

ICT Program

| Course Code رمز المقرر | Course Name اسم المقرر | Course Description وصف المقرر |
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| <i>Faculty Requirement- Elective</i> | | |
| M109 | NET Programming | This module is intended to introduce and present the fundamental skills that are required to design and develop object-oriented programs and applications in .NET Framework. |
| MS102 | Physics | An understanding of the physical phenomena underlying the operation of devices involved in information processing and transmission can lead to better understanding of those devices. In addition, software developers of computer games frequently require knowledge of the behavior of physical objects in order to produce realistic games. |
| MT372 | Parallel Computing | The module is a comprehensive study of parallel computing techniques, parallel programming and performance tuning. Topics covered include: fundamentals of parallel, concurrent and distributed computing systems, performance and limitations of these systems, and parallelism paradigms |
| MT380 | Service oriented architecture | Service-Oriented Architecture (SOA) intends to explain the SOA and the related topics including Web Services and Cloud Computing. Web Services (such as KSOAP, REST) make use of the notion of a service- oriented architecture; they are independent of specific programming languages or operating systems. |
| MT390 | Image Processing | Image Processing is an important field of study and MT390 is meant to provide students with the basic knowledge of this field. Along with the importance of Image Processing in traditional areas such as Medical Diagnosis, Industrial Inspections, Security Systems, Robotics etc., the pervasiveness of smart phones equipped with powerful cameras has increased the need for Image Processing due to the availability of large amount of image data. This module is intended to provide students the opportunity to study the basics of the important field of Image Processing. |
| MT395 | Applied Cyber Security | In today's world, organizations must be prepared to defend against threats in cyberspace. Decision makers must be familiar with the basic principles and best practices of cyber security to best protect their enterprises. |
| TM287 | Web Applications Development | This module provides key skills in using JavaScript/AJAX, PHP, and MySQL through demonstrating the vast possibilities they offer in developing robust code that complies with all modern web browsers. The module clarifies the roles of each of the client vs the server in web development and the importance of being able to have asynchronous calls and information exchange with focus on developing Web 2.0 applications. |
| TM290 | Cryptography and Internet Security | Nowadays, people shop online, work online, play online. As our lives become increasingly dependent on digital services, the need arises to protect our personal information from being maliciously intercepted, disrupted, or misused. |

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| TM291 | Management Information System | This module introduces the use and relevance of information systems to managers and enterprises. Rather than providing an in depth technological treatment of information systems, this module prepares students as future managers to assess the impact of information systems on a particular enterprise. |
| TM295 | System Modelling | This module aims to introduce students to the software development process in general with emphasis on the software modelling and analysis phase. The unified modelling language is used throughout the module to illustrate the different models. |
| TM391 | E-Commerce | The module aims to provide an understanding of e-business and its associated technologies. The basics of online commerce will be introduced along with the elements that are particular to an electronic marketplace. |
| <i>Faculty Requirement- Mandatory</i> | | |
| MT129 | Calculus and Probability | This module introduces the concepts of differentiation and integration as well as some applications of differential and integral calculus. Moreover, the module offers a clear and comprehensive survey of the of data sampling, measurements of central tendency and spread, organizing and visualizing categorical and numerical data. |
| TM260 | Security, ethics and privacy in IT and Computing | The ITC specialists must conduct ethically by adhering to the ITC code of conduct and understand the social, professional and legal context of IT and computing, |
| <i>Level 1 Modules</i> | | |
| M150 | Data, Computing and Information | The M150 is a mandatory elementary level module which introduces students to the essential concepts related to data and information in addition to some of the ways in which humans interact with and make use of this information. The module also gives basic knowledge of computer logic, coding, analysis, design, and decomposition of large problems. |
| MT131 | Discrete Mathematics | This is an elementary level module which introduces various topics in discrete mathematics. It offers a clear and comprehensive survey of logic operations, predicates, quantifiers, sets, functions, relations. Also, the module provides the concept of permutations, combinations and counting techniques which are needed as prerequisite in most of technology and communication modules. |
| MT132 | Linear Algebra | The course introduces a range of ideas concerning matrices and its applications, matrix operations that are widely used in data structure, programming, data communication, digital signal processing and in scientific research. The course shows algorithmic method to solve systems of linear equations |
| T175 | Networked Living: exploring Information and Communication Technologies | The module aims to: <ul style="list-style-type: none"> <input type="checkbox"/> Help the student to develop an understanding of how ICTs work, and the principles behind them; <input type="checkbox"/> Show how ICTs are used in networking, communication and identity, and entertainment and broadcasting, and their effects on our lives; <input type="checkbox"/> Show how ICTs are used in Health, transport and government, and their effects on our lives; <input type="checkbox"/> Prepare the student for further academic study by helping him to develop his/her study skills. |

