Code:	**Subject:** Transport Planning and Infrastructure Development		
Degree: II	**Year: 2**	**Semester: 2**	**ECTS:** 6
Status: mandatory		**Total hours: 75 (3+2)** 45 lectures 30 auditory exercises	
Teaching staff:	**prof.dr. Suada Sulejmanović, Civ.Eng.**		
Prerequisite for enrollment:	NO		
Course objective (s):	**The goals are to enable the student to:** • Understands basic concepts related to spatial data infrastructure and their application. • Acquires the skills of organizing, collecting, and sorting data and using software tools uses the geospatial data needed to create a traffic study, • Can apply mathematical methods for forecasting traffic demand, • Knows traffic planning methods • Knows and applies models for the spatial and visual distribution of movement • Knows the techniques of attributing the traffic to the traffic network • Diagnoses and solves problems, and thinks innovatively and creatively, proposes solutions for identified traffic problems and evaluates the optimal solution • Knows the techniques of Mapping air quality • Independently and in a team make a traffic study using software tools. • Acquires communication, presentation, and teamwork skills.		
Thematic units:	1. Spatial data infrastructure, spatial data, interoperability of spatial data, data exchange, 2. INSPIRE Directive and implementing rules 3. Traffic research 4. Collection of traffic data and their analysis 5. Traffic planning methods 6. Extrapolation trend models for forecasting traffic, population, economic indicators, and land use 7. Traffic demand modeling, traffic generation; Multi regression analysis models for forecasting future trends 8. Models of the spatial distribution of motion, Gravity model 9. Visual traffic distribution models, Diversion curves, Logit model 10. Modeling of the zone system and traffic network 11. Traffic attribution models 12. Defining solutions. 13. PBL: Air polutation - methods to map air quality 14. Valorization and determination of the optimal solution		
Learning outcomes:	**The student will be able to:** • Define and explain basic concepts related to spatial data infrastructure • Collect and determine relevant geospatial data in traffic generation tasks • Use extrapolation trend methods to forecast socio-economic parameters • Use multi-regression analysis methods to generate the number of trips • Use diversion curve methods and the Logit model for the visual distribution of motion • Model and simulate traffic on a defined traffic network using software tools		

	• Assess the condition of transport networks and identify existing and future problems
	• Independent creation of alternative solutions to identified traffic problems
	• Evaluate and compare the proposed solutions, recommend the optimal solution.
	• Make a traffic study independently and in a team
	• PBL: application/conceptual data model;
	  ○ layers of data relevant for air quality mapping (air quality measuring stations, major pollutants, hourly measured tabular data, etc.)
	  ○ contextual data sets (georeferenced raster maps, orthophoto, administrative units,…);
	  ○ datasets containing the results of the air quality analysis including air quality values based on Kriging method, derived heat maps, total sum of polluting particles (e.g. PM2.5 tons per year) by municipality (or other administrative unit)etc.
	  ○ Web map of air quality data.
	• Integrate acquired knowledge, understanding, and problem-solving skills and apply in new cases
	• Clearly and unambiguously present your solution, knowledge, and arguments that support them.

Teaching methods:	Lectures, auditory exercises
Assessment methods with assessment structure:	**The first part:Continuous evaluation during the semester K_v** • Quizzes and assignments KiZ — max 10 points • I Partial exam PI_1 (written/oral) — max 20 points • II Partial exam PI_2 (written/oral), — max 20 points • Program assignments/Seminars P_z (oral defense), — max 10 points **K_v = max 60 points** The minimum required percentage of success in continuous evaluation is 55%, or 33 points (0.55x60 = 33) to meet the prerequisite for taking the final exam. **The second part: Final exam Z_i** (written and oral) **Z_i = max 40 points** The minimum required percentage of success in the final exam is 55%, or 22 points (0.55x40 = 22). **Final grade = K_v + Z_i** Note: If the student does not submit the required program assignments, assignments and seminars within the prescribed time, he has the right to submit his work in an extended period defined by the professor, where he can win a maximum of 70% of the maximum number of points.

Literature[1]:	Mandatory: • *Bublin Mehmed: Planiranje saobraćaja i saobraćajnica, GF Sarajevo 2006.* • *Ključanin S, Poslončec-Petrić V, Bačić Ž, Osnove infrastrukture prostornih podataka, Dobra knjiga, Sarajevo, 2018.* • *Vladimir Ćorić, Dragana Petrović, Ivan Ivanović, Jadranka Jović, Planiranje saobraćaja – analiza transportnih zahteva, Univerzitet u Beogradu, 2018.* Additional: • *Pradip Kumar Sarkar, Vinay Maitri, G.J. Joshi, Transportation Planning, Principles, Practices and Policies, PHI Learning Private Limited, Delhi, 2015* • *MGH Bel, PW Bonsall, GR Leake, AD May, CA Nash, CA O'Flaherty, Transportation Planning and Traffic Engineering, Arnold 1997, reprinted 2006* • Radni materijali sa predavanja

[1] The Senate of the higher education institution as an institution or the council of the higher education institution's organizational unit as a public institution determines mandatory and recommended textbooks and manuals and other recommended literature based on which it prepares and takes the exam. by Article 56, paragraph 3 of the Law on Higher Education of Sarajevo Canton