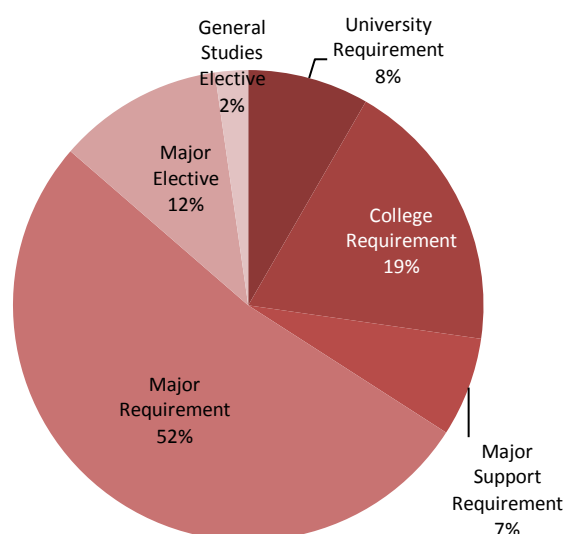


B.Sc. in Information Systems 2017

Program Components

Course Type	CRD
University Requirement (UR)	11
College Requirement (CR)	24
Major Support Requirement (MSR)	9
Major Requirement (MR)	69
Major Elective (ME) ¹	15
General Studies Elective (GSE) ²	3
CR- Training (Internship) Yes	1
Total Credit (CRD)	132



¹ Students must select five courses from the Major Elective (ME) Lists as follow:

- Two ME courses must be selected from the IS Concentration Elective courses List 1.
- Two ME courses must be selected from General Major Elective List 2.
- One course must be selected from Business Elective List 3.

² Students must select one General Studies Elective from Humanities and Social Science.

Note:

- Humanities and Social Science Component: any course from the following:
 Humanities: Fine Arts, History, American Studies, Classics, Communications, English, (Foreign Language) French, Music, Philosophy, Theatre, Literature (Arabic), Religion (comparative).
 Social Science: Anthropology, Economics, Education, Geography, History, Psychology, Sociology, Women's Studies, Political Science.

Teaching Language: English

Detailed Study Plan

Year 1 - Semester 1

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 103	Fundamentals of Information Systems	3	2	3	MR	-----	Yes
ITCS 113	Computer Programming I	3	2	3	CR	-----	Yes
MATHS 101	Calculus I	3	0	3	CR	-----	No
ARAB 110	Arabic Language Skills	3	0	3	UR	-----	No
ENGL 154	Language Development I	3	0	3	CR	-----	No

Year 1 - Semester 2

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITCS 114	Computer Programming II	3	2	3	CR	ITCS 113	Yes
HIST 122	Modern History of Bahrain and Citizenship	3	0	3	UR	-----	No
MGT 230	Organization and Management	3	0	3	MSR	-----	No
ACC 112	Financial Accounting I	3	0	3	MSR	-----	No
ENGL 155	Language Development II	3	0	3	CR	ENGL 154	No

Year 2 - Semester 3

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 241	Software Development	3	2	3	MR	ITCS 114	Yes
ITIS 213	Database Management Systems	3	2	3	MR	ITIS 103 & ITCS 113	Yes
HRLC 107	Human Rights	2	0	2	UR	-----	No
ITIS 243	Web Design and Development I	3	2	3	MR	ITCS 114	Yes
ENGL 219	Technical Report Writing	3	0	3	CR	ENGL 155	No

Year 2 - Semester 4

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 222	Electronic Business	3	2	3	MR	ITIS 243	Yes
ITIS 252	Cloud Computing I	3	2	3	MR	ITIS 243	Yes
ITIS 232	Systems Analysis and Design I	3	2	3	MR	ITIS 213	Yes
ITCS 214	Data Structures	3	2	3	CR	ITCS 114	Yes
ITIS 265	IT Project Management I	3	2	3	MR	-----	Yes
STAT 273	Probability and Statistics	3	0	3	CR	MATHS 101	No

Year 3 - Semester 5

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 333	Human Computer Interaction	3	2	3	MR	ITIS 232	Yes
ITIS 345	Web Design and Development II	3	2	3	MR	ITIS 241 & ITIS 243	Yes
ITIS 335	Systems Analysis and Design II	3	2	3	MR	ITIS 241 & ITIS 232	Yes
ITIS 361	Decision Support Systems	3	2	3	MR	STAT 273	Yes
MKT 261	Marketing Management	3	0	3	MSR	-----	No
GSE XXX	Humanities / Social Sciences	3	0	3	GSE	-----	No

