

STUDY PROGRAMME ENVIRONMENTAL MANAGEMENT

MASTER ACADEMIC STUDIES

Study programme name: Higher education institution in which the study programme is implemented:	Environmental Management University of Niš, Faculty of Occupational Safety in Niš
Educational / educational-scientific field: Scientific, professional, or artistic discipline:	Social Sciences and Humanities Management and Business
Type of studies: Scope of studies in ECTS credits: Degree title: Degree title in the diploma supplement:	Master academic studies 60 ECTS credits Master Manager Master Manager – Environmental Management
Duration of studies: Maximum number of students to enrol in the study programme:	1 year 25
Language in which the study programme is implemented:	Serbian

STUDY PROGRAMME OBJECTIVES

Objectives of the master academic studies study programme **Environmental Management** stem from the primary commitments and Strategic documents of the Faculty of Occupational Safety in Niš as a scientific-educational institution, as well as from the study programme purpose.

The **aim** of the study programme is to provide students with scientific and professional knowledge pertaining to environmental and social systems, which is applicable within the context of environmental policy and management, and to help them develop managerial skills in this field.

Programme **objectives** include the following:

- Improvement of existing and acquisition of new knowledge about modern environmental management in order to solve specific problems in practice;
- Development of skills to solve practical issues in environmental policy planning and implementation, as well as creation and implementation of regulatory acts and strategic documents in this field;
- Acquisition of knowledge and skills to analyse economic and ecological effects of environmental degradation and direct use of economic instruments and measures to protect and preserve the environment;
- Development of skills to manage human resources and develop them in terms of environmental protection;
- Acquisition of knowledge about the fundamental principles, concepts, and tools of circular economy and consideration of possibilities to reach sustainability goals through the prism of economic systems;
- Familiarization with and understanding of the issues of air, water, and soil pollution and the possibilities of monitoring and controlling air-water, and soil quality;
- Familiarization with and understanding of the municipal waste management system and acquisition of skills for sustainable management of municipal waste;
- Development of skills to manage projects and apply the principles of project management in environmental protection;
- Acquisition of knowledge about different models of optimizing the potential for environmental learning and development of skills for training management in a work organization and the local community;
- Development of communication skills to apply the principles of environmental and business ethics in environmental management;
- Development of leadership skills for innovative approaches and proactive strategies in environmental protection;
- Acquisition of knowledge to critically analyse the current issues of

environmental protection and the particularities of their examination and resolution;

- Acquisition of knowledge and skills to conduct research in this field;
- Acquisition of knowledge and skills for innovation activities, team-work, permanent education, and development of the knowledge system in the field of environmental protection.

STUDY PROGRAMME OUTCOMES – STUDENTS’ COMPETENCES UPON PROGRAMME COMPLETION

Completion of the master academic studies study programme Environmental Management provides students with the general and course-specific competences that are relevant for managing complex systems in the field of environmental protection and with the skills to apply different perspectives from this discipline (political, legal, economic, socioecological, managerial, etc.) to solve the complex problems of environmental protection and climate change.

Completion of the study programme provides students with the following **general competences**:

- Critical analysis and understanding of interactions accompanying development with social and environmental challenges in accordance with up-to-date scientific achievements in this field;
- Ability to analyse the current state and synthesise collected data in order to predict the effects and resolve the issues of environmental protection in practice;
- Analysis and understanding of the interaction between existing systems and patterns of production and consumption, their environmental impact, and the advantages of switching to the circular economic model;
- Management of changes from unsustainable towards sustainable practice, capacity strengthening, and improvement of cooperation in order to improve environmental quality in the immediate or broad work/living environment;
- Critical and pro-environmental thinking in the planning of a sustainable future;
- Communication, team-work, and innovative approaches in the field of environmental protection;
- Development of professional ethics for environmental issue resolution and environmental protection.

Upon completion of the study programme, students will also acquire the following **course-specific**, or professional, **competences**:

- Definition, coordination, and implementation of the environmental management system, including the selection of practical tools, methods, and techniques;
- Planning and implementation of political and legal instruments in environmental protection;
- Analysis of the influence of decision making in the implementation of public policies and enforcement of current legislation in environmental protection, as well as participation in the development of new legislation;
- Definition of technical, organizational, and personal characteristics of good environmental risk management;
- Monitoring of air, water, and soil quality and municipal waste management aimed at optimizing the environmental management system;
- Application of economic principles in environmental protection; critical observation of the existing and design of new economic instruments in environmental management;
- Development and coordination of projects for environmental protection, climate change adaptation, and sustainable development;
- Development and use of methods integrating environmental performance into management goals and organizations' productivity;
- Leadership, management, and development of human resources and knowledge system in environmental protection;
- inter- and multidisciplinary connection of knowledge from different fields of social sciences, humanities, and technical and technological sciences, and holistic perspective and solution of environmental management problems.

Students with a master's degree in environmental management are able to pursue specialist and doctoral academic studies in the same or related fields of study.

STUDY PROGRAMME PURPOSE

The purpose of the master academic studies programme Environmental Management is to educate future managers, who will possess applicable knowledge necessary for the creation of practical policies and for environmental management in the public, civil, and private sector, as well as to train them to respond to professional-managerial challenges in manufacturing companies.

Experts with this educational profile are particularly important for Serbia's EU accession in terms of meeting the requirements imposed in Chapter 27 negotiations and in terms of introducing new instruments in environmental management and fulfilling strategic commitments regarding climate change.

The study programme emphasises competences, knowledge, and skills that will allow students to spearhead the changes in environmental policies, both ethically and organizationally, and to implement sustainable development policies. It is an indisputable fact that Serbia lacks experts who are able to develop and improve practical environmental policies, which will become increasingly apparent in the decades to come. Experts with such a profile will be in growing demand in state administration bodies and public institutions, inspectorates, research institutions, project and consulting teams in other sectors (creation of spatial and urban planning documents, environmental risk and impact assessment studies, conservation studies for specific areas), but also increasingly in the industry that implements green economy, in the civil sector, and in education for environmental protection and sustainable development.

The study programme relies on an integrated approach from social studies and humanities on the one hand and environmental science and environmental engineering (which are studied within the existing basic and master academic studies' programmes at the Faculty of Occupational Safety in Niš) on the other hand, focusing on the complex relations between science, management, and policies in the field of environmental protection. Such an approach enables a comprehensive consideration of what environmental sustainability means in practice and which strategic changes need to be made in order to achieve sustainability in complex socio-economic systems.

The study programme integrates topics pertaining to organization and management in the public sector and companies, compliance with the requirements for implementing and improving technical designs in environmental protection (both within economic actors and within the whole society), political, legal, and economic aspects of environmental management, sustainable production and consumption, communication with and participation of the public, human resource management and knowledge distribution, as well as many more specific knowledge and skills. The programme emphasises the acquisition of knowledge and skills that will prepare students for environmental manager careers in companies and the public sector and institutions, so that they are able to contribute to the resolution of numerous environmental issues and facilitate EU accession negotiations. Accordingly, when designing the study programme, the Faculty of Occupational Safety particularly relied upon the comparison with similar study programmes in the EU and other developed countries.

ADMISSION REQUIREMENTS

The Faculty of Occupational Safety will enrol 25 students in the first year of master academic studies study programme Environmental Management. The number of students was established based on society's needs for the education of professionals for the protection of employees and material and natural resources, as well as based on the resources of the faculty and the interest expressed by the applicants.

The admission procedure is regulated by the Law on Higher Education, the Statute of the University of Niš, the Statute of the Faculty of Occupational Safety, the Regulations on Master Academic Studies at the Faculty of Occupational Safety in Niš, and the Call for Admissions to the first year of master academic studies at state-founded faculties. The Call for Admissions designates the number of students (total and by source of financing), admission deadlines, admission procedures, admission requirements, criteria for applicant ranking, manner and deadlines for formal complaints regarding the ranking, and the amount of tuition fee for the self-financing students.

To be eligible to apply for enrolment in the first year of master academic studies, a person must have met one of the following requirements:

- Completed basic academic studies in a corresponding or related educational-scientific field with a minimum of 240 ECTS credits;
- Obtained a higher education degree in a corresponding or related educational-scientific field in the duration of at least four years (eight semesters) according to the rules that were in force until the day the current Law on Higher Education came into force.

Applicants who completed the basic studies at the Faculty of Occupational Safety in Niš in the duration of four years (eight semesters) according to the rules that were in force until the day the current Law on Higher Education came into force are eligible to enrol in the master academic studies pursuant to the Faculty's Educational and Scientific Council's decisions No. 03-163/13, 03-163/14, and 03-163/15 from 10 April 2019. The decisions can be downloaded at

<https://www.znrfak.ni.ac.rs/SERBIAN/011-03-01-MAS-OglasnaTabla.html>

Applicants who completed the basic academic studies (180 ECTS) and master academic studies (120 ECTS), with a total of at least 300 ECTS in a corresponding or related educational-scientific field are also eligible to enrol in the first year of master academic studies provided that:

- they submit a written request no later than the deadline expiration for enrolment into the following academic year;
- the faculty possesses spatial and other resources;

- that the number of enrolled students has not reached the allowed maximum (25).

Foreign citizens may enrol in the study programme under the same conditions as Serbian citizens, the only added requirements being that their application submission has to contain a recognised diploma of previous education and the number of ECTS awarded or proof of the initiated diploma recognition procedure, proof of knowledge of the Serbian language in accordance with the Statute of the University of Niš (this requirement does not apply to applicants from former Yugoslav republics), as well as proof of health insurance.

Study programme admission requirements, corresponding or related educational-scientific fields, and preliminary and final applicant ranking re defined by the Regulations on Master Academic Studies at the Faculty of Occupational Safety in Niš (No. 03-230/4 from 2 July 2019), which can be downloaded at

http://www.znrfak.ni.ac.rs/SERBIAN/009-1-08-ZAKONI_Fakultet.html

STUDENT GRADING AND PROGRESS

Students' knowledge is continually tested and evaluated throughout the semester, while the final grade is given at the exam in accordance with the law and general acts. The evaluation is performed by awarding points for any type of activity and testing during the semester (pre-exam requirements) and at the exam itself, where the final grade is given according to the number of points awarded.

