Course Description

Study Plan Academic
Cohort entering 2013–2014

(Information Systems)

IS 130D **Information Systems**
The objective of this course is to provide students an understanding of how and why information systems are used today, how businesses are using information systems for competitive advantage vs. competitive necessity. Topics include why learn about information systems in organizations, hardware & software, data management, telecommunications, the internet, intranets, extranets, and system development life cycles.

PREREQ: -

IS 131D **Information Systems**
The objective of this course is to provide students an understanding of how information systems are enabling new forms of commerce between individuals, organizations, and governments, how various types of information systems provide the information needed to gain business intelligence to support the decision making for the different levels and functions of the organization, how enterprise systems foster stronger relationships with customers and suppliers and how these systems are widely used to enforce organizational structures and processes, how organizations develop and acquire information systems and technologies, and how to secure information systems resources, focusing on both human and technological safeguards. Topics include database & DBMS, business analytics, reporting system, dashboards, geographical IS, ERP & globalization (e-commerce), basic security, and basic of business intelligence.

PREREQ: IS 130D

IS 232D **e-Business Systems Design**
The objective of this course is to provide students an understanding of how information systems are enabling new forms of commerce in business, some of the technologies which support information systems for business, and the principles of electronic payment systems. Topics include electronic commerce economics, business model, e-commerce: marketplace, mechanisms, platforms, & tools, marketing & advertising in e-commerce & consumer behavior, order fulfillment along the supply chain, collaborative commerce & corporate portal, e-commerce security, e-commerce payment systems, building e-commerce applications, and e-commerce regulatory, ethical & social environment.

PREREQ: IS 131D

IS 334D **Information Systems Analysis and Design**
The objective of this course is to provide students an understanding of different phases of a system life cycle. The students will be able to develop interpersonal skills correctly, describe how systems analysts interact with users, management, and other information systems professionals, develop data flow diagrams and decision tables, perform a feasibility study, evaluate systems development alternatives, solve realistic systems analysis problems and determine methods for evaluating the effectiveness and efficiency of a system. Topics include different approaches to implementing information systems to support business requirements, packaged systems; enterprise systems, outsourced development, in-house development, structuring of IT-based opportunities into projects, project specification, project prioritization, different approaches to systems analysis & design: structured SDLC & agile methods, analysis of project feasibility, data collection methods, methods for structuring & communicating requirements, and design.

PREREQ: IS 131D

IS 333D **Multi-tier Application Development**
The objective of this course is to provide students an understanding of the multi-tier application architecture, how to interact with a database management system, the basic mechanisms for

accessing relational databases from various types of application development environments, the basics of how to secure web applications, and the basics of linking data/information modeling and business process modeling. The students will be able to implement and deploy a multi-tier software application and apply information requirements specification processes in the broader system analysis and design context. Topics include multi-tier architecture, HTML 5, scripting languages (Javascript), CSS3, PHP, HTTP, SOAP, multi-tier application development & deployment, and secure the web application.

PREREQ: CS 111D + IS 232D + IS 220D

IS 221D **Database Management**
The objective of this course is to provide students an understanding of the fundamentals of the basic file organization techniques, the principles of indexing in order to implement a relational database design using an industrial-strength database management system, the concept of database transaction and apply it appropriately to an application context, the concept of database administration and perform simple database administration tasks, the key principles of data security and identify data security risk and violations in data management system design, the basic of database recovery techniques, and the concept of distributed database management system. Topics include physical database design, indexing structures for files, transaction processing, concurrency control, database performance tuning, database administration, database security, database recovery techniques, and distributed database management system.

PREREQ: IS 220D

IS 224D **Information Systems Security**
The objective of this course is to define information security, recount the history of computer security, explain how it evolved into information security, define key terms and critical concepts of information security, enumerate the phrases of the security systems development life cycle, and describe the information security roles of professionals within an organization. Topics include introduction to information security, the need for security, legal, ethical, and professional issues in information security, risk management, access control & firewalls, intrusion detection & prevention systems, and cryptography.

