



Course Specification

Course Name: [Computer Animation]

Course Code: [IT432]

I. Basic Course Information

Major or minor element of program: Major

Department offering the course: [Information Technology Department]

Academic level: [400 Level]

Semester in which course is offered: [First (Fall) Semester]

Course pre-requisite(s): [Computer Graphics-1 IT331]

Credit Hours: 3

Contact Hours Through:

Lecture	Tutorial*	Practical*	Total
2.5	0.0	1.5	4.0

* 1.5 hours for **either** Tutorial or Practical

Approval date of course specification: [September 2014]

II. Overall Aims of Course

[Familiarize the student with the basics as well as the recent advances of computer animation.]

III. Program ILOs covered by course

Program Intended Learning Outcomes (By Code)			
Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
[K1,K10,K17,K20]	[I1,I17,I19]	[P14,P15,P17,P18]	[G2,G7,G8]



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IV. Intended Learning Outcomes of Course (ILOs)

a. Knowledge and Understanding

- K.1 Illustrate essential concepts, principles, theories, current and future development for computer animation applications.
- K.2 Demonstrate an understanding of the fundamental concepts, tools, and techniques used for processing speech and image signals.
- K.3 Identify the potential and limitation of real-time interactive computer animation
- K.4 Name and compare the tools for real-time graphics.
- K.5 Explain how real-time interactive animation graphics are created through selected tools.]

b. Intellectual/Cognitive Skills

- I.1 Analyse problems and assess the relevance and adequacy of information, set goals towards solving them.
- I.2 Formulate the necessary systems requirements for computer animation applications.
- I.3 Develop innovative, effective and practical designs to solve real-life IT-related problems with identified specifications and constrained.]

c. Practical/Professional Skills

- P.1 Apply the principles of effective information management, organization, and presentation to information retrieval of various kinds, including text, images, sound, and video, resolving security issues.
- P.2 Design, implement, maintain, document, and manage animation applications software, using appropriate tools, through the acquired comprehensive computing knowledge and skills to solve practical problems.
- P.3 Manipulate real life problems related to animation applications using different modelling approaches.
- P.4 Employ publicly available software (such as APIs or open source software) to develop animation applications.]

d. General and Transferable Skills

- G.1 Demonstrate ability in time management, organization skills, communication skills, report writing skills, and presentation skills for a variety of audiences (e.g., management, technical, academic).
- G.2 Demonstrate ability to work as a team member.
- G.3 Use IT resources and general computing facilities efficiently.
- G.4 Demonstrate an appreciation and ability to continue professional development and ensure life-long self-learning.]



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V. Course Matrix Contents

	Main Topics / Chapters	Duration (Weeks)	Course ILOs Covered by Topic (By ILO Code)			
			K & U	I.S.	P.S.	G.S.
1-	Introduction to Computer Animation]	[1]	[K1]	[]	[]	[]
2-	3D Modelling]	[1]	[K1,K3]	[I1]	[P4]	[G3]
3-	Rendering Techniques]	[1]	[K1,K3,K4]	[I1]	[P2,P4]	[G3]
4-	Key Framing and Interpolations]	[2]	[K1,K3]	[I1]	[P2,P4]	[G3]
5-	Hierarchical Animation]	[1]	[K1,K4]	[I1]	[P2,P4]	[G3]
6-	Camera Animation and Light Animation]	[2]	[K2,K3]	[I1,I2]	[P1:P4]	[G3]
7-	Special Effects]	[1]	[K4]	[I1,I2]	[P1:P4]	[G3]
8-	Digital Effects]	[1]	[K2,K4]	[I1,I2]	[P1:P4]	[G3]
9-	Digital Animation Techniques]	[1]	[K2,K4,K5]	[I2,I3]	[P3,P4]	[G3]
10-	Recording and Production Planning]	[2]	[K4,K5]	[I2,I3]	[P3,P4]	[G2,G3]
	Net Teaching Weeks	13				