The pre-exam requirements are evaluated according to the following criteria:

- active participation during lectures and exercises – up to 10 points;
- project assignment – 20 to 30 points;
- term papers and technical drawing assignments – 10 to 20 points;
- homework assignments (arithmetic problems, topic presentations, essays, etc.) – up to 5 points;
- preliminary exams (colloquia) – 15 to 30 points;
- laboratory practice and report completion – up to 10 points;
- participation in seminars – up to 10 points.

The study programme defines the following point distribution: a maximum of 60 points for activities and assignments during the semester (pre-exam requirements) and a maximum of 40 points for the final exam.

When the students have fulfilled all their pre-exam requirements, the teachers are obligated to enter the evaluation results (points) and the dates of completion into the student index no later than the day of the final exam. When all classes in a semester have ended, the structure and the total number of points awarded to students as part of their pre-exam requirements are published on the students' noticeboard and the faculty website.

By meeting the pre-exam requirements and completing their exams, students can receive a maximum of 100 points. For each specific course, students who have met all the pre-exam requirements specified in the syllabus and received a minimum of 30 points are eligible to take the exam.

Students may take the exam after all classes for the course have ended, during the terms determined by the law and the Regulations on Master Academic Studies at the Faculty of Occupational Safety in Niš. Exams are only written, only oral, or both written and oral. Students' exam achievements are graded from 5 (failed) to 10 (exceptional). The final exam grade is based on the total number of points the students received after meeting their pre-exam requirements and taking the exam; according to the following grading:

- from 91 to 100 points – grade 10 = exceptional;
- from 81 to 90 points – grade 9 = excellent;
- from 71 to 80 points – grade 8 = very good;
- from 61 to 70 points – grade 7 = good;
- from 51 to 60 points – grade 6 = sufficient;
- up to 50 points – grade 5 = failed.

The final exam grade and the total number of points received from the pre-exam requirements and the exam itself are entered into exam records, into the student index, and into the individual student's exam application, and then validated by the professor's signature. Grade 5 (failed) is not entered into the student index. The faculty is obligated to keep permanent records of all completed exams.

SELECTION OF COURSES FROM OTHER STUDY PROGRAMMES

If they so choose, students may attend and take the exam for a course taught at another study programme at the faculty or another higher education that is unrelated to any of the courses in their selected study programme at the faculty. The number of ECTS credits thus received will not be included in the total number of points received at the students' selected study programme, which is used in the student ranking for state-budget coverage of the tuition fee. In addition, the grade received at the exam for such an unrelated course will also not be included in the grade average during the studies. Mutual rights and obligations of the higher education institutions involved, including the method of financing and the students' rights and obligations, are regulated by an inter-institutional agreement. The diploma supplement issued to students includes the number of ECTS credits received for completing the unrelated course.

Students of the faculty may complete a portion of their study programme through a compatible study programme at another higher education institution provided an agreement on ECTS credit recognition has been signed between the faculty, or the university, and the other higher education institution (the so-called student mobility). The portion of the study programme students complete at another higher education institution may include one or more courses.

An exam completed at another higher education institution may be recognized provided that the course belongs to a compatible study programme of the same level and type of studies and has a syllabus that is compatible with the corresponding course at the Faculty of Occupational Safety. To have their exam recognized, students are required to submit an exam recognition request, a certificate of exam completion, compatible study programme details, and the proof of payment of exam recognition fees. The decision on the exam recognition is made by the Teaching Committee with consent from the teacher of the given course.

REQUIREMENTS FOR SWITCHING STUDY PROGRAMMES

Considering that the master academic studies last only one year, it is not possible to switch study programmes at the faculty or another higher education institution during the school year.

Students of master academic studies at the faculty or another higher education institution may enrol in another study programme at the faculty through reapplying for master academic studies. Upon successful admission, students may submit a request for the recognition of exams completed during their previous master academic studies.

An exam completed within another study programme at the faculty or at another higher education institution may be recognized provided that the course belongs to a compatible study programme of the same level and type of studies and has a syllabus that is compatible with the corresponding course at the selected faculty. To have their exam recognized, students are required to submit an exam recognition request, a certificate of exam completion, compatible study programme details, and the proof of payment of exam recognition fees. The decision on the exam recognition is made by the Teaching Committee with consent from the teacher of the given course.

STUDY PROGRAMME STRUCTURE

The master academic studies (MAS) study programme Environmental Engineering comprises the following elements stipulated by the Law on Higher Education: study programme name and objectives; type of studies and results of the learning process; academic degree; study programme admission requirements; list of required and elective courses with course outlines; procedure and duration of studies; credit value (ECTS) of courses and the master's thesis; course pre-requirements; procedure for selecting courses from other study programmes; and requirements for switching study programmes within the same or related fields of study.

The study programme structure complies with the Accreditation Standards for the First and Second Level of Higher Education.

The study programme lasts one year (2 semesters) and comprises 60 ECTS credits.

The study programme is implemented through:

- Required courses, which include the fundamental knowledge students need to acquire;
- Elective courses, which help students shape their educational profile more closely;
- Internship, which students do in the second semester; and
- Master's thesis, which students complete in the second semester.

The study programme comprises five required and three elective courses out of 13 offered, internship, and the master's thesis. Each course comprises a specific number of ECTS credits. The electivity factor of the study programme is 36.67 %.

Within the study programme structure, the percentage of different course types is as follows:

- Theoretical-methodological 24.75 %;
- Scientific-professional 24.08 %;
- Professional-applicative 51.17 %.

Total student activities comprise active classes (lectures, exercises, laboratory work, term papers, and other forms of active classes), individual work, preliminary exams (colloquia), examinations, writing of the master's thesis, and other activities. The average number of active classes per week is 19.77-20.00 (19.94 weekly average). The total number of lecture classes within the study programme is 16 (8.00 weekly average), the number of exercise classes is 15-16 (7.88 weekly average), other forms of active classes 0-0.53 (0.07 weekly average), research study 8 (4.00 weekly average), and other classes 10 (5.00 weekly average). The remaining time of the 40-hour work week is dedicated to other individual student activities.

Internship is an integral part of the study programme. It is done in pertinent scientific research institutions, organizations dedicated to innovation activities, organizations providing infrastructural support to innovation activities, companies, and public institutions, all for the purpose of enabling students to practically apply their acquired knowledge to solving current problems of occupational safety engineering. It comprises 3 ECTS credits.

The study programme is completed upon completion and public defence of the master's thesis. Through their master's thesis, students demonstrate their ability to synthesize and apply the acquired theoretical and practical knowledge to solving occupational safety engineering problems in organizations as well as in their local community. The master's thesis comprises 12 ECTS credits in total, of which the research study comprises 8 and the writing and defence of the thesis 4 ECTS credits.

Upon completion of the studies, students receive the academic degree

MASTER MANAGER

Degree title in the diploma supplement: **Master Manager – Environmental Management**

COURSE DISTRIBUTION BY SEMESTER AND YEAR OF STUDY

#	Code	Course name	Term paper	Active classes				Oth.	ECTS	Required / Elective (R/E)	Course type
			Le.	Ex.	Oth.	RS					
FIRST YEAR											
1.	19.MMZS01	Environmental Management	1	2	2	0	0	0	6	R	PA
2.	19.MMZS02	Human Resource Management and Development	1	2	2	0	0	0	6	R	PA
3.	19.MMZS03	Environmental Law	1	2	2	0	0	0	6	R	SP
4.	19.MMZS04	Social Ecology	1	2	2	0	0	0	6	R	SP
5.	19.MZZS04	Monitoring of Air Pollution and Air Quality	1	2	2	0	0	0	6	E	PA
	19.MZZS06	Ecotoxicology	1	2	2	0	0	0	6	E	TM
	19.MZZS07	Water Quality Monitoring	1	2	2	0	0	0	6	E	TM
	19.MMZS05	Ecological Psychology	1	2	2	0	0	0	6	E	TM
6.	19.MMZS06	Circular Economy	1	2	2	0	0	0	6	E	SP
	19.MMZS07	Environmental Policy	2	2	2	0	0	0	5	R	TM
	19.MMZS08	Municipal Waste Management	2	2	2	0	0	0	5	E	TM
7.	19.MMZS09	Ecological Andragogy	2	2	2	0	0	0	5	E	TM
	19.MMZS10	Business Ethics in Environmental Protection	2	2	2	0	0	0	5	E	PA
	19.MMZS11	Information and Public Relations	2	2	2	0	0	0	5	E	TM
8.	19.MZNR16	Project Management	2	2	1	0.53	0	0	5	E	TM
	19.MMZS12	Local Sustainable Development	2	2	2	0	0	0	5	E	SP
	19.MMZS13	Climate Change Adaptation	2	2	2	0	0	0	5	E	PA
	19.MMZS14	Environmental Protection Economics	2	2	2	0	0	0	5	E	TM
9.	19.MMZS15	Internship	2	0	0	0	0	6	3	R	PA
10.	19.MZS16A	Master's Thesis – Research	2	0	0	0	8	0	8	R	PA
11.	19.MZS16B	Master's Thesis – Writing and Defence	2	0	0	0	0	4	4	R	PA
Total classes (lectures/exercises + other) and credits				16	15.00-16.00	0.00-0.53	8	10	60		
Total active classes per year					39.53-40.00			10	60		

Abbreviations:

- Le. – Lectures
- Ex. – Exercises
- Oth. – Other forms of classes
- RS – Research study
- TM – Theoretical-methodological
- SP – Scientific-professional
- PA – Professional-applicative

LIST OF REQUIRED COURSES

1. Environmental Management
2. Human Resource Management and Development
3. Environmental Law
4. Social Ecology
5. Environmental Policy
6. Internship
7. Master's Thesis – Research
8. Master's Thesis – Writing and Defence

