

MASTER OF INFORMATION TECHNOLOGY

PROGRAMME STRUCTURE FOR STUDENTS REGISTERED FROM JAN 2015

LIST OF COURSES

Semester	Subject Code	Subject Name	Credit Hours	Course Type	Assessment Format	Pre-Requisite
Semester 1	CMDB6103	Advanced Database Systems	3	Core	B	None
	CMA6104	Advanced Object-Oriented Programming	4	Core	B	None
	CMIS5103	Methodology of Information System Development	3	Core	B	None
Semester 2	CMPM5103	Project Management	3	Core	B	None
	CMCN6203	Advanced Computer Network	3	Core	B	None
	CMAS6103	Computer Architecture & Operating System	3	Core	B	None
Semester 3	CMQM5103	Software Quality and Metrics	3	Core	B	None
	CMST5103	Software Testing	3	Core	B	None
	CMWD6103	Web Design and Technologies	3	Core	B	None
Semester 4		Elective I	3	Elective	B	None
		Elective II	3	Elective	B	None
Semester 5	CMPJ6106	Masters Project	6	Core		None
	TOTAL		40			

Note:

- OIJM has the flexibility to offer any courses in any semester.
- The courses are subjected to change without prior notice
- The offering of the elective courses is the sole discretion of the faculty
- Learners with non-IT related degrees will need to take TWO additional courses as audit.
- For assessment format please refer to section 10.

COURSE SYNOPSIS

CORE COURSES:

CMDB 6103: Advanced Database Systems

The course presents important aspects of database systems such as the concept of relational models, data models, data organisation and structures. It also discusses SQL concepts such as SQL data manipulation and data definition. Further, it explains ER-Model and normalisation. Advanced topics are database security and transaction management.

This course will cover the following topics which are the main components of database systems:

- o Relational Model and Languages

- Database Analysis and Design Techniques
- o Methodology

CMA6 6104: Advanced Object Oriented Programming

This course will discuss the following topics which are the main elements in Programming Language:

- o Concepts of Programming and Programming Languages
- o Type of Programming Languages
- o Object Oriented Software Development with Java

CMIS 5103: Methodology of Information System Development

This course is prepared for the students to enable them to understand in depth the Methodology of Information Systems Development, which is the approach to the analysis and design of information systems. To achieve this objective, the following topics will be covered:

1. Systems Development Environment
2. Initiating and Planning Systems Development Projects
3. Determining Systems Requirements
4. Finalising Design Specifications
5. System Implementation and Maintenance

CMPM 5103: Project Management

The course is to prepare learners to understand the ICT Project Management concepts and framework. Thus, enable learners to implement the project management principles, processes, techniques and tools in any ICT projects. Entrepreneurship will be covered at the end of the course. This is to cultivate entrepreneurship spirit among learners when they involve in Software Project Management.

CMCN 6203: Advanced Computer Networks

The course starts with an overview of the various kinds and uses of computer networks. The course also introduces the important structuring technique of layered architecture, which is vital in the study of complex systems such as computer networks. The course then presents theoretical basis for data communication, transmission media, analogue transmission, digital transmission and multiplexing. The course deal with MAC protocol and looks at random access and controlled access techniques, and discuss representative MAC protocols and their characteristics. It looks at interconnecting LANs with bridges. The course describes the categories of services provided and their characteristics. The sub network has to support these services and it explains the two main approaches in subnet implementations. The main function of the subnet is the routing of data from one point in the network to another. Various types of algorithms and approaches are possible and these are discussed. The course then look at how an important problem of networks — congestion — can be controlled. The description the functions of the transport layer, its purposes and position within the communication architecture, and the main aspects of its protocols, including the concept of quality of service and its negotiation are presented in this course. Lastly the course describes the general principles and structures of several high-speed networks. It starts the discussion with the definition of highspeed networks and then introduces several existing high-speed networks. Some of these networks are the upgraded versions of 802.3 Ethernet or 802.5 token rings. They have the advantage of simple backward compatibility with the old LAN technology.

CMAS 6103: Computer Architecture & Operating System

This course will cover the following topics which is the main components of ICT: o Computer System Organization (Part 1) • Computer System Organization (Part 2) o Processor

1. Operating System Concepts
2. Operating System Case Study



CMQM 5103: Software Quality and Metrics

This course will discuss the fundamentals concepts of software quality, its management processes, measurements and metrics.

CMST 5103: Software Testing

This course covers advanced topics on software testing with deep exposure to various testing strategies and techniques; the management of the testing process and the economics of software testing. It is expected that the learner will develop software testing skill and experience.

CMWD 6103: Web Design and Technologies

Discussion will start on the history of Internet, WWW and continued to HTML basics. Then, All the elements of web will be highlighted. Later, emphasise will be given for developing dynamic Web pages. For this purpose, students would be introduced to Web technologies such as Java Applet, ASP, Sennet, CGI and XML.

CMPJ 6106: Masters Project

This course is available so that learners can conduct, under supervision, a small project that will significantly increase their depth of knowledge in some aspect of information technology theory or practice.

- O The course exposes learners to methodology of research which enables them to design, formulate and implement research projects. The topics covered will include perspectives for the development of knowledge, project planning and design as well as writing a research proposal and research report. The activities in the course will normally include some combination of reading and writing as appropriate to the project. Supervisor will guide learners on implementing their information technology projects. Learners will implement their project works by completing the remaining phases in a software development life cycle, which are the coding, testing and maintenance phases. At the end of the semester, learners will submit their completed information technology project, written reports, and presentation (which may include a demonstration of the deliverable). Learners are also required to meet their supervisor as a means of continuous communication during the semester.

ELECTIVE COURSES:

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CMIP 6103: Information System Planning

This course exposes the students to the concepts and techniques of information systems planning for the whole organization. The topics include introduction to strategic planning for information technology, managing IT for competitive advantage, assessment of current IT

capability in organization, formulation of IT strategy for the future, planning for execution of the ISP, and lastly mechanism to monitor and control.

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CMNS 5103: Network Security

The course presents a study of network security policies, models, and mechanisms. Topics include: network security models; review of cryptographic techniques; internet key management protocols; electronic payments protocols and systems; intrusion detection and correlation; broadcast authentication; group key management; security in mobile ad-hoc networks; security in sensor networks.

AUDIT COURSES:

CMPL 5103: Programming Languages

MDB 5103: Database System

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