FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

List of Courses Offered for University of Malaya
Student Exchange (UMSEP) for the 2017/2018 Academic Session

Programmes:
(1) Bachelor of Computer Science (Computer System and Network)
(2) Bachelor of Computer Science (Artificial Intelligence)
(3) Bachelor of Computer Science (Information Systems)
(4) Bachelor of Computer Science (Software Engineering)
(5) Bachelor of Information Technology (Multimedia)

NO.	COURSE CODE	COURSE TITLE	PRE-REQUISITE	CREDITS	Courses Offered		COURSE DESCRIPTION
					Please tick (√) where applicable		
					SEMESTER I	SEMESTER II	
BACHELOR OF COMPUTER SCIENCE (COMPUTER SYSTEM AND NETWORK)							
1	WIC2002	Network Security	-	3		√	This course is designed to provide student knowledge of network security, types of attack towards network, security services, and security mechanism. This course also will examine the security criteria by identity the best practices for the network security. The criteria will be looking into encryption techniques, remote access, intrusion detection and prevention, Virtual Private Network, firewall, honey pots, AAA, Infrastructure security, and physical security. Finally, the course will evaluate a plan and best proposal to design a secure network topology based on security policy and legal issues. This course also emphasis on practical exercises by introducing a range of security applications used in a network.
2	WIC3007	Principle in Distributed Systems	-	3		√	This course covers the introduction to distributed systems which includes foundations on system models & inter-process communication, low level network programming using socket, distributed algorithms, systems middleware, system infrastructure and distributed computing paradigms.
3	WRES3405	Mobile Computing	-	3	√		This course covers the introduction to wireless networks and mobile computing which includes looking at examples of mobile computing applications, issues that distinguishes wireless networks from fixed networks and examples of how the issues are addressed to support mobile computing.
BACHELOR OF COMPUTER SCIENCE (ARTIFICIAL INTELLIGENCE)							
4	WIA1004	Fundamentals of Artificial Intelligence	-	3		√	This is an introductory course to the Principle of Artificial Intelligence (AI). It covers the history, the basic concepts and techniques of AI such as knowledge representation, problem solving, searching, reasoning and machine learning. It also differentiates between conventional systems and intelligent systems and introduces the various applications of AI.
5	WID3005	Intelligent Robotics	-	3		√	This course covers the fundamentals of robot intelligence. It covers topics on the background of robotic, applications (such as military, industries, medical, and, search and rescue), effects of robots on life, robot components, types of robots with functions and applications, senses – vision (image, pattern recognition, pixel analysis), acoustic, speech, touch, olfactory (artificial nose), robot kinematics, artificial emotions, navigation and cognitive mapping, sensors and robot problem solving. It also covers new development in robotics (such as bio-inspired robotics, evolutionary robotic and evolutionary algorithms).
6	WAES3306	Intelligence of Information Systems	-	3	√	√	This is an introductory course to Information Systems Intelligence. It covers the various Information Systems in organizations and the matrics used to measure the intelligence of the systems. It explains how AI techniques and applications such as expert systems, neural network, natural language processing, fuzzy logic, data mining and robotics can be used to make the system intelligent and advanced.

