



**COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE**

COURSE SYLLABUS/ SPECIFICATION

CODE & TITLE: ITMS 201 - Introduction to Multimedia Systems

WEIGHT: (3 - 0 - 3)

PREREQUISITE: ITCS 101

NQF Level Allocated: Level 6

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course focuses on building the theoretical knowledge about Multimedia Systems. It emphasize on learning the architecture, techniques, tools and development phases of Multimedia Systems. Students will understand the underlying concepts of multimedia, and gain knowledge about the state-of-the-art in this field.

OBJECTIVES:

1. To understand the basic concepts, components, and tools of Multimedia Systems.
2. To develop an understanding of the elements constituting the development of effective multimedia systems.
3. To identify the evolution, latest trends, and state-of-the-art in multimedia technology, standards, and applications.

SEMESTER:
INSTRUCTOR:
OFFICE TEL.:
EMAIL:

ACADEMIC YEAR:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	<u>Concepts and Theories:</u> <i>Demonstrate detailed knowledge and understanding related to fundamental elements of multimedia systems.</i>	Knowledge: theoretical understanding [Level 6]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	
B. Subject-Specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving:</u> <i>Use some advanced skill to solve them by using a variety of multimedia technologies.</i>	Knowledge: Practical Application [Level 6]
B2	<u>Modeling and Design:</u> Design multimedia systems by choosing appropriate components and models that satisfy user requirements.	Knowledge: Practical Application [Level 6]
B3	<u>Application of Methods and Tools:</u> NA	

C. Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic:</u> <i>Evaluate different multimedia technologies and problems needed for developing multimedia systems.</i>	Generic Problem Solving & Analytical skills [Level 6]
C2	<u>Synthetic:</u> NA	
C3	<u>Creative:</u> <i>Deal with defined issues in designing multimedia components and systems.</i>	Generic Problem Solving & Analytical skills [Level 6]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal)		NQF Descriptor/ Level
D1	<u>Communication:</u> <i>Use basic skills to communicate ideas in oral and written form.</i>	Communication, ICT and Numeracy Skills [Level 6]

D2	<u>Teamwork and Leadership: NA</u>	
D3	<u>Organizational and Developmental Skills: NA</u>	
D4	<u>Ethics and Social Responsibility: NA</u>	

Course Structure (Outline)						
Week	Hours		ILOs	Topic s	Teaching Method	Assessment Method
	Lecture					
1	3		A1	Syllabus and Creating Moodle accounts Introductions: <ul style="list-style-type: none"> Information Systems overview 	Lecture/ Class Discussion	-
2	3		A1	Introduction to multimedia systems: <ul style="list-style-type: none"> What is multimedia? History of multimedia. Components of multimedia systems 	Lecture/ Class Discussion	Oral Participation *
3	3		A1	Introduction to multimedia: <ul style="list-style-type: none"> Web and Internet multimedia applications. Transition from conventional media to digital media. 	Lecture/ In- Class Supervised Work	Quiz1
4	3		A1, B1, C1	Computer Fonts and Hypertext: <ul style="list-style-type: none"> Usage of text in Multimedia. Families and faces of fonts. Outline fonts. 	Lecture/ In- Class Supervised Work	Oral Participation *
5	3		B1,B2,C1,C3,D 1	Computer Fonts and Hypertext: <ul style="list-style-type: none"> Bitmap fonts. International character sets and hypertext. Digital font's techniques 	Lecture/ In- Class Supervised Work	Assignment1
6	3		A1, B2	Audio fundamentals and representations: <ul style="list-style-type: none"> Digitization of sound. Frequency and bandwidth. Decibel system. Data rate. Audio file format. Sound synthesis. 	Lecture/ In- Class Supervised Work	Oral Participation *

7	3		B1,B2,C1,C3,D 1	Audio fundamentals and representations: <ul style="list-style-type: none"> • MIDI. • Wavetable, • Compression and transmission of audio on Internet. 	Lecture/ In-Class Supervised Work	Assignment 2
8	3		A1, B1, B2, C1	Image Fundamentals and representations: <ul style="list-style-type: none"> • Colour Science. • Colour. • Colour Models. • Colour palettes. • Dithering, 2D Graphics. • Image. • Compression and File Formats: GIF, JPEG, JPEG 2000, PNG, TIFF, EXIF, PS, PDF. 	Lecture/ In-Class Supervised Work	Oral Participation *
9	3		A1, C1	Image Fundamentals and representations: <ul style="list-style-type: none"> • Basic Image Processing. • White balance correction. • Dynamic range correction. • Gamma correction. • Photo Retouching. 	Lecture/ In-Class Supervised Work	Quiz 2
10	3		A1, B1, C1	Video and Animation: <ul style="list-style-type: none"> • Video Basics. • How Video Works. • Broadcast Video Standards. • Analog video. • Digital video. • Video Recording and Tape formats. 	Lecture/ In-Class Supervised Work	Major Test
11	3		A1, B2, C1	Video and Animation: <ul style="list-style-type: none"> • Shooting and Editing Video (Use Adobe Premier for editing). • Video Compression and File Formats. • Video compression based on motion compensation. • MPEG-1, MPEG-2, MPEG-4, MPEG-7, MPEG-21. 	Lecture/ In-Class	Oral Participation *
12	3		A1, B1	Video and Animation: <ul style="list-style-type: none"> • Animation: Cell Animation. • Computer Animation. • Morphing. 	Supervised Work	Oral Participation *

13	3		A1	Multimedia Authoring: • Multimedia Authoring Basics.	Lecture/ In-Class Supervised	Oral Participation *
14	3		B1,B2,C1,C3,D 1	Multimedia Authoring: • Some Authoring Tools.	Lecture/ Independent Learning	Assignment 3
15	3			• Revision.		
16			A1, B1, B2, C1, C3	All Topics	Final Exam	

TEACHING MATERIALS

TEXTBOOK(S): 1. Tim Morris, “Multimedia Systems Delivering, Generating and Interacting with Multimedia”, 2012, Springer London.

HANDOUT(S): Power point slides, <http://www.ahlia.edu.bh/moodle>.

REFERENCE(S):

1. Ze-Nian Li, Mark S. Drew, Jiangchuan Liu, “Fundamentals of Multimedia (2nd ed.)”, 2014, Springer International Publishing.
2. Tay Vaughan, “Multimedia making it work”, 2014, McGraw-Hill Education; 9 edition.
3. An Introduction to Digital Multimedia 2nd Edition, 2013, Jones & Bartlett Learning; 2 edition, ISBN 144968839X-978-1449688394.
4. Vic Costello, “Multimedia Foundations: Core Concepts for Digital Design, 2nd Edition”, 2017, T&F/FOCAL PRESS.

ASSESSMENTS

Type of Assessment	Description	ILOs	Weighting
Oral Participation	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during	D1, A1	Formative
Quizzes	The test will be an in-class 30 minutes quiz that will consists of short-answer and problem solving questions. Also, it covers the topics as shown in the above weekly structure.	A1	10%
Assignments	The assignments are to evaluate the students on the analysis and design of multimedia components. A Soft copy submission is required by the end of specified dates through the course page in Moodle where answers will be checked by Turnitin against plagiarism.	B1, B2, C1, C3, D1	20%
Major Test	The written test will be an in-class 1:30 hour test that will consists of MCQs, short-answer, essay, and problem solving questions and cover the topics studied in the first 8 weeks.	A1, B1, C1	30%
Final Exam	The final exam is comprehensive and will be of two hours duration.	A1, B1, B2, C1, C3	40%
Overall			100%

13. Admissions	
Pre-requisites	ITCS 101
Minimum number of students	5
Maximum number of students	20