

**COLLEGE OF INFORMATION TECHNOLOGY**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**COURSE SYLLABUS/ SPECIFICATION**

**Course Code & Title: ITCS 401 – Software Project Management**

**Weight: (2-2-3)**

**Prerequisite: ITCS 327**

**NQF Level Allocated: 8**

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| **NQF Notional Hours / Credits:**  **120 notional hours/ 12 NQF credit** |

**Description:** The course focuses on the key aspects of software project management. It develops the ability of managing software projects, including organizing the software development team; selecting the best approach and tailoring the process model; estimating software cost and schedule; planning and documenting the plan; risk management and resource allocation.

**Objective:**

1. To explain the key components of a project plan.

2. To explain roles and responsibilities for key project personnel and stakeholders.

3. To explain the importance of a cost/benefit analysis to the successful implementation of a project plan.

4. To critically understand project budgeting, scheduling, and evaluation.

5. To prepare a project plan, as part of a team, for an IT project and demonstrate ability to follow standard project management methodology.

6. To use appropriate project planning and tracking tools.

**Semester:**

**Instructor (s):**

**Office Telephone: EXT: Email (s):**

**Intended Learning Outcomes (ILOs):**

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| 1. **Knowledge and Understanding** | | | | **NQF Descriptor/ Level** | |
| **A1** | | **Concepts and Theories:** Demonstrate critical knowledge and understanding of the process of developing and managing software projects. | | |  |  | | --- | --- | | |  | | --- | | Knowledge: theoretical understanding  [Level 8] | | | |
| **A2** | | **Contemporary Trends, Problems and Research:** Recognize emerging aspects and trends in software project management. | | |  |  | | --- | --- | | |  | | --- | | Knowledge: theoretical understanding  [Level 8] | | | |
| **A3** | | **Professional Responsibility:** Acquaint students with tasks undertaken during project management, tasks of each team member, and the skills needed for a project manager to lead his team. | | |  |  | | --- | --- | | |  | | --- | | Knowledge: theoretical understanding  [Level 8] | | | |
| 1. **Subject-specific Skills** | | | | **NQF Descriptor/ Level** | |
| **B1** | | | **Problem Solving:** Demonstrate the ability to estimate efforts, estimate budget, solve resource allocation together with project schedule problems and address any obstacles that may jeopardize the completion of projects. | Knowledge: Practical  Application  [Level 8]  Skills: Communication, ICT  & Numeracy  [Level 8] | |
| **B2** | | | **Modeling and Design: N/A** | **N/A** | |
| **B3** | | | **Application of Methods and Tools:** Apply appropriate project planning and tracking tools such as ROI, COCOMO, Gantt charts, CPM, PERT utilizing EXCEL and Microsoft Project. | Knowledge: Practical  Application  [Level 8]  Skills: Communication, ICT  & Numeracy  [Level 8] | |
| 1. **Critical-Thinking Skills** | | | | **NQF Descriptor/ Level** | |
| **C1** | | | **Analytic skills:** Critically analyze project requirements in order to define the scope of work, conduct organizational planning, identify and evaluate risks and assess how well a project follows its project plan. | Generic Problem Solving & Analytical skills [Level 8] | |
| **C2** | | | **Synthetic:** Integrate various components of project plan to implement the project. | Generic Problem Solving & Analytical skills [Level 8] | |
| **C3** | | | **Creative: N/A** | **N/A** | |
| 1. **General and Transferable Skills (other skills relevant to employability and personal development)** | | | | | **NQF Descriptor/ Level** | |
| **D1** | **Communication:** Demonstrate ability to communicate information in appropriate oral and written forms to a variety of audience. | | | | Communication, ICT and  Numeracy Skills  [Level 8] | |
| **D2** | **Teamwork and Leadership:** Function and work effectively as member/leader of a team. | | | | Competence: Autonomy, Responsibility and Context [Level 8] | |
| **D3** | **Organizational and Developmental Skills:** Demonstrate ability to organize ideas and effectively allocate time in given assignments and project. | | | | Competence: Autonomy, Responsibility and Context [Level 8] | |
| **D4** | **Ethical and Social Responsibility:** Predict and learn the impact of one’s behavior on the work and colleagues in a software project management process. | | | | Competence: Autonomy, Responsibility and Context [Level 8] | |

