CENTRAL UNIVERSITY

SCHOOL OF APPLIED SCIENCES

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

Course Code: ITEC406 **Credit Hour(s)**:**3** **Course Title**: Topical Issues in Computing

Course Lecturer: *Dr. Kingsford Kissi Mireku.* Computer Science Dept. #

 *kingpolowasky@yahoo.co.uk*

 *0244995464*

Office Hours: Monday to Thursday Time: 8 am to 5 pm

COURSE OBJECTIVE

This course will help students demonstrate knowledge of and familiarity with a wide variety of emerging technologies.

It is intended to broaden horizons and provide a foundational understanding of emerging technologies in the industry. This means that the lectures are often standalone rather than a flowing series, and the list of topics covered often changes to track current trends. Where possible, students will research the issues based on the lecturer's presentations.

COURSE DESCRIPTION

This course will focus on the emerging issues in computing today. It aims to introduce students to the new technologies that will influence and shape the world. This course will be organised in a presentation format where students will be grouped and present on each topic before it is discussed.

Some of the topics include Artificial Intelligence, Cloud Computing, Big Data concepts, Data Analytics, Data Centers and Virtualization, Internet of Things, Optical Computing, Quantum Computing, Virtual Reality, and Wearable Computing. The available technological challenges.

LEARNING OUTCOME

By the end of this course, students should be able to:

- Understand the impact that emerging technologies will have in the future.
- Define the use of emerging technologies such as:
    - Artificial Intelligence
    - Cloud computing,
    - Big data concept and Data analytics
    - Data Centers and Virtualization,
    - Internet of Things
    - and how they will affect our interaction with a computer system.
- Define the ways in which certain technologies will impact homes of the future.
- Focus on the topical issues affecting these emerging technologies, especially in our society.

COURSE DELIVERY METHODS

This course will be delivered through class discussions, group presentations, and online self-tutorial platforms. A two-professional learning platform will be provided, and students will be enrolled to participate in obtaining an international recognition certificate.

A WhatsApp course group will be established for sharing content, facilitating collaborative learning, and promoting student-teacher engagement. All students are required to subscribe to the class WhatsApp group.

RECOMMENDED TEXTBOOKS:

Marinescu, D. C. (2013). *Cloud Computing - Theory and Practice.*London, U. K.: Morgan Kaufmann

Kilicoglu, H., D. Shin, et al. (2012). *SemMedDB: a PubMed-scale repository of biomedical semantic predications.*

Sara Baase: (2013) *A Gift of Fire: International Version: Social, Legal, and Ethical Issues for Computing and the Internet*, Pearson, 4th edition

ASSESSMENT / EVALUATION TECHNIQUES

There will be a group presentation on selected topics.

The mid-semester test will be based on the online platform used and will be conducted at the end of May 2025.

Finally, there is a three-hour internal closed-book examination.

Evaluation is comprised of:

Class Attendance	5%
Group Presentation and Class Discussion	5%
Online Participation	10%
Mid-Semester Test	20%
End of Semester Exam	60%
TOTAL	**100%**

GRADING POLICY AND SCHEME

Continuous Assessment (40%)

End-of-semester examination (60%)

Please refer to the Central University Undergraduate Student Handbook, available on the school's website, for information on the grading system, bases for incomplete grades, and procedures for grade appeals.

EXAMINATION / ACADEMIC INTEGRITY OTHER POLICIES

Please refer to the Central University Undergraduate Student Handbook available on the school website.

COURSE CONTENTS AND SCHEDULE

Session	Topic	Concepts	Learner-centered Activities
1.	Introduction to Topical Issues in Computing	• Artificial Intelligence • Cloud Computing • Big data concept and Data analytics, • Data Centre and virtualization, • Internet of Things • Cybersecurity and Data Privacy	▪ **Assessment Task 1** a. Each student enrolled in the Google Cloud skills platform b. Each Student picks a topic to research.
2.	Artificial Intelligence	• Understanding Artificial Intelligence • Generative AI • Large Language Modules • Responsible AI • Others	**Google Cloud Skills Boost Platform**
3.	Cloud Computing	• Understanding Cloud Computing • Issues Affecting Cloud Computing • How can these issues affect Ghanaian Organizations and Institutions	• **Assessment Task 2** a. Presentation of issues affecting cloud computing.
4.	Cloud Computing	• Understanding Cybersecurity • **Introduction to Security Principles in Cloud Computing**	**Google Cloud Skills Boost Platform**
5.	Big data concept and analytics	• Understanding Big Data concepts and analytics • Big Data Analytics - Charts & Graphs • Data Analysis Tools	**Assessment Task 3** a. Presentation of Big Data concept and analytics issues.
6.	Big data concept and analytics	• Issues affecting Big Data concept and analytics: • How does Big Data affect Ghanaian Organizations and Institutions?	• **Assessment Task 4** Seminar for the class. An Expert in Cyber Security will be invited to the class
7.	MID-SEMESTER EXAMINATION	**Mid-Semester Assessment Task** An open-book mid-semester exam will be conducted to assess students on the understanding of the course so far.	
8.	Cyber Security and Data Privacy	Certified in Cybersecurity Courses and Exams	One Million Certified in Cybersecurity – Free ISC2 Certification Exams
9.	Data Centre and virtualization	• Understanding Data Virtualization • How is it helping organizations • The issues affecting Data Virtualization How is affecting Ghanaian companies?	**Assessment Task 4** a. Presentation on 4G/5g Mobile technologies
10.	Internet of Things - IoT	• Understanding the Internet of Things • The Internet of Things Lifecycle • How the Internet of Things works • Some Applications Of IoT • Technological Challenges Of IoT	a. Presentation on the Internet of Things – IoT b. **Class discussions**

11.	optical, quantum virtual reality, and wearable computing	• Understanding optical computing, • Devices used for optical computing • Application of Optical computers • Advantages and Disadvantages of OC • quantum computing, • virtual reality and wearable computing • Technological issues of them	**Assessment Task 5** a. Class Discussions
12.	Summation Reflections	**Second Class Seminar** **Guest Speaker** **i.** Present on Topical Issues in Computing and the Role in Ghanaian Organizations. **ii.** Questions and answers from students **Class Participation** i. Individual questions asked ii. Group Question based on a group project	
13.	Revision		
14.	End-of-semester examinations		
15.	End-of-semester examinations Examination Break		