Year 3 - Semester 6

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 310	Data Mining	3	2	3	MR	ITIS 213 & STAT 273	Yes
ISLM 101	Islamic Culture	3	0	3	UR	-----	No
ITIS 360	Information Security I	3	2	3	MR	ITIS 232	Yes
ITIS 362	Governance and Management of Enterprise IT	3	2	3	MR	ITIS 103	Yes
ITIS 321	Entrepreneurship and Digital Innovation	3	2	3	MR		Yes
ITCE 352	Computer Networks for IS	3	2	3	MR	ITIS 103	Yes

Training Requirement

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 483	Internship in Information Systems	0	3	1	CR-Training	Pass 85 Credits	Yes

Year 4 - Semester 7

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
BUS XXX	Business Elective	3	0	3	ME	As per ME list 3	No
ITIS 416	Database Systems Development	3	2	3	MR	ITIS 213	Yes
ITIS 451	Enterprise Systems	3	2	3	MR	ITIS 103	Yes
ITIS 4XX	ITIS Concentration Major Elective I	3	2	3	ME	As per ME list 1	Yes
ITIS 4XX	ITIS General Major Elective I	3	2	3	ME	As per ME list 2	Yes
ITIS 499	Senior Project	0	6	3	MR	ENGL 219 & STAT 273 pass 85 credits	Yes

Year 4 - Semester 8

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 452	Enterprise Architecture	3	2	3	MR	ITIS 335	Yes
ITIS 460	Strategic IT Planning	3	2	3	MR	ITIS 362	Yes
ITIS 466	IS Auditing and Business Continuity	3	2	3	MR	ITIS 360	Yes
ITIS 4XX	ITIS Concentration Major Elective II	3	2	3	ME	As per ME list 1	Yes
ITIS 4XX	ITIS General Major Elective II	3	2	3	ME	As per ME list 2	Yes

Major Elective Courses

List1: ITIS Concentration Major Elective

Students must select **two** ME courses from the Concentration Major Elective list:

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 467	Information Security II	3	2	3	ME	ITIS 360	Yes
ITIS 468	Cyber Security	3	2	3	ME	ITIS 360	Yes
ITIS 454	Cloud Computing II	3	2	3	ME	ITIS 252 & ITIS 345	Yes
ITIS 455	Cloud Solution Architecture	3	2	3	ME	ITIS 252 & ITIS 345	Yes
ITIS 414	Business Intelligence	3	2	3	ME	ITIS 310	Yes
ITIS 415	Big Data Applications and Analytics	3	2	3	ME	ITIS 310	Yes

List 2: ITIS General Major Elective

Students must select two ME courses from the General Major Elective list:

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 417	Knowledge Management	3	2	3	ME	MGT 230 & ITIS 362	Yes
ITIS 418	AI Applications in Business	3	2	3	ME	ITIS 241 & ITIS 310	Yes
ITIS 420	Multimedia Technology and Design	3	2	3	ME	ITIS 333	Yes
ITIS 422	Educational Technology and e-Learning	3	2	3	ME	ITIS 222	Yes
ITIS 427	e-Government Concepts and Implementation	3	2	3	ME	ITIS 222 & ITIS 345	Yes
ITIS 428	Social Media Networks and the Society	3	2	3	ME	ITIS 345	Yes
ITIS 434	Computer Supported Cooperative Work	3	2	3	ME	ITIS 335 & ITIS 345	Yes
ITIS 437	Business Process Modelling and Analysis	3	2	3	ME	ITIS 451	Yes
ITIS 440	e-Marketing Strategy and Applications	3	2	3	ME	MKT 261 & ITIS 222	Yes
ITIS 447	Mobile Computing and Development	3	2	3	ME	ITIS 243	Yes
ITIS 448	IT Business Applications	3	2	3	ME	MKT 261 & ITIS 222	Yes
ITIS 449	Health Informatics	3	2	3	ME	ITIS 416	Yes
ITIS 465	IT Project Management II	3	2	3	ME	ITIS 265	Yes

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 469	Information Systems Ethics and Cyber Laws	3	2	3	ME	ITIS 360	Yes
ITIS 470	Selected Topics in IT Issues	3	2	3	ME	As per Department Approval	Yes
ITIS 496	Research Methodology	3	2	3	ME	STAT 273 & ENGL 219	Yes

List 3: Business Elective Courses:

