



UNIVERSITY OF SARAJEVO – FACULTY OF SCIENCE
SUBJECT DESCRIPTION

Form SP2

Page 1 of 3

Subject code: FG-103-4	Subject name: Environmental Risks and Modeling		
Study cycle: II	Year: I	Semester: I	ECTS credits: 6
Status: mandatory		Contact hours: 60 Lectures: 30 Practical courses: 30	
Assigned professors and assistants:	Lecturers and assistants selected for the field to which the course belongs		
Prerequisites:	/		
Subject objectives:	Acquiring knowledge about the concept of risks and the types of natural and anthropogenic risks, as well as their specific characteristics. Additionally, gaining knowledge about plans for all types of risks and the structures of participants involved in implementing protection programs for various types of disasters. Mastering knowledge about system models and the application of information systems in forecasting and mitigating natural and anthropogenic accidents. Training students for modeling, creating simulations, and conducting risk assessment studies of natural and anthropogenic accidents in the environment.		
Teaching units:	1. The concept of risks and types of risks in the environment; 2. Specificities and classification of risks in the environment; 3. Natural disasters and natural risks in the environment; 4. Anthropogenic accidents in the environment, characteristics and causes; 5. Response plans for natural disasters and anthropogenically caused risks; 6. The structure of participants in the implementation of protection programs from natural and anthropogenic accidents; 7. System models in risk assessment of accidents; 8. Partial exam; 9. Application of information systems in forecasting and mitigating natural and anthropogenically caused accidents; 10. Simulation of risk assessment study for anthropogenic accidents;		



	11. Modeling the dispersion of noise and light pollution as a result of socio-economic activities; 12. Modeling the dispersion of pollutants in the air; 13. Modeling the dispersion of pollutants in water; 14. Modeling the dispersion of pollutants in soil; 15. Legal regulations for actions in case of natural and anthropogenically caused accidents; Institutional framework for risk management at the national and international level.										
Learning outcomes:	Knowledge: - Recognizes different types of risks and analyzes their specificities. - Analyzes natural and anthropogenic accidents in the environment. Skills: - Applies risk research methods in the environment. - Uses data from relevant institutions, agencies, and information systems for forecasting and mitigating natural and anthropogenically caused accidents. Competencies: - Independently assesses spatial specificities important for forecasting and managing environmental risks. - Independently models natural and anthropogenic accidents in the environment and, in accordance with legal and institutional frameworks, proposes measures for their remediation.										
Teaching methods:	Multimedia presentation and discussion (lectures); practical work, educational material analysis and discussion (practical courses).										
Knowledge testing methods with grading structure¹:	<table> <tr> <th></th><th><i>Points</i></th></tr> <tr> <td>Attendance</td><td>5</td></tr> <tr> <td>Participation on lectures</td><td>5</td></tr> <tr> <td>Partial exam</td><td>40</td></tr> <tr> <td>Seminar paper</td><td>10</td></tr> </table>		<i>Points</i>	Attendance	5	Participation on lectures	5	Partial exam	40	Seminar paper	10
	<i>Points</i>										
Attendance	5										
Participation on lectures	5										
Partial exam	40										
Seminar paper	10										

¹ The structure of points and point criteria for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton



	Final exam	40
	TOTAL	100
	Assessment:	
	<i>Grade</i>	<i>ECTS grade</i>
	10	(A) excellent
	9	(B) very good
	8	(C) good
	7	(D) satisfactory
	6	(E) sufficient
	5	(F, FX) insufficient
	Mandatory:	
	1. Dragičević, S., Filipović, D., 2016: Prirodni uslovi i nepogode u planiranju i zaštiti prostora, Univerzitet u Beogradu, Beograd. 2. Coch, N.K. (2004): Geohazards natural and human. Prentice Hall Engineering/Science/Mathematics, NY, USA. 3. Bryant, E. (2005): Natural hazards. Cambridge University Press, UK	
	Recommended:	
	1. . Državni akcioni program za Bosnu i Hercegovinu 2016: Tehnička pomoć za izradu planova upravljanja rizicima od poplava za Bosnu i Hercegovinu 2021. 2. Zakon o zaštiti zraka („Službene novine Federacije BiH“, broj 33/03 i 4/10) 3. Zakon o zaštiti prirode („Službene novine Federacije BiH“, broj 66/13) 4. Zakon o zaštiti od buke („Službene novine Federacije BiH“, broj 110/12) 5. Zakon o vodama („Službene novine Federacije Bosne i Hercegovine, broj: 70/06) 6. Pravilnik o utvrđivanju dozvoljenih količina štetnih i opasnih tvari u zemljištu i metode njihovog ispitivanja (Službene novine Federacije BiH br. 96/22) 7. Zakon o poljoprivrednom zemljištu ("Službene novine Federacije BiH", broj 52/09).	

Literature²:

² The Senate of the higher education institution as an institution or a council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which exams are prepared by a special act which is required to be published on its website before the beginning of the academic year in accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton.