The University of Jordan Accreditation & Quality Assurance Center

COURSE Syllabus

The University of Jordan

KASIT/ Computer Information Systems Department

Advanced Multimedia 1902450

Instructor name: Dr. Ammar M. Huneiti
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Course Description:

This course is mainly designed to further introduce the theoretical concepts of digital media including images, audio, animation and video. Different types of digital media are outlined and their digital storage process is explained in detail such as the GIF standard and file organization. The digital media encoding and decoding concepts and dithering techniques are explained. In addition, different types of digital media compression techniques are introduced. This includes lossless and lossy techniques such as JPEG, MPEG and H.26x video compression standards. The main algorithm used in these compressors are outlined. In addition, performance issues such as hardware, software, Internet-based broadcast, and analog vs digital concerns are also discussed. Internet like the like

Objectives of the course and Competency coverage:

- This course aims to develop the students' ability to understand multimedia concepts, tools and applications.
- Develop the students' skills of using multimedia tools and techniques.,
- Introduce approaches and models for multimedia techniques and applications
- Highlight and integrate image processing and compression techniques

After completing this course the student should be able to:

- Understand multimedia techniques and applications
- Understand Multimedia components (Text, image, audio and video) principles.
- Understand and use compression technique in different multimedia components.

Intended Learning Outcomes:

The intended learning outcomes of this course are:

A- Knowledge and Understanding: Students should ...

- A1) Understand how multimedia titles are made and their development process.
- A2) Know the different types of skills required to make multimedia titles
- A3) Understand the main principles for creating different types of multimedia elements including text, graphics, sound, animation and video.

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A4) Know about different types of hardware and software tools used for developing multimedia.

B- Intellectual skills: with the ability to ...

- B1) Distinguish between the tasks of different multimedia development team members
- B2) Distinguish between linear multimedia, nonlinear multimedia and hypermedia
- B3) Use production software tools to produce primitive multimedia elements
- B4) Use authoring software tools to produce a multimedia title

C- Subject specific skills – with ability to ...

- C1) Use different multimedia production tools.
- C2) Choose the best coloring scheme for a multimedia project
- C3) Advise on the most suitable hardware for a multimedia project
- C4) Create professional images, animations, and videos
- C5) Compute the file sizes of different multimedia elements

D- Transferable skills – with ability to

- D1) Plan for a multimedia project including the needed skill set
- D2) Manage the needed resources for a multimedia project
- D3) Build professional multimedia titles

Teaching/Learning Methods

Lectures and	A1+A2+A3+A4+B1+C2+C3+C4+C5+D1+D2+D
Discussions	3
Assignments/Projec	C1+C4+D3
t	
Demonstration	B2+B3+B4+C1+C2+C3+C4+D2+D3
Research	B3+B4+C1+C2+C4+C5+D1+D2+D3

Text Books

The main text books for this course are:

- **1.** The Science of Digital Media, J. Burg, Prentice Hall, 2009.
- 2. Fundamentals of Multimedia, Li and Drew, Pearson Prentice Hall, 2004.
- 3. Multimedia: Making it work, Tay Vaughan, 7th ed., McGraw Hill, 2008.
- **4.** Multimedia communications, applications, networks, protocols and standards", Fred Halsall, Pearson Education, 2001

Other reading material:

- 1. Multimedia: Computing, Communications and Applications, materiRalf Steinmetz and Klara Nahrstedt, Prentice-Hall Inc., 2001
- 2. Multimedia Communication Systems: Techniques, Standards, and Networks, K.R Rao, Z.S. Bojkovic and D.A. Milovanovic, Prentice Hall of India, 2002

3. Networked Multimedia Systems-Concepts, Architecture and design, Raghavan S V and Tripatti S K, Prentice hall, 1998

Journals:

- 1. ACM Proceedings on Multimedia Computing, Communications, and Applications (TOMCCAP)
- 2. IEEE Transactions on Multimedia
- 3. IEEE Multimedia Magazine

Course Content:

#	Topics	Duration (Week)	Chapter
1	Introduction to Multimedia	1	1 (Ref 1) 1 (Ref 2)
3	Graphics and Image Representations	2	2 (Ref 1) 3 (Ref 2)
٤	Color in Image and Video	1	2,3 (Ref 1) [£] (Ref 2)
5	Digitised Audio	2	4 (Ref 1) ° (Ref 2)
	Mid-Term Exam		
6	Digital Video	2	6 (Ref 1) 6 (Ref 2)
7	Video Compression Techniques MPEG, H.26x	1	7 (Ref 1) 10 (Ref 2) 4 (Ref 4) 5 (Ref 1) 13 (Ref 2) 4 (Ref 4)
8	Lossless Compression Techniques	1	7 (Ref 1) 7, 8 (Ref 2)
9	loss Compression Technique (JPEG)	1	3 (Ref 1), 9 (Ref 2)
10	Video and Audio Compression Techniques	2	7 (Ref 1) 10 (Ref 2) 4 (Ref 4)
			5 (Ref 1) 13 (Ref 2) 4 (Ref 4)
	Final Exam		

Grading:

The total grades of this course are assigned as follows:

Middle Term exam 30% Research, Assignments, Class presentation, Project 20% Final Exam 50%

<u>Notes</u>

•	Students are expected to attend class; there is no system of permitted absences. The instructor
	in each class determines the effect of absences on a student's grade in that class. Students may
	not normally receive credit for a course if they do not attend 15 % of the class meetings.

•	Assignments	and researc	h should	be delivered	ed in time.
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Name of Cour	rse Coordinator: Dr. Ammar Huneiti	Signature:	Date:
	Head of curriculum committee/Depa		
Head of Depa	 rtment: Signature:		-
Head of curri	culum committee/Faculty:	Signature:	
Dean:			_

Copy to: Head of Department Assistant Dean for Quality

Assurance