PREREQ: IS 131D

IS 435D **Support and Decision Making Systems** 3
The objective of this course is to discuss today's turbulent business environment and describe how organizations survive and even excel in such an environment, recognize the difficulties in managerial decision making today, learn the major frameworks of computerized decision support: decision support systems (DSS) and business intelligence and identify the major tools of computerized decision support, demonstrate an understanding of the foundations, definitions, characteristics, and capabilities of DSS and business intelligence (BI), describe the various types of DSS and explain their use, discuss the benefits of business analytics and data mining, explain management support system (MSS) modeling, discuss the processes involved in designing and building a DSS, demonstrate and understanding of the fundamental principles and capabilities of groupware and group support systems (GSS), knowledge management (KM), Artificial Intelligence (AI), and Knowledge-based Systems, and learn what expert systems and reasoning (CBR, genetic algorithms, fuzzy logic, intelligent software agents, etc.) are used to develop intelligent decision support systems (DSS). Topics include preliminaries and overview of decision support systems and business intelligence, DSS components and their structure, modelling and decision analysis, transportation and network model, Markov chain, knowledge-base model, DSS user interface design and management, decision support system construction methods, knowledge representation and reasoning, neural networks, agents systems, and systems integration and the future of DSS.

PREREQ: IS 322D

IS 223D **Object Oriented Design**
The objective of this course is to understand the foundations of object oriented design, describe Object Oriented Analysis and Design concepts and apply them to solve problems, differentiate between UML diagrams, apply the modeling tools for object oriented design, understand how to represent the architecture using UML, understand formal object-oriented analysis and design processes, and understanding and applying an agile method. Topics include overview of UML, introduction to object oriented concepts, object oriented analysis and modeling, software development processes, UML diagrams: use case, class, object, composite structure, activity, component, deployment diagrams, agile methods for object oriented design, and scrum method.

PREREQ: CS 111D

IS 410D **IS Management and Strategy**
The objective of this course is to understand the various functions and activities within the information systems area, including the role of IT management and the CIO, structuring of IS management within an organization, and managing IS professionals within the firm, view an organization through the lens of non-IT senior management in deciding how information systems enable core and supportive business processes as well as those that interface with suppliers and customers, understand the concepts of information economics at the enterprise level, appreciate how IS represents a key source of competitive advantage for firms, structure IS-related activities to maximize the business value of IS within and outside the company, understand existing and emerging information technologies, the functions of IS and its impact on the organizational operations, evaluate the issues and challenges associated with successfully and unsuccessfully incorporating IS into a firm, understand how strategic decisions are made concerning acquiring IS resources and capabilities including the ability to evaluate the different sourcing options, apply information to the needs of different industries and areas, and understand the role of IT control and service management frameworks from the perspective of managing the IS function in an organization. Topics include key issues in information systems management, leading IT in a dynamic global environment, understanding IT value delivery in organizations, setting the strategic direction for information systems investment, delivering IT services, systems, and applications, governing IT service delivery, managing performance and risk, managing IT-enabled organizational change, building and managing the IT infrastructure, and managing IT sourcing & talent.

PREREQ: IS 340D

IS 340D **Enterprise Architecture**
The objective of this course is to understand a variety of frameworks for enterprise architecture analysis and decision making, evaluate the total cost of ownership and return on investment for architecture alternatives, utilize techniques for assessing and managing risk across the portfolio of the enterprise, evaluate and plan for the integration of emerging technologies, administer systems, including the use of virtualization and monitoring, power and cooling issues, manage proliferating types and volume of content, understand the core concepts of data/information architecture and evaluate existing data/information architecture designs, plan for business continuity, understand the benefits and risks of service oriented architecture, understand the role of audit and compliance in enterprise architecture, and understand the integration of enterprise systems with inter organizational partners. Topics include introduction to enterprise architecture, the value and risk of creating an enterprise architecture, implementation methodologies, documentation framework, architecture components and artifacts, developing current and future architecture views, and service oriented architecture overview.

PREREQ: IS 223D + IS 333D

IS 322D **Data Warehousing and Data Mining**
The objective of this course is to provide students with an understanding of the theoretic and practical issues related to the data ware house and mining techniques. Topics include introduction to data warehouse, fundamentals of developing and using a data warehouse, developing requirements and designing models, creating a dimensional model, generating population and maintenance plans for a data warehouse, manipulating data in the data warehouse for update, maintenance and data extraction, data quality management, business intelligence, knowledge discovery in data warehouses, data mining algorithms and methods, and new emerging applications and trends in data mining.