Course name: Environmental Management		
Course status: Required	Course code:	19.MMZS01
ECTS credits: 6		
Requirements: -		
Course aim Acquisition of knowledge about the term, purpose, and goals of environmental management. Knowledge about the systems of environmental management and conditions, method, and procedures for strategic assessment of the environmental impact of plans and programmes.		
Learning outcome Students' ability to: <ul style="list-style-type: none"> • understand the concept of environmental management and be equipped to preserve and improve the environment; • implement concrete actions and procedures towards environmental protection; • purposefully implement regulations and procedures according to the model of management system included in the ISO 14000 series of standards. 		
Course outline Theoretical lessons Management: Definition of management. Basic functions of management (planning, organization, human resource management, governance, and control). Classification of management processes. Role and task of managers. Characteristics, knowledge, and capabilities of managers. Definition, purpose, and goals of environmental management: Basic types of environmental management. Principles of environmental protection. Principles of environmental management. Environmental management systems at the national level: Subjects of environmental management. Competence of local self-governments in the field of environmental protection. Place and role of civil society organizations in the environmental protection system. Strategic environmental impact assessment: Conditions, method, and procedures for strategic assessment of the environmental impact of specific plans and programmes. Strategic assessment of the environmental impact of specific plans and programmes. Basic principles of strategic assessment; strategic assessment report. Strategic assessment procedure. Environmental management: Environmental management as a business process. Use of ICT in environmental management systems. Environmental management systems according to international regulations. Model of management system according to the ISO 14000 series of standards. Risk management in compliance with ISO31000:2009. Environmental management system using the business intelligence model.		
Practical lessons Auditory exercises, which follow the theoretical lessons. Presentation and defence of term papers on a topic pertaining to environmental management (with an emphasis on the purpose and goals of environmental management, systems of environmental management, and environmental management as a business process). Analysis of strategic environmental impact assessment focused on the principles and procedures of strategic assessment.		
Literature <ul style="list-style-type: none"> • Živković Snežana (2015). <i>Upravljanje zaštitom životne sredine – interni materijal za pripremu ispita</i>. Niš: Univerzitet u Nišu, Fakultet zaštite na radu u Nišu. • Črnjar Mladen, Črnjar Kristina, Perić Joža, Zelenika Ratko, Denona-Bogović Nada (2009). <i>Menadžment održivog razvoja: ekonomija, ekologija, zaštita okoliša</i>. Opatija: Fakultet za menadžment u turizmu i ugostiteljstvu. 		

Number of active classes (weekly)									
Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
Teaching methods									
Lectures, exercises (including the term paper), discussions, office hours									
Grading (maximum number of points: 100)									
Pre-exam requirements				Points	Exam			Points	
Activity during lectures				5	Oral exam (theoretical part of the exam)			40	
Activity during exercises				5					
Colloquium 1				15					
Colloquium 2				15					
Term paper				20					

Course name: Human Resource Management and Development**Course status:** Required**Course code:**

19.MMZS02

ECTS credits: 6**Requirements:** -**Course aim**

Acquisition of knowledge about basic theoretical issues of human resource management and the particularities of their development in an occupational and environmental safety and protection system. Development of competences for professional interventions in human resource management (HRM) in organizations in terms of employee protection and occupational and environmental safety. Acquisition of knowledge and skills for efficient action for the purpose of human resource development (HRD) in this field. Development of critical thinking about various aspects of human resource management and development, consideration of possibilities for innovative approaches and actions aimed at improving occupational and environmental safety performance.

Learning outcome

- Possession of a developed knowledge system about modern concepts, strategies, processes, and possibilities of HRM that are necessary for identifying the current state of human resources in an organization, preparing the measures for improving safety performance, and hiring human resources in a way that improves safety culture and develops humane and motivating work conditions;
- Developed competences – knowledge and skills for efficient HRD;
- Understanding and consideration of all stages of HRM directly associated with the processes of occupational and environmental safety, which will enable the accomplishment of strategic business and safety goals.

Course outline**Theoretical lessons**

Human resource management: Historical development, term, subject matter, aims, activities, factors, and challenges. HRM as a phase of the management process. **Strategic human resource management:** term, aims, strategy formulation, strategy types, application, and control. **Work analysis and design** (of risks, hazards, and harms), work redesign and redesigning techniques (in terms of occupational and environmental safety). **Human resource planning:** term, characteristics, aims, activities. **Staffing:** term, aim, factors, recruitment process, external and internal sources. **Candidate selection:** Term, aims, significance. Individual differences between candidates. Selection process. Methods and instruments. Evaluation of the selection process. **Human resource development** – employee socialization and orientation. **Career development:** term, characteristics, significance, planning, phases, career anchors, career management. **Training and development:** organizational learning, knowledge management, andragogical cycle, process, phases, traditional and modern approaches. **Evaluation of work success:** term, aims, subject, functions, process, methods, quality evaluation. **Employee awards and motivation:** significance, aims, motivation, incentives, awards. **Particularities of human resource management and development** for occupational safety and health, for environmental protection and sustainable development, for protection against fires, disasters, and other emergencies. **Global changes in the occupational and natural environment and human resource management in the future:** changes, challenges, HRM in the future.

Practical lessons

Auditory exercises, which follow the theoretical lessons and include the presentation and

defence of term papers, which pertain to the current issues of HRM and HRD in terms of occupational and environmental safety (especially occupational safety and health). Analysis of innovative approaches and case studies of HRM using the examples of different work organizations in the national and international economic context.

Literature

- Nikolić Vesna (2019.) *Menadžment ljudskih resursa – interni materijal za pripremu ispita*. Niš: Univerzitet u Nišu, Fakultet zaštite na radu u Nišu.
- Galjak Mirjana, Nikolić Vesna (2019). *Menadžment u zaštiti*. Leposavić: Visoka tehnička škola strukovnih studija.
- Nikolić Vesna, Anđelković Branislav (2018). *Sistem bezbednosti i zaštite & Razvoj ljudskih resursa i upravljanje znanjem*, (određ. poglavlja). Niš: Univerzitet u Nišu, Fakultet zaštite na radu.
- *Health and Safety Guide for Human Resources Professionals* (2005). Ontario, Canada: Canadian Centre for Occupational Health and Safety.
- Nikolić Vesna (2012). *Tendencije upravljanja i razvoja ljudskih resursa u budućnosti*, u: Upravljanje ljudskim resursima i sigurnost. Zagreb: Visoka škola za sigurnost.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, conversation and discussions, demonstrations, case studies, office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Environmental Law									
Course status: Required					Course code:		19.MMZS03		
ECTS credits: 6									
Requirements: -									
Course aim Acquisition of extended theoretical knowledge about the legal institutes for environmental protection and detailed knowledge about international and national sources of environmental law; understanding of legal decisions in international and national legal sources.									
Learning outcome Students' ability to: <ul style="list-style-type: none">• understand the actions of international organizations, the state, and non-government actors that involve enactment and enforcement of environmental regulations;• interpret and practically apply environmental regulations;• supervise the enforcement of such regulations.									
Course outline Theoretical lessons General questions of environmental law. Theoretical framework of environmental law. Origin and development of environmental law. Basic characteristics of environmental law. Legal instruments of environmental protection. Ecological justice. Ecological crisis. Environmental ombudsman. Environmental crimes. Environmental inspection. Environmental lawsuit. Ecological taxes. International legal sources of environmental protection. United Nations – scope, activity, and environmental regulations. European Union – scope, activity, and environmental regulations. European Council – scope, activity, and environmental regulations. National legal sources of environmental protection. Constitution of the Republic of Serbia. Law on Environmental Protection. Law on Environmental Impact Assessment, Law on Strategic Environmental Impact Assessment. Law on Integrated Prevention and Control of Environmental Pollution. Legal regulation of specific environmental segments. Practical lessons Auditory exercises, which follow the theoretical lessons and include the presentation and defence of term papers on a topic included in the course syllabus, analysis of various legislative acts, and visits to relevant institutions.									
Literature <ul style="list-style-type: none">• Lilić Stevan, Drenovak Ivanović Mirjana (2014). <i>Ekološko pravo</i>. Beograd: Univerzitet u Beogradu, Pravni fakultet.• Joldžić Vladan (2008). <i>Ekološko pravo – opšti i poseban deo</i> (Primer Srbije – države u tranziciji). Beograd: Institut za kriminološka i sociološka istraživanja.• Kovačević Irina (2012). <i>Ekološko pravo i ekološka politika</i>. Banja Luka: Evropski defendologija cantar za naučna, politička, ekonomska, socijalna, bezbjednosna, sociološka i kriminološka istraživanja.									
Number of active classes (weekly)									
Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
Teaching methods Lectures (including presentations and discussions), exercises (term papers and analyses of different regulations), and office hours									

Grading (maximum number of points: 100)			
Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Social Ecology		
Course status: Elective	Course code:	19.MZZS10
ECTS credits: 5		
Requirements: -		
Course aim Familiarizing students with socioecological interpretations of the relation between nature and society in order for them to accept the holistic world view and the principles of ecological ethics and in turn properly perceive the environmental impact of social development, all so that they, as managers, can fully contribute to the solution of environmental issues, provision of more humane living conditions, and actualization of sustainable development.		
Learning outcome Students' ability to: <ul style="list-style-type: none"> • understand the social causality of ecological issues and ecological crisis; • accept the ecological-ethics principles and act accordingly; • accept the fact that there is no permanent and substantial solution of environmental issues without the acknowledgment of social factors operating within the environment; • understand the institutional forms and their mechanisms that contribute to the harmonization of society's developmental needs and environmental capacities; • participate in the creation of strategic documents about the actualization of sustainable development on a local, regional, and global level. 		
Course outline Theoretical lessons Subject matter of social ecology: Ecology as a science. Basic ecological terms. Humans as natural and social beings. Human environment (definition and elements of human environment, relations between elements of human environment, relation between the work and the natural environment). Quality of life: Definition of quality of life. Environmental quality as an element of quality of life. Ecological crisis: Definition of ecological crisis. Social aspects of the ecological crisis of modern society: pollution of nature, pollution of the work environment (occupational alienation and technical risks), pollution of the social environment (alienation from life and society, consumer culture, false values). Social causes of ecological crisis: technological development, urban sprawl, industrialization, nature of the economic and social system, population growth, system of values, consumption, globalization. Different views of the nature-society relation: Reflections on the nature-society relation before the 1970s; ideas about solving ecological issues put forward by the members of the Club of Rome in the following publications: The Limits to Growth, Mankind at the Turning Point, RIO – Reshaping the International Order, Goals for Mankind, Beyond the Age of Waste, Beyond the Limits: Global Collapse or a Sustainable Future, 2052 – A global Forecast for the Next Forty Years. Ecological awareness, ethics, and culture: Definition and elements of ecological awareness. Importance of ecological awareness for the harmonization of relations between society and nature. Philosophical and social bases of the development of ecological ethics. Influence of religion, tradition, and other factors on the shaping of ecological ethics. Anthropocentrism: strong and weak anthropocentrism. Ecocentrism: animal ethics, bio ethics, and geoethics. Socioecological theories: deep ecology, ecofeminism, eco-anarchism, eco-liberalism, eco-socialism. Ecological culture and solution of ecological problems: Definition of culture. Pre-industrial culture and environment, industrial culture and environment, post-industrial – ecological – culture		

and environment. Film and environmental protection. Music and environmental protection. **Ecological politics:** Definition of ecological politics. Traditional and ecological politics. Principles, goals, and subjects of ecological politics. **Ecological movements and ecological parties:** Definition of new social movements. Ecological movements and their importance for the solution of ecological issues. Ecological parties and green ideology. **Globalization and ecology:** Global society as a society of manufactured risks. Globalization and ecological inequality in the world.

