# LAIKIPIA UNIVERSITY

# Course Outline

Mr Evans Ombati

# Assembly Language Programming

**Overall Aim and Objectives**

The aim of this course is to introduce students to assembly language programming. By the end of the course students should be able to write, test and debug programs in x86 assembly language using assembler, debug and emulation software and relate assembly language with other processor assembly languages and high-level languages.

**Week 1:**

* Introduction to Assembly Language: Computer organization – Number and character representation - PC programming model

**Week 2:**

* Directives - The MOV instruction – addressing modes

**Week 3:**

* Arithmetic instructions

**Week 4:**

* Logic, shift and rotate instructions

**Week 5:**

* Interrupts, DOS and BIOS

**Week 6:**

* CAT

**Week 7:**

* Assembly language instructions

**Week 8:**

* Flow control instructions

**Week 9:**

* The stack - introduction to procedures

**Week 10:**

* Software constructs

**Week 11:**

* Arrays - addressing modes revisited

**Week 12:**

* The processor status and flags register

**Week 13:**

* Revision

**Methodology**

The course delivery will be based on theoretical lecturing, assignments and exercises solved in class. Exercises will be handed to students and their solutions shall be analysed at lecture periods. Additional tutorial time at the end of each lecture will be provided to students. Students are expected to demonstrate the necessary effort to become confident with the different concepts and topics of the course.

**Coursework Evaluation**

Evaluation will be based on two marked tests, which will be reflected in the coursework grade of each student.