CIT413 – Instructional Game Development with Scratch Course Syllabus

Course Name	Multimedia Design and Production
Course Code	CIT413
Type of Course	Major Area Elective
Course Level	Undergraduate
ECTS Credits	4
Weekly Theory Hour	3
Weekly Practice Hour	0
Weekly Laboratory Hour	-
Year	2013-2014
Term	FALL
Instructor (s)	Assist Prof. Dr. Yoney Kirsal
Teaching System	This course utilizes the Moodle course management system to share information and resources. To access the course site, log on to this link: http://elearning.gau.edu.tr and select the course from list of courses. All course materials will be posted here.
Education Language	ENGLISH
Prerequisite Course	-
Other Recommended Matters	-
Training Status	-

Course Objectives	• Become familiar with the Scratch "block based" interface
	• Become familiar with sprites in Scratch and how to interact with them
	• Build a basic animation using sprites and the block interface to create a script
	• Build a basic interactive story using sprites and the block interface to create a script
	• Build a basic catch game using sprites and the block interface to create a script
	• Build a basic collision game using sprites and the block interface to create a script
	• Use the Look, Sounds, Pen, Sensing, Variable and List Data Structure Blocks to creatively construct a generative art program.
	  ○ Develop algorithms that generate "Scratch Art" across the stage using the Motion, Look, Pen, Blocks and Variables in conjunction with Reporter Blocks.
	  ○ Develop algorithms that generate "Scratch Art" across the stage using the Motion, Look, Sound, Pen Blocks and Variable Lists in

<table>
<tr><td colspan="2"></td><td colspan="2">conjunction with Reporter Blocks.
○ Develop algorithms that generate "Scratch Art" across the stage using the Motion, Look, Sound, Pen Blocks and Variable => Lists as key value pairs to simple data structures.
• Become familiar with basic programming concepts.
• Create a basic mouse interaction project
• Create a basic user interaction project</td></tr>
<tr><td colspan="2">Learning Outcomes</td><td colspan="2">• Concepts of computation including decision, iteration, commands, variables, data types,
events and object manipulation. Program development and execution including saving, interpretation, user interactions providing input to program control.
• Concepts of mathematics including working with a 2D coordinate system; points, lines,
movement on the plane, and random numbers.
• Design process; Conceptualize, planning and realization through an iterative process of successive refinements.
• Planning and problem solving- identifying and defining a problem, identifying constraints,
identifying goals, brainstorming solutions, implementing solutions, assessing goodness of
solutions relative to goals.
• Teaming: working with a team, team problem solving, team productivity, and team success</td></tr>
<tr><td colspan="2">Course Content</td><td colspan="2">This course presents the Scratch media development application and teaches basic instructional gme development and game design techniques by using Scratch. After completing the course, students will have a fundamental understanding of instructional game development methods and procedures. Scratch was developed by the Massachusetts Institute of Technology(MIT) and is used by Harvard University for their "Introduction To Computer Programming" courses.</td></tr>
<tr><td rowspan="4">Weekly Detailed Plan</td><td rowspan="2">WEEK</td><td colspan="2">TOPICS</td></tr>
<tr><td>Theorotical</td><td>Lab (Prtactical)</td></tr>
<tr><td>1</td><td>Introduction & Getting Scratch

Previewing the Scratch Interface
The Scratch Block Scripts

Move a Sprite Around the Stage</td><td>SCRATCH PROGRAMMING BASICS: Getting Scratch, Moving a Sprite, & Animation</td></tr>
<tr><td>2</td><td>Automatically Move and Animate a Sprite</td><td></td></tr>
<tr><td>3</td><td>Changing Sprite Color & Adding Sound</td><td>SCRATCH</td></tr>
</table>

			PROGRAMMING BASICS: Changing Color, Adding Music, & Speaking
	4	Getting your Sprites to Speak to Each Other	
	5	Add a Sound & Twist	
	6	Creating a Moving Animation	
	7	Mid Term	
	8	Automatically Moving a Sprite & Keeping Score, & Posting to blog	
	9	Creating The Monkey Catch Game - Sprites & Background	
	10	Creating The Monkey Catch Game - Creating the Scripts	SCRATCH GAME BUILDING: Creating Characters, Game Logistics, & Variables
	11	Creating interactive instructional game - Sprites & Backgrounds	
	12	Creating interactive instructional game - Creating the Scripts Part 1	
	13	Creating an interactive Instructional Game - Creating the Scripts Part 2	
	14	Revision	
	15	**Final**	
Textbook/Recommended Readings	The class requires participants to have access to the Scratch environment, which is freely available from **http://scratch.mit.edu/**. The same website has a wide variety of information and sample projects that are also freely available. **Textbook:** Scratch™ Programming for Teens by Jerry Lee Ford Jr, published by Course Technology PTR, June 2008; ISBN 978-1-59863-536-2. The text will not be used in the class, but is included as a reference for those who wish to purchase a book		

ASSESSMENT METHODS

Term Activities	**Number**	**Semester(Year) Contribution %**
Term Project	**1**	**40**
Midterm	**1**	**20**
Final	**1**	**40**
TOTAL		**100**

Percentage of Classroom Activities		**60**
Percentage of Final Activities		**40**
	TOTAL	**100**

Calculation work load within the framework of learning, teaching and evaluation activities

Activities	Number	Time (Hour)	Total Work Load (hour)
Weekly Theory Hour	14	2	28
Weekly Practice Hour	14	1	28
Term Project	1	24	24
Midterm	1	20	20
Final	1	20	20
TOTAL WORKLOAD (hour)= 120			
COURSE ECTS CREDIT=Total Work Load (hour) /(30 hour/ECTS)= 120 / 30 = 4			

Additional Information about the **Term Project**(out of 100 points):
Individual projects are assigned to students from MONE's Information Technology book(6th,7th and 8th stages) and at a assigned grade level determined by the instructor.
Students will appropriately use Scratch to create an **interactive instructional** game on an assigned topic.

Programme and learning outcomes

Learning Outcomes (LO)	Programme Outcomes (PO)																
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**	**PO 16**	**PO 17**
LO1	5	3	3		5	5			4		5		3	5			
LO2	5	4	3		5	5			4		5		3	5			
LO3	5	3	3		5	5			4		5		3	5			
LO4	5	3	3		5	5			4		5		3	5			
LO5	5	3	3		5	5			4	4	5		3	5			

Contribution Level:
1 very low
2 low
3 medium
4 high