

1.	Course title	Multimedia
2.	Course number	1902745
3.	Credit hours (theory, practical)	3 Theory
	Contact hours (theory, practical)	
4.	Prerequisites/corequisites	
5.	Program title	MSC IS
6.	Year of study and semester (s)	Any
7.	Final Qualification	Masters of Science (MSc)
8.	Other department (s) involved in teaching the course	None
9.	Language of Instruction	English
10.	Date of production/revision	March 2019
11.	Required/ Elective	Required (Comp. track), Elective (Thesis Track)

12. Course Coordinator:

Ammar Huneiti
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13. Other instructors:

NA

14. Course Description:

This course will be an introduction to the past, present, and future of the theory and practice of multimedia information systems. The concepts and methods of the multimedia production cycle comprising the creation, description, retrieval, editing, management, distribution, and reuse of digital media will be presented. Students will gain theoretical background and practical experience to help them design, innovate, critique, and assess digital multimedia information systems. The course will introduce current commercial and academic research systems for media production, editing, annotation, retrieval, and reuse. In addition the course will include a look into the future of digital multimedia information systems including systems that automate and

integrate many aspects of digital media production and reuse. A discussion of the design of next-generation multimedia information systems and prototypes is also included.

In addition, This course is mainly designed to introduce the theoretical concepts of digital media including images, audio, animation and video. The difference between analog and digital media is discussed. Different types of digital media are outlined and their digital storage process is explained in detail. The digital media encoding and decoding concepts are explained. In addition, different types of digital media compression techniques are introduced. The most popular file formats are outlined for each media type. Finally, the Multimedia related hardware, software, and web-related issues are discussed where necessary.

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.

1. Course aims and outcomes:

Aims:

- Understand the theoretical concepts of digital media including images, audio, animation and video.
- Understand the difference between analog and digital media.
- Understand digital media storage process
- Understand the digital media encoding and decoding concepts
- Understand the different types of digital media compression techniques
- Outline the most popular file formats for each media type
- Understand the Multimedia related hardware, software, and web-related issues

Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to:

A- Knowledge and Understanding: Students should ...

- A1) Understand how multimedia titles are digitally encoded, compressed and their development process.
- A2) Know the different types of skills required to make multimedia titles both digital and analog.
- A3) Understand the basic principles for creating different types of multimedia elements including Images, audio, animation and video.
- 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 encoding techniques
- B2) Distinguish between Different multimedia types in terms of their storage, presentation and application.
- 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) Fix different digital media problems.
- C2) Choose between different colouring scheme for a multimedia project
- C3) Advise on the most suitable hardware for a multimedia project
- C4) Create professional images, audios, and videos
- C5) Compute the file sizes of different multimedia elements and the capability to trade-off between media quality and available computer resources

D- Transferable skills – with ability to:

- D1) Plan for a multimedia project including the needed skill set
- D2) Advise on different specifications of digital media standards.
- D3) Build professional multimedia titles
- D4) Build the capability to trade-off between media quality and available computer resources.

15. Topic Outline and Schedule:

#	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)
ξ	Color in Image and Video	1	2,3 (Ref 1) ξ (Ref 2)

5	Digitised Audio	2	4 (Ref 1) ° (Ref 2)
	Mid-Term Exam	1	
6	Digital Video	2	6 (Ref 1) 6 (Ref 2)
7	MIDI Audio	1	4 (Ref 1) ° (Ref 2)
8	Loss and Lossless Compression Techniques	1	7 (Ref 1) 7, 8 (Ref 2)
9	Image 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)
11	Research Evaluation	1	5 (Ref 1) 13 (Ref 2) 4 (Ref 4)
	Final Exam	1	

16. Evaluation Methods and Course Requirements (Optional):

Development of ILOs is promoted through the following <u>teaching and learning methods</u> :	
Lectures and Discussions	A1, A2, A3, A4, B1, B2, C2, C3, C4, C5, D1, D2, D3, D4
Demonstration	B1, B2, B3, B4, C1, C2, C3, C4, C5, D1, D2, D3, D4
Grading: The total grades of this course are assigned as follows:	
Middle term exam	30%
Research, Assignments, Class presentation, Project	30%
Final Exam	40%

17. Course Policies:

<ul style="list-style-type: none"> الامتناع المدير عن حضور المحاضرات أو الدروس أو عن الأعمال الأخرى التي تقضي الأنظمة بالمواطبة عليها ، وكل تحريض على هذا الامتناع سوف يؤدي الى حرمان الطالب من المادة المعنية. في حالة التغيب عن امتحان ال Mid Term لن يكون هناك امتحان تعويضي الا في حالة وجود عذر وحالة طارئة من المستشفى. على الطالب ابراز العذر لمدرس المادة في فتره لا تتجاوز الثلاثة ايام من تاريخ الامتحان, وللمدرس الحق في قبول او رفض العذر , وحسب التعليمات. Concerns or complaints should be expressed in the first instance to the module lecturer; if no resolution is forthcoming then the issue should be brought to the attention of the module coordinator (for multiple sections) who will take the concerns to the module representative meeting. Thereafter problems are dealt with by the Department Chair and if still unresolved the Dean and then ultimately the Vice President. For the final complaints, there will be a committee to review grading the final exam. <ul style="list-style-type: none"> For more details on University regulations please visit http://graduatedstudies.ju.edu.jo/RulesAndRegulations/Forms/Rules.aspx Intended Grading Scale:
0-49 F,D- 50-62 D,D+ 63-73 C-,C,C+ 74-83 B-,B,B+ 84-100 A-,A

- Statement on Students with disabilities

Students with Disabilities: Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.

18. Required equipment:

- Laptop
- DataShow
- MM Software: Adobe Flash, MovieMaker, Sound Recorder, Adobe PhotoShop, Paint Bruch, Power Point.

19. References:

- **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

20. Additional information:

Please Note: the course outline and other learning resources are also available on the University E-Learning system (elearning.ju.edu.jo). Login using your account name and password given by the registration unit.

Date: - 20.03.2019

Name of Course Coordinator: **Dr. Ammar Huneiti** Signature:



Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----

Copy to:

Head of Department

Assistant Dean for Quality Assurance

Course File