UNIVERSITI TEKNOLOGI MARA

CSC567: TEMPORAL MEDIA PROCESSING

Course Name (English)	TEMPORAL MEDIA PROCESSING APPROVED
Course Code	CSC567

MQF Credit	3

Course Description	This course provides a broad introduction to multimedia signal processing. The course is designed to provide students with the fundamentals of discrete-time signals, signal transforms, and digital filter design. Through this course, students are expected to achieve a basic understanding of digital signal processing and various compression methods.

Transferable Skills	Multimedia signal concept and processing.

Teaching Methodologies	Lectures, Lab Work, Discussion

CLO	
	CLO1 Explain the basic concepts of multimedia signals and processing.
	CLO2 Construct practical skills in multimedia signal processing.
	CLO3 Illustrate problem solving in multimedia signal processing.

Pre-Requisite Courses	No course recommendations

Topics
1. Color in Image and Video 1.1) Color Science 1.2) Color Models in Images 1.3) Color Models in Video
2. Basics of Video 2.1) Types of Video Signals 2.2) Analog Video 2.3) Digital Video
3. Basics of Audio 3.1) Characteristic of Sound 3.2) The Human Auditory System 3.3) Audio Recording 3.4) Waveform Method 3.5) Digitization of Audio Signal 3.6) Musical Instrument Digital Interface (MIDI)
4. Transforms and Subband Decomposition 4.1) Unitary Transform 4.2) Discrete Fourier Transform 4.3) Discrete Cosine Transform 4.4) Discrete Wavelet Transform 4.5) Digital Filters 4.6) Subband Analysis
5. Multimedia Data Compression 5.1) Lossless Compression Algorithms 5.2) Lossy Compression Algorithms 5.3) Image and Video Compression
6. Multimedia Services 6.1) Streaming Audio and Video 6.2) Video Conferencing 6.3) Voice Over IP 6.4) Skype 6.5) Application and Issues

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assignments (5 x)	10%	CLO2
	Group Project	Project	20%	CLO3
	Test	Test 2	10%	CLO1
	Test	Test 1	10%	CLO1

Reading List	Reference Book Resources	Srdjan Stankovic, Irena Orovic, Ervin Sejdic 2016, *Multimedia Signals and Systems: Basic and Advanced Algorithms for Signal Processing* Second Ed., Springer US [ISBN: 97833192394] Anna Sanders 2017, *Multimedia Signals: Image, Audio and Video Processing*, NY RESEARCH PRESS New York [ISBN: 97816323852] A. Murat Tekalp 2015, *Digital Video Processing*, Prentice Hall [ISBN: 9780133991000] Jens Ohm 2015, *Multimedia Signal Coding and Transmission*, Springer [ISBN: 9783662466902] Khalid Sayood 2018, *Introduction to Data Compression*, 5 Ed., Morgan Kaufmann US [ISBN: 978012809474]
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	