**Course Structure (Outline)**

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| **Week** | **Hours** | | **ILOs** | **Unit/Module or Topic Title** | **Teaching**  **Method** | **Assessment**  **Method** |
| **Lecture** | **Lab** |
| 1 | 2 | 2 | A1 | **Course Overview &**  **Introduction:**  Why is Project Management  Important? | Lecture/ Class  Discussion |  |
| 2 | 2 | 2 | A1 | **Introduction to Software**  **Project Management:**  Characteristics of Projects | Lecture/ Class  Discussion |  |
| 3-4 | 4 | 4 | A1, B1, B3, C1 | **Project Evaluation &**  **Programme Management:**  - The Business Case For a Project  - Project Portfolios  - Project Evaluation  - Cost Benefit Analysis  - Cash Flow Forecasting  - Programme Management  - Benefits Management | Lecture/ In- Class Supervised Work/ Lab Demonstration | In-Lab  Exercise |
| 5 | 2 | 2 | A1, B1, C1 | **Overview of Project**  **Planning:**  - Step Wise  - Gantt Charts | Lecture/ In-  Class Supervised Work | Case Study |
| 6-7 | 4 | 4 | A1, B1, C1, D1, D3 | **Software Effort Estimation:**  - What Makes a Successful Project  - Estimating Methods | Lecture/ In-  Class Supervised Work | Assignment1/ Case Study |
| 8 | 2 | 2 | A1, B1, B3, C1, C2 | **Activity Planning:**  - Scheduling  - Activity Networks  - PERT Diagram | Lecture/ In-  Class Supervised Work/ Lab Demonstration | In-Lab Exercise/ Case Study |
| 9-10 | 4 | 4 | A1, B1, C1 | **Risk Management:**  - Definition of ‘Risk’ and  ‘Risk Management’  - Some Ways of Categorizing  Risk, Risk Management | Lecture/ In- Class Supervised Work | Case Study/ Major Test (Week 9) |
| 11 | 2 | 2 | A1, B1, B3 | **Resource Allocation:**  Resource Smoothing | Lecture/ Lab  Demonstration | In-Lab  Exercise |
| 12 | 2 | 2 | A1, A2, A3, D1, D3 | **Managing Contracts,**  - Types of Contracts  - The Tendering Process | Lecture/  Independent  Learning | Assignment2 |
| 13 | 2 | 2 | A1, A3 | **Managing Teams:**  - Becoming a Team  - Virtual Projects | Lecture/ Class  Discussion | Case Study  (Simulation) |
| 14 | 2 | 2 | A1, C1 | **Software Quality**  - The Importance Of Software  Quality  - ISO 9126 Software Qualities | Lecture/ In-  Class Supervised Work | Case Study |
| 15 | 2 | 2 | A3, B1, B3, C1, C2, D1, D2, D3, D4 | Student Projects | Project  Supervision | Evaluation of  Project Presentations and Reports |
| 16 | 2 | - | A1, A2, B1,  C1, C2 | All Topics |  | Final Exam |

**Teaching Materials:**

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| **Textbook(s):** | 1. Schwalbe K. (2016) *Information Technology Project anagement*, 8th Edition, Cengaged learning.  2. Chemuturi M. K. (2013) *Mastering Software Project Management: Best Practices, Tools and Techniques*, J. ROSS Publishing, USA, ISBN-13: 978-1604270341 |
| **Handout(s):** | PowerPoint slides available on Moodle i.e. <http://www.ahlia.edu.bh/moodle> |
| **Reference(s):** | 1. Hughes B. and Cotterell M. (2009) *Software Project Management*, 5th Ed., McGraw- Hill  2. Gray C. and Larson E. (2018) *Project Management The Managerial Process*, 7th Edition, McGraw-Hill  3. Tagarden D. P. (2012) *Systems Analysis and design with UML*,4th Edition International Student Version, Wiley.  4. Other references can be found on Moodle.7. Hoffer J. A., George J. and Valacich J. A. (2016) *Modern Systems Analysis and Design,* 8th Edition, Pearson. |

**Assessment**

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| **Method of Assessment** | **Description** | **Learning Outcomes** | **Weighting** |
| In-Lab  Exercise | Each lab exercise consists of a set of practical tasks to be implemented by students individually in lab times as shown in the above weekly structure. Students work will be observed and graded directly during the lab sessions. | B1, B3, C1 | Formative  Assessment |
| Case Studies | Different project management cases are analyzed, simulated and studied. | A3, B1, C1 | Formative  Assessment |
| Assignments | Two assignments, each worth 10%. The assignments consist of essay, problem-solving and research based questions covering topics in software project management. The purpose of the assignments is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of software project management. | A2, B1, C1, D1, D3 | 20% |
| Major Test | The test will be an in-class 1-hour test that will consists of  short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks. | A1, B1, C1, C2 | 20% |
| Project | Starting from weak 4, the class will be divided into teams of  2-3 students where each team will be asked to develop a software project plan for an actual client. In this project, the team will work together and go through each of the steps in the Step Wise framework. | A3, B1, B3, C1, C2, D1,  D2, D3, D4 | 20% |
| Final Exam | The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay and problem- solving questions. | A1, A2, B1, C1, C2 | 40% |
| **Overall:** | | | **100 %** |

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| **Admissions** | |
| **Minimum number of students** | **5** |
| **Maximum number of students** | **20** |

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| **Ahlia University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see** [www.ahlia.edu.bh/integrity](http://www.ahlia.edu.bh/integrity) **for more information).** |