King Hussein Faculty for Computing Sciences

Computer Science Department

Study Plan for Master Degree in

Enterprise System Engineering (ESE)

2014 / 2015

Master of Science in Enterprise System Engineering Curriculum Course Descriptions

Course No:
13741
Course Name:
E-Business

Course Description:

This course introduces students to various aspects and models for e-business. It provides an overview of e-business from architectural and managerial perspectives. This includes fundamental concepts and frameworks for exploring e-business opportunities by comparing and contrasting e-business models. The course will also examine E-Business strategies and implementation issues faced by new Internet ventures as well as established firms. Current issues surrounding E-Business practices such as electronic commerce infrastructure, designing on-line storefronts, payment acceptance and security issues, and the legal and ethical challenges of e-business will also be discussed. Students will also gain hands-on experience in creating a web site using an HTML JSP, and PHP, authoring tool.

Course No:
13742
Course Name:
Enterprise Systems Architecture

Course Description:
This course intends to frame the student with the actual situation of Enterprise information systems development and integration. In this course, the student will learn how to cover the need of developing solutions that efficiently integrated with existent ones (legacy) and at the same time leverage the new business paradigm rules: flexibility to multimodal support, agility to easily adapt and react to continuous requirements changes and interoperable with different solutions. Cloud-based Multi-Enterprise Information Systems scenarios will be considered.

Course No:
13752
Course Name:
Integrated Application Systems

Course Description:
The course will introduce the integration of value chain, business processes of R&D, sales, procurement, production, logistics and service information systems. This course will show which functions of the processes are supported by which information systems and which methods. In particular, this course builds the bridge between conventional and electronic business.

It is going to elaborate the process of access and understanding advanced integrated software technology and understand the general functionalities and key elements of modern integrated system. The student will be learning the development of practical skills for the administration of complex ERP systems and reconstruction of complex architectures of real-world business information systems using the example of component SAP Enterprise Service Architecture.

Course No:
13747
Course Name:
Enterprise Business Intelligence

Course Description:

In this course, students will be familiar with the basic and current technologies together with advanced concepts, applications, and competitive strategies in the context of enterprise business intelligence supported by practical examples. The course will explain what business intelligence can offer to organizations and demonstrate how business intelligence is used in the real world; and finally provide an action plan for identifying and acting on the BI opportunities that exist in an organization.

Course No:
13753
Course Name:
Customer Relationship Management

Course Description:

Understanding CRM, benefits of CRM, success stories on CRM systems, models of CRM: operational, analytical and collaborative; components of CRM, relational Intelligence, customer acquisition, customer retention, CRM technologies, customer service automation, analysis methods of customer data, marketing in CRM, marketing automation, designing and implementing CRM.

Course No:

13754
Course Name:
Supply chain management/Logistics

Course Description:

The course will provide students with a wealth of knowledge in the various areas of business analysis and business management. The course covers all areas of supply chain starting from handling suppliers to manufacturing, warehousing and retailing. Various aspects of procurement management and decision making in the supply chain is discussed. During this course, student will study the concept of Supply Chain Management, understand its impact on enterprise efficiency, understand various business functions, processes and supply chain terminology, master concepts and mathematical models behind various supply chain software packages, and clearly link supply chain management and logistics. In addition, students will understand the various activities of logistics, understand all aspects of distribution management, understand the various activities of warehousing and inventory management, appreciate the importance of coordination between various supply chain entities, understand the best methods of sourcing and supplier selection, realize the various decision making strategies in supply chains, understand the bullwhip phenomenon and how to deal with it.

Course No:

13751
Course Name:
Human Computer Interactions/Social Media

Course Description:

In this course, students will learn the process of analyzing the application interface needs of users for software applications of all types with the focus on the applications that repeat in business areas. The process includes analyzing, designing, and building user application interfaces. In addition, students will be able to be establish the requirements through data gathering and design methodologies & design principles. The student will be able to prototype, construct, and finally evaluate the interaction of a design between human and a device. Finally, students will be able to make information search and visualization system.

