



ASU
جامعة العلوم التطبيقية الخاصة
APPLIED SCIENCE PRIVATE UNIVERSITY

FIT
FACULTY OF INFORMATION
TECHNOLOGY
كلية تكنولوجيا المعلومات



المستوى الذهبي



AMMAN - JORDAN

فلنجعل من الأردن العرب جامعة للعرب

Short Course Description of Software Engineering Department

- Introduction to Software Engineering 1302281

(Theoretical Course) (3 Credit Hours) (Prerequisite 1301108)

This course covers the fundamentals of software engineering, including understanding system requirements, finding appropriate engineering compromises, effective methods of design, coding, and testing, team software development, and the application of engineering tools. The course will combine a strong technical focus with a project providing the opportunity to practice engineering knowledge, skills, and practices in a realistic development setting with a real client

1302382 - Software Requirements Engineering

(Theoretical/ Practical Course) (3 Credit Hours) (Prerequisite 1302281)

The Software Requirements course looks at activities aimed at establishing a common understanding of the problem domain, what the clients and users expects the newly developed system to do, types of user requirements, completeness and consistency properties to be addressed by a Software Project. It includes methods techniques and tools associated with the elicitation, analysis and modeling, specification, review and management of software requirements. Students are given hand-on–practice using selected case studies and a team or individual project to collect, prototype, model, specify and verify requirements of a mid- sized Software Project.

1302383 - Project Management

(Theoretical/ Practical Course) (3 Credit Hours) (Prerequisite 1302281)

This course aims at introducing the major topics in project management. It seeks to explain the basic principles and provide practical steps for managing projects. It also seeks to expose students to a spectrum of activities involved in project management with a specific focus on IT projects. Further, students are also expected to understand and demonstrate knowledge of managing group projects and of project presentation. This course will cover the following topics: Overview of project management; Understanding the nature of projects; Principles and basic techniques of project management; Project management tools; Integration of tools and principles; Setting up a project; Project stages; Planning and controlling a project; Role and personal qualities of a project manager.



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1302384 - Software Analysis and Design

(Theoretical/ Practical Course) (3 Credit Hours) (Prerequisite 1302382+1301305)

This module is designed to develop student's knowledge, understanding, and skills to solve problems through the creation of software solutions. It covers concepts and methods to develop the architectural design of medium-size software systems with sufficient complexity. It introduces fundamental design concepts and notations, and discusses different design methods with emphasis on Object Oriented design methods and techniques. The module also covers the construction of maintainable software systems using one of the dominant Object Oriented programming languages. During the course, students will undertake a term project working individually and in groups addressing the design and construction of a relatively complex software system.

1302392 - Advanced Techniques and Tools in Software Engineering

(Theoretical Course) (3 Credit Hours) (Prerequisite Department Approval)

This course is designed to introduce students to advanced techniques and methods in software engineering, including software construction and maintenance using modern techniques and tools. Additionally, it provides students with related knowledge about the techniques and methods used in reverse engineering and product analysis. It also introduces the tools and techniques to make the development of a simple software Agile.

1302452 - Human Computer Interaction

(Theoretical Course) (3 Credit Hours) (Prerequisite 1302281)

The course focuses on giving advice on human factors and key issues underlying the iterative process of user interface design, an effective development approach and technology fundamental to user interface implementation.

1302481 - Component-Based Software Engineering

(Theoretical Course) (3 Credit Hours) (Prerequisite 1302384)

The course focuses on an approach to software development based on extensive use of pre-existing standard (or customizable) components. It also illustrates how a repository of reusable candidate components can be integrated into a typical evolutionary process model. The Component-based Software Engineering process involves identifying candidate components; qualify each component interface, and adapting components.



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1302483 - Real-Time and Embedded Systems (Theoretical Course) (3 Credit Hours) (Prerequisite 1301326)

The course provides a comprehensive overview about basic concepts of real-time and embedded systems. It discusses the requirements of these systems and the difference between them in terms of design techniques, development methodologies, and quality attributes such as reliability. Additionally, it introduces students to the tools and techniques used to confirm this concept, the reasons for building these systems in the form of a set of parallel processors, the role of the procedural port for real-time systems, the general concepts of the architecture of these systems, and monitoring and control of the data acquisition methods.

1302486 - Software Testing (Theoretical Course) (3 Credit Hours) (Prerequisite 1302384)

This course introduces various methods, techniques and tools for testing Software Systems, Students learn how to model test purposes, experiment and test hypothesis, perform various level testing using different testing techniques, use metrics to establish conformance to system design requirements, test specialized classes of software applications.

1302495- Software Quality Management (Theoretical Course) (3 Credit Hours) (Prerequisite 1302485+1302486)

The course also looks at the key issues and standard-based methodologies related to the management of software development and explores strategies central to the assurance of quality within different software development environments.

