COURSE INFORMATION					
Course Title	*Code*	*Semester*	*L+P+L Hour*	*Credits*	*ECTS*
3D Game Development	CIS507		3+0+0	3	10

Prerequisites	-

Language of Instruction	English
Course Level	Master's Degree
Course Type	Elective
Course Coordinator	Assoc. Prof. Dr. Uğur Tevfik Kaplancalı
Instructors	Assoc. Prof. Dr. Uğur Tevfik Kaplancalı
Assistants	
Goals	Game Programming Technology, has become crucial to the development of computer and web environment. Game programming basics and techniques are explained, the participants will develop gaming programs.
Content	Game Programming, Game Programming mathematics, graphics, transformations, animation, game programming, sound, input and output hardware and the algorithms used in game programming.

Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1) To grasp the basics of game programming	3,4,5	1,2,14,16	A,C,D
2) Make of 2D and 3D modeling	3,4,5	1,2,14,16	A,C,D

Teaching Methods:	1: Lecture, 2: Question-Answer, 14: Self Study, 16: Project Based Learning
Assessment Methods:	A: Testing, B: Presentation, C: Homework, D: Project, E: Laboratory

COURSE CONTENT	
Week Topics	**Study Materials**
1 Introduction to Game Programming	
2 3D Mathematics	
3 3D Modelling	
4 Character Modelling	
5 Sound Programming	

6	Using Graphics
7	Input Hardware
8	Structure of Games
9	2D and 3D Transformations
10	Midterm
11	Game Engines
12	Output Hardware
13	Game Programming Lab
14	Game Programming Lab

RECOMMENDED SOURCES	
Textbook	Beginning C++ Game Programming,Michael Dawson, Thomson Course Technology, 2004.
Additional Resources	1. Game Design: Theory and Practice (2nd Edition), Richard Rouse, 2005, Wordware Publishing, Inc., ISBN-13: 978-1556229121. 2. Unity for Absolute Beginners, Sue Blackman, 2014, Apress, ISBN13: 978-1-4302-6779-9. 3. By Will Goldstone Unity 3.x Game Development Essentials (Community Experience Distilled) (2nd Edition) , Will Goldstone, 2009. 4.Beginning 3D Game Development with Unity 4: All-in-one, multi-platform game development, Sue Blackman, 2013, Apress, ISBN-13: 978-1430248996.

MATERIAL SHARING	
Documents	
Assignments	
Exams	

ASSESSMENT		
IN-TERM STUDIES	**NUMBER**	**PERCENTAGE**
Mid-terms	1	50
Quizzes	2	25
Assignment	2	25
Total		100
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		40
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		60
Total		100

COURSE CATEGORY	Expertise/Field Courses

COURSE'S CONTRIBUTION TO PROGRAM					

No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Information Systems graduates have the knowledge and the skills to design and develop the complete systems for multi-media visual user interface.				X	
2	Information Systems graduates have advanced the knowledge and skills to design, develop and install the application systems for multi-media.				x	
3	Information Systems graduates have the knowledge and the skills to design, develop and apply algorithms and data structures to solve the basic problems of information processing, within the framework of discrete mathematics.					X
4	Information Systems graduates have the knowledge and the skills to design and develop computer applications, based on user specified requirements, using modern structured development tools and install them on various hardware platforms and deploy their usage.					x
5	Information Systems graduates have the knowledge and the skills to design and develop computer applications, based on user specified requirements, using modern object-oriented development tools and install them on various hardware platforms and deploy their usage.					X
6	Information Systems graduates know the logic of computer operating systems, the basic set of system commands, how to control access to system resources by users of different departments and how to monitor the running of jobs in the system.		x			
7	Information Systems graduates have the knowledge and the skills to design and develop data models serving different requirements, database applications that would access and process data using various types of software, including queries, reports and business applications.	x				
8	Information Systems graduates have the knowledge and the skills to design and develop business applications that would provide data access, modification and processing for data kept in enterprise database systems.	x				
9	Information Systems graduates have the knowledge about computer networks, and have the skills to design, develop and monitor computer networks, how to configure them and how to maintain their performance.	x				
10	Information Systems graduates have the knowledge and the skills to design and develop visual user interfaces for the web, web-based applications for n-tier client/server configurations, how to deploy them in enterprises.		x			
11	Information Systems graduates, within his/her job responsibilities can communicate the necessary information both written and orally in Turkish, English and another foreign language, respecting the values the societal institutions and establishments, of which he/she has acquired in the program.		x			

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION

Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Including the exam week: 16x Total course hours)	14	3	42
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Mid-terms	2	3	6
Quiz	6	8	48
Term Project	2	40	80
Final examination	1	3	3
Total Work Load			249
Total Work Load / 25 (h)			9.96
ECTS Credit of the Course			10