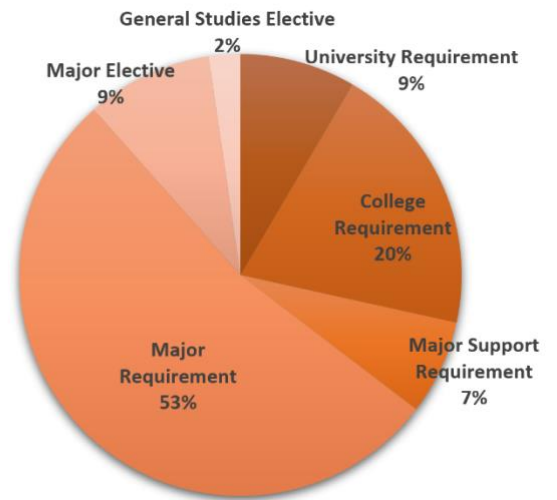


BSc. in Information Systems 2024

Program Components

Course Type	CRD
University Requirement (UR)	11
College Requirement (CR)	23
Major Support Requirement (MSR)	9
Major Requirement (MR)	69
Major Elective (ME) ¹	12
General Studies Elective (GSE) ²	3
CR- Training (Internship) Yes	3
Total Credit (CRD)	130



¹ Students must select **four** courses from the Major Elective (ME) Lists as follows:

- **Two** ME courses must be selected from the IS Concentration Major Elective courses (List 1).
- **Two** ME courses must be selected from the General Major Elective (List 2).

² Students must select **one** General Studies Elective course from the Humanities and Social Science list (GSE List).

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	0	3	MR	-----	Yes
ITCS 106	Computer Programming I	3	2	4	CR	-----	Yes
MATHS 101	Calculus I	3	0	3	CR	-----	No
ARAB 110	Arabic Language Skills	3	0	3	UR	-----	No
ENGL 157	English for Information Technology	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 107	Computer Programming II	3	2	4	CR	ITCS 106	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
HRLC 107	Human Rights Principles	2	0	2	UR	-----	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	0	3	MR	ITCS 107	Yes
ITIS 213	Database Management Systems	3	0	3	MR	ITIS 103 & ITCS 106	Yes
ITCS 214	Data Structures	3	0	3	CR	ITCS 107	Yes
ITIS 243	Web Design and Development I	3	0	3	MR	ITCS 107	Yes
ITCE 248	Computer Networks for IS	3	0	3	MR	ITIS 103	Yes

Year 2 - Semester 4

Course Code	Course Title	Course Hours			Course Type	Pre-requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 222	Electronic Business	3	0	3	MR	ITIS 243	Yes
ITIS 233	Systems Analysis and Design	3	0	3	MR	ITIS 213	Yes
ITIS 266	IT Project Management I	3	0	3	MR	ITIS 241	Yes
STAT 273	Probability and Statistics	3	0	3	CR	MATHS 101	No
ENGL 219	Technical Report Writing	3	0	3	CR	ENGL 157	No

Year 3 - Semester 5

Course Code	Course Title	Course Hours			Course Type	Pre-requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 334	Interface and User Experience Design	3	0	3	MR	ITIS 233	Yes
ITIS 345	Web Design and Development II	3	0	3	MR	ITIS 241 & ITIS 243	Yes
ITIS 352	Cloud Computing I	3	0	3	MR	ITIS 243 & ITCE 248	Yes
ITIS 361	Decision Support Systems	3	0	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	0	3	MR	ITIS 213 & STAT 273	Yes
ISLM 101	Islamic Culture	3	0	3	UR	-----	No
ITIS 360	Information Security I	3	0	3	MR	ITIS 233	Yes
ITIS 362	Governance and Management of Enterprise IT	3	0	3	MR	ITIS 103	Yes
ITIS 321	Entrepreneurship and Digital Innovation	3	0	3	MR	ITIS 222	Yes
ITIS 316	Database Systems Development	3	0	3	MR	ITIS 213	Yes

