Subject code: GIS-304-2	**Subject name: Remote Sensing**		
Study cycle: I	**Year: III**	**Semester: V**	**ECTS credits:** 6
Status: elective		**Contact hours:** 60 Lectures: 30 Practical courses: 30	
Assigned professors and assistants:	Lecturers and assistants selected for the field to which the course belongs		
Prerequisits:	/		
Subject objectives:	– To familiarize students with the principles and methods of remote sensing and its application in environmental protection and tourism potential research. – To introduce students to application software and provide practical work with optional software tools for component and complex research in environmental protection. – To educate students on the use of application software and practical work with optional software tools in the research and evaluation of tourism potentials.		
Teaching units:	1. Fundamentals of Remote Sensing – Concept, definition, subject, tasks, and objectives of study. 2. Historical-geographical continuity and current state of geospatial research. 3. Technological structure of remote sensing in the field of radiation sources. 4. Satellite systems for observing the Earth's surface and their classification. 5. Instruments for remote sensing and the impact of the atmosphere on diffraction and interference. 6. Classification of satellite and aerial images based on defined criteria. 7. Spectral resolution of satellite and aerial images. 8. Identification and interpretation of data for remote sensing. 9. Integration of data for remote sensing. 10. Application software for remote sensing. 11. Unsupervised and supervised classification of satellite images. 12. Spectral signature and advanced supervised classification of satellite images. 13. Software models for structural enhancement of satellite and aerial image content.		

	14. Geoecological spatial analyses using specific software modules according to types of natural resources. 15. Analysis and evaluation of tourism potentials using specific software modules according to types and their spatial coverage.
Learning outcomes:	**Knowledge:** – The student defines and describes the principles and methods of remote sensing and their possibilities for creation and expansion. – The student provides examples of the application of remote sensing in environmental protection and tourism potential research. **Skills:** – The student identifies and locates data on satellite systems for observing the Earth's surface and their classifications. – The student identifies instruments for remote sensing and the impact of the atmosphere on diffraction and interference. – The student classifies satellite and aerial images based on defined criteria. – The student analyzes the spectral resolution of satellite and aerial images. – The student analyzes and evaluates tourism potentials using specific software modules according to types and their spatial coverage. **Competencies:** – The student explores application software and performs practical work with optional software tools for component and complex research in environmental protection. – The student explores application software and performs practical work with optional software tools in the research and evaluation of tourism potentials.
Teaching methods:	Multimedia presentations and discussions (lectures) Independent research work by students and joint analysis (practical courses).
Knowledge testing methods with grading structure[1]:	*Maximum points* / *Minimum points* Attendance 5 / 3

[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

	Participation on lectures 5 3 Tests 40 22 Seminar paper 10 6 Final exam 40 21 TOTAL **Assessment:** *Grade* *ECTS grade* *Points scale* 10 (A) excellent 95 - 100 9 (B) very good 85 - 94 8 (C) good 75 - 84 7 (D) satisfactory 66 - 74 6 (E) sufficient 55 - 64 5 (F, FX) insufficient 55
Literature[2]:	**Mandatory:** 1. Đug, S., Dreškeović, N., Odžak, S. (2015): Daljinska istraživanja – principi i primjena u prirodnim naukama. Univerzitetski udžbenik. Izdavač: Univerzitet u Sarajevu, Prirodno-matematički fakultet Sarajevo. ISBN 978-9958-592-62-1, COBISS. BH - ID 22089478. 2. Horning, N., Robinson, J.A., Sterling, E.J., Turner, W., & Spector, S. (2010): Remote Sensing for Ecology and Conservation. A Handbook of Techniques. Oxford University Press Inc., New York. 3. Verbyla, D. (2000.): Satellite Remote Sensing of Natural Resources. Lewis publisher, New York. 4. Franklin, J., Miller, J.A. (2009): Mapping Species Distribution. Spatial Inference and Prediction. Cambridge University Press. **Recommended:** 1. Pham, H.M., Yamaguchi, Y. and Bui, T.Q., 2011. A case study on the relation between city planning and urban growth using remote sensing and spatial metrics. Landscape and Urban Planning, 100(3), pp.223-230.

[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.