

1.	Name of Course					Computer Programming	
2.	Course Code					JCOP1022	
	JCOP = the first alphabet identify the faculty within which the subject is offered., JCOP = the remaining three alphabet identify the course that offers the subject, 1022= the first digit identify level of study; in this case undergraduate level, 1022= the second and third digits identify subject identity and 1022 = the fourth digit identify credit value or credit hours						
3.	Name(s) of academic staff					To be Assigned	
4.	Rationale for the inclusion of the course/module in the programme					Knowledge of computer programming is essential in electrical and electronics engineering. Moreover, acquiring knowledge of high-level language especially C enable engineer to develop an algorithms.	
5.	Semester and Year offered					Year 1, Semester 1	
6.	Total Student Learning Time (SLT)		Face to Face				Total Guided and Independent Learning
	L = Lecture T = Tutorial P = Practical IS= Independent Study		L	T	P	IS	Total Guided and Independent Learning = 120
			42	-	14	64	
7.	Credit Value					3.0	
	Lecture: 3 hours per week x 14 weeks Practical: 2 hours x 7 weeks						
8.	Prerequisite (if any)					None	
9.	Course Objectives 1. To equip the students with the knowledge of the computer programming. Course Learning Outcomes (CLO) At the end of the semester students should be able to: CLO1: Identify and apply basic concepts of a high level programming language correctly; CLO2: Demonstrate the basic notions and techniques for algorithm development; CLO3: Develop simple algorithms						
10.	Transferable Skills: This course is expected the development of the following transferable skills: - An ability to manage time and task - An ability to learn both independently and co—operatively; - An ability to take responsibility and carry out laboratory test; - An ability to take initiative and lead other; - An ability to use recommended soft wares.						
11.	Teaching-learning and assessment strategy A variety of learning strategies are used throughout the course, including the following - Classroom Lesson; Lecturer and power point presentation - Tutorial session - Student- lecturer Discussion - Collaborative and co-operative learn; - Independent Study.						

	Assessment: <table> <tr> <td>Course works</td><td>40%</td></tr> <tr> <td>Assignment</td><td>5%</td></tr> <tr> <td>Quizzes</td><td>5%</td></tr> <tr> <td>Laboratory works</td><td>10%</td></tr> <tr> <td>Test</td><td>20%</td></tr> <tr> <td><u>Final Examination</u></td><td><u>60%</u></td></tr> <tr> <td><u>Total</u></td><td><u>100%</u></td></tr> </table>	Course works	40%	Assignment	5%	Quizzes	5%	Laboratory works	10%	Test	20%	<u>Final Examination</u>	<u>60%</u>	<u>Total</u>	<u>100%</u>
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12.	Synopsis: This course is very important course in the field of electrical and electronics engineering. The objective of course is to give an introduction to basic programming concepts through the use of a high-level programming language such as C. It covers the basic notions and techniques for algorithm development and the implementation of algorithms in a high-level programming language.														
13.	Mode of Delivery: Lectures; Tutorials ; Laboratory works														

14.	Assessment Methods and Types:						
	Performance Criteria :						
	CLO-PLO	Assessment Tool	1	2	3	4	5
	Marks		0-39	40-49	50-59	60-74	75-100
	Grade		(F)	(D,D+)	(C-,C,C+)	(B-,B,B+)	(A-,A,A+)
	CLO1: To Identify and apply basic concepts of a high level programming language correctly.	Assignment Lab works Test Quizzes Examination	Fail To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Poor To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Satisfactory To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Good To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Excellent To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test
	CLO2: Demonstrate the basic notions and techniques for algorithm development;	Assignment Lab works Test Quizzes Examination	Fail To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Poor To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Satisfactory To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Good To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Excellent To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test
	CLO3: To develop simple algorithms;	Assignment Lab works Test Quizzes Examination	Fail To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Poor To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Satisfactory To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Good To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test	Excellent To: - manage time and task - learn both independently and cooperatively - take responsibility to develop simple program and carry out laboratory test