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ACC 113	Financial Accounting II	3	0	3	ME	ACC 112	No
ECON 140	Microeconomics	3	0	3	ME	-----	No
MGT 233	Organizational Behavior	3	0	3	ME	MGT 230	No
MGT 236	Production Management	3	0	3	ME	MGT 230	No
MGT 340	Supply Chain Management	3	0	3	ME	MGT 230	No
MGT 430	Human Resources and Personal Management	3	0	3	ME	MGT 230	No
MGT 436	Management of Change	3	0	3	ME	MGT 230	No
MGT 448	Organization Theory and Design	3	0	3	ME	MGT 230	No
MKT 263	Promotion Management	3	0	3	ME	MKT 261	No
MKT 264	Intermediate Marketing	3	0	3	ME	MKT 261	No
MKT 268	Personal Selling	3	0	3	ME	MKT 261	No
MKT 364	Advertising Management	3	0	3	ME	MKT 261	No
MKT 367	Marketing Channels	3	0	3	ME	MKT 261	No
MKT 370	Customer Relationship Marketing	3	0	3	ME	MKT 261	No
MKT 461	Consumer Behavior	3	0	3	ME	MKT 261	No
MKT 463	International Marketing	3	0	3	ME	MKT 261	No
MKT 465	Services Marketing	3	0	3	ME	MKT 261	No
MKT 468	Pricing Strategies	3	0	3	ME	MKT 261	No

General Studies Elective Courses List

Course Code	Course Title	Course Hours			Course Type	Pre requisite
		Lec	Prac	CRD		
ARAB 141	Modern Arabic Lit.	3	0	3	GSE	-----
ARAB 242	Arabic Poetry In The Renaissance Period	3	0	3	GSE	-----
ART 133	Fundamentals of Music and Its Appreciation	3	0	3	GSE	-----
ART 141	Drawing and Painting	2	1	3	GSE	-----
ART 221	Traditional Music of Bahrain and Its Application	3	0	3	GSE	-----
CHL 101	Introduction to Chinese Language	3	0	3	GSE	-----
EDAR 126	Playing on Piano and Org 1	3	0	3	GSE	-----
EDPS 144	Psychology of Learning and Memory	3	0	3	GSE	-----
EDTC 100	Teaching and Learning Technology	3	0	3	GSE	-----
ENGL 130	Introduction to Literature	3	0	3	GSE	-----
FREN 141	French I	3	0	3	GSE	-----
GERM 101	Introduction to German	3	0	3	GSE	-----
HISTO 212	Contemporary History of The Arab World	3	0	3	GSE	-----
HISTO 281	Landmarks of Islamic Civilisation	3	0	3	GSE	-----
ISLM 114	Quranic Sciences	3	0	3	GSE	-----
ISLM 136	Biography of The Prophet	3	0	3	GSE	-----
ISLM 141	Introduction to Shari'a	3	0	3	GSE	-----
ISLM 252	Islamic Doctrine	3	0	3	GSE	-----
JAPN 101	Japanese Level I	3	0	3	GSE	-----
KL 101	Korean Language	3	0	3	GSE	-----
TL 101	Turkish Language	3	0	3	GSE	-----
LAW 101	Introduction to Legal Studies	3	0	3	GSE	-----
LAW 102	History of Law	3	0	3	GSE	-----
LAW 106	Constitutional Law I	3	0	3	GSE	-----
PSYC 103	Introduction to Psychology	3	0	3	GSE	-----
PSYC 120	Psychology of Marriage	3	0	3	GSE	-----
PSYC 211	Educational Psychology	3	0	3	GSE	-----
SOCIO 161	Introduction to Sociology	3	0	3	GSE	-----
SOCIO 181	Introduction to Anthropology	3	0	3	GSE	-----
SOCIO 191	Citizenship, Identity and Globalization	3	0	3	GSE	-----

Course Code	Course Title	Course Hours			Course Type	Pre requisite
		Lec	Prac	CRD		
SOCIO 224	Sociology of Health	3	0	3	GSE	-----
SOCIO 226	Sociology of Arabian Gulf	3	0	3	GSE	-----
GSE XXX	Other electives	X	X	3	GSE	Department Approval

Course Description

Course Code: ITIS 103 **Course Title:** Fundamentals of Information Systems

This is a foundation course that introduces students to the definitions, concepts and tools used in the IS field. It focuses on discussing the business implications of information systems, social and ethical issues it creates, their relationship with organization activities and how they support e-Commerce, knowledge management and decisions making. Topics covered include: information systems in global business today, ethical and social issues in information system, achieving operational excellence and customer intimacy, e-commerce, building and managing systems, managing knowledge and collaboration, enhancing decision making.

Course Code: ITIS 213 **Course Title:** Database Management Systems

This course presents the fundamental concepts for designing, using, and implementing database systems. It includes extensive coverage of the relational model, relational algebra, and SQL. The course also covers data modeling using entity-relationship diagrams, and relational database design principles based on functional dependencies and normal forms.

