



Jordan University of Science and Technology
Faculty of Computer & Information Technology
Computer Science Department

CS385 Fundamentals Of Multimedia

Summer Semester 2019-2020

Course Catalog

3 Credit Hours. 3 Credit hours (3 h lectures). Introduction to the principles and to the current technologies of multimedia system design and gain hands-on experience in this area. Topics include multimedia systems design, multimedia hardware and software, issues in effectively representing, processing, and transmitting multimedia data such as text, graphics, sound and music, image and video.

Text Book

Title	Fundamentals of Multimedia
Author(s)	Ze-Nian Li, Mark S. Drew, Jiangchuan Liu
Edition	2nd Edition
Short Name	T1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
T2	Digital Image Processing using Matlab	Gonzalez	2nd Edition	

Instructor

Name	Dr. Mohammad Alsmirat
Office Location	M2-L2
Office Hours	Sun : 13:00 - 14:30 Mon : 13:00 - 14:30 Tue : 13:00 - 14:30 Wed : 13:00 - 14:30
Email	masmirat@just.edu.jo

Class Schedule & Room

Section 2:

Lecture Time: Sun, Mon, Tue, Wed : 14:30 - 16:00

Room: منصة الكترونية

Prerequisites

Line Number	Course Name	Prerequisite Type
1731810	CS181 Linear Algebra	Prerequisite / Study
1732112	CS211 Data Structures	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Introduction	CH1 From T1
Weeks 2, 3, 4, 5	Graphics and Image Data Representations	CH3 From T1, CH2 From T2
Week 6	Color in Image and Video	CH4 From T1, CH7 From T2
Week 7	Fundamental Concepts in Video	CH5 From T1
Week 16	Basics of Digital Audio	CH6 From T1
Weeks 8, 9, 10	Lossless Compression Algorithm	CH7 From T1
Week 11	Lossy Compression algorithms	CH8 From T1
Weeks 12, 13	JPEG	CH9 From T1
Week 14	Video Compression	CH10 From T1
Week 15	Multimedia and Machine Learning	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Be able to define Multimedia and Multimedia System [1SO1, 1SO3]	4%	
Be able to describe different image and graphics representations [1SO1, 1SO3, 1SO6]	20%	
Understand color and deal with different color systems [1SO1, 1SO3, 1SO6]	6%	
Understand the basics of video [1SO1, 1SO3, 1SO6]	5%	
Understand lossless image compression techniques [1SO1, 1SO3, 1SO6]	17%	
Be able to describe lossy image compression techniques [1SO1, 1SO3, 1SO6]	6%	

Be able to describe the JPEG image compression standard [1SO1, 1SO3, 1SO6]	7%	
Be able to describe video compression techniques and simple standards [1SO1, 1SO3, 1SO6]	15%	
Be able to design and implement simple multimedia systems [1SO1, 1SO2, 1SO3, 1SO6]	20%	

Relationship to Program Student Outcomes (Out of 100%)					
SO1	SO2	SO3	SO4	SO5	SO6
32.33	5	32.33			30.33

Evaluation	
Assessment Tool	Weight
First	20%
Second	20%
Assignments	20%
Final	40%

Policy	
Attendance	Attendance is very important for the course. In accordance with university policy, students missing more than 20% of total classes are subject to failure. Penalties may be assessed without regard to the student's performance. Attendance will be recorded at the beginning or end of each class. No excuses will be accepted.
Short Assignments	Students are expected to keep up with the material as it is presented and submit assignments on time. There will be at least three programming assignments. A document will be distributed to describe each assignment requirements and deliverables.
Exams	All exams will be CLOSE-BOOK.

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