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| TM103 | Computer Organization and Architecture | This module offers a clear and comprehensive survey about computer organization and architecture. It introduces the inner workings of a modern digital computer through an integrated presentation of fundamental concepts and principles. |
| TM105 | Introduction to Programming | This module is an introductory level programming module and it is meant to provide basic foundation in computer programming to students. Students will learn how to develop solutions (algorithms) using pseudocode to solve simple problems. |
| TM111 | Introduction to Computing and Information Technology 1 | This is an introductory level 1 module, which provides students with a broad introduction to Computing and Information Technology concepts, principles and theories. |
| TM112 | Introduction to Computing and Information Technology 2 | This module will further develop and extend the skills and knowledge that students will have built up by studying its partner module TM111. The overall focus of TM112 is on developing the students' problem solving skills. |
| <i>Level 2 Modules</i> | | |
| M251 | Object Oriented Programming using Java | This module is intended to provide students a good understanding of object-oriented principles, including inheritance, polymorphism, class libraries, interacting objects, and the unified modelling language (UML). It uses the JAVA language to illustrate these principles. |
| M269 | Algorithms, Data structures and Computability. | One of the basic pillars of advanced computing projects consists of the set of proper algorithms used to solve not only traditional but also unconventional IT problems. With the huge amount of data embedding the new data science, being skilled in setting proper data structure, managing and understanding computability techniques become a must nowadays. |
| T215A | Communication and Information Technologies A | Students will begin with Communication and information technologies (T215) – learning about the core principles upon which new technologies are built. They will gain an understanding of the ways in which data is stored, manipulated and transmitted; and discover how new processes and services are transforming our lives. |
| T215B | Communication and Information Technologies B | Digital communication and information technologies have become fundamental to the operation of modern societies. New products and services are rapidly transforming our lives, both at work and at play. |
| T216A | Cisco networking (CCNA)-A | Students will begin with Cisco networking (CCNA) (T216). This will give them the knowledge, understanding, and skills needed to configure a LAN/WAN using Cisco equipment (which should also leave you well prepared for the industry-standard CCNA certification examination). |
| T216B | Cisco networking (CCNA)-B | Cisco Systems are market leaders in supplying networking equipment for the internet. They also have a well-established educational programme for network professionals. |
| T227 | Change, strategy and projects at work | This module will improve students' understanding of the origins, nature and consequences of change in the workplace. It also equips them with the knowledge, skills and competencies needed to successfully plan real practical projects. Besides, it allows students to gain an understanding of how ICTs both drive and enable change in the workplace |

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| TM240 | Computer Graphics and Multimedia | This module targets to cope with the current advances in computer graphics and multimedia and providing clear and concise explanations of the basic concepts of computer graphics and multimedia. This module is expected to enable students to gain understanding of basics of modelling, viewing, animation principles in both 2D and 3D and the impact of such topics on modern multimedia aspects. |
| TM298 | Operating Systems | The study of Operating Systems is essential since these are an integral part of modern IT systems. This is an introductory level module which introduces students to fundamental concepts of a variety of operating systems. |
| TT284 | Web technologies | This module is meant to introduce students to the foundations of web applications, including protocols, standards and content handling. |
| <i>Level 3 Modules</i> | | |
| T316: | Advanced Networking | With the continuous advancements in the networking field, the need arises for teaching advanced networking concepts. This advanced undergraduate course aims to meet this objective by discussing advanced networking topics complementing those introduced in T216A/B. |
| T318 | Applied Network Security | People, organizations, and enterprises are becoming increasingly dependent on digital services. Therefore, the need arises to protect information from being maliciously intercepted, disrupted, or misused. |
| TM351 | Data management and analysis | Data management and analysis (TM351) – an overview of the concepts, techniques, and tools of modern data management and analysis. The requirements of data management continually evolve. Recently those requirements have surpassed the capabilities of traditional data management. |
| TM352 | Web, mobile and cloud technologies | In this module students will learn about the technical and social aspects of cloud computing and mobile technologies, and they will gain hands-on experience of these technologies. |
| TM354 | Software Engineering | Software engineering (TM354) – the intellectual tools needed to design, build, and test software systems. This module aims to provide you with an understanding of software engineering concepts and a view of practical software development. It follows a disciplined approach to the development of software systems to meet specified requirements |
| TM355- | Communications Technology | This module gives students an insight into these and other questions, by looking at the fundamental principles of communications technologies. Through these principles students will gain an insight into the possibilities and constraints of modern communications technology. |
| TM356 - | Interaction design and user experience | Interaction design and the user experience (TM356) – in this module the students will learn the importance of user-centred design, and acquire practical skills for designing the interactive products for everyday life. |
| TM366 | Artificial intelligence | Basic concepts in artificial intelligence are being used in huge research projects all over the world for the last three decades. This includes research and development at the industrial and academic levels. The module introduces the students to the basics natural intelligence where AI has been inspired and presents the AI concepts and techniques that are being used in advanced AI projects |