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Catalogue of competencies

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Workshop on
Theme-based training of teaching staff for acquiring new teaching and learning methods/ Rijeka, 19-20 September 2019

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WP2: Development of competence-based curricula aligned with EU trends

WP2 implementation schedule:

Estimated Start Date	15-11-2018	Estimated End Date	14-09-2020

Activity	Starting date	Due date
2.1 Development of specific competencies and learning outcomes of curricula in WB	4/15/2019	14-10-2019
2.2 Development of courses content and syllabi	5/15/2019	14-01-2020
2.3 Innovation of existing and development of new master curricula for WRM in WB	5/15/2019	14-01-2020
2.4 Accreditation of master curricula	12/15/2019	14-09-2020
2.5 Theme-based training of teaching staff for acquiring new teaching and learning methods	5/15/2019	14-03-2020
2.6 Purchasing of literature, software and laboratory equipment, installation and activation	1/15/2019	14-11-2019

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WP2: Development of competence-based curricula aligned with EU trends

Estimated Start Date	15-11-2018	Estimated End Date	14-09-2020

Activity	Deliverable's Title	Due date
2.1 Development of specific competencies and learning outcomes of curricula in WB	Catalogue of competencies	14-10-2019
2.2 Development of courses content and syllabi	SWARM unique set of courses	14-01-2020
2.3 Innovation of existing and development of new master curricula for WRM in WB	Report on SWARM master curricula	14-01-2020
2.4 Accreditation of master curricula	Master curricula accredited	14-09-2020
2.5 Theme-based training of teaching staff for acquiring new teaching and learning methods	Teaching staff trained	14-03-2020
2.6 Purchasing of literature, software and laboratory equipment, installation and activation	Laboratories equipped	14-11-2019

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Activity 2.1: Development of specific competencies and learning outcomes of curricula in WB

Status of activity

Timeline	Action/Who	Outcome	Status
1-Aug-19	AUTh team provides information to WB partners	Send of 2 draft documents that could be used by the partners to develop the specific learning outcomes and competences of their proposed courses.	Done
8-Aug-19	UNI provides amendment documentation	Send of a draft version of Catalogue of competencies, entitled: WP2.1 Catalogue of competencies.docx	Done
14-Sep-19	UNI, UNMO, UNS, UoM, UPKM, TCASU provided feedback. ***University of Sarajevo?***	**Each of the project partners provided:** **1. Report on development of specific competences and learning outcomes of curricula,** **2. Development of specific competencies and learning outcomes of curricula in WB.**	Done
17-Sep-19	UNIRI provides additional information	Send of document: Ishodi učenja u obrazovanju građevinskih inženjera – IGI, based on the Croatian national project: Learning outcomes in civil engineers' education	Done
19-Sep-19	AUTh, UNI, UNIRI	Discussion on the progress of Action 2.1 during the Rijeka meeting	Ongoing
14-Oct-19	AUTh, UNI	Finalization of Deliverable 2.1	

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Action 2.6: Purchasing of literature, software and laboratory equipment, installation and activation

Status of activity

Timeline	Action/Who	Outcome	Status
?	???	???	
19-Sep-19	AUTh, UNI, UNIRI	Discussion on the progress of **Action 2.6** during the Rijeka meeting	Ongoing
?	???	???	
14-Nov-19	AUTh, UNI	Finalization of Deliverable 2.6	

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WP2.1 Catalogue of competencies

Catalogue of competencies

Contents

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Activity 2.1: a) Report on development of specific competences and learning outcomes of curricula

Contents

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Example of UNI

2 Programme description for undergraduate academic studies

Programme title:	Project management
Level:	Undergraduate academic studies
EQF level:	6th level
Academic title:	Engineering Manager – 240 ECTS
Language:	Serbian
Duration:	4 years – 8 semesters
ECTS credits:	240 ECTS
Knowledge:*	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles.
Skills:*	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study.
Responsibility and autonomy:*	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups.

* - in accordance with the European Qualifications Framework (EQF)

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Example of UNI

Table 1. shows existing courses and courses which will be introduced on undergraduate study programme related to water resources management.

Table 1. Existing and new courses on the becheler study programme

	Existing courses	New courses
1	Fluid Mechanics (ES, III semester)	Basis of hydrometeorology (OS, II semester)
2	Basics of Hydrology (ES, IV semester)	Urban Infrastructures (OS, III semester)
3	Hydrotehnics (OS, V semester)	Urban Hydrology (ES, V semester)
4	Hydropower (ES, V semester)	Urban Water (OS, VI semester)
5	Groundwater (ES, VI semester)	
6	Urban Hydrotehnics (ES, VII semester)	

OS - obligate subject, ES - elective subject

Example of UNI

2.1 Purpose

The study programs in the field of engineering management at the Faculty of Civil Engineering and Architecture in Nis have a direct social mission to educate staff for the same large branch of industry, whose role in the overall development of society is crucial. Poor qualification and age structure of the staff is one of the consequences of the long stagnation in this industry. For this reason, there is a clear need for skilled engineering managers who need to get involved in working in this industry, and thus for their adequate education.

The program of undergraduate academic studies, being the first in a series of these programs, is primarily aimed at acquiring knowledge in the fundamental sciences related to the engineering management profession, without neglecting the professional knowledge necessary for day-to-day engineering work. For students who will complete this degree, the program provides a wide range of competencies. Students who choose to pursue higher level academic studies receive a solid enough foundation for successfully pursuing more complex disciplines in advanced courses.