Practical lessons

Auditory exercises: discussions based on analyses of texts, statistical data, and presented video materials depicting causes and effects of ecological crisis, ecological challenges of the modern world, environmental activism, environmental migrants, ecological discourse, acceptance of ecological-ethics principles, and level of development of ecological awareness; defence of term papers.

Literature

- Marković Ž. Danilo (2015). *Socijalna ekologija*. Beograd: Zavod za udžbenike i nastavna sredstva
- Miltojević D. Vesna (2005). *Ekološka kultura*. Niš: Univerzitet u Nišu, Fakultet zaštite na radu
- Ilić Krstić Ivana (2018). *Ekološka bezbednost u pograničju-studija slučaja*. Novi Sad: Prometej; Niš; Mašinski fakultet: JUNIR
- Nadić Darko (2012). *Ogledi iz političke ekologije*. Beograd, Čigoja štampa i Fakultet političkih nauka Univerziteta u Beogradu
- Hannigan John (2014). *Environmental Sociology*. London and New York: Routledge

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, presentations, discussion, term papers, office hours, individual and group work

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Environmental Policy		
Course status: Required	Course code:	19.MZZS07
ECTS credits: 5		
Requirements: -		
Course aim Acquisition of basic theoretical and practical knowledge about environmental policy with a simultaneous development of critical thinking and acquisition of practical skills to participate in the decision making regarding practical policies that concern the issues of social development and that can have a positive relation and attitude towards the environment.		
Learning outcome Students' ability to: <ul style="list-style-type: none"> • thoroughly understand theoretical concepts of environmental policy; • stay up to date with and utilize any new developments regarding environmental policy and share that knowledge with others; • analyze the existing practical policies and environmental policy; • participate in the formulation and making of strategic decisions and decisions regarding practical policies, which are aimed towards resolving specific environmental issues in the country and in the local environment. 		
Course outline Theoretical lessons Policy and ethics. Ethical theories (divine origin theory, virtue theory, utilitarianism, deontological ethics). Ethical perspectives of environmental protection (anthropocentrism, biocentrism, ecocentrism, deep ecology). Relationship between ethics and environmental policy (reformative approach to environmental ethics, radical approach to environmental ethics, environmental pragmatism, question of legitimacy, question of sovereignty). Modern political theories (Origin and development of political theories. Liberalism, social democracy, socialism, conservatism. Relation of political theories towards environmental protection). Formation and historical development of environmental policy. Environmental policy prior to 1992. Environmental policy after 1992. Common good theory. Public goods and common interest. Types of goods. Particularities of public goods. Externalities. Positive and negative externalities. Positional goods and externalities in consumption. International environmental policy. Principles of international environmental policy. Mechanisms and tools: multilateral agreements. National environmental policy instruments. Planning instruments. Legal instruments. Economic instruments. Instruments for impact assessment. Instruments for monitoring and evaluation. Environmental protection and conflicts. Environmental policy changes after the RIO+20 conference. Practical lessons Case study: Water shortage in the Middle East. Case study: Impact of coal mining in the Ústí nad Labem Region on environmental policy. Case study: Extraction of mineral raw materials or conservation in New Zealand. Debate: Use of multilateral agreements in environmental protection – advantages and disadvantages. Seminar: Analysis of the EU pre-accession position of Serbia regarding Chapter 27 – Environment and Climate Change (analysis of the Post-Screening Document). Writing and defence of term papers.		
Literature <ul style="list-style-type: none"> • Milutinović Slobodan (2012). <i>Politike održivog razvoja</i>. Niš: Fakultet zaštite na radu. • Andrej Steiner, Henrieta Martonakova, Zuzana Guziova (ur.) (2003). <i>Vodič za dobro upravljanje u oblasti životne sredine</i>. Beograd: UNDP. 		

- Timothy Doyle, Doug McEachern (2008). *Environment and Politics*. Third Edition. London: Routledge.
- Steven Cohen (2006). *Understanding Environmental Policy*. New York: Columbia University Press.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures (including presentations and debates), exercises (term papers, case studies), and office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium	30		
Term paper 1	10		
Term paper 2	10		

Course name: Internship**Course status:** Required**Course code:**

19.MMZS15

ECTS credits: 3**Requirements:** Internship is completed in the second semester.**Course aim**

Becoming familiar with the operational process in the company (institution) in which the internship is done, with its goals, and with its organizational units. Meeting the team and learning about the project students join as part of the internship, selected according to the study programme they chose. Understanding of the work process in the company (institution), the operative processes, and occupational risks. Participation in design projects, document creation, or quality control, in keeping with the work process and the possibilities of the work environment.

Learning outcome

Students' ability to:

- understand the organization, goals, and operational processes of specific companies and institutions. and their activities in the field of environmental protection;
- improve their abilities to join the workforce after their studies;
- acquire a clear insight into the possibility of practically applying the acquired theoretical, scientific, and professional knowledge and skills covered in the study programme;
- solve specific issues in the scientific field Management and Business within the selected company or institution;
- understand the role of a person with a master's degree in environmental management within the organizational structure of a company or institution and their environmental protection tasks;
- develop a professional work approach, responsibility, and team work and communication skills to solve environmental protection problems;
- use experiences of other professionals employed at the company (institution) of the internship in order to expand their practical knowledge and increase their motivation.

Course outline

Internship content is fully compliant with internship aims and is created specifically for each student, according to the activity of the company (institution) where the internship is done and according to the demands of the profession for which a student is educated. Students become familiar with the structure of the company (institution) and its operation objectives, adapt their own involvement to the study programme they chose, and regularly fulfil their work duties, which correspond to the duties of regular employees of the company (institution). Students provide an account of their involvement during the internship and critically reflect upon their experience and the knowledge and skills they acquired during the internship.

As a rule, students choose a company (institution) from the government, private, or public sector for their internship. The internship may be done in institutions within Serbia that have a written agreement with the Faculty of Occupational Safety or that give consent for accepting student interns.

At a student's proposal, the vice dean for education approves the internship at a chosen company (institution) and then issues the written internship order form. Based on the internship logbook, which needs to record at least 90 internship classes, and the certificate of internship signed by the authorized person and stamped with the company (institution) seal, confirming that the internship has been completed, the student is awarded 3 ECTS after the internship defence before the professors appointed for the

defence by the Teaching and Scientific Council of the faculty.

Number of active classes (weekly)

Lectures	-	Auditory exercises	-	Other forms of classes	-	RS	-	Other classes	6
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Teaching methods

Consultations during the internship and creation of the internship logbook.

Grading (maximum number of points: 100)

Completed internship and creation and defence of the internship logbook are graded using the descriptors "defended" or "not defended".

Course name: Master's Thesis – Research		
Teacher/teachers: Thesis mentor, who is assigned to teach one or more master courses belonging to the scientific-professional or professional-applicative category		
Course status: Required	Course code:	19.MZS16A
ECTS credits: 8		
Requirements: Enrolment in the second semester		
Course aim Preparation of students for the writing of their master's thesis, which is based on the use of basic, theoretic-methodological, scientific-professional, and professional-applicative knowledge to solve specific problems within the chosen field/course. With the mentor's aid and guidance, preparation of students for using a critical approach and independently applying appropriate methods and instruments to investigate a given problem. Acquisition of required skills through solving complex issues and problems and identification of opportunities to practically apply the previously acquired knowledge.		
Learning outcome Students' ability to: <ul style="list-style-type: none"> • independently formulate a problem and create a conceptual framework; • use previously acquired knowledge in order to consider a broader research context when defining the structure and a suitable methodological approach to the given research problem and subject; • independently study literature and use comparative analyses and other approaches in order to draw conclusions about potential ways of solving the given research problem; • critically observe the existing issues and describe potential solutions; • consider the place and role of managers in environmental protection, especially in the creation of innovative approaches and projects in this field; • apply acquired knowledge and skills to solve problems in practice; • stay up to date with and utilize new developments in their profession. This way, students are better positioned when entering the job market, while their competences allow them to work in research and development centres and institutes and in organizations dedicated to environmentally responsible activities and open to new approaches and managerial solutions in environmental protection.		
Course outline According to their preferences and affinity, students choose their research study area, specifically the course within which they will conduct their research associated with their previously approved topic of the master's thesis. The mentor defines the research study task according to the requirements, complexity, and structure of a specific research. Students study the problem, create a conceptual framework, identifies the research methods, and studies relevant literature and other source; after analyzing the literature, they draw conclusions about potential problem solutions. In addition to the conceptualization of the research, the research study involves organizing and conducting research, processing data, and writing a research paper including the interpretation of obtained results. The mentor evaluates the research study based on the student's defence of the research paper and approves the writing of the master's thesis, which includes the results of the research study.		
Literature		

Number of active classes (weekly)									
Lectures	-	Auditory exercises	-	Other forms of classes	-	RS	8	Other classes	-
Teaching methods With the mentor's aid, students investigate a given problem, propose solutions, and write a research paper. During the research, the mentor regularly holds consultations with students to stay up to date with their progress, critically evaluates their work up to that point, and issues instructions in the form of guidelines or by referring students to specific literature.									
Grading (maximum number of points: 100)									
Pre-exam requirements				Points	Exam			Points	
Research paper – writing				50	Research paper – defence			50	