Training Requirement

Course Code	Course Title	Course Hours			Course Type	Pre-requisite	Major GPA
		LEC	PRAC	CRD			
ITIS 484	Internship in Information Technology	0	6	3	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			
ITIS 473	Security Risk Assessment and Countermeasures	3	0	3	MR	ITIS 360 & ITIS 362	Yes
ITIS 447	Mobile Computing and Development	3	0	3	MR	ITIS 243	Yes
ITIS 4XX	ITIS Concentration Major Elective I	3	0	3	ME	As per ME list 1	Yes
ITIS 4XX	ITIS General Major Elective I	3	0	3	ME	As per ME list 2	Yes
ITIS 499	Senior Project	0	9	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 418	AI Applications in Business	3	0	3	MR	ITIS 310	Yes
ITIS 456	Enterprise Architecture and Systems	3	0	3	MR	ITIS 362	Yes
ITIS 466	IS Auditing and Business Continuity	3	0	3	MR	ITIS 360	Yes
ITIS 4XX	ITIS Concentration Major Elective II	3	0	3	ME	As per ME list 1	Yes
ITIS 4XX	ITIS General Major Elective II	3	0	3	ME	As per ME list 2	Yes

Major Elective Courses

List 1: 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	0	3	ME	ITIS 360	Yes
ITIS 468	Cyber Security	3	0	3	ME	ITIS 360	Yes
ITIS 454	Cloud Computing II	3	0	3	ME	ITIS 352 & ITIS 345	Yes
ITIS 455	Cloud Solution Architecture	3	0	3	ME	ITIS 352 & ITIS 345	Yes
ITIS 414	Business Intelligence	3	0	3	ME	ITIS 310	Yes
ITIS 415	Big Data Applications and Analytics	3	0	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 410	Data Visualization	3	0	3	ME	ITIS 310	Yes
ITIS 417	Knowledge Management	3	0	3	ME	MGT 230 & ITIS 362	Yes
ITIS 419	Game Development	3	0	3	ME	ITCS 214	Yes
ITIS 420	Multimedia Technology and Design	3	0	3	ME	ITIS 334	Yes
ITIS 437	Business Process Modelling and Analysis	3	0	3	ME	ITIS 362	Yes
ITIS 440	e-Marketing Strategy and Applications	3	0	3	ME	MKT 261 & ITIS 222	Yes
ITIS 448	IT Business Applications	3	0	3	ME	MKT 261 & ITIS 222	Yes
ITIS 449	Health Informatics	3	0	3	ME	ITIS 316	Yes
ITIS 457	IS Change Management	3	0	3	ME	ITIS 266	Yes
ITIS 460	Strategic IT Planning	3	0	3	ME	ITIS 362	Yes
ITIS 465	IT Project Management II	3	0	3	ME	ITIS 266	Yes
ITIS 469	Information Systems Ethics and Cyber Laws	3	0	3	ME	ITIS 360	Yes
ITIS 493	Blockchain Technology and Applications	3	0	3	ME	ITCE 248	Yes

ITIS 470	Selected Topics in IT Issues I	3	0	3	ME	Dept. Approval	Yes
ITIS 471	Selected Topics in IT Issues II	3	0	3	ME	Dept. Approval	Yes
ITTI 401	IT Technical Selected Topics I	3	0	3	ME	Dept. Approval	Yes
ITTI 402	IT Technical Selected Topics II	3	0	3	ME	Dept. Approval	Yes
ITTI 403	Cooperative Learning	0	12	6	ME-Training	Dept. Approval & Co-Requisite ITIS 499	Yes

General Studies Elective (GSE) Courses List

Students must select one course from the following General Major Elective (GSE) list:

Course Code	Course Title	Course Hours			Course Type	Pre-requisite
		LEC	PRAC	CRD		
ARAB 141	Modern Arabic Literature	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	-----
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 Civilization	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	-----
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	-----
SOCIO 224	Sociology of Health	3	0	3	GSE	-----
SOCIO 226	Sociology of Arabian Gulf	3	0	3	GSE	-----
SPAN 101	Spanish I	3	0	3	GSE	-----
TL 101	Turkish Language	3	0	3	GSE	-----
GSE XXX	Other electives	X	X	3	GSE	Dept. Approval

Course Description

Major Requirement (MR)

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 233 **Course Title:** Systems Analysis and Design

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 266 **Course Title:** IT Project Management I

This course provides students with the basic principles of IT project management (PM). Topics covered include: the five PM areas: integration, scope, time, cost, and quality; the PM life cycle: project initiating, planning, executing, monitoring, controlling, and closing process.

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 316 **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 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 334 **Course Title:** Interface and User Experience Design

This course presents the fundamental concepts, models, and theories of Interface and User Experience Design. 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 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 352 **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 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 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, knowledge representation, fundamental concepts of searching, reasoning, and planning, intelligent agents, expert systems, genetic algorithms, fuzzy logic, neural networks, deep learning, and generative AI.

