

Course Catalogue Engineering and ICT

EXCHANGE PROGRAMME

Games Programming 2023-2024

University of
Applied Sciences

Windesheim



Course summary			
VOE Code: ICT.GP.PRJCT.V22		ECTS credits: 10	
Level: Bachelor's degree (full-time)			
Course Title	Game Project		
Type	Compulsory		
Learning competences			
Learning outcomes	You will create a (serious) game in a small group of fellow students.		
Course content	<p>You will have the option to choose between:</p> <ul style="list-style-type: none"> • Designing and implementing your own game. • Creating a (serious) game for a real client. • Doing research into new technology and building a prototype game demonstrating the capabilities. <p>The project has to meet a number of criteria, and will be approved or disapproved by a lecturer. The project requires the use of challenging technology.</p>		
Planned learning activities and teaching methods	<ul style="list-style-type: none"> • Working in a project group • Workshops 		
Recommended or required reading and other learning resources / tools			
Prerequisites and co-requisites			
Level	Bachelor		
Grading scale	1 up to 10, 1 dec.		
Assessment methods and criteria	Type of assessment	Grade weighting	Criteria
	Assessment	1	Higher or equal to 5.5
Language of Instruction	English		
Name of lecturer	For information about the lecturers you can contact Puja Buter-Fadte		
Mode of delivery	Through digital media and verbal communication		

Course summary			
VOE Code: ICT.GP.AAI.V22		ECTS credits: 6	
Level: Bachelor's degree (full-time)			
Course Title	Game Algorithms and Artificial Intelligence		
Type	Compulsory		
Learning competences			
Learning outcomes	During this course students will learn about algorithms specifically for games and how to apply various artificial intelligence techniques to create intelligent computer players		
Course content	<p>Some of the topics that will be covered are:</p> <ul style="list-style-type: none"> • Generating and Solving Mazes • Backtracking Techniques • Minimax algorithm and Alfa-Beta Pruning • Path Planning • Steering Behaviours • State Machines • Goal-driven Behaviours • Fuzzy Logic 		
Planned learning activities and teaching methods	<ul style="list-style-type: none"> • Lectures • Labs • Assignments 		
Recommended or required reading and			

other learning resources / tools			
Prerequisites and co-requisites			
Level	Bachelor		
Grading scale	1 up to 10, 1 dec.		
Assessment methods and criteria	Type of assessment	Grade weighting	Criteria
	Assignment	2	Higher or equal to 5.5
	Theory Exam	1	Higher or equal to 5.5
Language of Instruction	English		
Name of lecturer	For information about the lecturers you can contact Puja Buter-Fadte		
Mode of delivery	Through digital media and verbal communication		

Course summary			
VOE Code: ICT.GP.CG.V22 ECTS credits: 5 Level: Bachelor's degree (full-time)			
Course Title	Computer Graphics		
Type	Compulsory		
Learning competences			
Learning outcomes	Almost every game is played in a graphical two- or three-dimensional space. In this course you will learn how to create these environments. The theoretical basis will be covered, as well as practical implementation using OpenGL and other libraries. With the help of these libraries you can manipulate objects in space and change their look and feel with respect to the material the object is made of.		
Course content	Topics: <ul style="list-style-type: none"> • Shaders • Transformations • Texture Mapping • 3D Modelling • Theoretical and mathematical background • CPU vs GPU 		
Planned learning activities and teaching methods	<ul style="list-style-type: none"> • Lectures and labs (combined) • Assignments in pairs 		
Recommended or required reading and other learning resources / tools			
Prerequisites and co-requisites			
Level	Bachelor		
Grading scale	1 up to 10, 1 dec.		
Assessment methods and criteria	Type of assessment	Grade weighting	Criteria
	Final assignment	7	Higher or equal to 5.5
	Homework	3	Higher or equal to 5.5
Language of Instruction	English		
Name of lecturer	For information about the lecturers you can contact Puja Buter-Fadte		
Mode of delivery	<ul style="list-style-type: none"> • Explanation of theory • Practice implementation in classroom • Discussion and question answering 		

Course summary			
VOE Code: ICT.GP.CPP.V22		ECTS credits: 3	
Level: Bachelor's degree (full-time)			
Course Title	C++ Programming		
Type	Compulsory		
Learning competences			
Learning outcomes	<p>Nowadays the game industry mostly works with sophisticated game engines, like the CryEngine or the Unreal Engine. To add functionality to the Unreal Engine, you have to program in C++. C++ is a widely-used programming language that is used in the gaming industry as well as in many other industries. C++ is different from programming languages like Java or C#, mainly because you are responsible for your own memory management. You will learn C++ Programming in a Windows environment.</p>		
Course content	<ul style="list-style-type: none"> • Introduction C++ • Classes in C++ • Object orientation in C++ • Templates • STL Classes (IO streams, vectors, etc.) • Pointers & references • Usage of C++ in a Windows environment 		
Planned learning activities and teaching methods	<ul style="list-style-type: none"> • Lectures • Labs • Assignments • Visual Studio 2015 • See "Electronic Learning Environment" (ELO) 		
Recommended or required reading and other learning resources / tools			
Prerequisites and co-requisites			
Level	Bachelor		
Grading scale	1 up to 10, 1 dec.		
Assessment methods and criteria	Type of assessment	Grade weighting	Criteria
	Lab Exam	1	Higher or equal to 5.5
Language of Instruction	English		
Name of lecturer	For information about the lecturers you can contact Puja Buter-Fadte		
Mode of delivery	Through digital media and verbal communication		