Course No:

13746
Course Name:
Quality Management and Auditing

Course Description:

This course concentrates on the rigorous development of high quality software systems. Topics covered in this course include software process, software verification and validation (testing, inspection), software metrics, and software maintenance. Students will be equipped with necessary processes, methods and techniques for developing quality software, for assessing software quality, and for maintaining the quality of software. Students will be familiar with software testing at the unit, module, subsystem and system levels, automatic and manual techniques for generating and validating test data, and the testing process, static vs. dynamic analysis, functional testing, inspections and reliability assessment. Trade-offs between software cost, schedule, time, and quality, integration of quality into the software development process as well as the principles of test planning and test execution.

Course No:

13789
Course Name:
IT Project Management

Course Description:

The main goal of this course is to gain a clear understanding of the five IT Project Management Process Groups (Initiating, Planning, Executing, Monitoring and controlling, and Closing) and learn how these processes interact with each other to successfully achieve project objectives. Discover how to integrate the ten Knowledge Area processes, tools and templates in the work place. Concepts include stakeholders, scope, quality, time, cost, human resources, communication, risk, procurement and project integration management. Students will also apply techniques such as stakeholder analysis, work breakdown structure, scheduling, estimating, risk assessments, contracts and change control. Students will have opportunity to apply project management principles to real-world situations.

Course No

13758
Course Name:
Advanced Applied Mathematics

Course Description:

The advances in technology and business are achieved by applying technical knowledge from statistics, computing science, finance, economics, management and mathematics. The advanced applied mathematical curriculum deals with computer and computational methods that play an important role in all of these areas. It prepares students to deal with mathematical problems that arise in science, engineering, or management. The curriculum will emphasize on the construction, analysis, evaluation of mathematical models of real-world problems and the mathematical methods used to solve them. These models are analyzed to form better decisions in areas such as management, engineering, and the social sciences. In mathematical programming, a problem is modeled as an objective

function then the resulting model is optimized. The models are solved using computer programs.

Course No:
13791
Course Name:
Research Methodologies

Course Description:

This course aims to introduce students to a number of research methods useful for academic and professional investigations of information practices, texts and technologies. It provides an understanding of the different decisions and steps involved in executing a research methodology. Students, after this course, will be able to understand the research terminology, ethical and research principals, challenges and processes and using the quantitative/qualitative and hybrid methods approaches to research. In addition to knowing the literature review process and the evaluation methods combined with analyzing and evaluating others' published research and reporting a project's results.

Course No:
13757
Course Name:
People Leadership/ (HRM) Human resource management

Course Description:

The course will equip students with the necessary knowledge, tools and techniques for leading people towards organizational and individual success. The novelty in this course is considering positive psychology a cornerstone towards development of people leadership skills. The course revolves around three main skill sets which are personal skills, interpersonal skills and group skills. Each group of skills include specific skills that proved to be most required in the current labor market such as the ability to solve problems analytically and creatively, communication skills, motivating others, building high performing teams and teamwork and leading positive change. Moreover, the course is designed to help in filling in main leadership skills gap discovered by different survives conducted and funded by Tempus. These survives have been submitted to different sizes and types of enterprises in Egypt, Tunis and Jordan.

The focus is on promoting effective people management practices and addressing current management challenge. This will be achieved pragmatically rather than theoretically. Therefore, active learning is the fundamental mechanism through which this course is delivered. Participants are expected to be engaged in activities and higher order thinking (analysis, synthesis and evaluation) since more emphasis is placed on skill development rather than information transmission.

Course No:
13745
Course Name:
Enterprise Strategic Management

Course Description:

The course will prepare students to become familiar with strategic vision, strategic planning, strategic diagnosis, strategic choices strategy implementation, creating value for the enterprise stakeholders. It includes an understanding of technology innovation, power relationships and key factors of enterprise competitiveness and performance in each functions especially financial function.

