Middle East College of Information Technology (MECIT), Muscat, Oman
Validated Programme Leading to the Award of:
BEng (Hons) Data Communication and Systems Administration

1. ESSENTIAL QUALITIES AND ATTRIBUTES OF THE PROGRAMME'S GRADUATES

This programme prepares students with a comprehensive understanding of different communication channels and the issues associated with them. It facilitates the students' acquisition of skills in the design, development and implementation of communication systems that are appropriate to their environment. This programme also prepares students to be successful system administrators.

2. RATIONALE OF THE PROGRAMME

Information is the life blood of modern business. Information and communications technologies play an ever-increasing role in delivering timely information when and where required. The popularity and pervasiveness of the Internet has led to a heightened awareness of the potential of computer networks.

Computer networking technologies, both local area networks, enterprise networks, and the Internet, continue to develop at a rapid pace. Computer networks allow the user to access remote programs and remote databases either within the same organization or from another enterprises or public source. Computer networks provide communication possibilities faster than other facilities. Because of the advantages deriving from optimal information and communication strategies, computer networks may increase the rate of organizational learning and success.

The programme gives a broad understanding of the current technologies available to business, including the costs and benefits, so that they can make informed decisions regarding the selection, purchase, installation and maintenance of local and wide area networks. The programme takes a broad view of data communications and provides specialization in network design and network services. The curriculum combines theoretical studies with practical work using modern applied technology. A well-equipped laboratory with routers, switches and other communication tools are used in exercises and assignments.

The programme is applied in nature and is designed to be relevant to the industrial world. The programme includes a wide range of modules related to data communications and high speed networks, multi layer switching, simulation of computer networks, IP telephony and SIP, mobile communications and wireless networks, network security, routing in IP networks, and network management.

The programme is intended for students who wish to pursue careers in research, development, operations and management of networks and services. It addresses the specific needs of the world-wide communications industry. The programme offers studies that combine knowledge and skills in networking as well as the development of network services. Today's corporations depend on their information networks for mission-critical operations and are looking for highly trained networking professionals to keep them up and running at maximum performance.

BEng (Hons) - Data Communication and Systems Administration

	Year 1	CU Level	C.P	Year 2	CU Level	C.P	Year 3	CU Level	C.P	Summer	Year 4	CU Level	C.P
Fall Semester	College Mathematics	**0**	**10**	Inferential Statistics	**1**	**10**	**INTRODUCTION TO PROGRAMMING**	**0**	**15**		Omani Studies	**0**	**10**
	Computer Fundamentals	**0**	**10**	Business Communication	**0**	**10**	**SYSTEM ANALYSIS AND DESIGN**	**1**	**15**		**SPECIAL TOPIC / SYSTEMS PROJECT MANAGEMENT**	**3**	**15**
	English for Special Purpose	**0**	**10**	**COMPUTER ARCHITECTURE**	**2**	**15**	**Design of Network Security**	**3**	**10**		**DATABASE ADMINISTRATION**	**3**	**15**
	FUNDAMENTALS OF COMPUTER HARDWARE	**0**	**15**	**Voice Over Internet Protocol**	**1**	**10**	**Implementing Network Security**	**3**	**10**		**Routing Protocols**	**2**	**10**
	ELECTRICAL ENGINEERING	**0**	**15**	**ELECTIVE - I**	**1**	**15**	**Communication Server Administration**	**2**	**10**		**Project Planning**	**3**	**10**
			60			**60**			**60**				**60**
Spring Semester	Calculus and Numerical Methods	**1**	**10**	**Computer Network Protocols**	**1**	**10**	Business Environment	**0**	**10**		**Switching and Remote Access**	**2**	**10**
	Descriptive Statistics	**0**	**10**	**Network Administration**	**2**	**10**	**FUNDAMENTALS OF RELATIONAL DATABASE MANAGEMENT SYSTEM**	**2**	**15**		**Advanced Networking Technologies**	**3**	**10**
	Introduction to Internet	**0**	**10**	**Internet Administration**	**1**	**10**	**Principles of Routing**	**2**	**10**		**ELECTIVE - III**	**3**	**10**
	ELECTRONICS ENGINEERING	**1**	**15**	**Active Directory Services**	**1**	**10**	**Enterprise Mobility**	**3**	**10**				
	FUNDAMENTALS OF COMPUTER NETWORKS	**1**	**15**	**PROJECT - I**	**2**	**20**	**ELECTIVE - II**	**2**	**15**		**Project Design and Implementation**	**3**	**30**
			60			**60**			**60**				**60**
	Certificate in Networking			*Diploma in Data Communication and Systems Administration*			*Advanced Diploma in Data Communication and Systems Administration*				*BEng (Hons) in Data Communication and Systems Administration*		

INTERNSHIP

WHITE	10	COLLEGE REQUIREMENT
TURQUOISE	10	DEPARTMENTAL REQUIREMENT
YELLOW	13	MAJOR ELECTIVES
RED	2	PROJECT
LAVENDAR	4	ELECTIVES
	39	

Level 0	125
Level 1	120
Level 2	110
Level 3	125
	480
Level 2+Level 3	235

3. PROGRAMME LEARNING OUTCOMES

On completion of this programme, graduating engineering students should be able to:

- demonstrate knowledge and understanding of essential facts, concepts, principles and theories, and a sound grasp of science, mathematics and the technological base, relevant to data communication and system administration.
- analyse and interpret data and, when necessary, design experiments and use laboratory and workshop equipment to generate new data;
- design a system, component or process to meet a given need, and evaluate the designs, processes and products of others in order to make improvements;
- use a wide range of tools, techniques and equipment, including pertinent software;
- communicate effectively with colleagues and others, using both written and oral methods;
- work in a multi-disciplinary team and demonstrate an understanding of professional and ethical responsibilities;

4. PROGRAMME LEARNING OUTCOMES and CORE MODULES: MAPPING

MODULE	1	2	3	4	5	6
Fundamentals of Computer Hardware	x					
Electrical Engineering	x	x				
Electronics Engineering	x	x				
Fundamentals of Computer Networks	x		x			
Computer Architecture	x			x		
Voice Over Internet Protocol			x			
Computer Network Protocols			x			
Network Administration			x		x	
Internet Administration			x		x	
Active Directory Services		x				
Project 1	x				x	x
Introduction to Programming	x		x	x		
System Analysis and Design		x		x		
Design of Network Security			x			
Implementing Network Security		x	x			
Communication Server Administration		x			x	
Fundamentals of RDBMS		x	x	x		
Principles of Routing	x	x				
Enterprise Mobility				x		x
Systems Project Management				x	x	x
Database Administration		x		x	x	
Routing Protocols		x				
Switching and Remote Access		x	x			
Advanced Networking Technologies		x	x			
Project Planning	x	x	x	x	x	x
Project Design and Implementation	x	x	x	x	x	x