University/Academy: Arab Academy for Science and Technology & Maritime Transport
Faculty/Institute: College of Computing and Information Technology
Program: Software Engineering / Computer Science / Information Systems

Form No. (12)
Course Specification

1- Course Data

Course Code: SE391	Course Title: Project Management	Academic Year/Level: Year 3 / Semester 5
Specialization: Software Engineering	No. of Instructional Units: 2 hrs lecture 2 hrs section	Lecture:

2- Course Aim	This course provides an overview for Project management, and also explaining different aspects. Topics of interest include: project scope management, time management, cost management, Quality management, HR management, communications management, risk management, and procurement management. Moreover, practice sessions are provided for implementing different case studies in group work using Microsoft Project, and discussing different aspects of project management.

3- Intended Learning Outcome:

a- Knowledge and Understanding	**Students will be able to demonstrate knowledge of:** K15. Demonstrate strong knowledge of software systems analysis & design, data and Information Management, software project management, and software development models. K19. Perform specification, analysis, design, implementation and testing of software solutions. K20. Modeling organizational processes and data, defining and implementing technical and process solutions, managing projects, and integrating software systems (Equivalent to K14 and K18 in IS dept, K18 in CS dept) • Understand the growing need for better project management, especially for information technology projects • Describe what project management is and discuss key elements of the project management framework • Understand the history of project management • Understand the systems view of project management and how it applies to information technology projects • Explain the differences among functional, matrix, and project organizational structures • Understand the concept, development, implementation, and close-out phases of the project life cycle • Describe the five project management process groups, the typical level of activity for each, and the interactions among them

	- Understand the elements that make good project scope management important - Explain the scope planning process and contents of a scope statement - Discuss the scope definition process and construct a work breakdown structure using the analogy, top-down, bottom-up, and mind mapping approaches - Understand the importance of scope verification and scope change control to avoid scope creep on information technology projects - Understand the importance of project schedules and good project time management - Define activities as the basis for developing project schedules - Understand and use critical path analysis - Explain the basic concepts behind critical chain scheduling and Program Evaluation and Review Technique (PERT) - Understand the importance of good project cost management - Explain basic project cost management principles, concepts, and terms - Explain cost estimating using definitive, budgetary, and rough order of magnitude (ROM) estimates - Understand the processes involved in cost budgeting and preparing a cost estimate for an information technology project - Understand the benefits of earned value management and project portfolio management to assist in cost control - Describe quality planning and its relationship to project scope management - Discuss the importance of quality assurance - List the three outputs of the quality control process - Describe important concepts related to Six Sigma and how it helps organizations improve quality and reduce costs - Summarize the contributions of noteworthy quality experts to modern quality management - Understand how the Malcolm Baldrige Award and ISO 9000 standard promote quality in project management - Define project human resource management and understand its processes - Understand important issues involved in project staff acquisition and explain the concepts of resource assignments, resource loading, and resource leveling - Explain organizational planning - Understand the importance of project procurement management and the increasing use of outsourcing for information technology projects - Discuss what is involved in solicitation planning and the difference between a request for proposal and a request for quote - Explain what occurs during the solicitation process - Describe the source selection process and different approaches for evaluating proposals or selecting suppliers Describe the contract close-out process
b- Intellectual Skills	**By the end of the course, the student acquires high skills and an ability to understand:** I12. Identify attributes, components, relationships, patterns, main ideas, and errors. I14. Select the suitable tools, methods and techniques for modeling, analyzing software, establishing criteria, and verify solutions. I18 Perform problem analysis from written descriptions; derive requirements specifications from an understanding of problems (analysis, synthesis). I19. Create and/or justify designs to satisfy given requirements (synthesis, evaluation, application); (equivalent to **I11, I12, I14, I15** in IS, **I15, I16** in CS) - Demonstrate an introduction to MS Project - Analyze a formal organization using the structural, human resources, political, and symbolic organizational frame - Apply Weighted Scoring model - Demonstrate Financial Analysis using NPV, ROI and payback analysis