Course name: Master's Thesis – Writing and Defence									
Teacher/teachers: Committee for master's thesis evaluation and defence									
Course status: Required					Course code:		19. MZS16B		
ECTS credits: 4									
Requirements: Completion of exams for all courses in the study programme									
Course aim									
Ability to synthesize theoretical backgrounds, research procedures, and results obtained from the research study in order to solve a specific problem. Gaining experience to support and elaborate the results of the research study in written form and orally, during the master's thesis defence.									
Learning outcome									
Students' ability to:									
<ul style="list-style-type: none">independently present theoretical and methodological characteristics and results of their research by writing their thesis according to the required guidelines;orally present, support, and elaborate the obtained results during the master's thesis defence;clearly and satisfactorily elaborate on their proposed solutions to the given problem and their significance through an oral presentation of the thesis and response to the subsequent questions;individually investigate new and unknown problems in the field of environmental management by doing research, processing data, drawing conclusions, and writing and defending their results.									
By writing and defending their master's thesis, students become proficient in the narrow scientific field chosen as part of the master's study programme and receive the academic degree Master Manager – Environmental Management. The holder of this degree possesses detailed academic, theoretical, and practical knowledge and skills pertaining to environmental protection, knowledge of basic methodological principles of research and solution of complex problems, and the ability to independently and creatively apply those principles in practice.									
Course outline									
By combining the research study and the theoretical background of the given problem, students write their master's thesis, which has to contain the following elements: abstract with key words in Serbian, table of contents, introduction, research text body (formulation of the research problem and subject matter, presentation of the current state of the given research field, theoretical or practical portion of the research, results and discussion), conclusion, list of cited literature (minimum of ten references, of which at least six have to be academic and professional publications and at least one has to be written in a foreign language), and appendices.									
The committee for master's thesis evaluation and defence evaluates the written thesis and approves the public oral defence of the master's thesis, which is organized before a committee of three members, one of whom is the mentor. During the oral defence, the candidate presents the results of their research and then answers the questions by committee members, thus demonstrating the ability to orally present a project.									
Literature									
Number of active classes (weekly)									
Lectures	-	Auditory exercises	-	Other forms of classes	-	RS	-	Other classes	4

Teaching methods

With the mentor's aid, students write their master's thesis and prepare for the oral defence. Students consult with the mentor and other members of the committee for master's thesis evaluation and defence.

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Written thesis	30	Thesis defence	70

LIST OF ELECTIVE COURSES

1. Monitoring of Air Pollution and Air Quality
2. Ecotoxicology
3. Water Quality Monitoring
4. Ecological Psychology
5. Circular Economy
6. Municipal Waste Management
7. Ecological Andragogy
8. Business Ethics in Environmental Protection
9. Information and Public Relations
10. Project Management
11. Local Sustainable Development
12. Climate Change Adaptation
13. Environmental Protection Economics

Course name: Monitoring of Air Pollution and Air Quality		
Course status: Elective	Course code:	19.MZZS04
ECTS credits: 6		
Requirements: -		
Course aim		
Acquisition of knowledge about the monitoring of air pollution from energy generating and technological emission sources, the monitoring of ambient air quality, processing of monitoring results, and monitoring reports.		
Learning outcome		
Students' ability to:		
<ul style="list-style-type: none"> • monitor and measure air pollutant emissions from energy generating and technological sources and create reports on measurement results; • monitor ambient air in urban and rural environments and measure pollutant concentrations; • process measurement results and report on ambient air quality. 		
Course outline		
Theoretical lessons		
Definition of monitoring: General classification of monitoring. Authorized monitoring bodies. Air pollution sources: Pollutant Release and Transfer Register (PRTR). Local Pollutant Source Register (LPSR). General data on pollution sources. LPSR reporting. Air pollutant emissions: Types of emissions: continuous emission, fugitive and diffuse emissions, extraordinary emissions. Types and scope of control. Maximum mass flow rate. Maximum emission concentration and mass fraction indicator. Conditions and rules of emission measurement. Ambient air quality monitoring: General principles of monitoring. Monitoring system structure. Environmental information system and monitoring. Quality assurance and control in monitoring. Monitoring program. Systems for automatic ambient air monitoring. Information and software support. Data transfer networks. Monitoring network topology. Detection elements of air monitoring network. Processing of monitoring data. National network for air quality monitoring in Serbia: General principles of air quality monitoring. Scope and content of monitored pollutants. Measurement methods and equipment in the monitoring network. Air monitoring zones and agglomerations in Serbia.		
Practical lessons		
Determination of pollutant release into the air – general questions. Emission measurements. Emission calculations. Method selection. Determination of pollutant release into the air – specific aspects by sector. Work with emission measuring devices. Program for urban air quality monitoring. Conditions and rules of ambient air monitoring. Work with <i>Airpointer</i> monitoring station. Presentation and defence of term papers on topics included in the course syllabus.		
Literature		
<ul style="list-style-type: none"> • Živković Nenad, Đorđević Amelija (2017). <i>Monitoring emisije aeroxagađenja i kvaliteta ambijentalnog vazduha</i>. Niš: Univerzitet u Nišu, Fakultet zaštite na radu u Nišu. • Deflorenne Emmanuel, Gueguen Céline, Jeannot Coralie, Nicco Laetitia, Serveau Laetitia, Vincent Julien (2017). <i>Priručnik za izračunavanje emisija u zrak za nacionalne E-PRTR obveznike</i>. Hrvatska agencija za okoliš i prirodu i organizacija CITEPA. • Ilić Predrag (2015). <i>Zagađenje i kontrola kvaliteta vazduha u funkciji zaštite životne sredine</i>. Banja Luka: Nezavisni Univerzitet Banja Luka. 		

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, discussions, defence of term papers during exercises, and office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Ecotoxicology**Course status:** Elective**Course code:**

19.MZZS06

ECTS credits: 6**Requirements:** -**Course aim**

Acquisition of knowledge about the mechanisms of toxic effects of pollutants and the toxic effects on individual organisms, populations, and ecosystems. Learning about the methods for quantifying pollutant toxicity and predicting environmental effects.

Learning outcome

Students' ability to:

- understand the basic principles of ecotoxicology;
- understand the conditions under which the effects of pollutants impact individual organisms, populations, and ecosystems;
- understand the consequences caused by pollutants;
- analyze the results of ecotoxicological examinations and analyze exposure scenarios;
- perform risk assessment, calculate parameters, and interpret results.

Course outline**Theoretical lessons**

Introduction to ecotoxicology: Definition, subject matter, and tasks of ecotoxicology, basic terms and principles of ecotoxicology. **Pollutants and their fate in the ecosystem:** Primary pollutant classes (inorganic substances – metals, nonmetals, gaseous substances, radionuclides, nanoparticles, etc.; organic substances - hydrocarbons, polychlorinated biphenyls, organochloride, organophosphorus, carbamate, and pyrethroid pesticides, pharmaceuticals, etc.). Ways in which pollutants enter the environment. Factors influencing the transport and distribution of pollutants (sorption, degradation, and biodegradation of organic substances, bioaccumulation and biomagnification of persistent substances, etc.). **Impact of pollutants on individual organisms:** Exposure pathways. Toxicokinetics and toxicodynamics; Carcinogenesis, genotoxicity, mutagenesis. **Impact of pollutants on populations, communities, and ecosystems:** Population dynamics. Genetically acquired resistance to pollutants. Changes in communities and ecosystems. **Ecotoxicological risk assessment:** Biomonitoring. Biomarkers and their role in risk assessment. **Chemical accidents:** Options for prevention, action, and mitigation of harmful effects of accidents induced by toxic substances. **Regulatory aspects of ecotoxicology.**

Practical lessons

Calculations: NOAEL (no observed adverse effect level), LOAEL (lowest observed adverse effect level), TDI (tolerable daily intake), ADI (acceptable daily intake), GV (guideline value); qualitative and quantitative characterization of selected pollutants present in water, air, soil, and plants. Interpretation of results: database search for toxicity data for a given set of pollutants. Interpretation of the results obtained from the database search. Writing and defence of term papers.

Literature

- Golubović Tatjana (2015). *Ekotoksikologija - interni materijal za pripremu ispita*. Niš: Univerzitet u Nišu, Fakultet zaštite na radu.
- Vitorović Slavoljub, Milošević Milenko (2002). *Osnovi toksikologije sa elementima ekotoksikologije*. Beograd: Univerzitet u Beogradu, VIZARTIS Beograd.
- Jablanović Miodrag, Jakšić Predrag, Kosanović Katica (2003). *Uvod u ekotoksikologiju*. Kosovska Mitrovica: Univerzitet u Prištini, Kosovska Mitrovica.

