

Detailed Course Description - Course Plan Development and Updating Procedures/ Computer Science \ Multimedia Systems Department	QF01/0408-3.0E
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Faculty	Science & Information Technology	Department	Computer Science \ Multimedia Systems
Course number	0105121	Course title	Introduction to Multimedia Systems
Number of credit hours	3	Pre-requisite/co-requisite	Introduction to IT

Brief course description

This course aims to make students acquainted with the fundamental concepts of multimedia and multimedia systems in emerging multimedia value added services.

The course introduces the basic concepts and usage of Multimedia: Text, Images, Sound, Animation, and Video. Sampling, quantization, colors encoding, and data compression algorithms are discussed. Hardware and Software issues are discussed. Students will be introduced to the development stages and the required skills (Skill set) for making Multimedia titles.

1. To introduce students to the concept of multimedia and its components.
2. Understand the basics of related concepts such as sampling, quantization, colors encoding, and data compression.
3. Get introduced to the applications of multimedia in different domain.
4. Get personal training on several multimedia packages.
5. Understand the basics of photos and photo editing.
6. Combine photos, audio, and animation into a multimedia package.

Course goals and learning outcomes	
Goal 1	Provide students with the knowledge and understanding of multimedia concept and elements
Learning outcomes	1.1 Be able to understand the importance of Multimedia Systems in the work and the life. 1.2 Be able to use Multimedia Systems Software Tools. 1.3 Analyze the current status of multimedia production and distribution systems and predict future advances and implementations.
Goal 2	Provide students with the Intellectual Skills that needed to produce a multimedia project
Learning outcomes	2.1 Plan, develop, and document a professional-grade multimedia product that can be used to educate, sell, or inform. 2.2 Identify and analyze the technological impediments to multimedia production and distribution. 2.3 Identify and analyze the strengths and weaknesses of multimedia-enhanced educational products.
Goal 3	The ability to combine between multimedia elements and use compression techniques
Learning outcomes	3.1 be able to combine between different elements to produce projects 3.2 be able to evaluate and critique multimedia productions. 3.3 Become proficient in the development of graphics and animation using authoring tools. 3.4 be able to use different compression techniques

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Textbook	Z-N. Li, M.S. Drew, and J. Liu, Fundamentals of Multimedia, 2nd Ed., Springer, Switzerland, 2014.
Supplementary references	<ol style="list-style-type: none"> 1. Parag Havaldar, Gerard Medioni, Multimedia Systems: Algorithms, Standards, and Industry Practices, Cengage Learning, 2010. 2. R. Steinmetz and K. Nahrstedt, Multimedia Fundamentals: Media Coding and Content Processing, Prentice Hall, 2002. 3. "Multimedia: Making it work", Vaughan, Tay, 8th Edition. McGraw-Hill, 2010, ISBN: 0071748466

Course timeline				
Week	Number of hours	Course topics	Pages (textbook)	Notes
01	1	Introduction to Multimedia Multimedia Products Multimedia Authoring and Tools	1-36	
	1			
	1			
02	1	Graphics and Image Data Representations Color in Image and Video	40-87	
	1			
	1			
03	1	Fundamental Concepts in Video Basics of Digital Audio	90-110	
	1			
	1			
04	1	Lossless Compression Algorithms Lossy Compression Algorithms	929-960	
	1			
	1			
05	1	Image Compression Standards Basic Video Compression Techniques		Ref.2: 488-519
	1			
	1			
06	1	General Review, Exercises, and First Exam 20%		
	1			
	1			
07	1	Video Using Video, How video works, Broadcast video standards,	271-285	
	1			
	1			
08	1	MPEG Video Coding I—MPEG-1 and 2 MPEG Video Coding II—MPEG-4, 7 and Beyond	290-300	
	1			
	1			
09	1	Sounds: The power of sound, Digital Audio, Making MIDI Audio, Audio file formats, MIDI vs. Digital Audio. Compression Algorithms	190-211	
	1			
	1			
10	1	Basic Audio Compression Techniques MPEG Audio Compression		Ref 2: 232-243
	1			
	1			
11	1	Animation The power of Motion,	315-337	
	1			

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	1	Principles of Animation.		
12	1 1 1	General Review, Exercises, and Second Exam 20%		
13	1 1 1	Animation Animation Transformations Animation by Computer.	338-345	Ref.2: 450-470
14	1 1 1	Computer and Multimedia Networks Multimedia Network Communications and Applications	347-357	Ref.2: 471-485
15	1 1 1	Hardware Macintosh vs. Windows, Memory and storage, Devices, Input Devices, Output hardware,	359-385	Ref.3: 363-367
16	1 1 1	Final Exam 50%		

Theoretical course evaluation methods and weight	Participation = 10% First exam 20% Second exam 20% Final exam 50%	Practical (clinical) course evaluation methods	Semester students' work = 50% (Reports, research, quizzes, etc.) Final exam = 50%
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Approved by head of department		Date of approval	
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Extra information (to be updated every semester by corresponding faculty member)

Name of teacher	Sokyna ALQATAWNEH	Office Number	
Phone number (extension)		Email	S.qatawneh@zuj.edu.jo
Office hours			