	• Demonstrate the importance of creating a project charter • Apply WBS techniques • Demonstrate Scope management important documents • Demonstrate Scope Management on MS Project 2007 • Apply examples on Activity on-Arrow diagrams and Dummy activities • Apply examples on Precedence diagrams • Demonstrate a Gantt chart for schedule planning and tracking schedule information • Demonstrate Time management on MS Project 2007 • Apply on Earned Value Management Calculations • Demonstrate Cost Management on MS Project 2007 • Apply the tools and techniques for quality control, such as Pareto analysis, statistical sampling, Six Sigma, quality control charts, and testing • Apply on Resources Leveling • Demonstrate HR Management on MS Project 2007 • Create a project organizational chart, responsibility assignment matrix, and resource histogram • Demonstrate the procurement planning process, procurement planning tools and techniques, types of contracts, and statements of work Demonstrate types of software available to assist in project procurement management

c- Professional Skills	**By the end of the course the student will have the ability to:** **P13** Communicate effectively by oral, written and visual means, produce acceptable reports and technical and user system documentation. P15. Using tools to automate software development phases. P20. Deploy effectively the tools used for the construction and documentation of software, with particular emphasis on understanding the whole process involved in using computers to solve practical problems. P21. Prepare technical reports, and a dissertation, to a professional standard. (Equivalent to **P11, P12, P17,P18** in IS, **P14, P15, P19** in CS) • Analyze different examples of information technology projects • Examine the project management profession, including recent trends in project management research, certification, and software products • Evaluate why stakeholder management and top management commitment are critical for a project's success • Analyze the attributes of a good project manager in general and in the information technology field • Evaluate how organizations develop information technology project management methodologies to meet their needs • Analyze a case study of an organization applying the project management process groups to manage an information technology project • Explore the strategic planning process • Analyze different project selection methods, such as a net present value analysis, a weighted scoring model, and a balanced scorecard • Compare various tools and techniques that help project managers perform activity duration estimating and schedule development • Analyze several techniques for shortening project schedules • Evaluate how resource planning relates directly to project cost management • Evaluate how resource planning relates directly to project cost management • Evaluate how software can assist in project cost management • Evaluate how software can assist in project quality management Assess the importance of good contract administration

d- General Skills	**Students will be able to:** G1. Demonstrate the ability to make use of a range of learning resources and to manage one's own learning. G2. Demonstrate skills in group working, team management, time management and organizational skills. G3. Show the use of information-retrieval. • Verify how project management relates to other disciplines • Verify the difference between project development and product development • Verify how the project management process groups relate to the project management knowledge areas • Verify how software can assist in project scope management • Verify how project managers use network diagrams and dependencies to assist in activity sequencing • Verify the importance of project quality management for information technology products and services • Verify project quality management and understand how quality relates to various aspects of information technology projects • Verify how leadership, cost, organizational influences, and maturity models relate to improving quality in information technology projects • Verify the importance of good human resource management on projects, especially on information technology projects
4- Course Content	• Introduction to Project Management • The project Management and Information Technology Context • The Project Management Process Groups • Project Scope Management • Project Time Management • Project Cost Management • Project Quality Management • Project Human Resource Management Project Procurement Management
5- Teaching and Learning Methods	Lectures, Labs, Projects, Individual study & self-learning.
6- Teaching and Learning Methods for Students with Special Needs	• Students with special needs are requested to contact the college representative for special needs (currently Dr Hoda Mamdouh in room C504) • Consulting with lecturer during office hours. • Consulting with teaching assistant during office hours. • Private Sessions for redelivering the lecture contents. For handicapped accessibility, please refer to program specification
7- Student Assessment:	
a- Procedures used:	Exams and Individual Projects

b- Schedule:	7th week exam 30% Project 20% Lab 10% Final exam 40%
c- Weighing of Assessment:	**Week 7 Grades – 30%** **Week 12 -Grades – 20%** Lab 10% **Week 16 - Final Exam – 40%**

8- List of References:

a- Course Notes	From the Moodle on www.aast.edu
b- Required Books (Textbooks)	Managing Information Technology Projects, SCHWALBE, K. H., COURSE TECHNOLOGY 6ED. 2008
c- Recommended Books	Robert K. Wysocki, *Effective Software Project Management*, Wiley, 2006.
d- Periodicals, Web Sites, …, etc.	

Course Instructor: **Head of Department:**

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