JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS AND ECONOMICS

END OF SEMESTER EXAMS

Kendu-Bay Learning Center

ACS311: COMPUTER ORGANIZATION AND APPLICATION

1.(a) Identify the 4 major types of computers and explain their use. (10 marks)

(b) Explain what the four main sections of a computer are, and what they do. (10 marks)
(c)Explain 5 differences between primary and secondary storage. (10 marks).

2. (a) An Algorithm is a series of simple steps that once completed in order, solve a problem. IEBC would like to find the number of times a name occurs in a list of names in the voters register. Write a simple algorithm to help them find the number of times a name occurs in a list extracted from the register. (15marks).

(b). convert the following numbers: from binary system to decimal system

(i) 132 (ii) 412

Decimal to binary

(i) 10000100

3 (a) you work as an Information Systems security personnel in a bank. You realize that other bank's system has been penetrated. Discuss the ways in which you can defend your computer systems (methods of defence) (15marks)

(b)List the possible adversaries in a computer system security. (5marks)

4. Discuss, with elaborate examples, the various types of software. (20marks)

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COURSE OUTLINE

I. Course Description

ACS 311 Computer Organization and Application.

Lecturer: Collins Otieno Oyoo

II. Course Objectives

1. Students will learn the fundamentals of computer organization and its relevance to classical and modern problems of computer design
2. Students will be able to identify where, when and how enhancements of computer performance can be accomplished.
3. Students will learn the sufficient background necessary to read more advance texts as well as journal articles on the field.
4. Student will see how to use concepts of computer organization in real-life settings using various PC performance improvements.
5. Students will also be introduced to more recent applications of computer organization in advanced digital systems.

III. Expected Outcomes

1. Student will learn the concepts of computer organization for several user applications.
2. Student will develop the ability and confidence to use the fundamentals of computer organization as a tool in the utilization of digital systems.

IV. Textbook(s) and Readings

Textbook:

Patterson and Hennessy, Computer Organization & Design: The Hardware/Software Interface, 3rd ed., Morgan Kaufmann, 2005.

References:

1. Hennessy and Patterson, Computer Architecture: A Quantitative Approach, 3rd ed., Morgan Kaufmann, 2002.
2. J. Hayes, Computer Architecture and Organization, 3rd ed., McGraw-Hill, 1998.
3. M. Mano, Computer System Architecture, 3rd ed., Prentice Hall, 1993.

V. Student Materials

- Lecture Slides

- Internet site

- Homeworks

VI. Course Outline

The following topics will be covered in this course:

1 Introduction to computers
2 Von Neumann Model

3 Functional Components of a Computer (CPU, Memory etc)

4 Number systems and internal data representation
5 Types of software
6 Classical and temporary application of computers
7 Basic computer usage, productivity (word, spreadsheet,email,web
8 Computer security and maintenance issues
9. Computer ethical and societal issues.

Instructional Methods

1. Lectures
2. Quizzes and Homeworks

VII. Evaluation of Outcomes

Evaluation will be done based on the following:

1.	Homeworks and 2 Quizzes	:	10%
2.	Midterm Exam	:	20%
3.	Final Exam	:	70%

VIII. Professional Component Contribution

This is an introductory course in Computer Organization designed for students to become familiar with the fundamentals of computer organization techniques and their application

to computer engineering problems. It provides essential tools that are needed from engineering professionals to measure a simple PC performance.

IX. Policies

- Attendance is required.
- All submitted work must be yours.
- Cheating will not be tolerated.
- This course requires significant effort.