



(Knowledge for development)

KIBABII UNIVERSITY(KIBU)

SCHOOL OF COMPUTING AND INFORMATICS

**CSC 222: ASSEMBLY LANGUAGE PROGRAMMING AND MICROPROCESSOR
SYSTEMS**

COURSE OUTLINE

TIME: Thursdays 2PM - 5PM

Room: ABB202

Lecturer: Eric Sifuna, MSc IS; BSc EEE ; R.Eng; MIEEE, MIEK

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CSC 222: Assembly Language Programming and Microprocessor Systems	
Contact Hours	42
Purpose/Aim	To enable students to gain knowledge in PC hardware, and in using assembly language, including what is needed to write, link and execute a program written in assembly language.
Course Objective (Learning Outcomes)	<p>At the end of this course, successful students should be able to:</p> <ol style="list-style-type: none"> 1. Describe basic concepts of computer organization and instruction and data representation. 2. Describe the basics of assembly language style programming. 3. Critique particular machine assembly language in depth
Course Content	<ul style="list-style-type: none"> • Basic Computer Organisation: <ul style="list-style-type: none"> – Number Systems – Data Codes – Internal Representation • Introduction to simple machine and Assembly Language instructions <ul style="list-style-type: none"> – DEBUG program – Interrupts – Program Logic and Control (selection and iteration) – Arithmetic Operations – Logical and Bit Operations – Addressing Modes

	<ul style="list-style-type: none"> – Subroutines and the Hardware Stack – Macro Definitions • High-Level Language Interface – String Processing 	
Mode of delivery	Blended learning (Lectures), directed reading, and hands-on laboratory sessions and projects.	
Instructional Materials/ Equipment	Audio visual equipment, writing boards, cross-assemblers, computers	
Course Assessment	Type	Weighting (%)
	Examination	70
	Continuous Assessment	30
	Total	100
Recommended Reading	<ol style="list-style-type: none"> 1. Introduction to RISC Assembly language programming, J Waldron, Addison-Wesley (1999) 	
Other references	<ol style="list-style-type: none"> 1. Assembly Language for Intel-Based Computers, Kip Irvine, Morgan-Kaufmann (1999) 2. MIPS Assembly Language programming, Robert Britton, Morgan-Kaufmann (2000) 	