



**PLAN OF SECOND DEGREE FULL TIME SECOND - DEGREE STUDIES OF A GENERAL ACADEMIC PROFILE
DISCIPLINE (MAIN): CIVIL ENGINEERING, GEODESY AND TRANSPORT
MAJOR: GEODESY AND GEOINFORMATICS**

start time: 2025

GROUPS OF COURSES / COURSES	hours/ECTS		ECTS / academic skills	ECTS / practical skills	ECTS share NA	including no. of hours of:						No. of hours/semester/ECTS points per semester						Organisational Unit responsible for the course	Remarks		
	gocz.	ECTS				lectures	classes	lib.	project	seminar	I		II		III						
											hours	ECTS	hours	ECTS	hours	ECTS					
A. General educational content	64	5.0	2.0	2.0	2.0	24	30	0	0	10	0	64	5.0	0	0.0	0	0.0	0.0			
1. Introduction to national defence	30	3.0	1.0	1.0	1.0	20	30			10		30	3.0						WIG		
2. Foreign language	30	2.0	1.0	1.0	1.0		30					30	2.0						SJO		
3. Occupational health and safety	4	0.0	0.0	0.0	0.0	4						4							BHP		
B. Basic educational content	98	7.0	3.0	3.5	3.0	36	30	32	0	0	0	98	7.0	0	0.0	0	0.0	0.0	WCY		
1. Mathematics	30	3.0	1.0	1.0	1.4	16						30	3.0						WIG		
2. Physical geodesy and geodesic gravimetry	38	2.0	1.0	1.5	1.2	14	12					38	2.0						WIG		
3. Geodata processing algorithms	30	2.0	1.0	1.0	1.0	20						30	2.0						WIG		
C. Major-related content	254	14.0	9.0	9.5	7.2	16	88	68	10	254	14.0	0	0.0	0	0.0	0	0.0	0.0			
1. Satellite measurement techniques	50	3.0	2.0	2.0	1.2	22	16					50	3.0						WIG		
2. Programming in Python – advanced level	40	2.0	1.5	1.5	1.2	16						40	2.0						WIG		
3. Reference systems in geodesy	38	2.0	1.5	1.5	1.2	16						38	2.0						WIG		
4. Advanced photogrammetric studies	42	2.0	1.5	1.5	1.2	18	12					42	2.0						WIG		
5. Designing geographic information systems	42	2.0	1.5	1.5	1.2	18	12					42	2.0						WIG		
6. Publication of spatial data	42	3.0	1.0	1.5	1.2	18	12					42	3.0						WIG		
D. Elective content	504	36.0	20.5	23.5	9.6	18	180	180	30	0	0	356	28.0	28.0	148	8.0					
1. Diagnostic measurement of objects	50	4.0	1.5	2.0	1.2	18						50	4.0						WIG	It is recommended to select a minimum of three courses from this group.	
2. Advanced methods of processing observations	64	5.0	1.0	2.5	1.2	28	24					64	5.0						WIG		
3. Advanced satellite observation techniques	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG		
4. Terrestrial and low-altitude scanning	64	5.0	1.5	2.5	1.2	22	20			10		64	5.0						WIG		
5. Mobile measurement systems	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG		
6. Legal conditions for geodesic surveys	64	5.0	1.5	2.5	1.2	22	20			10		64	5.0						WIG		
7. Automation of geodesic surveys	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG		
8. Automation of geoprocessing systems	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG		
9. Geostatistics	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG		
10. Cadastral information systems	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG		
11. Artificial Intelligence and machine learning in processing geodata	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG	It is recommended to select a minimum of three courses from this group.	
12. Deep neural networks in the analysis of geodata	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG		
13. Photogrammetry in engineering	64	5.0	1.5	2.0	1.2	18	20					64	5.0						WIG		
14. Global geodesic networks	64	5.0	1.5	2.5	1.2	28	24					64	5.0						WIG		
15. 3D and BIM modelling	74	4.0	1.5	2.5	1.2	28	24			10									WIG	It is recommended to select a minimum of two courses from this group.	
16. Automated editing of maps and analyses	74	4.0	1.5	2.5	1.2	28	24			10									WIG		
17. 3D printing in geodesy and cartography	74	4.0	1.5	2.5	1.2	28	24			10									WIG		
18. Virtual and augmented reality in geodesy	74	4.0	1.5	2.5	1.2	28	24			10									WIG		
19. Programming applications for geodata	74	4.0	1.5	2.5	1.2	28	24			10									WIG		
E. Diploma dissertation	60	24.0	20.0	5.0	0	0	0	0	0	30	0	0	0.0	2.0	30	22.0					
1. Diploma seminar	60	4.0	1.0	2.0						30				2.0	30	2.0					
2. Dissertation	20.0		19.0	3.0															WIG		
F. Internships	160	4.0	1.0	2.0						Period after semester 1		160	4.0							WIG	
1. Internships	160	4.0	1.0	2.0						after semester 1		160	4.0							WIG	
Total hours/ECTS points	1140	90.0	58.5	45.5	22.8	94	300	248	80	576	30.0	386	30.0	386	178	30.0					
acceptable deficit of ECTS points												12			12						
Types and number of realizations in a semester:											7	min	6	min	3	min	3	min	3	min	3
											4	min	1	min	1	min	1	min	1	min	1
											5	min	6	min	6	min	6	min	6	min	6

Plan of studies adopted by Senat WAT on the June 26, 2025

Semesters 2-3 – education based on elective courses

The student selects the courses from the Elective courses group - it is required to receive a minimum of 30 ECTS points per semester.