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 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: ITCE 248 **Course Title:** Computer Networks for IS

This course aims to introduce students to the basic concepts and terminologies used in telecommunication networks and a system-level view of network operation. Topics covered include: network components, topology and categories, protocols, standards, and models (OSI, TCP/IP), data communication basics; signal types; transmission media and modems, transmission and switching basics; Error detection (VRC; LRC; CRC). Data Link Control. Bit oriented Data Link Protocols. Local Area Networks (LAN technology; Ethernet).

Major Elective Courses (ME)

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 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 419 **Course Title:** Game Development

This course provides students with a comprehensive introduction to game development using already-established game engine tools (e.g., Unity, Unreal). Students will learn the essential concepts and techniques to create interactive and engaging games. Initially, they will cover the background behind game development via game ideation and storyboard drafting. They will have hands-on experience with character creation, gameplay mechanics, graphics design, and playtesting, enabling them to create immersive and interactive gaming experiences.

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

This course covers techniques used to design multimedia systems using conceptual frameworks and multimedia authoring tools. Topics include multimedia system elements, ethical and legal issues in using and creating multimedia contents, create and manipulate information using multimedia presentation concepts.

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

This course introduces contemporary methods for framing, modeling, and improving organizational business processes. Topics covered include: process modelling using UML, data and logic requirements modeling, techniques to analyze business processes, measurement techniques for evaluating outcomes, and modeling As-Is and To-Be process workflows using 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 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 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 456 **Course Title:** Enterprise Architecture and Systems

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, SOA, ZACHMAN, FEAF, DODAF).

Course Code: ITIS 457 **Course Title:** IS Change Management

This course introduces students to the definitions, concepts, and tools used in the IS Change Management field. Topics covered include: resistance to change, diagnosis for change, challenges associated with change, implementing change: change management, contingency, and processual approaches, strategies and skills for communicating changes, sustaining change.

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 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 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 473 **Course Title:** Security Risk Assessment and Countermeasures

This course examines information security as a Risk Management (RM) problem. Topics covered include: fundamentals of RM, standard RM approaches for identifying, analyzing, and responding to risks, identification of information security risks, risk evaluation, making decision whether to mitigate or accept the risk given its resource constraints, risk mitigation methods, as well as the tools and methodologies for metrics to monitor RM activities.

Course Code: ITIS 493 **Course Title:** Blockchain Technology and Applications

The course provides students the most important Blockchain concepts, the philosophy of decentralization behind blockchain, and recent development and technologies in the Blockchain environment. In addition, it covers the recent applications of Blockchain and its impacts.

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

This course focuses on new development or application of IT. The course aims at providing 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 471 **Course Title:** Selected Topics in IT Issues II

This course focuses on new development or application of IT. The course aims at providing 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: ITTI 401 **Course Title:** IT Technical Selected Topic I

This course covers advanced technical topics from various areas of IT not covered in the curriculum.

Course Code: ITTI 402 **Course Title:** IT Technical Selected Topic II

This course covers advanced technical topics from various areas of IT not covered in the curriculum.

Course Code: ITTI 403 **Course Title:** Cooperative Learning

This course provides students an opportunity to work full time in a relevant industrial establishment for one academic semester. Gaining the experience of a structured job experience and working on a realistic capstone project using knowledge and skills obtained in prior courses wherein they incorporate IT standards and multiple realistic constraints such as economic, ethical, social, political, environmental, health and safety, manufacturability, and sustainability. Students are expected to submit a written report of the work experience together with a written report detailing the project design efforts, and often a working prototype.

Major Support Requirement (MSR)

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

Course Code: ENGL 157

Course Title: English for Information Technology

This is the first in a two-part series of language courses for IT students. It focuses on developing students' grammar and writing skills, specifically essay and summary writing. The level of this course is upper-intermediate (B2).

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 106

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, and functions.

Course Code: ITCS 107

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 sub-typing, abstract base class, lists, stacks, queues, trees, graphs, hash tables, strategies for choosing appropriate data structure.

Course Code: ITIS 484

Course Title: Internship in Information Technology

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

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 Principles

This course provides a general overview on the "Human Rights" concept as well as the international and national sources of human rights law. It also covers the main types of human rights (civil, political, economic, social and cultural rights), and their implementations in the Kingdom of Bahrain. Finally, the international and national mechanisms of monitoring human rights will be addressed with more focus on the experiences of the 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.