



POLYTECHNIC OF MEĐIMURJE IN ČAKOVEC

COURSE SYLLABUS

ACADEMIC YEAR: 2022/2023

1. GENERAL COURSE INFORMATION

1.1 Course name	Development of computer games			
1.2 Study program/s	Undergraduate professional studies Computer science			
1.3 Course status (O,E)	E	1.6. Method of teaching (number of hours)	Lectures	30
1.4 Course code			Exercise	30
1.5 Course abbreviation	RRI		Seminar	-
1.6 Semester	VI.		E-learning	
1.7 ECTS	4	1.7 Place and time of instruction	The premises of the Polytechnic of Međimurje in Čakovec, according to the schedule published on the website	

2. TEACHING STAFF

2.1 Course leader/s-title	Nenad Breslauer, senior lecturer	Contact	nbreslauer1@mev.hr
		Contact	
2.2 Assistant/s- title		Contact	
		Contact	
2.3 Instruction held by-title	Nenad Breslauer, senior lecturer	Contact	

3. COURSE DESCRIPTION

3.1 Course goals	<p>After a registered course, the student will learn to use the platform to develop computer games, whereby students will receive the knowledge needed to develop simple 3D and 2D computer games. Students will master using the platform to develop computer games kroz linking concepts related to the use of finished 2D and 3D content with the knowledge of software development. The acquired skills and knowledge of the development of computer games will be upgraded with knowledge enabling the creation of virtual and augmented reality systems. Special attention will be paid to the creation of educational 3D games within virtual and augmented reality and the design of the user interface and interaction within them.</p> <p>Students will learn to use modern platforms for the development of computer games (Unity Game engine, program languageC#) and equipment for virtual and augmented reality systems.</p>
3.2 Prerequisites	There are no conditions.
3.3 Course outcomes	<p>After a successfully mastered course, students will be able to:</p> <ul style="list-style-type: none">I1 - Explain what a platform for developing computer games is and what are the basic benefits of its use.I2 - Build a space within which interaction between objects (participants) takes place.I3 - Build mechanisms to simulate physical laws.I4 - Design and create program scripts within the computer game development platform.I5 - Assemble a more sophisticated virtual and/or augmented reality system.

3.4 Course content	Thematic units will be processed, which include different areas of development and creation of computer games, the creation and use of graphic elements and the implementation of their behaviors.																																																				
3.5 Types of coursework	X	Lectures	X	Exercises	Blended e-learning	X	Individual activities	Laboratory																																													
	x	Seminars and workshops		Distant learning	Field classes		Multimedia and network	Mentorship																																													
		Other																																																			
3.6 Language of instruction	Croatian																																																				
3.7 Monitoring students' work (enter the number of ECTS credits for each activity so that the total number of ECTS credits is equal to the total ECTS value of the course, 1 ECTS = 30 hours)	1	Class attendance		Seminars		Essay																																															
	1	Class activity	2	Project		Report/paper																																															
		Midterm exams	1	Practical task		Continuous knowledge check																																															
		Written exam		Experimental work																																																	
		Oral exam		Research																																																	
3.8 Assessment and evaluation of students' work during classes and at the final exam	<table border="1" data-bbox="603 891 1324 1133"> <thead> <tr> <th data-bbox="603 891 944 922">Activity Specification</th> <th data-bbox="951 891 1133 922">Percentage %</th> <th data-bbox="1139 891 1324 922">Score</th> </tr> </thead> <tbody> <tr> <td colspan="3" data-bbox="603 931 1324 954">Evaluation during class</td> </tr> <tr> <td data-bbox="603 958 944 990">Presence in class</td> <td data-bbox="951 958 1133 990">15%</td> <td data-bbox="1139 958 1324 990">15</td> </tr> <tr> <td data-bbox="603 994 944 1025">Activity in Class</td> <td data-bbox="951 994 1133 1025">15%</td> <td data-bbox="1139 994 1324 1025">25</td> </tr> <tr> <td data-bbox="603 1030 944 1061">Seminar work/ project/ essay</td> <td data-bbox="951 1030 1133 1061">70%</td> <td data-bbox="1139 1030 1324 1061">60</td> </tr> <tr> <td colspan="3" data-bbox="603 1066 1324 1088"><i>Evaluation of exam work for students who did not co-late</i></td> </tr> <tr> <td data-bbox="603 1093 944 1124">Written exam</td> <td data-bbox="951 1093 1133 1124">60%</td> <td data-bbox="1139 1093 1324 1124">60</td> </tr> <tr> <td data-bbox="603 1128 944 1160">Total:</td> <td data-bbox="951 1128 1133 1160">100%</td> <td data-bbox="1139 1128 1324 1160">100</td> </tr> </tbody> </table>								Activity Specification	Percentage %	Score	Evaluation during class			Presence in class	15%	15	Activity in Class	15%	25	Seminar work/ project/ essay	70%	60	<i>Evaluation of exam work for students who did not co-late</i>			Written exam	60%	60	Total:	100%	100																					
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3.9 Assessment criteria – analysis per learning outcomes	<table border="1" data-bbox="523 1220 1209 1527"> <thead> <tr> <th colspan="5" data-bbox="523 1220 1209 1252">Ways of evaluating learning outcomes</th> </tr> <tr> <th data-bbox="523 1261 663 1283"></th> <th data-bbox="670 1261 813 1283">Attendance</th> <th data-bbox="820 1261 963 1283">Activity</th> <th data-bbox="970 1261 1114 1283">Project</th> <th data-bbox="1120 1261 1209 1283">Total</th> </tr> </thead> <tbody> <tr> <td data-bbox="523 1292 663 1314">Outcome 1</td> <td data-bbox="670 1292 813 1314"></td> <td data-bbox="820 1292 963 1314"></td> <td data-bbox="970 1292 1114 1314">14</td> <td data-bbox="1120 1292 1209 1314">14</td> </tr> <tr> <td data-bbox="523 1323 663 1346">Outcome 2</td> <td data-bbox="670 1323 813 1346"></td> <td data-bbox="820 1323 963 1346"></td> <td data-bbox="970 1323 1114 1346">14</td> <td data-bbox="1120 1323 1209 1346">14</td> </tr> <tr> <td data-bbox="523 1355 663 1377">Outcome 3</td> <td data-bbox="670 1355 813 1377"></td> <td data-bbox="820 1355 963 1377"></td> <td data-bbox="970 1355 1114 1377">14</td> <td data-bbox="1120 1355 1209 1377">14</td> </tr> <tr> <td data-bbox="523 1386 663 1408">Outcome 4</td> <td data-bbox="670 1386 813 1408"></td> <td data-bbox="820 1386 963 1408"></td> <td data-bbox="970 1386 1114 1408">14</td> <td data-bbox="1120 1386 1209 1408">14</td> </tr> <tr> <td data-bbox="523 1417 663 1440">Outcome 5</td> <td data-bbox="670 1417 813 1440"></td> <td data-bbox="820 1417 963 1440"></td> <td data-bbox="970 1417 1114 1440">14</td> <td data-bbox="1120 1417 1209 1440">14</td> </tr> <tr> <td data-bbox="523 1449 663 1503">Outcome not-related</td> <td data-bbox="670 1449 813 1503">15</td> <td data-bbox="820 1449 963 1503">15</td> <td data-bbox="970 1449 1114 1503"></td> <td data-bbox="1120 1449 1209 1503">40</td> </tr> <tr> <td data-bbox="523 1512 663 1534">Total</td> <td data-bbox="670 1512 813 1534">15</td> <td data-bbox="820 1512 963 1534">15</td> <td data-bbox="970 1512 1114 1534">70</td> <td data-bbox="1120 1512 1209 1534">100</td> </tr> </tbody> </table> <p data-bbox="523 1568 1461 1635">Grading of outcomes (in order to pass the mid-term exam/exam the student must achieve at least 50% points for each learning outcome)</p> <p data-bbox="523 1644 1461 1848"> Points Grade 89 – 100 excellent (5) 76 – 88 very good (4) 63 – 75 good (3) 50 – 62 pass (2) 0 – 49 fail (1) </p>								Ways of evaluating learning outcomes						Attendance	Activity	Project	Total	Outcome 1			14	14	Outcome 2			14	14	Outcome 3			14	14	Outcome 4			14	14	Outcome 5			14	14	Outcome not-related	15	15		40	Total	15	15	70	100
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3.10 Specific features related with taking the course	<p data-bbox="513 1856 1461 1957">If the student collects 50% of the points of each outcome directly access orally exam. If a student does not achieve a sufficient number of points on the midterm exam, he cannot take the next midterm exam.</p> <p data-bbox="513 1966 1461 2058">Once won points in intermediate exams for each learning outcome are no longer deleted unless the student decides to correct the result for each learning outcome, whereby the points won until then are deleted and newly achieved</p>																																																				