Course Code: ITIS 222 **Course Title:** Electronic Business

This course introduces students to the concepts and fundamentals of e-Business. Topics covered include: e-Business technologies related to forms of e-Marketplaces, the information exchanges and key business processes involved in the exchange of goods and services among trading partners, standardization of products and shipment numbering including automatic identification of products, data synchronization, role of e-Business technologies in Just-In-Time (JIT) replenishment, Electronic Funds Transfer (EFT), Inter-organizations Systems (IOS) such as Electronic Data Interchange (EDI), Collaborative Planning and Forecasting (CPFR) systems, Vendor Managed Inventory (VMI), B2B and B2C technologies and applications. Students are expected to produce entrepreneurial business plans for electronic businesses encompassing innovative digital solutions.

Course Code: ITIS 232 **Course Title:** Systems Analysis and Design I

This course introduces students to the concepts and skills of system analysis and design. Topics covered include the context of systems analysis and design methods, system analysis approaches, fact-finding techniques for requirements discovery; modeling system requirements with use cases, data modeling and analysis, process modeling, object-oriented analysis and modeling using the UML and feasibility analysis, and the system proposal.

Course Code: ITIS 241 **Course Title:** Software Development

This course introduces students to the design and development of desktop applications that meet commercial programming standards using visual object-oriented programming language (such as C# or Visual Basic). Topics covered include: the language's core syntax and object-oriented fundamentals, basic and complex user interface elements (e.g. rich text editors, selectors, dialog and special controls, data controls), implementation and manipulation of data structures (e.g. arrays, collections), and debugging and unit testing. The course focuses on connecting and manipulating databases within the software, and performing CRUD (create, read, update, and delete) operations.

Course Code: ITIS 243 **Course Title:** Web Design and Development I

This course presents students with modern web design and development concepts with emphasis on current web technologies, techniques and trends. Topics covered include: introduction to the Internet, WWW, and other technologies. Understand the basic structure and techniques to design and develop modern and responsive web pages. The course focuses on the standard webpages front end building blocks mainly: HTML 5, CSS 3 and JavaScript. It also covers leading front end packages for creating responsive and interactive pages (e.g. Bootstrap, jQuery and Angular JS).

Course Code: ITIS 252 **Course Title:** Cloud Computing I

This course introduces the concepts of cloud computing as a new computing paradigm. Students will explore various terminologies, principles and applications of cloud computing. Topics covered include: classic data centers, virtualized data centers (VDCs), business continuity in VDCs, cloud infrastructure, cloud services such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS), cloud management, cloud security, and cloud migration considerations.

Course Code: ITIS 265 **Course Title:** IT Project Management I

This course provides students with the basic principles of project management, including concepts of project initiating, planning, executing, monitoring and controlling, and closing process groups. The course introduces the fundamentals of five project management areas: integration, scope, time, cost and quality.

Course Code: ITIS 310 **Course Title:** Data Mining

This course emphasizes on advanced data analysis techniques used to extract meaningful patterns and knowledge from data in ways not possible with traditional techniques. Topics covered include: the nature and purpose of Data Mining (DM), DM applications, the relationship between DM and data warehousing, design issues related to DM tools and data warehouses, data processing techniques, DM methods such as association rules, classification, predictions, and clustering.

Course Code: ITIS 321 **Course Title:** Entrepreneurship and Digital Innovation

This course covers areas related to developing and managing technology-based new ventures. Topics covered include: role and personality of the entrepreneur, business planning, building and managing teams, digital innovative products, market evaluation and developing a business and marketing plan, legal issues including intellectual property, preparation of venture budgets, and raising finance.

Course Code: ITIS 333 **Course Title:** Human Computer Interaction

This course presents the fundamental concepts, models and theories of human computer interaction (HCI). Topics covered include: physical, cognitive and affective engineering, design heuristics, principles and guidelines, the techniques of task analysis and system evaluation methods.

Course Code: ITIS 335 **Course Title:** Systems Analysis and Design II

This course covers advanced IS development phases to deliver the final product. Topics covered include the design phase of the systems development life cycle including the application architecture and modeling, database design, output design and prototyping, input design and prototyping, user interface design, object oriented design and modelling using UML. It also covers the implementation phase of the systems development including testing (i.e. static testing, dynamic testing, recovery testing, security testing, stress testing, and performance testing), installation (i.e. direct; parallel; single-location and phased Installation), documentation, training, and support. The last phase covered is the maintenance phase (i.e. corrective; adaptive; perfective and preventive maintenance).

Course Code: ITIS 345 **Course Title:** Web Design and Development II

The course follows up on the first course and introduces necessary concepts and skills to design and develop web-based application (Webapps) using back end server technologies. Topics covered include: introduction to server-side development languages (such as PHP or ASP) and techniques, overview of server-side stacks and packages (e.g. LAMP, WISA, Ruby on Rails, Node.js), and a focus on a selected back end framework. Other topics include modern web development technologies (e.g. state and profile management, Version Control Systems such as GitHub) and modern techniques (e.g. MVC). It also includes the use and integration of Web Services and APIs in webapps and use of data interchange formats such as JSON.