- Kastori Rudolf (1997). *Teški metali u životnoj sredini*. Novi Sad: Naučni institut za ratarstvo i povrtarstvo.
- Hoffman David, Rattner Barnett, Burton Allen, Cairns John (2002). *Handbook of ecotoxicology*. Boca Raton, Florida: CRC Press.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, auditory/calculation exercises, office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Written exam (practical part of the exam)	20
Activity during exercises	5	Oral exam (theoretical part of the exam)	20
Colloquium 1	20		
Colloquium 2	20		
Term paper	10		

Course name: Water Quality Monitoring									
Course status: Elective					Course code:		19.MZZS07		
ECTS credits: 6									
Requirements: -									
Course aim									
Acquisition of knowledge about the organization of water quality monitoring systems and the use of water quality testing methods aimed towards preserving the functions of aquatic ecosystems (required ecological status) and ensuring the required quality of the water intended for water supply and sanitation systems in residential areas.									
Learning outcome									
Students' ability to work independently in:									
<ul style="list-style-type: none">operational control and management of water quality monitoring systems;water supply and sanitation systems of residential areas.									
Course outline									
Theoretical lessons									
Water quality monitoring: Spatial and temporal organization of water quality monitoring systems. Definition, roles, and goals of monitoring. Types of monitoring. Structuring and design of water quality monitoring systems in a watershed area. Analytical-conceptual frameworks for the processing of obtained data. Advanced models of obtained data visualization. Evaluation of water body status: ecological status/potential, chemical and quantitative status of surface water bodies. Water supply: Drinking water properties and quality. Elements of the water supply system for the population and industry, water supply springs, and protective measures. Drinking water distribution: Transformation of abstracted water quality to the required hygienic safety level. Distribution network and other water supply system facilities. Operational control and management of the water supply system. Sanitation: Systems for reception and disposal of waste and other water. Operational control and management of the sewerage system. Protective measures for wastewater recipients: Monitoring of the impact of wastewaters on recipient quality. Definition of wastewater recipient protective measures in terms of emissions and emission standards.									
Practical lessons									
Calculation exercises and term paper – project assignment pertaining to water quality monitoring systems at specified watershed areas and design of water supply and sanitation systems for specific residential areas. Fundamentals of calculation, measurement, and control of the operation of water supply and sanitation systems.									
Literature									
<ul style="list-style-type: none">Milojević Miloje (2003). <i>Snabdevanje naselja vodom i kanalisanje naselja</i>. Beograd: Univerzitet u Beogradu, Građevinski fakultet.Stojanović Marina, Vasović Dejan (2019). <i>Monitoring kvaliteta voda (interni materijal za pripremu ispita)</i>. Niš: Univerzitet u Nišu, Fakultet zaštite na radu u Nišu.Veljković Nebojša i dr. (2018). <i>Status površinskih voda Srbije - Razvoj monitoringa u okviru planova upravljanja rečnim slivovima</i>. Beograd: Agencija za zaštitu životne sredine Republike Srbije.Loucks Daniel, Eelko van Beek (2005). <i>Water Resources Systems Planning and Management: An Introduction to Methods, Models & Applications</i>. Paris: UNESCO Publishing.									
Number of active classes (weekly)									
Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-

Teaching methods

Lectures, auditory/calculation exercises, and office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Written exam (practical part of the exam)	20
Activity during exercises	5	Oral exam (theoretical part of the exam)	20
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Ecological Psychology**Course status:** Elective**Course code:**

19.MMZS05

ECTS credits: 6**Requirements: -****Course aim**

Acquisition of knowledge about ecological psychology, its importance and role, especially with regard to the development of ecological awareness, sustainable behaviour, and improvement of the natural and work environment. Learning about the human-nature relationship, evaluation of environmental change quality, and participation in environmental planning.

Learning outcome

Students' ability to:

- understand the relationship of people with the environment and psychology in order to find ways to improve and optimize people's behaviour;
- provide motivation for pro-ecological behaviour of individuals towards the environment;
- apply the theoretical principles of ecological psychology in the work surrounding.

Course outline**Theoretical lessons**

Subject matter of ecological psychology: Theoretical models of the human-nature relationship. Role of people in the creation of ecological and social issues. Presentation of psychological dimensions of sustainability. Sustainable behaviour. Sustainability lifestyles (sustainable ways of life). **Social dimensions of space:** Personal space, compactness, privacy, territoriality. Environmental stressors (air pollution, noise, crowdedness). Perception of the environment. Perception of hazards and behaviour in accidents and disasters. **Environment and quality of life:** Motivation for pro-ecological behaviour. Emotions and pro-ecological behaviour. Urban environment. Environment and irresponsible behaviour. **Environmental planning:** Environmental design. Environmental changes and their impact on psychological changes. **Environmental management:** Environmental management from the perspective of ecological psychology. Psychological dimensions of environmental disasters. Application of ecological psychology to the work environment.

Practical lessons

Auditory exercises follow the theoretical lessons. Presentation and defence of term papers. Analysis of examples from practice pertaining to the environment and environmental impact of people as well as the consequent effects of environmental stressors on people. Examples of proactive influence on the environment through the analysis of environmental design.

Literature

- Živković Snežana (2016). *Ekološka psihologija – interni materijal za pripremu ispita*. Niš: Univerzitet u Nišu, Fakultet zaštite na radu u Nišu.
- Darline Nemeth, Robert Hamilton, Judy Kuriansky (2015). *Ecopsychology: Advances from the Intersection of Psychology and Environmental Protection*, Volume 1. Science and theory. California, Santa Barbara: ABC/CLIO/Praeger.
- Bechtel, Azra Churchman (2002). *Handbook of Environmental Psychology*. New York: Wiley.
- Paul Bell, Thomas Greene, Jeffrey Fisher, Andrew Baum (2001). *Environmental Psychology*. Fort Worth: Harcourt College Publishers.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, term papers as part of exercises, discussions, office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Circular Economy		
Course status: Elective	Course code:	19.MMZS06
ECTS credits: 6		
Requirements: -		
Course aim Understanding the advantages and challenges of transitioning to a new, resource-efficient, cyclical economic model. Acquiring knowledge on the basic principles, concepts, and strategies for closing material cycles and achieving efficient use of resources and energy.		
Learning outcome Students should be able to: <ul style="list-style-type: none"> • understand and apply the basic principles of different approaches for improving the efficiency of resource use and establishing cyclical economic activities; • recognize and present resource use projections and related challenges for achieving sustainability goals; • critically consider the implications of existing consumption models for environmental quality; • recognise and estimate the opportunities and obstacles for implementing organizational and technical measures available in order to switch to a more efficient, cyclical economic model. 		
Course outline Theoretical lessons Circular economy: Definition, development and significance of the CE concept. Resources and biophysical environment: Challenges and trends. Introduction to industrial ecology: Large-scale material and energy flows. Circular business models and supply chains: Cascading and reverse flows of by-products. Efficiency of resource use. Reverse logistics. Sustainable production and consumption: Circular strategies for sustainable production. Life cycle thinking (LCT). Industrial eco-design and product development. Dematerialization of economy. Principles of efficient resource use: Biomimetics/Biomimicry, biological and technical nutrients. Eco-industrial symbiosis. Methods and tools for multi-criteria decision-making regarding sustainable and resource-efficient solutions. Industrial waste flow and treatment. Recycling as an instrument of circular economy: Perspectives and problems of urban mining. Exploitation of urban deposits. Current scope of circular economy: Experiences and examples of good practice.		
Practical lessons Elaboration of various topics concerning cyclical resource use and concepts, methods, and trends of circular economy through examples of good practice; presentation of various software tools for the purpose, and evaluation of term papers. Calculation exercises (multi-criteria decision making, analytic hierarchy process). Critical thinking rehearsals, discussions, debates, and analyses of relevant videos.		
Literature <ul style="list-style-type: none"> • <i>Towards the Circular Economy</i> (2013). Cowes: Ellen MacArthur Foundation. (https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf). • <i>Cirkularna ekonomija kao šansa za razvoj Srbije</i> (2016). Beograd: OEBS. • Glišović Srđan (2017). Sustainable Design and the Environment (in Serbian; title of the original: <i>Održivo projektovanje i životna sredina</i>). Univerzitet u Nišu, Fakultet zaštite na radu. 		

- *Osnove cirkularne ekonomije* (2016). Beograd: Privredna komora Srbije / GIZ GmbH.
- Anne-Marie Tillman, Siri Willskytt, Daniel Böckin, Hampus André, Maria Ljunggren Söderman (2020). *What circular economy measures fit what kind of product? Draft chapter in Handbook on the Circular Economy*, Miguel Brandão, David Lazaveric and Göran Finnveden (eds). Edward Elgar Publishing Ltd.
(https://research.chalmers.se/publication/511859/file/511859_Fulltext.pdf).

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, discussions, term paper defence during exercises, and office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Written exam (practical part of the exam)	20
Activity during exercises	5	Oral exam (theoretical part of the exam)	20
Colloquium	30		
Term paper	20		

Course name: Municipal Waste Management**Course status:** Elective**Course code:**

19.MMZS08

ECTS credits: 5**Requirements: -****Course aim**

Acquisition of theoretical knowledge about integrated sustainable municipal waste management and treatment methods necessary for the comparative analysis and optimization of the municipal waste management system.

Learning outcome

Students' ability to:

- use a systems approach to waste management locally and regionally;
- select municipal waste treatment methods;
- optimize the municipal waste management system in order to improve environmental quality.

Course outline**Theoretical lessons**

Municipal waste generation. Waste types and classification. Composition and quantity of municipal waste. Integral municipal waste management. Principles, elements, and aspects of integral sustainable municipal waste management at the local and regional level. Municipal waste management options: recycling (glass, plastics, paper, metal, etc.), composting, incineration, mechanical biological treatment (MBT) of municipal waste, municipal waste disposal. **Environmental impact of specific waste treatment methods. Sanitary landfills:** Selection of sanitary landfill site. Regional sanitary landfills. Sanitary landfill capacity. Technical and technological conditions for design, construction, and operation of sanitary landfills. **Functional zones of sanitary landfills:** reception and transfer area, operational area, waste disposal area. Landfill remediation and recultivation. **Landfill fires:** surface landfill fires, subsurface landfill fires. **Environmental impact of landfills:** water, air, soil.

Practical lessons

Analysis of local and regional municipal waste management plans. Defence of term papers.

Literature

- Radosavljević Jasmina, Đorđević Amelija (2012). *Deponije i deponovanje komunalnog otpada*. Niš: Univerzitet u Nišu, Fakultet zaštite na radu.
- Radosavljević Jasmina (2009). *Urbana ekologija*. Niš: Univerzitet u Nišu, Fakultet zaštite na radu.
- Tchobanoglous George, Theisen Hilary, Vigil Samuel (1993). *Integrated Solid Waste Management*: New York: McGraw-Hill.
- William C. Blackman, Jr. (2016). *Basic hazardous waste management*: CRC Press.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, auditory exercises, office hours, and term papers.

Grading (maximum number of points: 100)			
Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Written exam (practical part of the exam)	20
Activity during exercises	5	Oral exam (theoretical part of the exam)	20
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Ecological Andragogy**Course status:** Elective**Course code:**

19.MMZS09

ECTS credits: 5**Requirements: -****Course aim**

Acquisition of knowledge about the concept of ecological andragogy and different andragogical approaches to environmental education, optimization models for environmental learning and management training in a work organization and the local community. Development of leadership abilities and skills for innovative approaches and proactive strategies in environmental protection. Learning about the methodological foundations of eco-andragogical studies.

