

603101 Introduction to Web Design (3:3-0)

Prerequisite : 9601099 / P.T.

This course provides students with an overview of the Internet, Internet protocols, client-side, and server-side technologies. The students will learn and practice how to design Web sites using Hyper Text Markup Language (HTML). They will learn how to insert images, hyperlinks, lists, tables, forms, and frames into Web pages. In addition, they will learn how to use Cascading Style Sheets (CSS) and JavaScript in developing Web sites. Students will gain practical skills through lab work and course project. Also, the course introduces digital security and ethics.

603391 Systems Analysis & Design (3:3-0)

Prerequisite : 601281+601221

This course introduces System Development Life Cycle (SDLC) covering: Requirements Engineering, requirements collection techniques (interviews, questionnaires, observation and joint application design), requirement analysis using the structural methodology (Data flow diagrams, data dictionary), process of system design including: architecture, input & output, user interfaces and data bases, introduction to project management, overview of system testing concepts, and system maintenance are introduced.

603392 Software Engineering (3:3-0)

Prerequisite : 603391+601315

This course provides knowledge and practice in the object-oriented analysis and design activities of software engineering. Topics covered: unified process model, Requirement Engineering using scenarios and use cases, object oriented analysis models (Class diagram, activity diagram, sequence diagram), introduction to object oriented design models, changing the design to code. Practical sessions using CASE tools also provided.

603393 Human-Computer Interaction (3:3-0)

Prerequisite : 603391

This course introduces human-computer interaction field that integrates the capabilities of computer technology with human factors limitations. Topics covered: foundations, the human, the computer, the interaction, usability paradigms and principles, interaction design, understanding users, model of the user in design, affective aspects, interfaces and interactions, data gathering, design and construction of prototypes, evaluation techniques.

603395 Software Testing (3:3-0)

Prerequisite : 603391

This course provides an introduction to the process of validating and verifying the software during the life cycle. Topics covered: System testing techniques (Static and dynamic white-box testing, static and dynamic black-box testing), testing stages (unit testing, integration testing and system testing), testing strategies (top-down and bottom

up), test planning and test reporting. Preparation of software test documents and test cases. Practical experience in using testing CASE tools.

603396 IT Project Management

(3:3-2)

Prerequisite : 603391

This course provides the skills and the necessary knowledge to successfully initiate, plan, control, manage and report on information technology projects. Topics covered: the PMBOK and its practices including: integration management, scope management, time management, cost management, quality management, human resource management, communications management, risk management, and procurement management. Special attention is also placed on the issues affecting project managers such as PMOs, and outsourcing. In addition to receiving hands on experience by working on a case study.

603400 Field Training

(3:0-3)

Prerequisite : Dept. Approval+ 603392

This course provides the ability to practice on using computer tools and applications in various fields, either in a public or private sectors under the supervision of the department members. The purpose of the supervised field training experiences is for students to synthesize the knowledge and skills developed during the academic portion of the program in a practical setting. Field training is both a learning experience for students and contributes to the work undertaken by the field training site. The expectation is that the field training will provide learning opportunities unavailable in a classroom setting.

603404 Requirements Engineering and Specification

(3:3-0)

Prerequisite : 603392

This course introduces the various concepts of Requirements Engineering. Topics covered include: essential topics of the variant requirements analysis phases, problem analysis, Prototyping the Requirements, Trawling for Requirements, Scenarios, Writing the Requirements, Reviewing the Specification, Requirements Reusing, Requirements Quality Gateway and risk analysis. A Requirements Specification Template as a standard and guideline in producing the Requirement Specification document. Project and case studies are introduced within the learning scope.

603405 Software Architecture & Design

(3:3-0)

Prerequisite : 603404

Software design is required to produce a solution to a given problem for software systems. This course introduces the following topics: the basic design fundamentals, the importance of software design, software design strategies, techniques and methods, architectural design styles and viewpoints with illustrations, design patterns modelling, software design qualities.

603406 Software Development and Documentation

(3:3-0)

Prerequisite : 603392

This course explains core software engineering practices at a conceptual level. Explains traditional and agile development methodologies. These include V model, Incremental, evolutionary models, agile mindset, and modeling. It also describes the key foundational pillars of Agile principles. It explains CRC modeling based on responsibilities and collaboration. It explains the importance of the iterative approach of the scrum, as well as the need for continuous documentation. This course will allow students to understand how to implement the Agile methodology using Azure DevOps.

603408 Selected Topics in Software Engineering (3:3-0)

Prerequisite : 603391

This course provides topics that are selected by instructors according to the interest of the department and students and cover the novel areas in current advancements in various information technology fields. Suggested topics include: advance-programming languages not included in the degree plan, advance topics in networks, advance topics in data base, management information system, advanced topics in internet and web, case study in different areas.

