

ICT. Ed. 474: Multimedia in Education

Course No.: ICT. Ed. 474

Nature of course: Theoretical

Level: Bachelor (BICTE)

Credit Hour: 3(2T+1P) hours

Semester: Seven

Teaching Hour: 64(32T+32P) hours

1. Course Description

This course provides complete instruction in the creation and manipulation of digital media, covering key elements of image, audio, and video processing, as well as live broadcasting. Students will gain practical skills in using various multimedia authoring tools and methodologies, equipping them to create excellent digital content for educational and professional applications.

2. General Objectives

The general objectives of this course are as follows:

- To define the scope and applications of multimedia in education utilizing various authoring tools and digital media formats.
- To demonstrate the image capture and manipulation techniques for enhanced visual appeal of educational resources.
- To record and edit high-quality audio files for educational podcasts and other platforms.
- To develop professional educational video clips with engaging visual effects.
- To implement live streaming through mobile applications, audio live podcasting, and other platforms for educational purposes.

3. Course Outlines:

| Specific Objectives | Contents |
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| <ul style="list-style-type: none"> • Explain the definition and scope of multimedia. • Identify and describe the components of multimedia. • Explore the applications of multimedia in education and future trends. | Unit I: Introduction to multimedia (6 Hours) <ul style="list-style-type: none"> 1.1 Definition and scope 1.2 Components of multimedia 1.3 Applications of multimedia in education 1.4 Multimedia authoring tools 1.5 Digital media formats and standards 1.6 Current trends in multimedia |



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| <ul style="list-style-type: none"> Describe media file formats and standards. Utilize multimedia authoring tools. | |
| <ul style="list-style-type: none"> Define the basics of digital photography concept. Describe image formats and compression techniques. Remove unwanted objects from images. Fix lighting issues and make adjustment to improve image quality. Demonstrate tasks about layers, filters, and text to enhance images. | <p>Unit II: Capture and Manipulate Image (12 Hours)</p> <p>2.1 Basics of Digital Photography 2.2 Image format and compression 2.3 Removing Unwanted Objects 2.4 Fixing Lighting Issues with Adjustments 2.5 Working with Layers 2.6 Exploring Filters 2.7 Adding Text to an Image</p> <p>Practical Tasks:</p> <ul style="list-style-type: none"> Remove unwanted objects from an image. Improve image quality by adjusting lighting issues Work with multiple layers to create a composite image Apply and explore various filters to enhance an image Add and style text within an image |
| <ul style="list-style-type: none"> Describe concept of audio. Differentiate and utilize various audio file formats. Record and edit audio clips, performing simple edits and splitting tracks. Manage audio tracks by labeling and adding new tracks. Improve audio quality through noise reduction, normalization, and speed adjustment. Apply metadata and export audio files for various uses, including | <p>Unit III: Audio Recording and Editing (12 Hours)</p> <p>3.1 Concept of audio 3.2 Audio file format 3.3 Recording and Editing Audio 3.4 Track Management: Labeling Tracks, Adding Tracks 3.5 Audio Enhancement: Noise Reduction and Normalization, Adjusting Audio Speed 3.6 Metadata and Exporting: Adding Metadata, Exporting Audio 3.7 Live Recording on social media</p> <p>Practical Tasks:</p> <ul style="list-style-type: none"> Record a short audio clip, perform simple edits, and split the track. |



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| live recording for social media sharing. | <ul style="list-style-type: none"> • Manage multiple tracks within a project • Enhance audio quality using noise reduction, normalization, and speed adjustment. • Add metadata to a project and export the final audio file • Record a live session and prepare it for social media sharing |
| <ul style="list-style-type: none"> • Describe video file format compression techniques. • Demonstrate video recording methods and skills. • Trim and cut video clips effectively. • Merge multiple video clips into a cohesive single video. • Overlay and style text for titles, captions, and subtitles. • Adjust brightness and saturation to enhance video quality. • Create smooth animations using keyframes and apply filters and effects for improved visual appeal. | <p>Unit IV: Video Capturing and Editing (10 Hours)</p> <p>4.1 Video file format compression 4.2 Video recording methods and skills 4.3 Trimming and Cutting Clips 4.4 Merging Clips 4.5 Adding Text 4.6 Adjusting Brightness and Saturation 4.7 Keyframe Animation</p> <p>Practical Tasks</p> <ul style="list-style-type: none"> • Remove unwanted sections or create shorter segments from video clips • Combine multiple video clips into a single video • Overlay text for titles, captions, or subtitles • Enhance the visual quality of a video by adjusting brightness and saturation. • Create smooth animations using keyframes • Enhance the video with background music • Apply filters and effects to enhance the video's visual appeal. |
| <ul style="list-style-type: none"> • Describe the concept of live streaming. • Utilize mobile applications for live streaming on platforms like Facebook Live or Instagram Live or TikTok. | <p>Unit V: Online Broadcasting (22 Hours)</p> <p>5.1 Concept of live streaming 5.2 Mobile application and live streaming 5.3 Audio Live podcasting 5.4 Video and live streaming</p> <p>Practical Tasks</p> |