Course Code: ITIS 360 **Course Title:** Information Security I

The course is about technical and administrative aspects of Information Security and Assurance. Topics covered include: the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system, mechanisms and technologies used in information security such as authentication technologies and cryptography.

Course Code: ITIS 361 **Course Title:** Decision Support Systems

This course establishes a foundation of understanding and analyzing critical information as well as designing and developing Decision Support Systems (DSS) to support managerial decision makers. Topics covered include: the nature of decision making, the use of information by the executive decision maker, the concept of decision support, frameworks of computerized decision support models of DSS such as forecasting and predicting, planning, linear programming, inventory, risk analysis, simulation and learning curve.

Course Code: ITIS 362

Course Title: Governance and Management of Enterprise IT

This course provides students with the knowledge to become skilled in directing, planning, running, building and monitoring of Enterprise IT. Topics covered include: Introduction to Enterprise IT Management; strategic alignment of IT strategy to enterprise strategy, types of IT organizations and functions; organizational structures, Enterprise IT governance concepts and frameworks; concepts of measuring, governance enablers, reporting and controlling; outsourcing approaches.

Course Code: ITIS 416

Course Title: Database Systems Development

This course provides detailed theoretical and practical knowledge of how database systems and applications are designed and developed. Topics covered include: client/server DBMS architecture, advanced SQL statements, writing programs using procedural languages, writing procedures and functions, development of user interface, generating reports, developing integrated database applications, transaction processing, evaluation of DB systems in terms of efficiency, reliability, usability, and security.

Course Code: ITIS 427

Course Title: e-Government Concepts and Implementation

This course presents a conceptualization of e-government from a socio-technical perspective and explains how systems are managed and implemented in the context of public administration. Topics covered include: e-government through various stages from policy and planning to management, implementation and evaluation, theoretical models of e-government, issues and trends in the field.

Course Code: ITIS 451

Course Title: Enterprise Systems

This course explores Enterprise Systems (ES) adoption and implementations and examines strategic role of enterprise systems in helping organizations improve their capabilities, operations, and processes. The course discusses how ESs are used to integrate business processes in organizations. Students will examine the factors or enablers that lead to efficient and effective use of ESs. Students will examine typical ES, modules such as manufacturing, supply chain management (SCM), financials, projects, human resource management, and customer relationship management (CRM).

Course Code: ITIS 452

Course Title: Enterprise Architecture

This course covers the theory, frameworks, principles, and best practices of enterprise architecture, the significance of stakeholders and the skills of an enterprise architect, enterprise architecting methodology, applying the different modeling tools used for modeling enterprise architectures. Topics covered include: enterprise and enterprise architecture concepts, enterprise architecture constructs and methodologies, the enterprise architect, architectural frameworks (e.g. TOGAF, ZACHMAN, FEAF, DODAF).

Course Code: ITIS 460

Course Title: Strategic IT Planning

The course aims to develop an understanding of the issues involved in planning and implementing strategic Information Systems within the organization. Topics covered include: the main managerial aspects and challenges facing strategic management, alignment of IS and business strategy, strategic concepts for IT and business, the IS strategic tools and techniques, and the comprehensive frameworks for IS strategic planning. The course will also introduce the students to the IT planning development lifecycle processes such as plan the plan, document the business strategy, assess the current IT situation, propose a new IT situation and propose a strategic vision and governance model.

Course Code: ITIS 466

Course Title: IS Auditing and Business Continuity

This course covers Information Systems audit and control concepts and practices. Topics covered include: risk assessments concepts in compliance with IS audit standards and guidelines, types of audits to ensure that systems are protected and controlled, strategies to minimize risks, control objectives and controls related to Information Systems and audit planning, audit project management techniques and standards and procedures for the development and maintenance of the Business Continuity Plan (BCP) and testing methods.

Course Code: ITIS 499

Course Title: Senior Project

The student has to undertake and complete a research topic or develop a system under the supervision of a faculty member in order to probe in depth a specific problem in Information Systems. The student is expected to make a final project presentation before a committee.

Course Code: ITIS 414 **Course Title:** Business Intelligence

This course introduces Business Intelligence (BI) and its components. The course shows how BI transforms the output from large data collections into intelligence leading to strategic and tactical business decisions. Topics covered include: BI technologies, data gathering, storing, accessing and analysis, BI application to the organization, data quality and validity, data privacy and security, data warehousing, analytical reporting, data visualization, and ethical and legal issues.

Course Code: ITIS 415 **Course Title:** Big Data Applications and Analytics

This course introduces the foundations of big data. The topic is approached from two main aspects: the establishment of big data systems and data analysis. Topics covered include: the emerging technologies, software and tools used, the current and the future role of big data, role of the cloud in big data, information management and analytics in organizations, deployment and maintenance of these technologies, and evaluation of the deployment.

