Faculty of Computers and Information Technology

Multimedia

Information :

Course Code :	ITC 442	**Level** :	Undergraduate	**Course Hours :**	3.00- Hours

Department :   Department of Information Systems

Area Of Study :

Apply sampling and quantizing techniques to still images, video, sound and sensor data;
Use digital sound, image and video processing to alter digital media
Design and develop digital media applications which incorporate a range of different digital media components;
Identify and explain the applications of digital media; and
Work in a team of digital media developers

Description :

Introduction to multimedia systems, Media Types, Digital Audio, Digital video, Lossy and lossless data compression, Predictive coding techniques, Transform coding techniques, Scalar and vector quantization, Entropy encoding, Huffman coding, Arithmetic coding, Adaptive techniques, Dictionary based coding (LZ11- LZ78- LZW), JPEG compression, Motion estimation and compensation in video, MPEG compression, Wavelet coding, multimedia databases, Network considerations for multimedia transmission. Screen Resolution And Screen Technology, Video Accelerator Design System, Vaster Graphics (3d- Transformation), Analog to Digital Conversation, Video Compression, Mixing and Displaying at 30 FPS with Full Color Capacity, Physics Of Sound, Sound Cards, Sound Cards Limitations.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Describe the basic concepts of the fundamental elements in multimedia
2 -	Describe the formats of different multimedia data
3 -	Describe different multimedia standards and technologies
4 -	apply lossless and lossy compression techniques on multimedia data

b.Intellectual Skills: :

1 -	Design and process image, video and audio data using software tools
2 -	Analysis of electronic effects in media
3 -	Develop multimedia projects

c.Professional and Practical Skills: :

1 -	Training on how to use the multimedia in the media
2 -	Practiced media production through multimedia

d.General and Transferable Skills: :

1 -	Building a mentality to prepare programs through multimedia.
2 -	Use Designing skills to solve problems effectively

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Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction to Multimedia	2	2	
Basics of Digital Audio, image, video	4	2	2
Audio	4	2	2
JPEG-Codec	4	2	2
Midterm Exam I	3	1	2
Video Compression and Standards	4	2	2
Lossless Compression . Á	4	2	2
Lossless Compression in Multimedia Data Representation & Lossless Compression algorithms	4	2	2
Editing and authoring tools	4	2	2
Midterm Exam II	3	1	2
Cameras and Projectors	4	2	2
Content Based Media Retrieval	4	2	2
Multimedia and Human Computer Interfaces	4	2	2
Multimedia Networking	4	2	2
Revision	4	2	2
Final Exam	4	2	2

Teaching And Learning Methodologies :

Lectures
Practical training
Presentation
Exercises
Open Discussion
Projects
E. Learning
Web-Site searches
Self Studies

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
current discussion and class activities	10.00	3	the student progress and attitude
final written	40.00	16	the ability to understand, remember and assess
practical exam	30.00	14	the practical skills in providing solutions
written mid-term exam 1	10.00	5	student progress along mid-semester
written mid-term exam 2	10.00	10	student progress along mid-semester

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Course Notes :

PowerPoint presentations, and pdf files

Recommended books :

Tay Vaughan, Multimedia: Making It Work

Web Sites :

prezi.com