Murang'a University of Technology

School of Computing and Information Technology

COURSE OUTLINE

Unit Code: IT/OS/ICT/CR/10/6

Unit Name: Develop Computer Program

Pre-requisites: None

Credit Hours: 6 hours

Department: Information Technology

Program: Diploma in ICT (TVET)/ Diploma in Information Technology (MUT).

Lecturer's Name: Mr. Jackson Kamiri

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Academic Year: 2022/2023

Notice to Learners

i) This is a core unit of competence in your programme

ii) This unit will be fully covered within three semesters. For each semester, the unit will have 6 credit hours.

iii) Testing for this unit will involve continues assessment by the internal assessor and a final assessment by an external assessor from TVET CDACC.

iv) Modes of testing for this unit will include; Written test, oral test, observation, practical tests, projects.

Summary of the Learning Outcomes

1. Identify program and programming concepts
2. Identify Phases of Program development
3. Perform program design and Analysis
4. Develop a Computer program
5. Perform Program testing and debugging
6. Perform User training and Program Maintenance

Teaching Methodology

i) Presentations and practical demonstrations by trainer;
ii) Guided learner activities and research to develop underpinning knowledge;
iii) Supervised activities and projects in a workshop;

Tools Needed

Software- NetBeans, DevC++, Code Blocks, Design Software

Hardware- Laptops, Lab-computers, Projector

Week	Lesson	Topic	Sub-Topic
Week 1	Lesson 1	Introduction	Introduction to programming Programming Paradigms
	Lesson 2	Software Engineering approaches	Introduction to software Engineering. Waterfall, Agile
Week 2	Lesson 1	Software Engineering Approaches	Spiral and Prototyping Standard phases of program development
	Lesson 2	**TEST 1**	

	Lesson 1	Program Design and Analysis	Introduction Program design and Analysis tools (Pseudocode, flowchart)
Week 3	Lesson 2	Program Design and Analysis	Software design levels (High level, detailed design, Architectural design)
	Lesson 1	Program Design and Analysis	Types of System Design
Week 4	Lesson 2	Introduction to C Programming	IDE set-up Basic Concepts of C Programming
	Lesson 1	Introduction to C Programming	Format of a C program Library functions used in a basic C program
Week 5	Lesson 2	Program Writing	Datatypes and Operators in C programming
	Lesson 1	Program Writing	Keywords Variables, Initialization.
Week 6	Lesson 2	Program Writing	Constants and Identifiers
	Lesson 1	**TEST 2**	
Week 7	Lesson 2	Error Handling	Types of errors in C How to handle Errors in C programming
	Lesson 1	Control Structures	Sequence structure Selection Structures
Week 8	Lesson 2	Control Structures	Loop Structures Nested Structures
	Lesson 1	Functions	Creating user-defined functions Calling Functions
Week 9	Lesson 2	**TEST 3**	

	Lesson 1	Data Structures in C	Arrays and Pointers File operations
Week 10	Lesson 2	Program Documentation	Data flow diagram and HIPO diagram
Week 11		Exams	