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| <ul style="list-style-type: none"> • Set up and execute audio live podcasting, including arranging essential equipment. • Demonstrate video live streaming techniques using OBS or YouTube. • Evaluate and reflect on student learning through live streaming sessions. | <ul style="list-style-type: none"> • Demo live streaming using mobile application such as Facebook live, Instagram live, ticktick for student learning reflection. • Demo Audio Live Podcasting include arranging essential equipment such as microphones, headphones, and audio interfaces in a dedicated space. • Demo Live Streaming Using OBS or YouTube |
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4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to particular units.

4.1 General Techniques

Reading materials will be provided to students in each unit. Lecture, Discussion, use of multi-media projector, brain storming are used in all units.

4.2 Specific Instructional Techniques

The demonstration is an essential instructional technique for all units in this course during teaching teaching-learning process. Specifically, demonstration with practical works will be a specific instructional technique in this course. The following tools and applications can use for classroom teaching.

| Unit | Issues | Suggestive tools/application |
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| 2 | Image capturing and editing | Use any one or more tools/application such as Adobe Photoshop, Pixlr, GIMP (GNU Image Manipulation Program), Paint.NET, Canva or similar online or offline tools |
| 3 | Audio capturing and editing | Use any one or more tools/application such Adobe Audition, Audacity, GarageBand, FL Studio or similar |



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| | | online or offline tools. |
| 4 | Video capturing and editing | Use any one or more tools/application such Adobe Premiere Pro, Final Cut Pro, DaVinci Resolve, Cap Cut or similar online or offline tools. |
| 5 | Broadcasting and Live Streaming | Use any one or more tools/application such OBS Studio (Open Broadcaster Software), Facebook Live, YouTube Live, Instagram Live, X (formerly Twitter) or similar online or offline tools |

5. Evaluation:

Evaluation of students' performance is divided into parts: Internal assessment (theory and practical and internal External examinations (theory and practical). The distribution of points is given below:

| Internal Assessment Theory | Internal Assessment Practical | Semester Examination (Theoretical exam) | External Practical Exam/Viva | Total Points |
|----------------------------|-------------------------------|---|------------------------------|--------------|
| 25 Points | 15 Points | 40 Points | 20 Points | 100 Points |

Note: Students must pass separately in internal assessment and semester examination.

5.1 Internal Evaluation (25 Marks):

Internal assessment will be conducted by the subject teacher based on the following criteria:

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| Attendance and learning Activities | 5 points |
| First assignment (Written assignment) | 5 points |
| Second assignment (Project work with presentation) | 10 points |
| Third assignment/written examination | 5 point |
| Total | 25 points |

5.2 Internal Assessment (15 Points) of the practical part

Internal practical assessment will be conducted by subject teacher based on following criteria:

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| Attendance and learning Activities | 5 points |
| Practical work/project work/lab work | 10 points |
| Total | 15 points |



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5.3 Semester Examination (40 Marks)

Examination Division, Dean's office will conduct the final examination at the end of the semester.

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| Objective question (Multiple choice questions 10 x 1 point) | 10 Points |
| Short answer questions (6 questions x 5 marks with Two OR Questions) | 30 Points |
| Total points | 40 |

5.4 Practical Exam/Viva (20 Points)

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| Internal assessment (Record Book-4 points, Project work Presentation- 2, Internal Practical Test-2 Points) | Semester final examination | Total |
| 8 Points | 12 Points | 20 Points |

6. Recommended Books and References Materials:

Maxim, J. (2024). *Adobe Premiere Pro: 2024 release*. Adobe Press.

Costello, V. (2023). *Multimedia foundations: Core concepts for digital design*. Elsevier Focal Press.

Carlson, J. (2020). *Adobe Photoshop Elements 2021 Classroom in a Book* (1st edition). Adobe Press.

Maxim, J. & Adobe Creative Team. (2019). *Adobe Audition CC Classroom in a Book* (2nd Ed). Adobe Press.

Audacity. (2024, July 16). *Tutorials for Audacity - Audacity Manual*. Manual.audacityteam.org.
https://manual.audacityteam.org/man/tutorials_for_audacity.html

Bailey, L. (2024). *Welcome to OBS Studio's documentation! — OBS Studio 29.1.1 documentation*. Docs.obsproject.com. <https://docs.obsproject.com/>

CapCut. (2023). *CapCut Online Tutorials | Explore, Learn, and Create Videos and Images with Ease*. Wwww.capcut.com. <https://www.capcut.com/tutorial>

