SANATAN DHARMA COLLEGE, AMBALA CANTT

College with Potential for Excellence, UGC,New Delhi
NAAC Accredited Grade "A+" with CGPA 3.51 in 3rd cycle
ISO 9001:2015 & ISO 14001:2015 Certified

Department of Computer Science

Lesson Plan (Session 2022-2023)

BCA-356: Multimedia Tools
Maximum Marks: 100 External: 80
Minimum Pass Marks: 35 Internal: 20
Time: 3 hours

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. Student will be required to attempt FIVE questions in all. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each Unit. All questions will carry equal marks.

UNIT – I

Multimedia: Basic Concept, Definition, Components & Applications of Multimedia; Hypermedia and Multimedia; Multimedia Hardware and Software; Multimedia Software Tools; Presentation Tools; Multimedia Authoring: Introduction, Features, Types of Authoring Tools: Card or Page-Based, Icon- Based, Time-Based, Object-Oriented; VRML: History, Features

UNIT – II

Images: Graphics/Image Data Types, File Formats; Color Models in Images and Video; Video: Introduction, Types of Video Signals; Analog and Digital Video; Analog Video Standards: NTSC, PAL, SECA; Digital Video Standards: Chroma Subsampling, CCIR Standards, HDTV

UNIT – III

Digital Audio: Basic Concepts, Analog vs. Digital Audio, Digitization of Sound; Digital Audio File Formats, MIDI Quantization and Transmission of Audio: Coding of Audio; Pulse Code Modulation; Differential Coding of Audio; Lossless Predictive Coding; DPCM; DM; ADPCM

UNIT – IV

Compression Techniques: Introduction, Types of Data Compression, Run-Length Coding, Variable- Length Coding, Dictionary-Based Coding, Transform Coding Image and Video Compression Techniques: JPEG Standard for Image Compression; JPEG Mode, Video Compression Techniques: H.261, H.263, MPEG

TEXT BOOKS:

- Ze-Nian Li, Mark S. Drew, "Fundamentals of Multimedia", Pearson Education.
- Tay Vaughan, "Multimedia Making It Work", Tata McGraw- Hill.

REFERENCE BOOKS:

- Ramesh Bangia, "Multimedia and Web Technology", Firewall Media.
- John F. Koegel Buford, " Multimedia Systems", Addison Wesley, Pearson Education.
- Ana Weston Solomon, "Introduction to Multimedia", Tata McGraw-Hil

Course Outcomes

After the completion of this course, prospective Computer professionals will have the ability to

Semester-V Course- BCA-356: Multimedia Tools At the end of course student should be able to:	
CO-1	Describe the types of media and define multimedia system.
CO-2	Describe the process of digitizing (quantization) of different analog signals (text, graphics, sound and video).
CO-3	Use and apply tools for image processing, video, sound and animation.
CO-4	Apply methodology to develop a multimedia system.
CO-5	Apply acquired knowledge in the field of multimedia in practice and independently continue to expand knowledge in this field.
CO-6	Describe the types of media and define multimedia system.
CO-7	Explain different audio and video compression techniques.
CO-8	Explain quantization and transmission of audio.

S.No	Instructional Technique	Assessment Methods(AM)
1	**Chalk & Talk**	**Assignments**
2	**ICT tools**	**Quiz**
3	**Group discussions**	**Group Discussions**
4	**Industrial visit**	**Oral Tests**
5	**Case studies**	**Sessional**
6	**Small Projects**	**Presentations**
7	**Workshop**	**Seminar**
8	**Spoken Tutorials**	**University Exams**
9	**Flipped Class**	
10	**E-Resources**	

