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| Unit Code: | *BSD226* |
| Unit Title: | *INTRODUCTION TO MULTIMEDIA SYSTEMS* |
| Program(s): | *BIT/BBIT* |
| Lecturer Name: | *Mr. Isaac Kega Mwangi* |
| Lecturer Contacts: | Email: Isaac.kega@zetech.ac.ke, *Phone No: 0720935632* |
| *Consultation time* : | Monday 2pm-5pm, Tuesday 12pm-2pm |

**F-7-16**

**UNIT DESCRIPTION/ OBJECTIVES OF THE UNIT**

Multimedia has become an indispensable part of modern computer technology. In this course, students will be introduced to principles and current technologies of multimedia systems. Issues in effectively representing, processing, and retrieving multimedia data such as sound and music, graphics, image and video will be addressed. The students will gain hands-on experience in those areas by implementing some components of a multimedia streaming system as their term project. Latest Web technologies and some advanced topics in current multimedia research will also be discussed.

**EXPECTED LEARNING OUTCOMES**

1. A comprehensive understanding with multimedia standards, tools and systems
2. Extensive practices from multimedia capturing, processing, transmitting, content representing to retrieval
3. Building a solid background in multimedia for your academic researches or industrial applications.

**COURSE SYLLABUS AND SCHEDULE**

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| *Class/Week* | *Topic* | *Sub topic* |
| *Week 1* | Introduction to Multimedia | *Definition of terms; categories of multimedia systems, application of multimedia systems, multimedia development* |
| *Week 2* | *Building blocks of multimedia systems* | *Text: fonts, typefaces. Text transfer in multimedia systems.*  *Create a blog site with different types of font* |
| *Week 3* | *Audio, video, animation in Multimedia systems* | *Sound conversion in multimedia, composition of sound, streaming of sound in MMs, MIDI Audio, Sound formats. Principle of animation in MM, Animation file formats, Video conversion in MM systems, video compression* |
| *Week 4* | *Images* | *Images in MMSs, components of an image, image file formats, managing images in a MMSs* |
| *Week 5* | *Case study. Assignment one* | *Develop a website that will act as you blog and incorporate images, text and audio aspects in that blog of yours* |
| *Week 6* | *CAT1* | *CAT1* |
| *Week 7* | *Video streaming in MM systems* | *Video streaming protocols used, application of video streaming in real life.* |
| *Week 8* | *Multimedia hardware and storage*  *Multimedia and the internet* | *Cloud storage, a disruptive tech for storing MM elements online, why the disruption, types of cloud system storage for multimedia, A case in point YouTube.* |
| *Week 10* | *Multimedia retrieval and representation.* | *Tools and methods used for representing and retrieving media* |
| *Week 11* | *CAT2* | *CAT2* |
| *Week 12* | *REVISION* | *REVISION* |

**TEACHING/LEARNING METHODOLOGY**

*Class discussions and lectures, practical individual website creation projects*

**INSTRUCTIONAL MATERIALS**

1. *Whiteboard, marker pens, projectors, account links to various cloud systems e.g AWS, Google Workspace*

**ASSESSMENT CRITERIA**

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| ***Assessment Type*** | ***Frequency*** | ***Percentage*** |
| *Assignment/presentation* | *2* | *10%* |
| *CATs* | *2* | *30%* |
| *Final Examination* | *1* | *60%* |
| *Total* |  | *100%* |

**REFERENCE TEXTBOOKS**

***For example;***

1. Fundamentals of Multimedia, Ze-Nian Li, and Mark S. Drew, Pearson Prentice Hall, October 2003.
2. Multimedia Communication Systems, K. Rammohanarao, Z. S. Bolzkovic, D. A. Milanovic, 1st edition, Prentice Hall, May 2002.
3. Video Processing and Communications, Yao Wang, Joern Ostermann, and Ya-Qin Zhang, Prentice Hall, 2002.

**Course Journals**

1. Multimedia systems. Springer
2. Multimedia systems SCI journal

***Approval for circulation by:***

**Unit lecture name: Isaac Kega Mwangi signature: ……………………………………….**

**Hod name: Daniel Njeru signature: ………………………………………….**