Course Code: ITIS 454 **Course Title:** Cloud Computing II

The course builds on the fundamentals acquired in the first Cloud Computing course and introduces advanced topics in applications of cloud computing in specific contexts such as Web and Mobile services and applications, Internet of Things (IoT) and Big Data, and High Performance Computing and Scientific Computing. The course focus on implementing a cloud platform like Amazon Web Services (AWS) Software Development Kits (SDKs) e.g. for .NET or PHP.

Course Code: ITIS 455 **Course Title:** Cloud Solution Architecture

This course presents the students with advanced cloud computing topics that builds on the fundamentals learned in previous cloud computing course. The course first looks at how to design and build a scalable and resilient cloud solution in a cloud platform like Amazon Web Services (AWS) or Microsoft Azure. Also, it enables the students to move current enterprise systems to the cloud solutions and ensure their operability to ingress and egress data efficiently. Finally, the course highlights the best cloud architectural practices to effectively build a cloud solution.

Course Code: ITIS 467 **Course Title:** Information Security II

This course provides an advanced view of the field of information security and covers issues related to privacy, security engineering, physical aspects, network security, and strategies for managing and controlling information security systems. Topics covered include: security controls, firewalls and VPNs, protocols, social engineering, risk management, and information security maintenance.

Course Code: ITIS 468 **Course Title:** Cyber Security

This course is designed to introduce the students to cyber security and teach them how to engage all functional levels within the enterprise to deliver information system security. The course addresses range of topics, each of which is essential to securing the modern enterprise. Topics covered include: cyber security concepts and domains, policies and procedures, security architecture principles, process controls, network security, vulnerability assessment tools, intrusion detection and prevention systems, incident response and handling methodologies.

Course Code: ITIS 417 **Course Title:** Knowledge Management

This course provides students with an understanding of the strategies and processes for capturing, structuring and sharing organizational knowledge and intellectual assets that enhance the performance and competitiveness of a business. Topics covered include: managing organizational knowledge, Knowledge Management (KM) tools and technologies, applications of KM, analyzing the role of KM in attainment of financial objectives, apply KM models and technologies to business situations, KM strategies and plan to create, capture, represent and share knowledge within an organization.

Course Code: ITIS 418 **Course Title:** AI Applications in Business

This course is an introduction to the concepts of artificial intelligence (AI) and the applications of different intelligent techniques for solving business problems. Topics covered include: AI concepts and techniques, intelligent agents, fundamental concepts of searching, reasoning, and planning, expert systems, advanced techniques such as genetic algorithms, neural networks, and fuzzy logic, applications of AI techniques to solve different kinds of business problems.

Course Code: ITIS 420 **Course Title:** Multimedia Technology and Design

This course introduces the student to standard and newly developed interactive multimedia technologies. Topics covered include: multimedia information systems, media theory and human factors, different types of multimedia, multimedia and social media, different techniques to store, manipulate, and retrieve multimedia, delivering multimedia presentations.

Course Code: ITIS 422 **Course Title:** Educational Technology and e-Learning

This course is to train students on how to design, develop, and evaluate e-learning materials. Students will be exposed to different learning management systems (e.g. Blackboard and Moodle) and blended learning. Topics covered include: types of digital technology used in the teaching and learning processes, theories of communication, selection, use, and evaluation of educational technology in educational settings.

Course Code: ITIS 472 **Course Title:** e-Government Concepts and Implementation

This course presents a conceptualization of e-government from a socio-technical perspective and explains how systems are managed and implemented in the context of public administration. Topics covered include: e-government through various stages from policy and planning to management, implementation and evaluation, theoretical models of e-government, issues and trends in the field.

Course Code: ITIS 428 **Course Title:** Social Media Networks and the Society

This course introduces methods for analyzing and understanding how people use social media and explores their influence on society, business, and individuals. Topics covered include: the history and evolution of social and Web 2.0 technologies, Web 3.0, the structure and parts of a social network and their underlying technologies, the theory and methods used to study social media, the social media presence of an enterprise organization, how to develop an effective social media strategy, positive and negative impact of social networks on society, and the issues an organization must consider when working with social media, including privacy, security of information, and ethical issues.

Course Code: ITIS 434 **Course Title:** Computer Supported Cooperative Work

Computer Supported Cooperative Work (CSCW), also referred to as a groupware, is a design-oriented academic field bringing together social psychologists, sociologists, and computer scientists, among others. Despite the variety of disciplines, CSCW is an identifiable research field focused on understanding characteristics of interdependent group work with the objective of designing adequate computer-based technology to support such cooperative work.