Detailed Lesson Plan

Date	Topic to be Covered	Instructional Technique	Assessment Method
1-Sep-22	Multimedia: Basic Concept, Definition, Components & Applications of Multimedia;	1	1,2,3,4
2-Sep-22	Components & Applications of Multimedia	1	1,2,3,4
3-Sep-22	Hypermedia and Multimedia, Multimedia Hardware and Software	1	1,2,3,4
8- Sep-22	Multimedia Software Tools; Presentation Tools	2-(PPT/Projector)	----
9- Sep-22	Multimedia Authoring: Introduction, Features, Types of Authoring Tools	1	1,2,3,4
10-Sep-22	Card or Page-Based, Icon- Based, Time-Based, Object-Oriented	1	1,2,3,4
15-Sep-22	VRML: History, Features	1	1,2,3,4
16-Sep-22	Revision	1	1,2,3,4
17-Sep-22	Graphics/Image, Data Types	1	1,2,3,4
22-Sep-22	File Formats; Color,Models in Images and Video	1	1,2,3,4
23-Sep-22	Holiday		
24-Sep-22	Introduction, Types of Video Signals	**2-(PPT/Projector)**	**1,2,3,4**
29-Sept-22	Analog and Digital Video	**2-(PPT/Projector)**	1,2,3,4
30-Sept-22	Analog Video Standards:NTSC, PAL, SECA	**2-(PPT/Projector)**	**1,2,3,4**
01-OCT-22	Digital Video Standards: Chroma Subsampling	**2-(PPT/Projector)**	**1,2,3,4**
6-Oct-22	CCIR Standards, HDTV	**9,10**	**1,2,3,4**
7-Oct-22	CCIR Standards, HDTV	**9,10**	**1,2,3,4**
8-Oct-22	Revision	**2-(PPT/Projector)**	**1,2,3,4**
13-Oct-22	Holiday		
14-Oct-22	Digital Audio: Basic Concepts	**2-(PPT/Projector)**	**6**

15-Oct-22	Analog vs. Digital Audio	**9**	**1,2,3,4,6**
20-Oct-22	Digitization of Sound; Digital Audio File Formats, MIDI	**6**	**1,2,3,4,**
21-Oct-22	Quantization and Transmission of Audio	**6**	**1,2,3,4,**
22-Oct-22 to 26-Oct-22	**Diwali Vaccation**		
27-Oct-22	Coding of Audio;Pulse Code Modulation	**6**	**1,2,3,4**
28-Oct-22	Pulse Code Modulation	**6**	**1,2,3,4**
29-Oct-22	Differential Coding of Audio	**2-(PPT/Projector)**	**1,2,3,4**
3-Nov-22	Lossless Predictive Coding; DPCM	**9,10**	**1,2,3,4**
4-Nov-22	DM	**9,10**	
5-Nov-22	ADPCM	**2-(PPT/Projector)**	**1,2,3,4**
10-Nov-22	Introduction, Types of Data Compression	**2-(PPT/Projector)**	**1,2,3,4**
11-Nov-22	Run-Length Coding	**2-(PPT/Projector)**	**1,2,3,4**
12-Nov-22	Run-Length Coding	**2-(PPT/Projector)**	**1,2,3,4**
17-Nov-22	Variable-Length Coding	**6**	**1,2,3,4**
18-Nov-22	Variable-Length Coding	**6**	**1,2,3,4**
19-Nov-22	Revision	**--**	
24-Nov-22	Dictionary-Based Coding,	**2-(PPT/Projector)**	**1,2,3,4**
25-Nov-22	Dictionary-Based Coding,	**2-(PPT/Projector)**	**1,2,3,4**
26-Nov-22	Transform Coding	**2-(PPT/Projector)**	**1,2,3,4**
1-Dec-22	Transform Coding	**2-(PPT/Projector)**	**1,2,3,4**
2-Dec-22	Image and Video Compression Techniques	**6**	**1,2,3,4**
3-Dec-22	Image and Video Compression Techniques	**2-(PPT/Projector)**	**1,2,3,4**

8-Dec-22	JPEG Standard for Image Compression	**2-(PPT/Projector)**	**1,2,3,4**
9-Dec-22	JPEG Standard for Image Compression	**2-(PPT/Projector)**	**1,2,3,4**
10-Dec-22	JPEG Mode	**2-(PPT/Projector)**	**1,2,3,4**
15-Dec-22	Sessional		
16-Dec-22	Introduction Video Compression Techniques Video Compression Techniques	**2-(PPT/Projector)**	**1,2,3,4**
17-Dec-22	Overview H.261	**2-(PPT/Projector)**	**1,2,3,4**
22-Dec-22	H.261, H.263	**2-(PPT/Projector)**	**1,2,3,4**
23-Dec-22	MPEG	**2-(PPT/Projector)**	**1,2,3,4**
24-Dec-22	Revision	**--**	**--**