

MC5205 COMPUTER GRAPHICS AND MULTIMEDIA

DETAILED SYLLABUS

OBJECTIVES:

- To provide knowledge and understanding in the fundamental principles of Computer Graphics and Mathematical concepts related to Computer graphical operations.
- To provide in-depth knowledge of display systems, image synthesis and shape modelling of 3D applications.
- To understand the basic concepts related to Multimedia including data standards, algorithms and software.
- To Experience the development of Multimedia application to display their ability by using Multimedia tools.

UNIT I BASIC CONCEPTS

2D Transformations – Clipping – Point Clipping – Line Clipping – Polygon Clipping – Text Clipping – Exterior Clipping – Window to View Port Mapping – Interactive Input Methods – Picture Construction Techniques.

UNIT II 3D GRAPHICS

3D Concepts – 3D Transformations – 3D Viewing – Visible Surface Detection Methods – Back Face Detection Method – Depth Buffer Method – Scan Line Method –Virtual Reality Environment.

UNIT III MULTIMEDIA BASICS

Introduction to Multimedia – Applications– Hypermedia – Authoring — File formats –Color Models – Digital Audio– Digital Music Making – MIDI – Digital Video – Video Compression Techniques – Video Performance Measurements –Multimedia Databases–Animation.

UNIT IV MULTIMEDIA COMMUNICATION

Multimedia Network Services–Network Protocols–Requirements for Multimedia Communications – Multimedia Conferencing Architectures –QuickTime Movie File Format–MHEG–Multimedia File Sharing –Multimedia & Internet–Real-Time Interchange.

UNIT V MULTIMEDIA APPLICATION DEVELOPMENT

Design of a Multimedia System –Content Based Information Retrieval – HDTV, ATV, EDTV, IDTV Standards –Development of User Interface Design – Multimedia Broadcasting –Social Media Sharing – Multimedia Development Issues – Sample Multimedia Project.

REFERENCES:

1. Donald Hearn and M. Pauline Baker, “Computer Graphics C Version”, Second Edition, Pearson Education
2. David Hillman, “Multimedia – Technology and applications”, Galgotia Publications, Delhi, 2008
3. John F. KoegelBuford, “Multimedia Systems”, Pearson Education, Delhi, 6th Edition, 2009
4. Mohammad Dastbaz, Designing Interactive Multimedia Systems, McGraw-Hill Publishers, 2002

For Questions, Notes, Syllabus & Results

5. Parag Havaladar and Gerard Medioni, "Multimedia Systems-Algorithms, Standards and Industry Practices", Cengage Learning, 2009
6. Ralf Steinmetz and Klara "Multimedia Computing, Communications and Applications", Pearson Education, 2009
7. Tom McReynolds – David Blythe, "Advanced Graphics Programming Using OpenGL", Elsevier, 2005
8. Ze-Nian Li, Mark S Drew and Jiangchuan Liu, "Fundamentals of Multimedia", Second Edition, Springer, 2014