

	Name subjects:	BIM and engineering practice		
Code subjects	Status subjects	Semester	Number ECTS credit	Fund hours (weekly)
PL2BIM1	Required	III mag. study	7	2P+2V

Studio programs for which is organizes: Faculty for polytechnic, studio program master's degree study, direction for Architecture and design

Conditionality other subjects: There is none.

The idea of studying the subject: To develop students' ability to approach comprehensively and systemic implementation BIM environment on investment projects in construction, through four phases according to the Bew-Richards diagram. Present, analyze and compare the advantages and disadvantages of software packages used to implement 7D BIM environments in all phases of the project life cycle. To enable students to apply the same principles of advanced analysis of available BIM technologies in practice. Effective use of available literature and Internet resources. Implementation of project tasks.

Objectives of studying the subject: Subject aims to to introduce the student to the application of technologies of the IV industrial revolution in the BIM environment in all phases of life project cycle. Knowledge of the Bew-Richards diagram and the four phases in the implementation of BIM technologies (0, 1, 2, and 3). Knowledge of software packages used for implementation projects in 7D BIM environment (Autodesk, Graphisoft, German check, Bentley, and Bexel). Understanding each from dimension 7D BIM environment, especially the fourth dimension related to time management, the fifth to costs, the sixth to sustainability and the seventh to operational utilization and maintenance of facilities. Project the assignments are designed with the intention of introducing the student to the application of modern digital technologies in the BIM environment.

Outcomes learning: A student who successfully completes this subject will be able to:

1. Understands how to integrate processes and software in the BIM environment;
2. Knows the Bew-Richards diagram and four phases in the implementation of BIM technologies (0, 1, 2, and 3);
3. Analyzes and compares the application of software packages for the realization of projects in the 7D BIM environment (Autodesk, Graphisoft, Nemetscheck, Bentley, and Bexel);
4. Understands each of the dimensions of the 7D BIM environment and makes a decision on the selection and application of optimal software packages for the implementation of the BIM environment on the project;
5. Participates in the application of digital technologies in the BIM environment in project management, and is able to give a critical opinion about them.

Name and last name teacher and collaborators: prof. Dr. Zoran Hammer

Method teaching and overcoming materials: lectures, exercises, individual and group project tasks.

PLAN WORK

Sunday: Name methodological unit for lectures (P), exercises (V) and others teaching contents (O); Planned shape checks knowledge (Pz)

Preparatory Sunday		Getting to know each other, preparation and enrollment semester.
And Sunday	P	Introduction in comprehensive and systemic application digital technology in BIM environment projects
II	P	Bew-Richards diagram and four phases in implementations BIM technology (0, 1, 2, and 3)
III	P	Choice optimal software package for realization 7D BIM environments;
IV	P	BIM software packages for management over time (4D), expenses (5D), sustainability (6D) and by maintenance (7D)
V	P	Autodesk Revit / Navisworks / Construction Cloud Software
VI	PZ	Defense group work
VII	PZ	Defense group work
VIII	P	Archicad / Graphisoft / DDScad / BIMx
IX	P	German check Design / Allplan AEC / SOLIBRIE / SCIA / LYNCH / FRIED / dRofus / SpaceWell / YOU DONT CHEAT / BLUEBUILD
X	P	Bentley Building Design / Digital Twins / Design Delivery / Civilian Design
XI	P	Tekla BIM / Structures / Tedds
XII	P	Bexel BIM Manager / 6D / Portfolio Manager
XIII	PZ	Defenses individual seminar works.
XIV	PZ	Final exam.
XV		Verification semester and enrollment rating
XVI		Correctional exam deadline

Obligations student in during teaching: lectures, exercises, discussions, project tasks.

Consultations by e-mail: YES

Load student

Sunday: 7 credit x 40/30 = 9 hours 20 minutes Structure: – 2 hours lectures – 2 hours exercises – 5 hours 20 mine independent work, including consultations.	In semester: Total burden for subject 7x30 =210h Structure: Lessons and final exam: 9 hours and 20 minutes x 16 weeks = 149h 20min. Preparation before the beginning of the semester 10h40minx2=21h20min. Additional work for preparation exam in correctional within: 0- 48h
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Literature:

Eastman, C., Teicholz, P., Sacks, R., Liston, K. (2011) BIM Handbook, A Guide to BIM for Owners, Managers, Designers, Engineers and Contractors, John Wiley and Sons Inc., USA

Websites: Autodesk / Revit BIM, Graphisoft / Archicad BIM, German check / AllPlan BIM, Bentley BIM, and Bexel 7D BIM

Shapes checks knowledge and assessment:
Group seminar work 30%, individual seminar work 30%, and exam 40%.

Rating	A	B	C	D	E
Number point	90- 100	80- 89	70- 79	60- 69	50- 59