PREREQ: IS 221D

IS 361D **Banking Information Systems**
The objective of this course is to give the students the knowledge and skills needed to Differentiate between the banking information systems and regular Information systems, compare between traditional banks and electronic banks, study the modern technologies that develop the banking information system domain, use the internal and external resources (computers and networks), deal online with all banking transactions and processes, be adaptive with the regulations and restrictions related to employees, customers, investors, deal with mobile banking, and activate all the ethical issues. Topics include history of banking & banking information systems, introduction of electronic banking, market potentials for online banking that include analysis and market trends, future trends and services that may be integrated or investigated, infrastructure analysis including hardware, software, information systems, databases, networks and web services, e-banking components and services, estimating the internal and external resources, core banking systems, financial management tools, the potential reactions of employees, customers and investors, legal, ethical and social issues around online banking.

PREREQ: IS 131D

IS 360D **Health Management Applications**
The objective of this course is to explore the healthcare information technology planning and management issues associated with decision making in healthcare organizations, understand the types of information systems prevalent in healthcare organizations, evaluate specific strategies related to healthcare IT investments, and understand the ramifications of health data standards and privacy concerns on information management policy. In this course, student will learn how the core competencies of healthcare informatics can be developed and applied using real-world case studies. Student will be exposed to specific concepts related to electronic medical records (EMR), health data and standards, sourcing, and IT investments in healthcare. Topics include introduction to health management applications, health information management, health management record, emerging use of clinical information systems, health data sets and standards, clinical vocabularies, classification systems reimbursement methodologies, HIT functions, secondary data systems, healthcare delivery systems, ethical issues in HIT, and healthcare statistics.

PREREQ: IS 131D

IS 451D **Graduation Project (1)**
This course is the first part of a sequence of two courses that constitute the graduation capstone project. In this part, the student is expected to propose, analyze, and design a software system or conduct a thorough investigation of a particular IS-related problem for research-based projects. The student will deliver oral presentations and written reports.

PREREQ: Completed 90 credit hours successfully + IS 350D

IS 452D **Graduation Project (2)**
This course is the second part of a sequence of two courses that constitute the graduation capstone project. In this project, the student will continue the System/Research development of the project that started in IS 451T. The student will deliver oral presentations, progress reports, and a final report.

PREREQ: IS 451D

IS 453D **Internship**
The objective of the 120-hour internship program is to provide students the opportunity to apply their academic education with hands-on, real world experience in an organization. Students are sent to different companies to get the real involvement of work group, communications, and professional development experiences.

PREREQ: Completed 90 credit hours successfully

BUS 101M **Principles of Management**
The objective of this course is. Topics include.

PREREQ: -

BUS 352M **Entrepreneurship**
The objective of this course is. Topics include.

PREREQ: -

ACCT 101M **Principles of Accounting (1)**
The objective of this course is. Topics include.

PREREQ: -

IS 414D **Disaster Recovery Management**
The objective of this course is to provide the students an understanding of the concepts of disaster recovery, the best practices for designing for incidents and crises, the cost-benefit trade-off for the different approaches when managing disaster recovery, the business continuity planning approach. Topics include introduction to business continuity and disaster recovery (BCDR), business impact analysis, BCDR plan development, emergency response and recovery, and change management for BCDR.

PREREQ: IS 224D

IS 362D **Business Process Management**
The objective of this course is to introduce to the students the methodologies and techniques of business process modeling, increase the students' awareness of the concepts and foundations of business process modeling and the potential to improve the efficiency and effectiveness of organizations by using business process modeling techniques. Topics include overview to business process management, challenges in managing business, understanding organizational process, modelling business processes, process assessment, process improvement, qualitative process analysis, using IT for process management and improvement, organizational issues in business process management, business process outsourcing, managing process and cross organizational borders.

PREREQ: IS 334D

IS 411D **IT Auditing and Control**
The objective of this course is to understand the concept of business risks and the management of business risk, understand IT risk as a component of business risk, gain an appreciation of the need to manage IT risks, gain an understanding of the basic type of controls required in a business system in order to control IT risks, learn concepts and applications of the following types of IT controls: top management, system development, programming, gain an appreciation for the difficulties in assessing systems effectiveness and efficiency, and to understand the new system control risks created by the use of the internet for business applications and electronic business. Topics include concepts of IT audit and control, IT environment and the role of the IT auditor, business risk & IT governance, audit standards and pronouncements, IT audit process, auditing systems development and maintenance, auditing IT security, auditing IT service delivery and support, auditing business continuity and disaster recovery, data analytics and fraud investigations, overview of specification section IT as relevant for assurance, and auditing emerging technologies.