Learning outcome

- Possession of a developed knowledge system in the field of environmental education;
- Understanding of the role and responsibilities of a manager in the consideration of possibilities for environmental education in the work environment and the local community;
- Developed competences for eco-andragogical action;
- Leadership abilities and training management skills in the field;
- Methodological competences for eco-andragogical research, creation of development strategies, and use of innovative approaches.

Course outline**Theoretical lessons**

Definition and subject matter of ecological andragogy: definition, subject matter, development, place, and position in the system of andragogical sciences; **Philosophical approaches and theories of environmental adult education:** liberal, progressive, behavioural, humanistic, radical; **Environmental education and sustainable development education:** terminological, conceptual, and socio-normative context; **Formal, nonformal, and informal environmental education:** education system, types, characteristics, lifelong learning; **Environmental education factors:** family, school, society, work organization, social organizations, associations, movements; **Ecological awareness of adults,** participation in environmental protection and the potential of the work and local surrounding for learning for ecological action (civil activism, green business, etc.); **Global challenges and areas of environmental adult education:** ecological crisis, climate change, natural disasters, emergencies, etc. (learning for climate change adaptation, perception of community vulnerability and options for strengthening resilience capacities, reducing risk from disasters, and managing emergencies; **Management training in environmental protection:** andragogical cycle, training needs analysis, training process and stages, management; **Managers as leaders in environmental protection:** definition of leadership, theoretical approaches and models of leadership; leadership functions and styles; leadership and occupational and environmental changes; management vs leadership; **introduction to the methodology of research of eco-andragogical problems:** definition and subject matter; types of research; research project; research stages, methods, techniques, and instruments; analysis, interpretation, and application of results.

Practical lessons

Auditory exercises that follow the theoretical lessons, presentation and defence of term papers on current issues of environmental adult education, and considerations of its implications for proactive managerial actions and leadership in environmental protection.

Literature

- Nikolić Vesna (2003). *Obrazovanje i zaštita životne sredine*. Beograd: Zadužbina Andrejević.
- Nikolić Vesna, Živković Nenad (2010). *Bezbednost radne i životne sredine, vanredne situacije i obrazovanje*. Niš: Fakultet zaštite na radu u Nišu, Univerzitet u Nišu (određ. poglavlja).
- Clover E. Darlene, et al. (2013). *The Nature of Transformation – Environmental Adult Education*. Netherlands: Sense Publishers.
- Haugen Caitlin Secrest (2010). *Adult Learners and the Environment in the Last Century: An Historical Analysis of Environmental Adult Education Literature*, El. Green.
- Walter Pierre (2009). *Philosophies of Adult Environmental Education*, *Adult Education Quarterly*.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes		RS	-	Other classes	-
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Teaching methods

Lectures, conversation and discussion, case studies, office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Business Ethics in Environmental Protection		
Course status: Elective	Course code:	19.MMZS10
ECTS credits: 5		
Requirements: -		
Course aim Acquisition of knowledge about the origin and development of business ethics and the basic theoretical approaches to defining it. Learning about the importance of business ethics in environmental protection in order to grasp the basic postulates of applied ethics and business ethics in environmental protection.		
Learning outcome Students' ability to: <ul style="list-style-type: none"> adequately ethically reason about environmental issues; apply the acquired knowledge about ethics in their professional career; properly utilize business ethics in environmental management. 		
Course outline Theoretical lessons Definition of business ethics: Definition of morals, ethics, and ethical theory. Ethical values, principles, and analysis methods. Ethical dilemmas and critical cases. Business ethics and law. Parties involved in business ethics. Basic components of organizational ethics. Importance of business ethics. Development of business ethics: Historical development of business ethics. Business ethics as an academic field. Business ethics as a movement. Previous influence of science and technology on companies and their ethics. Business ethics and socially responsible business. Sustainable development as a key goal of business ethics. Fostering of business ethics. Business ethics and environmental protection issues: Business ethics and the environment. Business ethics and sustainable development. Business ethics in environmental protection and ecological management. Importance of business ethics in ecological crisis prevention. Business ethics and economic development as prerequisites for ecological crisis resolution. Business ethics and the basic instruments and measures of economic and eco-policy. Business ethics and international cooperation in environmental protection. Business ethics and quality standards in environmental protection. Business ethics and rural development policy in environmental protection. Organizational culture as a prerequisite for the development of business ethics: Definition and importance of organizational culture. Content and classifications of organizational culture. Personal values and priorities. Organizational culture and leadership style. Process of emergence and change of organizational culture. Systems approach to organizational culture. Organizational culture as an efficiency factor. Learning organization and organizational cultures. Organizational culture and consulting. International business ethics: Definition of international business ethics. Business decisions of companies with a developmental character. Primary factors of business internationalization. Strategic approach to business internationalization. Ethical challenges in international business. Globalization as the key context for business ethics. Relevance of globalization for business ethics. European versus alternative approaches to business ethics. Globalization and assimilation between Europe and other regions. Practical lessons Auditory exercises: coverage of current topics about the challenges of business ethics in environmental management through term paper defence and text analysis.		

Literature

- Cvijanović Drago, Mihajlović Branko, Pejanović Radovan (2012). *Poslovna etika i komuniciranje*. Beograd: Institut za ekonomiku poljoprivrede.
- Krkač Kristijan (2007). *Uvod u poslovnu etiku i korporativnu društvenu odgovornost*. Zagreb: Mate.
- Džozef R. de Žarden (2006). *Ekološka etika: Uvod u ekološku filozofiju*. Beograd: Službeni glasnik.
- Ričard de Džordž. (2003). *Poslovna etika*. Beograd: Filip Višnjić.
- Patrick Curry (2006). *Ecological ethics: an introduction*. Cambridge: Polity Press.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes		RS	-	Other classes	-
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Teaching methods

Lectures, presentations, discussions, term papers, office hours, individual and group work

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Information and Public Relations	
Course status: Elective	Course code: 19.MMZS11
ECTS credits: 5	
Requirements: -	
Course aim Acquisition of knowledge about methods and ways of sharing information with different target groups in order to gain communication skills necessary for the manager profession. Provision of a comprehensive view of basic concepts and principles of public relations and explanation of the role and importance of public relations.	
Learning outcome Students' ability to: <ul style="list-style-type: none"> • better understand communication practice and acquire communication skills; • understand the role and function of public relations; • establish public relations in the fields of environmental protection and management; • communicate for the purpose of creating, maintaining, and improving good relations with the public. 	
Course outline Theoretical lessons Information: definition and structure of information, basic characteristics of information, functions of information. Message: definition, structure, and types of messages, redundancy, factographic and value messages. Information sharing with the public: definition and functions of information sharing, socially engaged and tendentious information sharing. Communication: definition of communication, types of communication practice: interpersonal and mass communication. Models of information and communication systems: origin of information and communication systems, Lasswell's, Shannon and Weaver's, Vivian's, and Vreg's information and communication systems. Functions of information and communication systems: basic functions and derived functions of information and communication systems. Types of communication: written, verbal, paraverbal, and nonverbal communication. Receiving subsystems of information and communication systems: mass, audience, public, target public. Public relations: definition and parameters, strategy of public relations, communication with the public, communication with professional circles and authorized bodies. Methods of public relations: press conferences, lobbying and sponsorships as a method of communication with the public. Public relations and the environment: importance of communication, communication strategy, creation of effective communication, plan of communication: incoming information, outgoing information, messengers, personnel, training and practice, monitoring, updates, and adjustment. Territorial and local systems of notifying and informing the public during emergencies. Communication with the media regarding the environment: traditional and new media. Local media and information about the environment. Aarhus convention and the right of citizens to timely information about the environment: right to information about the environment, collection and delivery of information about the environment, information and communication systems and environmental protection.	
Practical lessons Auditory exercises: discussions based on content analysis about information sharing by traditional and new media concerning the environment; discussions based on analysis of information sharing and public relations in authorized institutions, primarily the Environmental Protection Agency of Serbia with the Serbian Ministry of Environmental	

Protection, and the Emergency Management Sector with the Ministry of Internal Affairs; analysis of good practice examples of information sharing and of public relations; analysis of implementation of the Aarhus convention in Serbia; defence of term papers.

Literature

- Stojković Branimir, Radojković Miroljub (2009). *Informaciono komunikacioni sistemi*. Beograd: CLIO
- Mandić Tijana (2003). *Komunikologija-psihologija komunikacije*. Beograd: CLIO
- Blek Sem (2003). *Odnosi s javnošću*. Beograd: CLIO
- Bartel Van de Walle, Turoff Murray & Hiltz Starr Roxanne (2009). *Information Systems for Emergency Management*. New York & London: M.E. Sharpe
- Jelenković Predrag, Jelenković Ljiljana (2012). *Odnosi s javnošću u oblasti zaštite životne sredine*. Beograd: Čigoja štampa

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, presentations, discussion, term papers, office hours, individual and group work

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

Course name: Project Management**Course status:** Elective**Course code:**

19.MZNR16

ECTS credits: 5**Requirements: -****Course aim**

Acquiring knowledge about the concept, methods, techniques, and application of project management principles in preventive engineering and other related (organizational and technical) disciplines.

Learning outcome

Students should be able to:

- plan and monitor projects;
- organize project activities;
- apply modern software tools for project management;
- apply the project management concept in planning and implementation of various occupational and environmental safety related projects.

Course outline**Theoretical lessons**

Introduction to project management: Development and importance, of the concept. Areas of application. Certification bodies. **Basic characteristics of a project:** Definition, framework/scope, project goals, "triple constraint". Planning, identification and selection of resources. Critical factors. Project integration. Process groups and project lifecycle.

Project planning and monitoring: SWOT analysis, SMART goals, Logical framework matrix (*LFM*). **Project management methods and techniques:** Gantt charts, WBS-PBS-OBS diagrams, network planning. **Network diagrams:** rules for drawing and numbering network diagrams, time analysis, critical path method (*CPM*). **Organization of project management:** Project quality management. Managing scope, time, and costs, project progress evaluation. Project risk management. Project implementation, monitoring and control. **Software tools for project management:** overview of relevant software packages, introduction to *MS Project*.