1302485 - Software Maintenance and Reengineering 93)4(Theoretical Course) (3 Credit Hours) (Prerequisite 1302

The course addresses the knowledge and techniques necessary to enhance and modify software over time. It covers the issues of software maintenance, extensibility, and software adaptability to different environments, as well as software re- engineering process, such as reverse engineering and restructuring, how legacy systems can be assessed to decide if they should be scrapped, maintained, re-engineered or replaced. Finally, the distinction between Software re-engineering and data re- engineering is demonstrated.

1302490 - Special Topics in Software Engineering (Theoretical Course) (3 Credit Hours) (Prerequisite Department approval)

This course aims to discuss selected topics such as latest and ongoing trends, updates and research areas in the field of software engineering and accordingly the content of the course is determined and approved each semester by the department council.



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1302493 - Software Development and Documentation (Theoretical Course) (3 Credit Hours) (Prerequisite 1302384)

Modeling, such as the Unified Modeling Language (UML) along with its Object Constraint Language (OCL) and Action Semantics extensions; the specification of abstract data types, such as Z; and concurrency, such as process algebras and temporal logic. This course also covers a particular vision of Petri Nets. This course presents an integrated set of techniques for software analysis and design based on object-oriented concepts and the UML notation. The process of software documentation, from user analysis through editing and fine tuning are explained.

- Agile Methods 6130249 (Theoretical Course) (3 Credit Hours) (Prerequisite 1302384)

This course emphasizes the quick realization of system value through disciplined, iterative, and incremental software development techniques and the elimination of wasteful practices. Students will study the full spectrum of agile methods, including Scrum, Extreme Programming, Lean, Kanban, Dynamic Systems Development Method, and Feature-Driven Development. These methods promote teamwork, rich concise communication, and the frequent delivery of running, tested systems containing the highest-priority stakeholder features. Agile methods are contrasted with common workplace practices and traditional methods such as Waterfall.

1302390 - Software Architecture (Theoretical Course) (3 Credit Hours) (Prerequisite 1302384)

Software architects are typically responsible for the definition of software “systems by applying abstract knowledge and proven methods to a set of technologies with the goal of creating an extensible and maintainable solution”. In this module, students will learn about the principles of software architecture and design and how and when to apply software design and architecture patterns to solve common problems when designing and developing software with the goal of creating an extensible and maintainable software solution.

1302337 – E-commerce (Theoretical Course) (3 Credit Hours) (Prerequisite 1301108)

This module presents concepts and skills for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how it affects business processes including electronic transactions, supply chains, decision making and organizational performance.



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1302360 – Database Systems Administration (Theoretical Course) (3 Credit Hours) (Prerequisite 1301305)

This module provides fundamental knowledge of, and practical experience with, database concepts. Includes study of information concepts and the realization of those concepts using the relational data model. Practical experience gained designing and constructing data models and using SQL to interface to both multi-user DBMS packages and to desktop DBMS packages.

1302338 – Advanced Internet Computing (Theoretical/Practical Course) (3 Credit Hours) (Prerequisite 1303236+1301305)

The course introduces the concept of dynamic web development. The students will be able to differentiate between static web pages and dynamic programming of web sites. Upon completion of the course they will have the skills to build static and dynamic websites, connect to a database, write server code and use advanced technologies such as ASP.NET Core MVC.

1302368 - Field Training Credit Hours) (Prerequisite pass 90 Credit Hours)3(Practical Course) (

The student enrolls in one of the labor market areas relative to his/her specialty for six weeks with a total of 240 full-time working hours based on a coordinated program between the department and the training organization. The aim is to strengthen the foundations and theoretical concepts and to implement it practically in the field as well as to be familiar with the circumstances, procedures and labor relations. The student is supervised by both internal supervisor (from the department) and external supervisor (from the training organization). At the end of training, student and supervisors should provide reports and oral exam is conducted to discuss what has been achieved in the training.

1302491 - Graduation Project (1) (Practical Course) (1 Credit Hours) (Prerequisite pass 90 Credit Hours + 1302384)

The student selects the topic of the project in coordination with the department and a faculty member is assigned to supervise the project. The course includes studying theoretical analytical aspects of the project problem focusing on the practical implementation. At the end of the semester, the student submits a printed report about the project and the discussion committee discusses and evaluates it.

1302492 - Graduation Project (2) (Practical Course) (2 Credit Hours) (Prerequisite 1302491)

The student selects the topic of the project in coordination with the department and a faculty member is assigned to supervise the project. The course includes studying theoretical analytical aspects of the project problem focusing on the practical implementation. At the end of the semester, the student submits a printed report about the project and the discussion committee discusses and evaluates it.