Course Code: ITIS 437 **Course Title:** Business Process Modeling and Analysis

This course provides an introduction to the skills and techniques required to analyze and design new processes and/or redesign existing ones. The course will introduce a number of contemporary methods for framing, modeling and improving organizational business processes. Topics covered include: Process Modeling using UML, data and logic requirements modeling, techniques to analyze business processes, the measurement techniques for evaluating outcomes, and modeling As-Is and To-Be process workflows using Process Model and Notation (BPMN) standard.

Course Code: ITIS 440 **Course Title:** e-Marketing Strategy and Applications

This course provides students with essential knowledge and skills of digital and internet marketing. The course is also enabling the students to understand and identify profitable e-Marketing strategies of segmentation, targeting, positioning and differentiation. Topics covered include: E-Marketing context, e-Business models, performance metrics, and marketing strategies. In addition, this course will help students master the marketing functions of product, pricing, distribution and marketing communication for a firm's e-Marketing strategy.

Course Code: ITIS 447 **Course Title:** Mobile Computing and Development

This course presents the fundamental concepts of mobile computing and mobile applications development. The course acquaints students with the practical skills needed for developing mobile applications. Topics covered include: mobile technologies, platforms for mobile applications, mobile applications types and development, mobile application interface design.

Course Code: ITIS 448 **Course Title:** IT Business Applications

This course provides students with essential knowledge and skills of computerized business applications and presents different applications of IS for solving business problems of organizations. Topics covered include: applications of business in accounting, marketing and other business fields such as Accounting Information System (AIS), IT for finance, IT for human resources, and IT for public relations.

Course Code: ITIS 449 **Course Title:** Health Informatics

This course introduces modern information systems for medical data in a clinical environment. It seeks to apply information and computing technologies to improve some aspects of healthcare, including patient care, research and education. Topics covered include: the nature of biomedical information and terminologies, clinical configuration, user interface design, the electronic medical records, the role of information and computing technologies to support clinical decision making, system analysis and technology assessment, and crucial issues of informatics in medical ethics, medical device integration, and community health information exchange.

Course Code: ITIS 465 **Course Title:** IT Project Management II

This course builds on the first IT Project Management course, it provides students with some principles of project management toward successful IT project management. The course provides the students with the fundamentals of five project management areas: human resources, communications, risk, procurement, and stakeholder management.

Course Code: ITIS 469 **Course Title:** Information Systems Ethics and Cyber Laws

This course reviews the social, ethical and legal issues impact of Information Technology (IT). Students will gain an awareness and understanding both of what being a professional in IS involves and how they can most effectively deal with the challenges they will encounter. The course examines the policy issues that relate to the use of IT such as personal privacy, rights of access, security, trans-border information flow and confidentiality. The course will also introduce the key contemporary challenges that IS professionals face including e-commerce security management, audit, risk management, data privacy and the protection of intellectual property.

Course Code: ITIS 470 **Course Title:** Selected Topics in IT Issues

This course focuses on new development or application of information technology related to information systems. The intention is to provide a rapid response to current trends, with topic and content changing with each offering. The course description is to be approved by the Department council.

Course Code: ITIS 496 **Course Title:** Research Methodology

The aim of this course is to enable students to undertake their own research and provide them with the knowledge of concepts and required tools required to conduct research in Information Systems. Students will be exposed to the main components of a research framework such as: problem definition, research questions, literature review, research design, quantitative and qualitative methods of data collection, data analysis, discussion of results, and ethical issues in research with some reflections to the context of Information Systems. Report writing and presentation will also be covered during the course.

Course Code: ITCE 352 **Course Title:** Computer Networks for IS

Concepts of data communications and computer networks. Topics covered: Introduction to data communication (signal types, transmission media, modems); physical layer; network types, topology and categories; protocols; standards; OSI model; error detection (VRC, LRC, CRC); data link control; Bit oriented data link protocols; Local Area Networks (LAN technology, Ethernet); networking devices; introduction to TCP/IP protocol suite (addressing, network layer, transport layer, ARP, ICMP, FTP, HTTP); wireless LAN.

Course Code: BIS 202 **Course Title:** Computers and Business Information Systems

This course provides the basic understanding of computers and information systems. Students learn how and why information technology is critical to solving information systems related problems. Topics covered include fundamentals of information systems in terms of software, hardware and network, Internet history and services, the use of information systems within enterprises, and MS-Windows environment and Windows-based applications

Course Code: BIS 315 **Course Title:** Database Management Systems

This course provides an introduction to database development and management using database management systems. It introduces the fundamental concepts necessary for designing, using, and implementing database systems. Topics covered include database and file-based systems, database design, data modeling using entity-relationship diagrams and relational data model, normalization of relations, the QBE relational database language.

