FACULTY OF COMPUTING AND MATHEMATICAL SCIENCES
UNIVERSITI TEKNOLOGI MARA

LESSON PLAN

CSC567 TEMPORAL MEDIA PROCESSING

Semester:	Mac 2023-Jul 2023
Program:	CS253
Method of Instruction:	2 hours lecture, 2 hours lab
Lecturer:	Dr Nor Ashikin Mohamad Kamal
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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.

Course Learning Outcomes (CLO):

CLO1 Explain the basic concepts of multimedia signals and processing (Quizzes, Tests)
CLO2 Construct practical skills in multimedia signal processing (Assignments)
CLO3 Illustrate problem solving in multimedia signal processing. (Project)

Start Date	End Date	Week	Lecture Topics	Subtopics	Lab	Notes	
20-Mar-23	26-Mar-23	1	Introduction / Entrance Survey	Introduction to Temporal Media Processing			
27-Mar-23	2-Apr-23	2	Topic 1: Introduction to Temporal Media Processing	• Analog signal • Digital sgnal	Lab 1		
3-Apr-23	9-Apr-23	3	Topic 2: Basics of Video	• Types of Video Signals - Component Video - Composite Video - S-Video • Analog Video - NTSC Video - PAL Video - SECAM Video • Digital Video - Chroma Subsampling - High Definition TV (HDTV)	Lab 2		
10-Apr-23	16-Apr-23	4	Topic 3 : Basics of Audio	• Characteristic of Sound • Waveform method • Digitization of Audio Signal • Signal to Noise Ratio	Lab 3a		
17-Apr-23	23-Apr-23	5	Topic 4 : Frequency Domain Processing	• Introduction to Digital Signal Processing • Discrete Fourier Transform (DFT) • Discrete Wavelet Transform (DWT)	Lab 3b		
22-May-23	1-May-23		Cuti pertengahan semester/Cuti khas perayaan				
2-May-23	7-May-23	6	Topic 4 : Frequency Domain Processing (Cont')	• Digital Filters - Low pass filter - High pass filter - Band pass filter - Band stop filter	Lab 4a	Project Briefing	
8-May-23	14-May-23	7	Test 1		Lab 4b		
15-May-23	21-May-23	8	Chp 5:Lossless Compression	• Lossless Compression Algorithms - Run Length Coding - Shannon Fano Algorithm - Huffman Coding - Dictionary-based Coding	Exercise 5		
22-May-23	26-May-23	9	Chp 5: Lossy Compression	• Lossy Compression Algorithms - Discrete Cosine Transform - JPEG compression (DCT)	Project preparation		
27-May-23	5-Jun-23		(Pesta Menuai: 30-31 Mei 2023) (Gawai: 01-02 Jun 2023) (Harijadi YDP Agong: 05 Jun 2023)				
6-Jun-23	12-Jun-23	10	Chp 5: Lossy Compression (Cont)	• Lossy Compression Algorithms - Discrete Wavelet Transform	Project preparation		
13-Jun-23	18-Jun-23	11	Chp 5: Basic Video Compression	• Basic Video Compression - Intraframe and interframe coding - Motion compensation - Video compression standard (H.261, MPEG)	Project preparation		

19-Jun-23	23-Jun-23	12	Topic 6 : Multimedia Services	• Streaming Audio and Video • Video Conferencing • Voice Over IP • Skype	Project preparation		Exit survey
24-Jun-23	2-Jul-23		Cuti khas perayaan (Raya Aidil-Adha: 29 Jun 2023)				
3-Jul-23	9-Jul-23	13	**TEST 2**		Project Report Submission /SUFO		Exit survey
10-Jul-23	16-Jul-23	14	**Revision**		Project Report Submission /SUFO		Exit survey
12-Jul-23	16-Jul-23	15	Revision Week				
22-Jul-23	12-Aug-23	17	Final Assessment				

Activities	**References**
Self online learning	Microsoft Teams
Lab Activities	Microsoft Teams chat and WhatsApp messages
Submission of assignments	Microsoft Teams
Tests	F2F

Assessment:

			Percentage (%)	**Notes**
Continuous Assessment	Test 1		10	test 1
	Test 2		10	test 2
	Assignments (5)		10	To be submitted online
	Mini Project		30	Online report submission
Final Assessment	Final Assessment		40	F2F Exam
Total			**100**	