	<p>points for that learning outcome are entered. A student cannot access the exam period if he / she has not submitted and presented seminar paper. The final grade is obtained on the oral part of the exam.</p> <p>Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam.</p> <p>Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.</p>						
3.11 Students obligations	<p>Full-time students are required to attend at least 70% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam. Attendance can be offset by online consultations, organized webinars, and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In the event that a student is absent from more than 50% of classes, and has a justifiable reason / apology, a request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.</p>						
3.12 Written assignments	<p>Seminar papers must be computer written and may have a maximum of 12 text cards (Times New Roman, font 12) from introduction to conclusion, together with pictures, table appendices, etc. Seminar papers must have an adequate title page, content, marked pages and literature. The seminar paper should be divided into chapters and contain a list of references and a list of figures and tables and graphs and finally a summary / conclusion in the size of 250 words. The student guarantees the authenticity of the work with his signature.</p>						
3.13 Required reading	<table border="1"> <tr> <td>1.</td> <td>Thorn, A.: Unity 5.x By Example, Packt publishing,2016</td> </tr> <tr> <td>2.</td> <td></td> </tr> <tr> <td>3.</td> <td></td> </tr> </table>	1.	Thorn, A.: Unity 5.x By Example, Packt publishing,2016	2.		3.	
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4 ADDITIONAL COURSE INFORMATION							
4.1 Quality control	<p>The quality of the program, teaching process, teaching skills and level of mastery of the material will be established by conducting a written evaluation based on questionnaires, and in other standardised ways and in accordance with the by-laws of the Polytechnic of Međimurje in Čakovec.</p>						
4.2 Contact the teacher	<p>Students can contact the teacher during the office hours and during classes, while for short questions and explanations they can contact him/her any day during working hours by coming in person or by landline. It is also possible to</p>						

	ask questions by e-mail, which will be answered in 48 hours at the latest. It is desirable for students to come as often as possible for any possible questions during the teacher's office hours.
4.3 Information about the course	It is the obligation of each student to be regularly informed about the course. All notifications about the classes or possible postponement of classes will be posted on the bulletin board and on the website of the Polytechnic at least 24 hours in advance.
4.4 Course contribution to the study program	<p>Identify trends in ICT technologies on the domestic and international market.</p> <p>Apply communication and professional ethics. Identify the basic specifics of operating systems . Develop applications using object-oriented paradigms to solv program tasks</p> <p>Choose the rightprog ram language and technology when solving program tasks</p> <p>Develop web and mobile projects, using advanced technologies and connect to databases using modern methods and tools</p>