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**SCHOOL OF INFORMATION, COMMUNICATION AND MEDIA STUDIES**

**DEPARTMENT OF INFORMATION SCIENCE, HEALTH RECORDS AND SYSTEMS**

**COURSE OUTLINE**

**COURSE CODE: INF 326 COURSE TITLE: MULTIMEDIA SYSTEMS AND ANIMATION TECHNOLOGIES**

**YEAR** TWO **SEMESTER** TWO **ACADEMIC YEAR** 2024/2025

**DAY** WED AND FRIDAY  **TIME** 8:00 – 10:00AM **VENUE:** MAIN CAMPUS

**Lecturer’s name:** MS QUINTER ACHIENG **Phone No** +254-708-530-496

**Email qachieng85@gmail.com**

**COURSE CODE: INF 326**

**COURSE TITLE: MULTIMEDIA SYSTEMS AND ANIMATION TECHNOLOGIES**

COURSE CONTENT

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| Purpose of the course | This course is designed to introduce the learner to multimedia systems, production, applications in a format suitable for their organization, storage, retrieval and delivery. |
| Expected Learning outcome of the course | By the end of the course, the learner should be able to:   * Identify and describe various multimedia systems; * Design and develop effective multimedia applications using a variety of software and devices; * Analyze real world problems and recommend solutions based on a given multimedia * Demonstrate an understanding of industry-standard hardware and software for most digital multimedia |
| Course description | Introduction: Definition of multimedia, multimedia hardware and software, Multimedia –related technologies. Types of multimedia systems. Types of Multimedia Products: multimedia operating systems, multimedia database systems, multimedia toolkits. The nature of discrete and continuous media. Components of multimedia systems, Application of multimedia system. Enabling technologies, implications on quality of service. Text and audio: text technology, data representation, encryption, digital representation of sound, analogue and digital conversion, psychoacoustics, speech recognition and generation, transmission of digital sound. Image and video: types of image creation and capture, raster scanning principles, images and colors, perceptual vision. Compression and decompression: evaluating a compression system, redundancy and visibility, taxonomy of compression techniques, Entropy. Image compression system, video compression techniques, JPEG image, standard, MPEG motion video compression standard, DVI technology. Multimedia Conferencing: teleconferencing systems, requirements for multimedia communications, shared application architecture and embedded distributed objects, multimedia conferencing architectures, Knowledge-based multimedia systems: problems facing multimedia systems, Anatomy of an intelligent multimedia system, research and future directions. |

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| **WEEK** | **LECTURE** | **TOPIC** |
| **1** | **1** | Introduction: Definition of multimedia, multimedia hardware and software, Multimedia –related technologies. |
| **2** | **2** | Types of multimedia systems. Types of Multimedia Products: multimedia operating systems, multimedia database systems, multimedia toolkits. |
| **3** | **3** | The nature of discrete and continuous media. Components of multimedia systems, Application of multimedia system. Enabling technologies, implications on quality of service. |
| **4** | **4** | **CAT1 15%** |
| **6** | **5** | Text and audio: text technology, data representation, encryption, digital representation of sound, analogue and digital conversion, psychoacoustics, speech recognition and generation, transmission of digital sound. |
| **7** | **6** | Image and video: types of image creation and capture, raster scanning principles, images and colors, perceptual vision |
| **8** | **8** | Compression and decompression: evaluating a compression system, redundancy and visibility, taxonomy of compression techniques, Entropy. |
| **9** | **9** | Image compression system, video compression techniques, JPEG image, standard, MPEG motion video compression standard, DVI technology. |
| **10** | **10** | **CAT 2 15%** |
| **11** | **11** | Multimedia Conferencing: teleconferencing systems, requirements for multimedia communications, shared application architecture and embedded distributed objects, multimedia conferencing architectures |
| **12** | **12** | , Knowledge-based multimedia systems: problems facing multimedia systems, Anatomy of an intelligent multimedia system, research and future directions. |

**Mode of Delivery**

This is a practical course and delivery shall be by lectures and lab work:

**Assessment**

Continuous Assessment tests (CATs): 40%

End of Semester Written Examinations: 60%

Pre requisites INF 101 Introduction to Informatics

**Learning Materials**

Textbooks, Journals, Internet Sources,

1. Donald Hearn, M. Pauline Baker; “Computer Graphics C Version”; PHI. Foly, Van Dam, Feiner, Hughes; “Computer Graphics principles and practice”; Pearson Education. Z. Xiang, R. A. Plastock; “Computer Graphics”, second edition, McGraw Hill, 2006. N. Sinha, A. D. Udai; “Computer Graphics”, 1st edition, McGraw Hill, 2008.
2. Multimedia Communications: Applications, Networks,Protocols and Standards, Fred Halsall,Addison Wesley, 2000 (ISBN 0-201-39818-4)
3. Introduction to Data Compression (3rd Edition) Khalid Sayood Morgan Kaufmann, 2005 (ISBN-13: 978-0126208627)
4. Data Compression: The Complete Reference (Fourth Edition) David Salomon Springer-Verlag London, 2007but (ISBN-13: 978-1846286025)
5. Sound Synthesis and Sampling (Third Edition) Martin Russ
6. Focal Press (ISBN-13: 978-0240521053)
7. Mastering MATLABDuane C. Hanselman and Bruce L.LittlefieldPrentice Hall, 2004 (ISBN-13: 978-0131857148)
8. Digital Image Processing Using MATLAB Rafael C. Gonzalez,Richard E. Woods, and Steven L. Eddins Prentice Hall, 2004 (ISBN-13: 978-0130085191)
9. DAFX: Digital Audio Effect Udo Zolzer John Wiley and Sons Ltd , 2002 (ISBN-13: 978-0471490784

Lecturer’s Signature………………………………………. Date………………………………..

Received by the Class:

Name of Class Representative………………..………… Registration No. ……………………

Signature of Class Representative…………………………………….Date…………………….

Head of Dept signature………………………………………………..Date………….…………

Name of Head of Department : DR. MAUREEN ADOYO