PREREQ: IS 410D

IS 412D **IS Innovations and New Technologies**
The objective of this course is to understand the importance of technology and innovation for economic growth and competitive advantage, recognize that organization's require a strategic, integrated approach for the successful management of technology and innovation in different settings, understand and identify the complexities of management and operations associated with technology and innovation in products and processes, including partnerships and collaborations, research and development, commercialization and marketing, understand how businesses have used IS technologies to innovate and reengineer business processes, apply the techniques used to innovate Social Media, understand how the Web as a platform enhances creativity, information sharing and functionality, understand the role of Web technologies such as online communities in the business world, and how they deliver value, apply the popular community-oriented tools, such as online social networking tools, to business problems, apply basic tools of economics to digital goods and services, understand Search space and its technologies, and understand Innovating with Big Data. Topics include what is innovation and why does it matter, creativity and innovation, web technologies, business processes, search space, latest trend in IS innovating with big data.

PREREQ: IS 410D

IS 342D **Enterprise Systems**
The objective of this course is to provide students with an understanding of the theoretical and practical issues related to the application of enterprise systems within organizations, demonstrate how enterprise systems integrate information and organizational processes across functional areas with a unified system comprised of a single database and shared reporting tools. Topics include business process and business process integration, acquiring and implementing enterprise systems, selection of enterprise systems software, challenges associated with the implementation of global enterprise systems applications, organizational change and change management, and strategic alignment.

PREREQ: IS 340D

IS 341D **Cloud Computing Management and Security**
The objective of this course is to explain cloud definition, services, structure, management services and deployment types. It is also help in understanding the risk associated with the different Cloud services and deployment types in addition this course briefly discuss the challenges for establishing

trust in the Cloud. Topics include orientation, introduction to cloud, background of cloud computing, cloud structure, self-managed services, and trustworthy clouds.

PREREQ: IS 340D

IS 413D **Risk Analysis Management**
The objective of this course is to understand the concepts of threat, evaluation of assets, information assets, physical, operational, and information security and how they are related, understand the need for the careful design of a secure organizational information infrastructure, perform risk analysis and risk management, understand both technical and administrative mitigation approaches, understand the need for a comprehensive security model and its implications for the security manager or Chief Security Officer (CSO), create and maintain a comprehensive security model, understand and apply security technologies, design and guide the development of an organization's security policy, determine appropriate strategies to assure confidentiality, integrity, and availability of information, and apply risk management techniques to manage risk, reduce vulnerabilities, threats, and apply appropriate safeguards/control. Topics include risk management fundamentals, managing risks, maintaining compliance, developing a risk management plan, risk assessment approaches, performing risk assessment, identifying assets and activities to be protected, identifying and analyzing threats, vulnerability, and exploits, and identifying and analyzing risk mitigation security controls, .

PREREQ: IS 333D

IS 343D **Enterprise Resources Planning**
The objective of this course is to provide a road map with many real life examples for successful implementation and utilization of ERP, explore conceptual tools and their application for enterprise planning, management and execution, describe ERP from the perspective of the business manager in a clear step-by-step manner, and provide a deeper understanding of ERP concepts. Topics include introduction to enterprise resource planning, history of enterprise resource planning, buffer resource strategy, ERM checklist, integrating supply chain, strategic sourcing and procurement, sales and operations process and planning, distribution network and requirement planning warehousing, ERP selection and requirement, and customer relationship and service.

PREREQ: IS 334D

IS 363D **Selected Topics (1)**
The objective of this course is to expand topics in this course knowledge area, learn about the latest schemes, developments, applications of the topics of this course, explain in depth chosen topics related to the knowledge area which are explained briefly in the plan and the students wish to go into more details, discuss recent research papers in the topics related to the knowledge area, apply the concept of the topic related in developing an application, and develop an application that related to the topic. Topics include related to one of these main topics: Digital Forensics, Ethical Issues and Intellectual Property, or Basic Knowledge Representation and Reasoning.

PREREQ: -

IS 336D **Selected Topics (2)**
The objective of this course is to provide a solid basis for participating in and managing the software development projects of an organization and improving the processes involved. Topics include Agile methods basics, Agile methods in practice, Scrum, and eXtreme programming.

PREREQ: -

IS 325D **Selected Topics (3)**
The objective of this course is to expand topics in this course knowledge area, learn about the latest schemes, developments, applications of the topics of this course, explain in depth chosen topics related to the knowledge area which are explained briefly in the plan and the students wish to go into more details, discuss recent research papers in the topics related to the knowledge area, apply the concept of the topic related in developing an application, and develop an application that related to the topic. Topics could be one of these: (1)Big data, (2)Semantic Web, or (3)Information Retrieval.

PREREQ: -