

FACULTY OF ENGINEERING STUDY COURSE DESCRIPTION

Course Title:	Building information modelling I			
Course code (LAIS):	<i>The course will be registered in the study administration system after accreditation</i>			
Study programme:	Construction of sustainable buildings			
Level of Study programme:	☒	1st level professional higher education		
	☐	Professional Bachelor		
	☐	Professional Master		
	☐	PhD level		
Type of Study programme:	☒	Compulsory course (Part A)		
	☐	Professional specialization courses (Part B, compulsory)		
	☐	Professional specialization optional courses (Part B, optional)		
	☐	Elective courses (Part C)		
Course Workload:	ECTS	Academic hours	Contact hours	Independent work hours
	3	75	30	45
Course Author/ Tutor:	Krišjānis Zakis			
	Guest lecturer, Mg.comp. krisjanis.zakis@va.lv			
	Consultations: according to the consultation schedule for each semester			
Course Form:	Full time			
Study year, semester:	1 st year 2 nd semester			
Language:	Latvian			
Prerequisites for the Course:	-			
Course Summary:	The goal of the course “Building information modelling I” is to provide students with an understanding of the use of the BIM environment in construction, its structure, terminology and principles. Within the course, students work with digital drawings of residential and public buildings, create sets of construction drawings using Revit Architecture and learn about the BIM environmental conditions and its integration in different stages of the construction process.			
The Type of Final examination	Examination			
Requirements for Credits:	The final grade will be made up of the following: – Tests during lectures – 10 % of the final grade – Practical work at home – 20 % of the final grade – Course paper – 30 % of the final grade – Examination – 40 % of the final grade Evaluation criteria for the final examination: – with distinction (10) – knowledge, skills and competence exceed the course requirements; – excellent (9) – knowledge, skills and competence fully comply with the course requirements; – very good (8) – the course requirements are fully met, however, understanding of some issues is not deep enough to apply the knowledge independently in solving more complex problems; – good (7) – the course requirements are generally met, however, sometimes there is inability to apply the knowledge acquired independently; – almost good (6) – the course requirements are met, however, at the same time understanding of the problem is not deep enough and there is inability to apply the knowledge acquired; – satisfactory (5) – the course requirements are generally met, however, there is insufficient knowledge of some problems and inability to apply the knowledge acquired; – almost satisfactory (4) – the course requirements are generally met, however, understanding of some basic concepts is insufficient and there are significant difficulties in applying the knowledge acquired;			

	– poor (3) – knowledge is superficial and incomplete, a student is not able to apply it in specific situations; – very poor (2) – there is superficial knowledge only about certain problems, most of course requirements are not met; – very, very poor (1) – there is no understanding of the basic issues of the course, there is almost no knowledge of the topics covered.
Abiding by the Academic Ethics	Students must abide by the academic and research ethics, Vidzeme University of Applied Sciences Ethics Regulations, incl.: – study papers must be independently developed; – the study work should reference all statements, ideas and data used that have been authored by someone else; – appropriate data acquisition methods should be used in the acquisition of data, the research ethics must be respected, empirical data must be collected independently and cannot be distorted or falsified; – the examination must be carried out by the student independently, without the use of supporting materials and/or consultations with other students, unless the lecturer states otherwise. In the event of non-compliance with the academic and research ethics, punishment is imposed in accordance with the ViA Ethics Regulations and the study course must be re-taken, unless the punishment is extramarital

	Learning Outcomes	The evaluation methods and criteria
	Knowledge	
Learning Outcomes	Understanding of the applicability of the BIM environment in construction.	Tests during lectures
	Demonstration of theoretical and practical knowledge when using the BIM environment, BIM model analysis.	Examination
	Skills	
	To use building construction project documentation and analyze the adequacy of information in digital form. To develop an in-depth work performance project.	Independent work
	At the level of basic knowledge to understand, plan and develop a work performance project.	Independent work
	Cross-cutting decision-making – ability to combine the knowledge acquired in other courses and integrate it into the BIM environment.	Course paper
	To control the compliance of work execution with construction project solutions in the building information modelling (BIM) environment.	Independent work
	Competency	
	Ability to constantly combine the knowledge acquired in the BIM course with the knowledge gained in other courses, and to assess in a responsible manner the compliance of the construction documentation of the building with the goal of the construction project.	Examination
Course Compulsory literature:	LVS EN ISO 19650-1:2019 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 1: Concepts and principles (ISO 19650-1:2018) LVS EN ISO 19650-2:2019 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 2: Delivery phase of the assets (ISO 19650-2:2018) LVS EN ISO 19650-2:2020 Organization and digitization of information about buildings and civil engineering works, including building information	

	modelling (BIM) — Information management using building information modelling — Part 3: Operational phase of the assets (ISO 19650-3:2020)
Course additional literature:	1. Bimal Kumar. A Practical Guide to Adopting BIM in Construction Projects. 2016., 192, p. ISBN 9781849951463 2. André Borrmann, Markus König, Christian Koch, Jakob Beetz. Building Information Modeling: Technology Foundations and Industry Practice. ISBN 978-3-319-92862-3 3. Rail Baltica, Detailed BIM strategy, https://www.railbaltica.org/wp-content/uploads/2018/09/RBR_Detailed_BIM_Strategy_v2.0.pdf 4. Valsts nekustamie īpašumi, BIM vadlīnijas, https://www.vni.lv/kompetence/bim-kompetences-centrs 5. https://www.thenbs.com/
Course approval date:	10.12.2022
Course last revision date:	29.10.2024

Study Course Plan:

Date	Topic	Number of academic hours		Study form / Description of the organization and tasks of students' independent work
		Contact hours	Independent work hours	
<i>The date is specified before the course is taught</i>	New IT technologies and their application in construction	7		Test during the lecture Lecture
			8	Practical work
	Planning of digital construction projects	7		Test during the lecture Lecture
			12	Practical work
	The beginnings and basics of BIM	7		Test during the lecture Lecture
			12	Practical work
	BIM in current construction Integrated course work with other subjects	7		Test during the lecture Lecture
			13	Independent work Course paper
	Demonstration of the knowledge gained in the course	2		Examination
	<i>Total number of hours:</i>	30	45	

* The date is specified before the implementation of the course