Course Outline for ETE-407

Part A

1. Course Code: ETE-407

2. Course Title: Multimedia Communication

3. Course Type: Core Course

4.Level/ Term: Level: 4 Term: 1

5. Academic Session: 2019-20

6. Course Teacher: Eftekhar Hossain, Lecturer, Dept. of ETE, CUET

7. Prerequisite(s): None

8. Credits: 3

9. Contact Hours: 3 lectures of 50 minutes per week

10. Total Marks: 300

11. Rational of the Course:

This course will cover the basic multimedia communication which includes various types media such as image, graphics, text, sound, video. This course will provide knowledge on how music is generated, video is represented and stored; how to compress different media and the use cases of the compression algorithms such as JPEG, and MPEG. This is a required course for all the students enrolling B. Sc. Engg. in ETE program. The catalogue description of the course is

Course Content:

Multimedia: Media and Data Streams, Medium, Properties of Multimedia Systems, and Traditional Data Stream Characteristics.
Sound / Audio: Basic Sound Concepts, Music, MIDI Devices and Standards, Speech Generation, Speech Analysis and Transmission.
Images and Graphics: Digital Image Representation, Image Format, Graphic Format, Computer Image Processing.
Video and Animation: Video Signal Representation, Computer Video Format, and Computer Based Animation.
Data Compression: Coding requirements, Source coding, Entropy and Hybrid Coding, Basic Compression Techniques, JPEC, H.261, MPEG, DVI.

Computer Technology: Communication Architecture, Multimedia Work-stations, UNIX based Systems, QuickTime, Windows Multimedia Extensions, OS/2 Multimedia Presentation Director Multimedia Communication Systems: Application Subsystem, Transport Subsystem, QoS and Resource Management Multimedia synchronization, security. Security issues in multimedia - digital water- marking, partial encryption schemes for video streams

Multimedia Applications: Internet Telephony, Teleconferencing, HDTV, Email and E-commerce, Virtual Reality, Authoring Tools, Multimedia Documents, Games.

12. Course Objectives:

(a) Introduce the concept of multimedia communications systems, application and basic characteristics.

b) Analysis of the multimedia streaming, and various compression algorithms.

c) Interpret the development process and applications of the multimedia systems and test multimedia communication systems and equipment in real conditions.

13. Course Learning Outcomes (CLOs) and Mapping of CLOs with Program Learning Outcomes (PLOs)

a) CLOs

	Course Learning Outcomes (CLOs)	**Blooms Level (Optional)**
CLO1	Comprehend the technical characteristics and performance of multimedia system and terminals.	
CLO2	Apply the encoding techniques in different media streams.	

b) Mapping of CLO with PLO

No.	**(CLOs)**	**PLO 1**	**PLO2**	**PLO3**	**PLO4**	**PLO5**	**PLO6**	**PLO7**	**PLO8**	**PLO9**	**PLO 10**	**PLO 11**	**PLO 12**
1	CLO1		X										
3	CLO2			X									

Part B

14. Course plan specifying content, CLOs, co-curricular activities (if any), teaching learning and assessment strategy mapped with CLOs

`	Topic	Teaching-Learning Methodology	Assessment Method	Corresponding CLOs
Week-01	Introduction to Multimedia	Lecture with whiteboard	Not applicable	CLO-1
Week -02	Media and Data streams	Lecture with PPT	Test, exams, quiz, etc	CLO-1
Week -03	Sound/Audio	Lecture with PPT	Test, exams, quiz, etc	CLO-1
Week -04	Sound/Audio	Lecture with PPT	Test, exams, quiz, etc	CLO-2
Week -05	Image and Graphics	Lecture with whiteboard	Test, exams, quiz, etc	CLO-2
Week -06	Image and Graphics	Lecture with whiteboard	Test, exams, quiz, etc	CLO-2
Week -07	Video and Animation	Lecture with whiteboard	Test, exams, quiz, etc	CLO-2
Week -08	Video and Animation	Lecture with PPT	Test, exams, quiz, etc	CLO-2
Week -09	Data compression	Lecture with whiteboard	Test, exams, quiz, etc	CLO-2
Week -10	Data compression	Lecture with whiteboard	Test, exams, quiz, etc	CLO-2
Week -11	Computer technology	Lecture with PPT	Test, exams, quiz, etc	CLO-2

Week -12	Computer technology	Lecture with PPT	Test, exams, quiz, etc	CLO-1
Week -13	Multimedia applications	Lecture with PPT	Test, exams, quiz, etc	CLO-1

Part C

15. Assessment and Evaluation

l) Assessment Strategy

Class participation and attendance Class tests/Class assessment Term Final Examination (3 hours duration)	10% 20% 70%
Total	100%

2) Marks distribution:

a) Continuous Assessment: 30%

b) Summative: 70%

c) Make-up Procedures:

- Feedback on continuous assessment is given to the students immediately after the test.
- The minimum number of class-test/assignment are (n+1) with best n will be counted (here, n is number of credit). Based on the students' feedback additional class-test/assignment may be taken by the course teacher

Part D

16. Learning Materials

1) Recommended Readings

- Multimedia: Computing, Communications & Applications
  Authors: Ralf Steinmetz & Klara Nahrstedt

2) Others

- Handout/lecture material provided by the course teacher