VI. Course Weekly Detailed Topics / hours / ILOs

Week No.	Sub-Topics	Total Hours	Contact Hours	
			Theoretical Hours	Practical Hours*
1	Introduction to Computer Animation]	2.5	2.5	
2	3D Modelling]	4	2.5	1.5
3	Rendering Techniques]	4	2.5	1.5
4	Key Framing]	4	2.5	1.5
5	Interpolations]	4	2.5	1.5
6	Hierarchical Animation]	4	2.5	1.5
7	Midterm Exam			
8	Camera Animation]	4	2.5	1.5
9	Light Animation]	4	2.5	1.5
10	Special Effects]	4	2.5	1.5
11	Digital Effects]	4	2.5	1.5
12	Digital Animation Techniques]	4	2.5	1.5
13	Recording and Production Planning]	4	2.5	1.5
14	Recording and Production Planning]	4	2.5	1.5
15	Final Exam			
Total Teaching Hours		51	33	18

* No Practical/Tutorial during the first week of the semester



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VII. Teaching and Learning Methods

Teaching/Learning Method	Selected Method	Course ILOs Covered by Method (By ILO Code)			
		K & U	Intellectual Skills	Professional Skills	General Skills
Lectures & Seminars	[x]	[K1:K5]	[I2]	[]	[]
Tutorials	[]	[]	[]	[]	[]
Computer lab Sessions	[x]	[K4,K5]	[I1:I3]	[P2,P4]	[G1,G4]
Practical lab Work	[x]	[K4,K5]	[I1:I3]	[P1,P2,P4]	[G1,G2,G3]
Reading Materials	[]	[]	[]	[]	[]
Web-site Searches	[]	[]	[]	[]	[]
Research & Reporting	[]	[]	[]	[]	[]
Problem Solving / Problem-based Learning	[]	[]	[]	[]	[]
Projects	[]	[]	[]	[]	[]
Independent Work	[]	[]	[]	[]	[]
Group Work	[x]	[K5]	[I2]	[P3]	[G1,G2,G3]
Case Studies	[]	[]	[]	[]	[]
Presentations	[x]	[K4,K5]	[I1,I2]	[P2,P4]	[G1:G4]
Simulation Analysis	[]	[]	[]	[]	[]
Others (Specify):	[]	[]	[]	[]	[]

VIII. Assessment Methods, Schedule and Grade Distribution

Assessment Method	Selected Method	Course ILOs Covered by Method (By ILO Code)				Assessment Weight / Percentage	Week No.
		K & U	I.S.	P.S.	G.S.		
Midterm Exam	[x]	[K1,K2,K3]	[I1,I2]	[]	[]	[20%]	7
Final Exam	[x]	[K1:K4]	[I1,,I2]	[]	[]	60%	15
Quizzes	[x]	[K1:K4]	[I1,I2]	[P1,P2]	[G3]	[5%]	[5]
Course Work	[]	[]	[]	[]	[]	[]	[]
Report Writing	[]	[]	[]	[]	[]	[]	[]
Case Study Analysis	[]	[]	[]	[]	[]	[]	[]
Oral Presentations	[x]	[K4,K5]	[I3]	[P2,P3,P4]	[G1,G2,G3]	[5%]	[5]
Practical	[]	[]	[]	[]	[]	[]	[]
Group Project	[x]	[K5]	[I3]	[P2,P3,P4]	[G1:G4]	[10%]	[12]
Individual Project	[]	[]	[]	[]	[]	[]	[]
Others (Specify):	[]	[]	[]	[]	[]	[]	[]



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IX. List of References

Essential Text Books	<ul style="list-style-type: none">• [The Art of 3-D Computer Animation and Effects, Third Edition (Paperback) by Isaac Victor Kerlow]
Course notes	<ul style="list-style-type: none">• [Lecture Slides and Notes]
Recommended books	<ul style="list-style-type: none">• [Computer Animation, Second Edition: Algorithms and Techniques (The Morgan Kaufmann Series in Computer Graphics) (Hardcover) by Rick Parent• [Principles of Three Dimensional Computer Animation (Hardcover by Michael O'Rourke]
Periodicals, Web sites, etc ...	<ul style="list-style-type: none">• [Various]

X. Facilities required for teaching and learning

<ul style="list-style-type: none">• [Computer Animation Software (to be decided)]
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Course coordinator:[Prof. Hesham El Mahdy]

Head of Department:[Prof. Reda Abd el- Wahab]

Date: September 2014