


AMOU UNIVERSITY
“A Vehicle for Peace and Development”
AMOU UNIVERSITY



FACULTY OF COMPUTING AND ICT

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY PROGRAMME

ACADEMIC YEAR 2015/ 2016

COURSE DESCRIPTION

BIT 317	Discrete Mathematics
Contact Hours	52
Pre-requisite	N/A
Purpose/Aim	This course prepares students to think logically in readiness for the programming courses.
Course Objective	To appreciate the basic principles of Boolean algebra, Logic, Set theory, Permutations and combinations and Graph Theory.
Course Content	<ul style="list-style-type: none"> • Boolean algebra: axiomatic definitions of Boolean algebra, duality, proposition and proposition functions, truth-values and truth tables. • Logic: Predicate logic, Propositional logic, logical reasoning. • Set Theory: Set algebra, recursive definition of sets, orderings, relations, partially ordered sets, Lattices. • Permutations and Combinations: • Graph Theory: Directed and undirected graphs, subgraphs, circuits, paths, cycles, coactively, adjacency ad incidence matrices, elements of transport network. • Functions :Domain, Range, One-to-One, Onto Inverses and Composition, One-to-One Correspondence and the Cardinality of a Set • The Integers : The Division Algorithm ,Divisibility and the Euclidean Algorithm , Prime Numbers, Congruence, Applications of Congruence
Learning & Teaching Methodologies	Lectures and tutorials
Instructional Materials/Equipment	Classroom with audio visual aids



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Course Assessment	Type	Weighting (%)	
	Final Examination	60	
	Mid Term Examination	20	
	Assignment	10	
	Attendance	10	
	Total	100	
Recommended Reading	Title	Author	Publisher
	Discrete Mathematics	Sharma J	McMillan (2005)
Additional Reading	Discrete Maths for Computer Scientists and Mathematicians	Kandel Abraham and Theodere P. Baker	Prentice Hall (2003)
	<i>Discrete Mathematics with Graph Theory</i>	Edgar Goodaire, Michael Parmenter.	Prentice Hall (2005).
Other Support Material	A variety of multimedia systems and electronic information resources as prescribed by the lecturer.		