Course Code: MGT 230 **Course Title:** Organization and Management

Overview of management theories and practices; introduction to the study of organizational structures; management functions and processes within an action frame of reference; organization design, planning and control systems; leadership and employee motivation; decision-making models, the management of change.

Course Code: MKT 261 **Course Title:** Marketing Management

Elements of marketing management: the marketing system and the marketing environment; analysis of consumer and industrial markets; marketing research and marketing information systems; market segmentation. The marketing mix: product decisions, pricing decisions, distribution decisions and promotion decisions, international marketing in non-profit organizations.

Course Code: ACC 112 **Course Title:** Financial Accounting I

A survey of the accounting cycle; recording changes in financial position; ledger; journal; trial balance; income measurement; adjusting and closing entries; accounting for merchandising operations; special journals and subsidiary ledgers; accounting for cash; receivables; inventories; plant and equipment.

College Requirement Courses Descriptions

Course Code: ENGL 154 **Course Title:** Language Development I

ENGL 155 is the second of three integrated language courses designed for IT students. The level is upper-intermediate.

Course Code: ENGL 155 **Course Title:** Language Development II

The first of a series of three integrated language courses designed specifically for IT/CS and CE majors. Special attention is given to IT related vocabulary, reading texts and writing.

Course Code: ENGL 219 **Course Title:** Technical Report Writing

This course deals with professional and technical writing. It looks at the theoretical and practical aspects of technical report writing. It also teaches the vocabulary and language structures typically found in report writing with a view to producing a full-length formal research report.

Course Code: MATHS 101 **Course Title:** Calculus I

Algebra. Functions and graphs. Trigonometry. Conic sections. Limits and continuity. Derivatives and integrals. Applications of derivatives which include mean value theorem, extrema of functions and optimization. Definite integrals and the Fundamental Theorem of Calculus.

Course Code: STAT 273 **Course Title:** Probability and Statistics

Descriptive Statistics, Introduction to probability and probability distributions. Some of probability Densities, Sampling distributions. Central limit theorem. t and F distributions. Estimation. Tests of hypotheses. Goodness of fit tests. Regression and correlation.

Course Code: ITCS 113 **Course Title:** Computer Programming I

This course introduces problem solving and fundamental programming concepts and techniques implemented by a high-level programming language. Topics include primitive and compound data types, syntax, semantics, expressions, assignment, input, output, conditional and iterative control structures, functions.

Course Code: ITCS 114 **Course Title:** Computer Programming II

This course covers key concepts of object-oriented programming. Topics include object oriented design, encapsulation, event handlers, memory management, arrays, exception handlers, searching algorithms, programming applications.

Course Code: ITCS 214 **Course Title:** Data Structures

This course covers data structures and their implementations in an object-oriented programming language. Topics include subtyping, abstract base class, lists, stacks, queues, trees, graphs, hash tables, strategies for choosing appropriate data structure.

Course Code: ITIS 483 **Course Title:** Internship in Information Systems

The course is a full time internship training program whereby the student works in an Information Systems related environment that provides a comprehensive experience of the professional environment. The course provides an opportunity for gaining knowledge and application while being supervised by experienced professionals in various industries. The students are expected to gain new technical, interpersonal, and professional skills throughout this internship. The Internship should last for at least 8 weeks. The student should produce a report detailing their experience and observations through reflecting upon the lectures and labs taught in the university and linking them to the internship period.

University Requirements Courses Descriptions

Course Code: ARAB 110

Course Title: Arabic Language Skills

This course focuses on basic Arabic skills including form, function, and meaning. It also helps the student to appreciate and understand structures and approach them from a critical point of view, through various genres in literature.

Course Code: HIST 122

Course Title: Modern History of Bahrain and Citizenship

Spatial identity of Bahrain: Brief history of Bahrain until the 18th century; the historical roots of the formation of the national identity of Bahrain since the 18th century; the modern state and evolution of constitutional life in Bahrain; the Arabic and Islamic dimensions of the identity of Bahrain; the core values of Bahrain's society and citizenship rights (legal, political, civil and economic); duties; responsibilities and community participation; economic change and development in Bahrain; Bahrain's Gulf, Arab and international relations.

Course Code: HRLC 107

Course Title: Human Rights

This course deals with the principles of human rights in terms of the definition of human rights, scope, sources with a focus on the International Bill of Human Rights; The Charter of the United Nations; Universal Declaration of Human Rights; The International Covenant on Economics, Social and Culture rights; Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment; Mechanics and the Constitutional Protection of Rights and Public Freedoms in Kingdom of Bahrain.

Course Code: ISLM 101

Course Title: Islamic Culture

An introduction to the general outline and principles of Islamic culture, its general characteristics, its relationships with other cultures, general principles of Islam in beliefs, worship, legislation and ethics.