603480 Graduation Project (1) (3:0-3)

Prerequisite : 603392 + 402201

This course is the first of a two-course sequence in which the students will develop a complete graduation project. This course considers as a preparation for GP2 by allowing students to form their teams, select the project idea in a particular area that related to one of information technology fields; understand project scope, study and review literature and previous work in their project idea. In addition to that, this course helps student to plan their work through the 2 semesters, collect all data needed to identify the project's requirements.

603485 Graduation Project (2) (3:0-3)

Prerequisite : 603480

This course is the second of a two-course sequence where the students will apply and integrate the knowledge of the development life cycle, and development tools, to design and build a fully functional information system to solve a business problem for organizations. The Graduation Project challenges students to go beyond the learning that occurs as the result of their prescribed educational program. Students shall complete their projects in areas of concentrated study under the direction and supervision of faculty members.

603490 Quality Management & Process Improvement (3:3-0)

Prerequisite : 603396

This course provides a general introduction to Software Quality Assurance. It gives an overview of underlying concepts including: Software Quality Assurance, Quality Control, Quality management, Quality components, and software quality metrics. The course also introduces a detailed process and components for achieving software quality which include: Pre-project components, Software project life cycle quality components, Infrastructure components for error prevention and improvements and Managerial SQA

components. It also introduces the International Organization for Standardization's (ISO) quality model.

603491 Software Configuration Management (3:3-0)

Prerequisite : 603392

Software Configuration Management (SCM) is required to control evolving and changing software systems. This course will introduce the basic concepts of software configuration management, the importance of SCM in software development, the different SCM phases and activities, identification and control of configuration items, how branching is applied in industry, status accounting, release management, configuration management applications CASE tools used in SCM industry.

603492 Advanced Software Engineering (3:3-0)

Prerequisite : 603391

This course provides students with the essential knowledge and skills of how to use SAP ERP. This includes understanding SAP system navigation using the Global Bike Inc. (GBI) model company. Moreover, these tutorials highlight the integration of logistics, accounting and human resources processes in SAP ERP. Therefore, tutorials serve as a starting point and knowledge base for attending advanced SAP trainings.

603281 e-Commerce (3:3-0)

Prerequisite : 603101

This course provides an introduction to electronic commerce that conducts buying and selling of product or service over electronic systems. Topics covered: definition of e-commerce, mechanisms and models in creating services that improve various business operations and selling on the web. Ecommerce applications: retailing, B2B e-commerce, e-government, and e-learning. E-commerce platforms: mobile commerce and ubiquitous computing, and social commerce. Ecommerce support services: marketing and advertising, security and fraud, and electronic payment.

603409 Innovation & Entrepreneurship in SE (3:3-0)

Prerequisite : 603392

This course introduces students to the concepts of innovation, entrepreneurship, and creativity in information security. This course includes the following topics: private sector entrepreneurship; public sector entrepreneurship; social entrepreneurship; types of innovation; innovation characteristics; phases of innovation, benefits of entrepreneurship and innovation to an economy; components of the creative process and creative techniques. Furthermore, the course explains the business model canvas and helps students understand the impact of innovation and entrepreneurship on organizations and society.

603311 Programming by Components (3:3-0)

Prerequisite : 601315

This course introduces students to modelling by components. This course covers issues in designing and deploying reusable components, components interfaces, ports. Modelling using components in software engineering processes. Modelling using design patterns. Other topics include creation of Beans, persistent storage and retrieval of Beans, the Java reflection package, introspection to provide Bean information and customization.

603470 Latest Advancements in SE (3:3-0)

Prerequisite : 601315

This course aims at introducing the undergraduate students to the new trends and topics in a variety of areas in information technology, the course structure based on group learning and instructional method that puts students into roles of greater autonomy and responsibility for their learning.

603385 Database Administration (3:3-0)

Prerequisite : 601281

This course presents a study of database administration issues. Topics covered: planning, views integration, data dictionary, integrity and security, and database implementations using embedded SQL for various enterprises, create an operational database, manage users, privileges and resources, and database files, start up and shutdown, and manage table spaces, segments, extents, and blocks.

603496 Software Engineering CASE Tools (3:3-0)

Prerequisite : 603404

The course introduces the main concepts of using CASE tools in software engineering. Topics covered: classification of CASE tools, comparative study, practice on using CASE tools during software development life cycle, and research on existing CASE tools.

603460 Professional Ethics for Information Technology (1:1-0)

Prerequisite: 603391

This course introduces students to the topics of information technology ethics including definitions, rules & policies of computer ethics, hacking, viruses, Internet ethics, freedom of expression on the Internet, computer professionals and social responsibilities, software copyright, intellectual property, software piracy, cyber law and privacy & security of computerized information.