Example of UNI

2.2 Aims and objectives

The Engineering Management study program was established with the following objectives:

- training students to apply the required knowledge in fundamental scientific disciplines (mathematics, physics, mechanics, etc.).
- achievement of professional competences of students in various fields of engineering management through scientific-professional and professional-applied subjects,
- developing students' creative abilities to consider engineering problems and their critical thinking skills;
- developing teamwork skills,
- developing professional ethics,
- developing the ability to publicly present work results,
- training in the use of common computer tools for document creation, presentation, budgeting, and simulation,
- training for continuing education at higher levels.

2.3 Competencies

By completing undergraduate Engineering Management study programme, the students acquire the following general competencies:

- identifying, describing and solving engineering problems,
- applying fundamental knowledge to solve practical problems in construction,
- using common computer tools for document creation, presentation, budgeting and simulation,
- sharing information, ideas, problems and solutions with people in and outside the profession,
- collaboration in team professional work,
- taking an ethical stance in solving engineering problems,
- continuing education in graduate academic studies in engineering management or other related fields.

Engineering Management is a program that combines engineering courses with business management principles. Students obtain a comprehensive engineering education consisting of planning, scheduling, monitoring, and control of engineering projects while developing business expertise, social awareness, and organizational communication skills. On the bachelor's level, Engineering Management is a four-year degree that immerses students in a multidisciplinary field that deals with the technical, financial, strategic, and human resources components of the program. Graduates of this degree apply their experiential knowledge and skill set necessary for practical problem solving to address the complexities of the discipline.

2.4 Curriculum structure

The basic academic study program in Engineering Management lasts 4 years (divided into 8 semesters) and is worth 240 ECTS credits. The academic title acquired after graduation is a civil engineer. Curriculum structure encompasses distribution of courses over eight semesters, the fund of teaching hours during 30 working weeks of 1 school year and ECTS credits distribution (30 ECTS[1] in each of the eight semesters).

The study program covers fundamentally theoretical subjects such as mathematics, physics, design geometry, geology or mechanics. In addition, students gain basic practical knowledge in the application of computer technology.

All subjects of the study program are one-semester courses, and in most of them active teaching consists of lectures and computational exercises. Laboratory exercises (physics, construction materials, fluid mechanics, etc.) exist in a number of subjects. In addition to attending classes, students' obligations include a two-week professional internship worth 4 ECTS credits. Final year work is a compulsory part of the studies and is worth 15 ECTS credits.

Upon completion of this study program, students may continue their studies in the Master Academic Program in Engineering Management at the Faculty of Civil Engineering and Architecture in Nis or related studies in the country and abroad.

2.5 Enrolment

Minimal qualifications completion of secondary school (4th level of EQF).

To apply for the studies, the candidates will submit the following documents:

- Application form
- Copies of qualifications

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Activity 2.1: b) Development of specific competencies and learning outcomes of curricula in WB.

Example of UPKM

1. General Competences

Taking into account the generic competences that must be acquired by the graduates of the University of Pristina in Kosovska Mitrovica (UPKM) which General Competences are intended by the course?

- ☒ Apply knowledge in practice
- ☒ Retrieve, analyse and synthesise data and information, with the use of necessary technologies
- ☒ Adapt to new situations
- ☒ Make decisions
- ☒ Work autonomously
- ☒ Work in teams
- ☒ Work in an international context
- ☒ Work in an interdisciplinary team
- ☒ Generate new research ideas
- ☒ Design and manage projects
- ☒ Appreciate diversity and multiculturality
- ☒ Respect natural environment
- ☒ Demonstrate social, professional and ethical commitment and sensitivity to gender issues
- ☒ Be critical and self-critical
- ☒ Advance free, creative and causative thinking

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2. Learning Outcomes Categorization

Select for every domain the levels covered by the learning outcomes of the course.

Cognitive Domain		Affective Domain		Psychomotor Domain	
☒	Creating	☒	Characterization	☒	Naturalization
☒	Evaluating	☒	Organization	☒	Articulation
☒	Analysing	☒	Valuing	☒	Precision
☒	Applying	☒	Response	☒	Manipulation
☒	Understanding	☒	Reception	☒	Imitation
☒	Remembering				

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3. Levels of Intended Learning Outcomes

Select the highest levels of learning outcomes intended with this course. You should select the levels that correspond to the learning outcomes of the course, irrespective of the level of studies (undergraduate / postgraduate). The learning outcome level definitions provide an estimate of the demands of the course for the benefit of students and curriculum designers alike.

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Activity 2.1: b) Development of specific competencies and learning outcomes of curricula in WB.

Knowledge means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the Serbian National Qualifications Framework*, knowledge is described as theoretical and/or factual knowledge.		Skills means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the Serbian National Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments) skills.		Competence means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. In the context of the Serbian National Qualifications Framework, competence is described in terms of responsibility and autonomy.	
☐	Level 8	☐	Level 8	☐	Level 8
☒	Level 7	☒	Level 7	☒	Level 7
☒	Level 6	☒	Level 6	☒	Level 6
☐	Level 5	☐	Level 5	☐	Level 5
☐	Level 4	☐	Level 4	☐	Level 4
☐	Level 3	☐	Level 3	☐	Level 3
☐	Level 2	☐	Level 2	☐	Level 2
☐	Level 1	☐	Level 1	☐	Level 1
☐	No choice	☐	No choice	☐	No choice

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Thank you for your attention!