the regular study program. The organization of contact hours is adapted to the weatheropportunities on students and lasts longer from regular study program but not longer than 2 studios years.

Elective courses from the List of free elective courses from the units of UMT, which are for the students to choose from the study program APPLIED SOFTWARE ENGINEERING

	Electives from the List of Free Electives from the University				
	Electives	Hours	Contact hours	Total load	ECTS
1	Introduction to Programming	2 + 1	45	90	4
2	Information skills	2 + 1	45	90	4
3	Advanced Information skills	2 + 1	45	90	4
4	Internet Technology	2 + 1	45	90	4
5	Business Ethics	2 + 1	45	90	4
6	Entrepreneurship	2 + 1	45	90	4
7	Selected chapters from Probability and statistics	2 + 1	45	90	4
8	Selected chapters from Physics	2 + 1	45	90	4
9	Parts of elementary mathematics, applied in engineering	2 + 1	45	90	4
10	Web programming	2 + 1	45	90	4
11	Numerical Mathematics and its application	2 + 1	45	90	4
12	Food, media and the society	2 + 1	45	90	4
13	Introduction to the food industry	2 + 1	45	90	4
14	Fundamentals of Science of materials	2 + 1	45	90	4
15	Selected chemistry chapters	2 + 1	45	90	4
16	Fundamentals of renewable resources	2 + 1	45	90	4

	energy				
17	Selected chapters in Biology	2 + 1	45	90	4
18	General cartography	2 + 1	45	90	4
19	Geoinformatics	2 + 1	45	90	4
20	Human Resources Management	2 + 1	45	90	4
21	Architecture of computers	2 + 1	45	90	4
22	Traffic policy	2 + 1	45	90	4
23	Urban logistics	2 + 1	45	90	4
24	Basics of the economy	2 + 1	45	90	4
25	Fundamentals of Engineering	2 + 1	45	90	4
26	Modern things on construction	2 + 1	45	90	4
27	Modern trends of Arcticature	2 + 1	45	90	4
28	Eco-Architecture and durable Design	2 + 1	45	90	4
29	Communication with the public and the art of speaking	2 + 1	45	90	4
30	Research Journalism	2 + 1	45	90	4
31	Controversies in public debate	2 + 1	45	90	4
32	European multiculturalism	2 + 1	45	90	4
33	English for specific needs 1	2 + 1	45	90	4
34	English for specific needs 2	2 + 1	45	90	4
35	Romanian languages for specific needs 2	2 + 1	45	90	4
Total		2 + 1	45	90	4

Participation of electives from the List of free electives in the study program APPLIED SOFTWARE ENGINEERING, in accordance with the amendments of the Law forhigher education (Fig. The newspaper on RM no.25 / 11) amounts 10% from the total number of courses in the study program.

Electives from the List of Free Electives have the status of compulsory subjects and the students are obliged to elect them. The choice of teaching subjects from this group is free will and persuasion. Electives from the List of Free Electives at the University Units during the studies are selected by the students depending on the type of upgrade they want to acquire and depending on their professional development, which the student considers he will need to advance over his own career.