Course No

13743
Course Name:
Cloud Computing and Big Data

Course Description:

The course will introduce students to two major technologies: cloud computing and big data. The first part of the class will introduce the benefits of cloud computing as well as the challenges associated with it. The course will introduce different models of services that are common in cloud computing, namely: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). The class will discuss the types of clouds and benefits of each one as well as its cost model. The course includes studying current commercial offerings from major providers of cloud computing solutions like Amazon, Google, Microsoft and others. The second part of the course - Big data - will explain the challenges with analyzing the huge amounts of data being generated by worldwide social media and web applications. The course will adopt a map reduce framework (ex: Hadoop) to demonstrate the analysis of big data.

Course No:
13711
Course Name:
Business Data Communications and Networks

Course Description:

The course will provide an in-depth knowledge of data communications and networking requirements, including networking standards, models, topologies, technologies, devices, and protocols. Students will learn how to evaluate, select, and design the different data communication options such as bandwidth requirements, performance requirements, cost, and suitability according to business applications needs. In addition, student will learn the basics of network security and reliability options. The course will shed light on recent network advancement such as software defined networking, and Internet of things and its impact on businesses. A course project will be presented in which students are required to evaluate, select, and implement different data network options and prepare a cost-benefit analysis for a proposed solution.

Course No:
13799
Course Name:
Master Thesis

Course Description:

The student should be able to apply relevant knowledge and abilities, within the main field of study, to a given problem within given constraints, even with limited information, independently analyze and discuss complex inquiries/problems and handle large problems in the advanced level within the main field of study reflect on, evaluate and critically review one's own and other scientific results.
The student should be able to document and present one's own work with strict requirements on structure, format and language usage. The student should be able be able to identify one's need for further knowledge and continuously develop one's own knowledge

Course No:
13732
Course Name:
Information System Security

Course Description:

This course covers issues related to the detection, evaluation, analysis and management of security risks facing the information systems and networks in organizations. Topics include fundamental concepts of information security, network security issues, intrusion detection systems, threat and attack strategies, vulnerability analysis, formal models of security, Authentication and access control systems, cryptography, risk management, contingency planning and incident handling, alarms and responses. The course will study in detail principles and tools related to these topics. The course will also cover security standards, security planning, and ethical and legal issues in information security.

Course No:
13755
Course Name:
Enterprise Mobile Computing:

Course Description:

The goal of this course is to provide an in depth understanding of the fundamental problems in the area of integration of Mobile Devices into Enterprise Systems and study the existing and proposed solutions for these problems from both research and development perspective. This course will introduce students to mobile computing and mobile application development. Topics covered include: mobile and wireless environment; mobile device technology; mobile computing architecture and protocols; mobile computing security; and applications in wireless and mobile computing, including distribution applications, mobile middleware, mobile information and database access, mobile multimedia, remote execution, user interface and user experience. Students will be expected to learn at least one

mobile application development framework (Android) and use it to implement their assignments and course project.

Course No:

13755
Course Name:
Enterprise Mobile Computing:

Course Description:

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Course No:

13759
Course Name:
IT Outsourcing

Course Description:

This course will outline the major aspects of outsourcing with a focus on IT. It will explore the conditions in which outsourcing makes sense and conditions where short term cost gains are offset by long term systemic issues. The costs of outsourcing may outweigh the benefits, if outsourcing activities are not effectively managed. The course will introduce students to IT outsourcing and why do companies choose to outsource IT functions. Furthermore, the course will discuss

the challenges of managing IT outsourcing and managing IT vendor relationships. Techniques which increase IT outsourcing success for both clients and vendors will be discussed.

Course No:
13756
Course Name:
Interoperability Systems

Course Description:

System Interoperability course covers the ability of diverse systems and organizations to work together (inter-operate). It sets a broad framework on the services, which allows for information exchange with heterogeneous systems takes into account social, political, and organizational factors that impact system to system performance.

Course No:

13786
Course Name:
Special Topics in Enterprise System Engineering

Course Description:

Topics will be assigned by the department on evolving techniques and related topics of enterprise system engineering to support the study plan and to encourage further research by students.