SARDAR RAJA COLLEGE OF ENGINEERING, ALANGULAM

DEPARTMENT OF COMPUTER APPLICATIONS

MICRO LESSON PLAN

SUBJECT NAME   : COMPUTER GRAPHICS AND MULTIMEDIA

SUBJECT CODE   : MC7205

DEPT   : MCA

YEAR/SEM   : I/II

Handled By

Mrs.P.UMA

Asst.Prof / MCA

MC 7205 COMPUTER GRAPHICS AND MULTIMEDIA   L T P C   3 0 0 3

UNIT I   BASIC CONCEPTS   9
  2D Transformation – Clipping – window - View Prot Mapping - Graphical User Interfaces and Interactive Input Methods-Picture Construction Techniques-Virtual Reality Environment**.**

UNIT II   3D GRAPHICS   9
  3D Transformation-3D Viewing-Visible Surface Detection-Back Face Detection-Depth Buffer Method-Scan Line Method.

UNIT III   MULTIMEDIA BASICS   9
  Introduction to Multimedia – Components – Hypermedia – Authoring – Authoring tools – File formats – Color models – Digital Audio representation – Transmission – Audio signal processing – Digital music making – MIDI – Digital video – Video compression techniques – Video performance measurements – Multimedia Databases – Animation – Key frames and tweening techniques – Principles of animation – Virtual reality – Multimedia for portable devices

UNIT IV   MULTIMEDIA COMMUNICATION   9
  Stream characteristics for Continuous media – Temporal Relationship – Object Stream Interactions - Media Synchronization – Models for Temporal Specifications – Streaming of Audio and Video – Recovering from packet loss – RTSP — Multimedia Communication Standards –RTP/RTCP – SIP and H.263- Real time streaming and On-demand streaming

UNIT V MULTIMEDIA APPLICATION DEVELOPMENT   9
  Design, Development and evaluation of multimedia a system - The development of user interface design - Design Process - MultiMedia & the Internet - Multimedia conferencing - Multimedia file sharing – Multimedia broadcasting - Multimedia Development Issues - Multimedia project - Structured Multimedia development - Multimedia project timing - Sample project   **TOTAL =45 HOURS**

REFERENCES:
1.Donald Hearn and M. Pauline Baker, "Computer Graphics in C Version", Second Edition, Pearson Education

2.Tom McReynolds – David Blythe " Advanced Graphics Programming Using OpenGL" , Elsevier,

2010

3. Parag Havaldar and Gerard Medioni, "Multimedia Systems-Algorithms, Standards and Industry Practices",

Course Technology, Cengage Learning, 2010.

4.John F. Koegel Bufend , "Multimedia systems", Pearson Education, Delhi, 2002

5.Ralf Steinmetz and Klara "Multimedia Computing, Communications and Applications", Pearson Education,2004.

6.Kurose and Ross, „Computer Networks : A top down Approach", Pearson Education, 2002

7.Mohammad Dastbaz, Desgning Interactive Multimedia Systems

8.Multimedia – Technology and applications David Hillman Galgotia Publications, Delhi

9.Ralf Steinmetz and Klara Nahrstedt "Multimedia Applications", Springer, 2007.

DESCRIPTION

- **Gain proficiency in 3D computer graphics API programming**
- **Enhance the perspective of modern computer system with modeling, analysis and interpretation of 2D and 3D visual information.**
- **Able to understand different realizations of multimedia tools**
- **Able to develop interactive animations using multimedia tools**
- **Gain the knowledge of different media streams in multimedia transmission**

OBJECTIVES

- **To understand computational development of graphics with mathematics.**
- **To provide in-depth knowledge of display systems, image synthesis, shape modeling of 3D application..**
- **To Understand basic concepts related to Multimedia including data standards, algorithms and software.**
- **To Experience development of multimedia software by utilizing existing libraries and descriptions of algorithms**.

MICRO LESSON PLAN

Hours	LECTURE TOPICS	READING
UNIT I – BASIC CONCEPTS		
1	2D Transformation (AV Class)	R1
2	Clipping	R1
3	window	R1
4	View Prot Mapping	R1
5	Graphical User Interfaces and Interactive Input Methods	R1
6	Graphical User Interfaces and Interactive Input Methods	R1
7	Picture Construction Techniques	R1
8	Virtual Reality Environment	R1
9	Virtual Reality Environment	R1
UNIT II - 3D GRAPHICS		
10	3D Transformation	R2
11	3D Viewing (AV Class)	R2
12	Visible Surface Detection	R2
13	Visible Surface Detection	R2
14	Back Face Detection	R2
15	Back Face Detection	R2
16	Depth Buffer Method	R2
17	Depth Buffer Method	R2
18	Scan Line Method	R2
UNIT III MULTIMEDIA BASICS		
19	Introduction to Multimedia, Components	R3

20	Hypermedia, Authoring, Authoring tools	R3
21	File formats, Color models, Digital Audio representation	R3
22	Transmission, Audio signal processing, Digital music making	R3
23	MIDI, Digital video, Video compression techniques	R3
24	Video performance measurements, Multimedia Databases, Animation	R3
25	Key frames and tweening techniques	R3
26	Principles of animation, Virtual reality (AV Class)	R3
27	Multimedia for portable devices	R3
UNIT IV MULTIMEDIA COMMUNICATION		
28	Stream characteristics for Continuous media	R4,R5
29	Temporal Relationship, Object Stream Interactions	R4,R5
30	Media Synchronization, Models for Temporal Specifications	R4,R5
31	Streaming of Audio and Video, Recovering from packet loss	R4,R5
32	RTSP	R4,R5
33	Multimedia Communication Standards	R4,R5
34	RTP/RTCP	R4,R5
35	SIP and H.263	R4,R5
36	Real time streaming and On-demand streaming (AV Class)	R4,R5
UNIT V MULTIMEDIA APPLICATION DEVELOPMENT		
37	Design, Development and evaluation of multimedia a system	R8,R9
38	The development of user interface design, Design Process	R8,R9

39	MultiMedia & the Internet, Multimedia conferencing	R8,R9
40	Multimedia file sharing, Multimedia broadcasting	R8,R9
41	Multimedia Development Issues	R8,R9
42	Multimedia project (AV Class)	R8,R9
43	Structured Multimedia development	R8,R9
44	Multimedia project timing	R8,R9
45	Sample project	R8,R9