

COURSE DESCRIPTION		
University:	University of Prešov in Prešov	
Faculty:	Faculty of Humanities and Natural Sciences	
Code: 2GAG/EnTIG/20	Title: Digital Transformation in GIS and Beyond	
Field of study: 4.1.35. Geography		
Study programme: Geography and Applied Geoinformatics		
Guarantee: prof. Ing. Jozef Vilček, PhD.		Lecturers: Mgr. Miloslav Michalko, PhD.
Semester: Summer	Forms of teaching: Seminars	Number of credits: 7
	Recommended number of hours: 13	
	Per week: 0/1 Total per study: 0/13	
Prerequisites:-		
Assessment: exam		
Course assessment:		
Final assessment: exam		
Objective: This course is designed to introduce students to the transformative impact of digital technologies in Geographic Information Systems (GIS) and their applications across various sectors. Through interactive lectures and hands-on labs, students will explore the integration of new digital tools and technologies such as cloud computing, big data analytics, AI, and IoT in GIS. The course will highlight how these technologies are reshaping the landscape of spatial data analysis, management, and decision-making processes. By the end of this course, students will be able to:		
<div><div></div><div><ul style="list-style-type: none">- Understand the fundamentals of GIS and the impact of digital technologies on its evolution.- Explore the integration of cloud computing and big data analytics in GIS.- Analyze the role of Artificial Intelligence (AI) and Machine Learning (ML) in enhancing GIS functionalities.- Examine the applications of Internet of Things (IoT) in gathering and processing spatial data.- Evaluate case studies where digital transformation in GIS has led to improved decision-making and operational efficiencies.- Develop skills to implement digital solutions in GIS projects effectively.- Discuss future trends and innovations in the field of GIS and digital technologies.</div></div>		
Course content:		
<div><div></div><div><ol style="list-style-type: none">1. Introduction to GIS and Digital Transformation: Overview of GIS fundamentals and the significance of digital technologies.2. Cloud Computing in GIS: How cloud platforms are used for GIS data storage, processing, and sharing.3. Big Data Analytics in GIS: Techniques for handling large datasets and performing spatial analysis.4. Artificial Intelligence and GIS: Integration of AI and ML algorithms for predictive analysis and problem-solving.5. IoT and Spatial Data: Use of IoT devices in real-time data collection and its implications for GIS.6. Case Studies: Review of successful digital transformation projects within various industries.7.- 10. Practical Labs: Hands-on sessions using digital tools in GIS applications.11.-12. Future Trends: Discussion on upcoming innovations and potential advancements in GIS technology.13. Summary of key concepts and skills learned. Q&A session, course feedback, and closure.</div></div>		

Literature:

- Siebel, T. M. (2019). Digital Transformation: Survive and Thrive in an Era of Mass Extinction. RosettaBooks.
- Rogers, D. L. (2016). The Digital Transformation Playbook: Rethink Your Business for the Digital Age. Columbia University Press.
- Schuurman, N. (2017). GIS: A Short Introduction. John Wiley & Sons.

Language the course is taught in:
English

Signature of guarantee and date of last edition:
April 2024