Practical lessons

Audio-visual exercises that follow the theoretical lessons, calculation exercises (applying CPM method: creation of a network diagram structure, event numbering, progressive and regressive time calculation, identification of critical path within a network diagram), application of project management software tools (*MS Project*), presentation and defence of a project assignment on a topic from the course syllabus.

Literature

- Jovanović Predrag (2005). *Upravljanje projektom*. Univerzitet u Beogradu, Beograd: Fakultet organizacionih nauka.
- Stanimirović Predrag (2009). *Mrežno planiranje i MS PROJECT*. Univerzitet u Nišu, Niš: Prirodno matematički fakultet.
- Glisovic Srdjan (2018). *Environmental Life Cycle Management as a Framework for Successful Project Development, Management and Safety*. The European Society of Safety Engineers.
- Petronijević Predrag (2006). *Brzi vodič kroz MS PROJECT*. Univerzitet u Beogradu, Građevinsko-arhitektonski fakultet.
- Project Management Institute (2013). *A Guide to the Project Management Body of Knowledge, Fifth Edition (PMBOK Guide)*. Newtown Square, PE: Project Management Institute.

Number of active classes (weekly)

Lectures	2	Auditory exercises	1	Other forms of classes	0.53	RS	-	Other classes	-
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Teaching methods

Lectures, exercises, office hours. Term paper defence.

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Written exam (practical part of the exam)	25
Activity during exercises	5	Oral exam (theoretical part of the exam)	15
Colloquium 1	15		
Colloquium 2	20		
Term paper	15		

Course name: Local Sustainable Development		
Course status: Elective	Course code:	19.MMZS12
ECTS credits: 5		
Requirements: -		
Course aim Enabling students to analyze existing strategic and planning documents at the central and local level, to create and implement a strategy of local sustainable development and related strategic and planning development documents at the local level, and to facilitate strategic planning at the local level.		
Learning outcome Students' ability to: <ul style="list-style-type: none"> • facilitate the process of participative planning in cities and municipalities; • participate in the devising of local strategies of sustainable development, either individually or in a team; • participate in the creation of development and planning documentation at the local level; • manage development projects locally; • monitor local implementation of strategic development documents. 		
Course outline Theoretical lessons Urban systems: Location theory and central place theory. Evolution of urban systems. Primate cities and centrality of cities. Urbanization in socialist and post-socialist societies. European urban system. Term and definition of local sustainable development: Sustainable urban development. Spatial planning and urban metabolism. Sustainable rural development. Polycentric development and relationship between urban and rural development. EU policies affecting spatial planning (competition policy, trans-European network policy, environmental policy, research and technological development policy). Management of local communities: Decentralization. Decentralization models. Local community management in Serbia. Constitutional and legal foundation. Functions and authority of local self-government. Structure and territorial foundation of local self-government. Fiscal system and financing of local self-government. Policies and programmes of local sustainable development. Planning of local sustainable development: Partnership. Stakeholders. Strategic and action planning of local sustainability. Tools for strategic planning of local sustainable development.		
Practical lessons Debate – showing of the film <i>Urbanized</i> and discussion about urbanization. Case studies: Hammarby Sjöstad, Niš, Ada, Venice, Budapest, Freiburg. Seminar: Urban mobility (case studies: Barcelona, London, Rome, Stockholm, Berlin). Analysis of local sustainable development strategies in Serbia.		
Literature <ul style="list-style-type: none"> • Milutinović Slobodan (2004). <i>Urbanizacija i održivi razvoj</i>. Niš: Univerzitet u Nišu, Fakultet zaštite na radu. • Milutinović Slobodan (2004). <i>Lokalna Agenda 21: Uvod u planiranje održivog razvoja</i>. Beograd: Stalna konferencija gradova i opština. • Zlokapa Zdravko, Damjanović Dušan (ur.). (2008). <i>Modeli organizacije lokalne samouprave</i>. Beograd: PALGO Centar. • Marija Geiger Zeman, Zdenek Zeman (2010). <i>Uvod u sociologiju (održivih) zajednica</i>. Zagreb: Institut društvenih znanosti Ivo Pilar. 		

- Milutinović Slobodan (ur.) (2006). *Priručnik za razvoj vizije opštine u procesima strateškog planiranja održivog razvoja u Srbiji*. Beograd: Stalna konferencija gradova i opština.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes	-	RS	-	Other classes	-
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Teaching methods

Lectures, case studies, debates, seminars

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Seminar participation 1	10		
Seminar participation 2	10		
Colloquium	30		

Course name: Climate Change Adaptation									
Course status: Elective					Course code:		19.MMZS13		
ECTS credits: 5									
Requirements: -									
Course aim									
Enabling students to understand the current issues related to climate change, which is caused by anthropogenic factors, and the role of adaptation measures as a response to these issues.									
Learning outcome									
Students' ability to:									
<ul style="list-style-type: none">independently research environmental and evolutionary implications of climate change for natural systems, as well as human and cultural implications for social and socio-economic systems;apply different adaptation frameworks and specific adaptation measures to practical policies in different sectors, so as to enable more efficient management of climate change risk, reduce the sensitivity of systems, and increase their resilience;work individually or in a team to develop sensitivity analyses and action plans for climate change adaptation at the national and local level.									
Course outline									
Theoretical lessons									
Basics of climate change and climate change adaptation. Hydrological and carbon cycle, greenhouse gases, climate sensitivity. Climate projections and scenarios. Adaptation and mitigation. Vulnerability, resilience, and adaptability in environmental and social systems. Adaptation and fair development. Impact of climate change in different sectors and adaptation measures: water resources and water security; public health; agriculture; energy industry; biodiversity. Climate impacts and vulnerability in urban systems. Urban vulnerability assessment and adaptation mechanisms. Planning of climate change adaptation in urban environments. Impact of climate change on water and aeolian erosion. Vulnerability assessment and adaptation measures. Measurement of global and national adaptation measure implementation. National framework for the fight against climate change and disaster risk reduction. Financing and supervision of climate change adaptation.									
Practical lessons									
Case studies: EU strategy of climate change adaptation. Strategy of climate change adaptation in the Danube basin. Action plan of climate change adaptation with a vulnerability assessment for the city of Belgrade.									
Literature									
<ul style="list-style-type: none">Milutinović Slobodan (2018). <i>Priručnik za planiranje prilagođavanja na izmenjene klimatske uticaje u lokalnim zajednicama u Srbiji</i>. Beograd: Stalna konferencija gradova i opština.UNDP (2015). Rezime poglavlja Promene klime, pogođenost i adaptacija Drugog izveštaja Republike Srbije prema Okvirnoj konvenciji UN o promeni klime. Beograd: UNDP.Akcioni plan adaptacije na klimatske promene sa procenom ranjivosti za Beograd. (2015).									
Number of active classes (weekly)									
Lectures	2	Auditory exercises	2	Other forms of classes		RS	-	Other classes	-

Teaching methods

Lectures, auditory exercises, seminars, office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Seminar participation 1	10		
Seminar participation 2	10		
Colloquium 1	30		

Course name: Environmental Protection Economics**Course status:** Elective**Course code:**

19.MMZS14

ECTS credits: 5**Requirements: -****Course aim**

Acquisition of knowledge about the negative economic effects of using renewable and non-renewable natural resources, measures for their conservation and rational use, economic measures for pollution prevention and control, and the effects of investing in prevention for the purpose of useful and rational management of available natural resources in accordance with economically sustainable development.

Learning outcome

Students' ability to:

- recognize and understand the importance of proper consideration of the society-environment interrelation within the context of economic and overall social development;
- apply their acquired knowledge from environmental protection economics to create economic valuations of the environment and its components and to ensure economically sustainable development;
- recognize and analyze negative economic and ecological effects of environmental pollution;
- propose the use of adequate economic measures and instruments for environmental protection.

Course outline**Theoretical lessons**

Economics and the environment: natural resources and economic development; environmental microeconomics and macroeconomics; theoretical analytical methods of studying the economics of natural resources; economics of natural resources; public resources and common goods; factors influencing environmental pollution; economic environmental indicators; economic aspects of environmental impact assessment.

Economics of renewable and non-renewable natural resources: optimal use of renewable and non-renewable natural resources; measures for conservation and rational use of natural resources. **Economics pollution:** definition and types of pollution; pollution levels; measures of pollution prevention and control. **Economic effects of environmental pollution:** definition; classification; effects by time and place of origin; effects of pollution of renewable and non-renewable natural resources; methods of calculating the economic effects of environmental pollution. **Economic measures and instruments of environmental protection:** classification of economic instruments; command and control instruments; economic incentive instruments; subsidies for the costs of pollution reduction; market permits for environmental pollution. **Insurance and environmental protection:** definition and elements of environmental protection insurance, environmental risks, economic importance of environmental protection insurance.

Practical lessons

Auditory exercises follow the theoretical lessons. Learning about economic indicators and index databases. Creation of the economic portion of specific environmental impact assessments and economic valuations of the environment and its components. Presentation and defence of term papers.

Literature

- Pešić Radmilo (2002). *Ekonomija prirodnih resursa i životne sredine*. Beograd: Poljoprivredni fakultet.
- Harris Jonathan (2009). *Ekonomija životne sredine i prirodnih resursa. Savremeni pristup*. Beograd: Data Status.
- Radukić Snežana, Petrović-Ranđelović Marija (2019). *Ekonomski pristup zaštite životne sredine*. Niš: Ekonomski fakultet Univerziteta u Nišu.
- Spasić Dragan, Avramović Danijela (2013). *Ekonomika zaštite životne sredine*. Niš: Fakultet zaštite na radu.
- Tisdell Clement (2009). *Resource and Environmental Economics: Modern Issues and Applications*. New Jersey, London, Singapore, Beijing, Shanghai, Hong Kong, Taipei, Chennai: World Scientific Publishing Co. Pte. Ltd.

Number of active classes (weekly)

Lectures	2	Auditory exercises	2	Other forms of classes		RS	-	Other classes	-
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Teaching methods

Lectures, conversations and discussions, demonstrations, case studies, office hours

Grading (maximum number of points: 100)

Pre-exam requirements	Points	Exam	Points
Activity during lectures	5	Oral exam (theoretical part of the exam)	40
Activity during exercises	5		
Colloquium 1	15		
Colloquium 2	15		
Term paper	20		