BACHELOR OF COMPUTER SCIENCE (INFORMATION SYSTEMS)							
7	WIE2003	Introduction to Data Science	-	3		√	The course is designed to help the student learn fundamental concepts of data science. It covers the what, when, who, where, why and how (5W 1H) of data science in the era of big data. Also encompass, the life cycle of data science from data preparation, data processing, data cleansing and integration, to data analysis and visualization of data in data-driven decision making. The role of data scientist, the knowledge and skills required is also presented. Machine learning algorithms and statistical models are included. Diverse technologies, programming languages as well as tools in data science are discussed.
8	WIE3006	Information System Auditing	-	3		√	This course provides a general and practical view of information systems audit and control concepts and management practices. This course emphasizes on the purpose and value of IS audit in current business scenario, the impact on the control process and audit procedures in current technology and new technology advancement. Upon completion of this course, students will be able to discuss and conduct basic audits of information systems.
9	WMES3109	Technopreneurship	-	3	√		This course involves the following subject matters: (a) Entrepreneurial Revolution; (b) Environmental Assessment and Marketing Research for a New Venture; (c) Financial Preparation for Entrepreneurial Ventures; (d) Developing an Effective Business IT Plan; (e) Sources of Capital for Entrepreneurs; (f) Strategic Planning and Managing Emerging Ventures; (g) Seminar (Guest Speakers); (h) Business Plan drafting.
BACHELOR OF COMPUTER SCIENCE (SOFTWARE ENGINEERING)							
10	WIF2001	Human Computer Interaction	-	3		√	This course covers both human factors and the technical methods for the design and evaluation of interactive systems, where it is structured within four main topics: overview of HCI, essential interaction design principles, UI Development process, and interface design and programming. Overview of HCI introduces human, computer and interactions; User Interfaces (UI); usability and user experience (UX). Essential interaction design principles include topics on Psychopathology of everyday things, Psychology of everyday actions, Knowledge in the head and in the world, Knowing what to do, understanding and designing for error. UI Development process includes topics on iterative design, user-centred design, design discovery, design exploration and evaluation of user interfaces. Interface design and programming include topics on visual information design, forms design, interface design patterns, prototyping and construction tools, and responsiveness issue. Three types of applications are covered: Graphical User Inte
11	WIF3005	Software Maintenance and Evolution	-	3		√	This course mainly covers software maintenance fundamentals, key issues in maintenance, maintenance process, techniques for maintenance and evolution in maintenance activities. Topics include definitions, terminology and categories of maintenance (Corrective Maintenance, Perfective Maintenance, Adaptive Maintenance, Preventive Maintenance); evolution of software; technical and management issues in maintenance (such as technical issues related to testing, impact analysis and maintainability; management issues such as staffing, process, organizational aspects, and outsourcing and offshoring); maintenance cost estimation and measurement; maintenance processes and activities (such as maintenance planning activities, software configuration management (configuration item, processes and activities in configuration management, patches), activities for software quality); techniques for maintenance such as program comprehension, reengineering, reverse engineering, migration and retirement; evolution of legacy systems;
BACHELOR OF INFORMATION TECHNOLOGY (MULTIMEDIA)							
12	WIB1001	Fundamental of Multimedia	-	3		√	In this course, students will be introduced to the main elements of a multimedia system including text, image and graphics, audio, video and animation. Students will be taught the editing process for each multimedia element using appropriate editing tools such as Adobe Photoshop, Adobe Illustrator, Audacity and SketchUp. Students also will be using a presentation tool such as MS Powerpoint and Prezi to create multimedia presentation for a mini project. Students also will be exposed to issues related to data compression, security and current multimedia technologies.
13	WIB2002	Interactive Design	-	3	√		This course covers the main topics in interactive design such as the following: interaction concept and design; user roles in interactive design; design for combining information and communication; effective aspects of interface and interactivity; data collecting, analyzing, and presentation; interactive design process; and interactive design evaluation process.

14	WIG3004	Virtual Reality	-	3		√	This course begins with some introduction to virtual reality technology and its applications, followed by detail explanation regarding input and output devices that are being used in virtual reality application. Students will also learn about human sensory systems (visual, audio and tactile) and their relations to the development of virtual reality devices, as well as the possible effects these devices have on human health. Then students will be taught about how to model a virtual reality world and manipulate its objects using virtual reality development tools and programming languages. The course ends by providing students with fundamental knowledge regarding data visualisation, a research area that is closely related to virtual reality.
15	WRET3105	Data Communication and Networking	-	3	√		This course covers the following topics: the basics of computer network; the Open System Interconnection (OSI) layers; high-speed networking that supports multimedia requirements; the needs of Quality of Service (QoS), advanced TCP/IP and ATM network; advantages of ATM, ATM network components; ATM network operation; traffic needs for data; audio, video, and image; ATM layers; ATM adaptability layers; ATM network management; and ATM implementation in enterprise network.

Note: Course offered is subject to change.