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Multimedia Technologies — Complete Syllabus (Program Elective-2, Option 2)

BTEUP Diploma in Computer Science & Engineering • 5th Semester • Session 2026-27
Subject 5.3.2 (Practicum) • Total 100 Marks • 5 Credits • L 3 - P 4 • Choose this OR
Mobile App Development

Examination Scheme

Code	Paper	Type	L - P	Credits	Internal	External	Total
5.3	Program Elective-2: Multimedia Technologies	Practicum	3 - 4	5	40	Theory 60 (3 hrs)	100
Multimedia Technologies Total				5	40	60	100

What This Subject Aims To Do

To introduce students to the domain of multimedia technologies, explaining the technologies underlying digital images, videos and audio content, including various compression techniques and standards, and the issues involved in delivering multimedia content over the internet. By the end you should be able to: understand various aspects of multimedia and related standards; build multimedia content and applications; and multimedia-enable web applications and mobile applications.

Unit-Wise Complete Topic List

Unit	Topic	Periods	Marks Share
1	Introduction to Multimedia	10	25%

2	Basic Compression Techniques	12	25%
3	Content Development and Distribution	10	25%
4	Introduction to Digital Imaging	10	25%

Unit 1 — Introduction to Multimedia (10 Periods, 25%)

Topics: Multimedia foundation and concepts: multimedia hardware; multimedia software; multimedia operating systems; multimedia communication systems.

In simple words: What multimedia is made of: the hardware, software and systems that handle text, images, audio and video together.

Unit 2 — Basic Compression Techniques (12 Periods, 25%)

Topics: Video and audio data compression techniques — lossy and lossless; example algorithms/standards: Huffman, RLE, JPEG, MPEG, MP3, MP4, LZMA, FLAC, ALAC, ITU G. 722, H.261, H.265.

In simple words: Why a video file is not impossibly huge: compression — throwing away what you will not notice (lossy) vs keeping everything exactly (lossless) — and the famous formats behind MP3, JPEG and video.

Unit 3 — Content Development and Distribution (10 Periods, 25%)

Topics: Desktop publishing (CorelDRAW, Photoshop, PageMaker); multimedia animation and special effects (2D/3D animation, Flash).

In simple words: Making the content itself: desktop publishing tools for print and graphics, and animation for moving content.

Unit 4 — Introduction to Digital Imaging (10 Periods, 25%)

Topics: Basics of graphic design and use of digital technology; definition of digital images; digital imaging in multimedia.

In simple words: What a digital image actually is, and how graphic design works with digital technology.

Practical Work

- Installation of various multimedia software like Photoshop/GIMP, Blender, Flash, Director or any open-source software.
- Installing and using various multimedia devices: scanner, digital camera, web camera, microphone and speakers, touch screen, plotter and printers, DVD, audio CD and video CD.

- Reading and writing different formats on CD/DVD.
- Transporting audio and video files.
- Using various features of Flash.
- Using various features of Photoshop/GIMP.
- Using various features of Blender.
- Making multimedia presentations combining Flash and Photoshop/GIMP, such as a department profile, lesson presentation, games and project presentations.

Reference Books (as listed in the syllabus)

- An Introduction to Multimedia Authoring — A. Eliens
- Fundamentals of Multimedia — Ze-Nian Li & Mark S. Drew, Prentice Hall/Pearson
- Multimedia and Animation — V. K. Jain, Khanna Publishing House, 2018
- Fundamentals of Multimedia — Ramesh Bangia, Khanna Book Publishing Co., New Delhi (2007)

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Source: BTEUP 3rd Year curriculum (folder2627), approved in C.D.C. meeting held on 16.07.2026. Topic lists follow the official syllabus; short explanations are the author's own plain-English summaries, not syllabus text.

Please confirm with your own polytechnic for any local changes.