15.	Mapping of the Programme Objectives to the Programme Learning Outcomes										
Programme Learning Outcomes (PLO) Programme Objectives (PO)	PLO1: Ability to acquire and apply knowledge of science and engineering fundamentals.	PLO2: Acquired in-depth technical competence in electrical and electronics engineering discipline.	PLO3: Ability to undertake problem identification, formulation and solution;	PLO4: Ability to utilise systems approach to design and evaluate operational performance.	PLO5: Understanding of the principles of design for sustainable development;	PLO6: Understanding of professional and ethical responsibilities and commitment to them.	PLO7: Ability to communicate effectively, not only with engineers but also with the community at large.	PLO8: Ability to function effectively as an individual and in a group with the capacity to be a leader or manager;	PLO9: Understanding of the social, cultural, global and environmental responsibilities of a professional engineer	PLO10: Recognising the need to undertake lifelong learning, and possessing/acquiring the capacity to do so	PLO11: Ability become entrepreneur
	PO1: To produce graduates with excellent knowledge and competency in Electrical and Electronic Engineering.	✓	✓	✓							
	PO2: To produce graduates with professional, generic attributes to meet the present and future global demands.										
	PO3: To produce graduates with Islamic humanistic values and reinvention skills to meet the requirement of a dynamic environment. These skills include Civil Intelligence, Moral Intelligence, Self-Reliance and Communication Skills.										

16.	Mapping of the course Learning Outcome to the Programme Outcome											
Programme Learning Outcomes (PLO)		PLO1: Ability to acquire and apply knowledge of science and engineering fundamentals.	PLO2: Acquired in-depth technical competence in electrical and electronics engineering discipline.	PLO3: Ability to undertake problem identification, formulation and solution;	PLO4: Ability to utilise systems approach to design and evaluate operational performance.	PLO5: Understanding of the principles of design for sustainable development;	PLO6: Understanding of professional and ethical responsibilities and commitment to them.	PLO7: Ability to communicate effectively, not only with engineers but also with the community at large.	PLO8: Ability to function effectively as an individual and in a group with the capacity to be a leader or manager;	PLO9: Understanding of the social, cultural, global and environmental responsibilities of a professional engineer	PLO10: Recognising the need to undertake lifelong learning, and possessing/acquiring the capacity to do so	PLO11: Ability become entrepreneur
Course Learning Outcome (CLO)												
CLO1: To Identify and apply basic concepts of a high level programming language correctly.		✓	✓	✓								
CLO2: Demonstrate the basic notions and techniques for algorithm development;		✓	✓	✓								
CLO3: To develop simple algorithms;		✓	✓	✓								

17.	Content outline of the course/module and the SLT per topic						
	Details		SLT (Hour)				
			L	T	P	IS	Total
	Topic 1	Introduction Overview of Computers and Software - History, - Computer components, - Computer software including operating system and computer languages	3	-	-	6	9
	Topic 2	Designing Programs - Requirements, Specifications and design, - Meaning of algorithm, - Usage of pseudo code and flowcharts, - Coding & testing, - Documentation, - Maintenance.	9	-	-	13	22
	Topic 3	Variables and Flow Control - Introduction to C programming language. - Simple variables, Simple data types including arrays, - Basic pointers and records, - Arithmetic & logical operators, - Relational operators, - Conditionals, - Loops.	9	-	-	12	21
	Topic 4	Functions and Procedures - Function declarations, - Definitions, & prototypes, - Pass-by-value and pass-by-reference parameters, - Local and global variables, - Scope, - Function calls.	6	-	-	10	16
	Topic 5	I/O & File Operations - I/O with standard input and output - Strings and Files. - Formatting of read and write operations. - File manipulation operations.	6	-	-	10	16

	Topic 6	Pointers and Arrays • Pointer variables, Pointer levels and arrays, • Pointer reference function calls. • Array indices, • Cells, • Character strings, • Multi-dimensional arrays Structure and Unions • Structures and operations on structures, • Pointers to structures, • Structure in a structure, • Unions	9	-	-	13	22
	Practical	Practicals are programming exercise involve in application of theory in computer laboratory.	-	-	14	-	14
	Total SLT (Hour)			42	-	14	64
18.	Main references supporting the course 1. Deital & Deital, “C How to program”, 4th Edition, Prentice Hall, 2007. 2. Donald E. Knuth, the art of computer programming, 3rd edition 2011 3. Mary Farrell, The art of computer programming, 2nd edition, 2008 Additional references supporting the course						
19.	Other additional information All materials will be available to the students in the library.						