

**FACULTY OF ENGINEERING
STUDY COURSE DESCRIPTION**

Course Title:	VR/AR Innovations and Actuality in Various Industries				
Course code (LAIS):	DatZ1016				
Study programme:	Virtual reality and smart technologies				
Level of Study programme:	<input type="checkbox"/>	1st level professional higher education			
	<input type="checkbox"/>	Professional Bachelor			
	<input checked="" type="checkbox"/>	Professional Master			
	<input type="checkbox"/>	PhD level			
Type of Study programme:	<input checked="" type="checkbox"/>	Compulsory course (Part A)			
	<input type="checkbox"/>	Professional specialization courses (Part B, compulsory)			
	<input type="checkbox"/>	Professional specialization optional courses (Part B, optional)			
	<input type="checkbox"/>	Elective courses (Part C)			
Course Workload:	Credits	ECTS	Academic hours	Contact hours	Independent work hours
	2	3	80	24	56
Course Author/ Tutor:	Arnis Cīrulis				
	Assoc. Prof., Dr.sc.ing.				
	e-mail: arnis@va.lv				
	Consultation: according to the schedule for each semester				
Course Form:	Full time				
Study year, semester:	1 st year, 1 st semester				
Language:	Latvian, English				
Prerequisites for the Course:	-				
Course Summary:	The aim of this course is to give practical and theoretical knowledge in virtual and augmented reality technologies innovations and actuality in various industries. In frames of this course students are introduced with successful use cases and their stories from real companies. During practical demonstrations students will get opportunity to experience and understand technologies influence and benefits for museums, marketing, medicine, architecture etc. As a result students prepare and present their chosen idea.				
Assessment:	Examination				
Requirements for Credits:	<ol style="list-style-type: none"> Active participation in enterprises' pitching sessions – seminars (questioning and discussions). Submission of master thesis topic according course schedule. Course evaluation in form of Pass or Fail. Evaluation is based on topic of master thesis. Description, problem, goal, novelty, planed tasks and methods, technical solution description and solutions for validation. 				
Abiding by the Academic Ethics	<p>Students must abide by the academic and research ethics, Vidzeme University of Applied Sciences Ethics Regulations, incl.:</p> <ul style="list-style-type: none"> – 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. <p>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.</p>				

Learning Outcomes; the evaluation methods and criteria	Learning Outcomes		The evaluation methods and criteria
	Knowledge		
	Knowledge on virtual and augmented reality solutions for museums, exhibitions and marketing.		Discussions with industry specialists and experts.
	Knowledge on virtual and augmented reality solutions for medicine, anatomy, architecture and design		Discussions with industry specialists and experts.
	Knowledge on virtual and augmented reality solutions for entertainment, sport events and e-commerce.		Discussions with industry specialists and experts.
	Skills		
	Skills to describe basics of various VR/AR implementations.		Discussions with industry specialists and experts.
	Skills to generate and plan new implementations for specific needs.		Discussions with industry specialists and experts. Presentation.
	Skills to demonstrate VR/AR ideas and organize simple duties in team.		Discussions with industry specialists and experts. Presentation.
	Competency		
	Use correct VR/AR terminology.		Discussions with industry specialists and experts. Presentation.
	Independently design drafts for various VR/AR systems		Discussions with industry specialists and experts. Presentation.
	Solve challenges and predict realistic strategies for idea implementations		Discussions with industry specialists and experts. Presentation.
	Course Compulsory literature:	-	
Course additional literature:	Jaron Lanier, Dawn of the New Everything: Encounters with Reality and Virtual Reality, 2017. Steve Aukstakalnis, Practical Augmented Reality: A Guide to the Technologies, Applications, and Human Factors for AR and VR , 2016. Jack Challoner, Virtual Reality, 2017. Murray Ramirez, Virtual Reality for Beginners!: How to Understand, Use & Create with VR, 2016.		
Course confirmation date:	13.06.2018		
Date of course description update:			

Study Course Plan:

Date	Theme	Academic hours		Study Form/ Organization of independent work of students and task description
		Contact hours	Independent work hours	
	Virtual and augmented reality solutions and demonstrations for museums, exhibitions and marketing.	4	8	Seminar, industry pitching sessions, practical demonstrations and discussions.
	Virtual and augmented reality solutions and demonstrations for medicine and anatomy studies.	4	8	Seminar, industry pitching sessions, practical demonstrations and discussions.
	Virtual and augmented reality solutions	4	8	Seminar, industry pitching

	and demonstrations for architecture and design.			sessions, practical demonstrations and discussions.
	Virtual and augmented reality solutions and demonstrations for entertainment, sport events and e-commerce.	4	8	Seminar, industry pitching sessions, practical demonstrations and discussions.
	Use case analysis and successful businesses. VR/AR industry challenges and company's idea pitching.	4	8	Seminar, industry pitching sessions, practical demonstrations and discussions.
	Project idea selection and team formation. Investigation of implementation potential and presentation.	4	16	Evaluation is based on topic of master thesis. Description, problem, goal, novelty, planned tasks and methods, technical solution description and solutions for validation.
Hours total:		24	56	