SENG 310 - SOFTWARE PROJECT MANAGEMENT (2024-2025)

Course Code	Course Name		Semester	
SENG 310	Software Project Management		Fall ☒ Spring ☐ Summer ☐	
Hours			**Credit**	**ECTS**
Theory	**Practice**	**Lab**	3	7
3	0	0		

Course Details	
Department	Department of Software Engineering (English)
Course Language	English
Course Level	Undergraduate ☒ Graduate ☐
Mode of Delivery	Face to Face ☒ Online ☐ Hybrid ☐
Course Type	Compulsory ☒ Elective ☐
Course Objectives	This course gives an **overview of the Project Management** and an *introduction to important concepts*, *critical-thinking and project management skills* and *some of the tools* used by engineers regarding managing a project. One of the main purposes of the course is to **enhance student's awareness** toward *Engineering Thinking* and *Project Management mindset* and make the students understand *'What is Project Management?'*, *'How does an Engineer manages limited resources such as money, time, labor, etc.?', 'How should an eengineer hedges project related risks?',* and *'What are the secrets of successful project management?'*. In this sense, this course will help the students understand the value engineering thinking, where the added value is for the *companies*, *customers*, *efficiency* and *effectiveness* regarding a successful project management, thus optimized project performance, enhanced productivity, reduced risks, increased customer satisfaction, and thus the **importance of project management skills** and the **philosophy of managing a project**. Students will learn how to analyze, develop solution approaches and effectively manage *a project* by implementing **engineering and management principles** and **methods**. They will also learn how to use the *philosophy*, *core methods* and *tools* of Project Management Engineering, and related simple *management techniques* on their path to success in real life.

Course Content	The start of your project management journey: Introduction to project management. Project management: *definitions.* What is project management? Important features of the project. Project vs. operation. Main objectives of project management. Project management history (*Gantt Chart, developments, today…*). Projects in today's organizations. Forces in project management: the project management era. Why project management? Project management profession and the Institute of Project Management (PMI). Project management profession in Turkey. Project examples. Key components of project management. Program and portfolio management. Project management & Project manager. PMI Talent Triangle. Characteristics of a project manager. Characteristics of leadership. Project Management Life Cycle. Risk in the project life cycle. Traditional Approach - Waterfall Model. Traditional Approach - Iterative Model. Agile Model. Scrum Method. Benefits of the Scrum Method. Project organizational structures *(Functional Organization, Project Organization, Matrix Organization)*; choice of form of organization. Project Integration & Scope Management (project purpose, planning project management, project charter, directing and managing project execution, information management, project monitoring and control, performing integrated change control, project closing. Project scope management: planning scope management, gathering requirements, project scope statement, scope control). Time Management (planning time management, activity identification, sequencing project activities, activity dependencies, estimating activity durations), features of time planning, Gannt diagram, CPM / PERT (earliest start and earliest finish rules, latest finish and latest start rules, critical path, examples), time control. Cost Management & Financial Feasibility. Planning cost management. Cost types, estimating activity costs, preparing budget, cost control. Financial feasibility *(return on investment, break-even point, net present value, internal profitability ratio, benefit/cost).* Expenses (development expenses, continuous expenses, intangible expenses). Income (tangible income, intangible income). Sample financial feasibility report (calculation of break-even point and return on investment). Resource Management. Resource definition, resource planning problem, project constraint types. Planning resource management. Responsibility Matrix (RACI matrix). Resource estimation. Resources allocation&assingment. Resource balancing *(smoothing resource demand, resource balancing examples)*. Factors that influence resource allocation. Team management and Conflict management. Leadership types, 12 leadership styles. Quality Management. Planning quality control. Quality management plan. Quality culture, process improvement and continuous improvement concept *(PDCA Cycle, when to use the PDCA Cycle)*. Quality management system. Quality control and problem solving tools (process mapping (flow diagram), run charts, control chart, check sheets (checklists), histogram, pareto charts (pareto analysis), cause & effect diagram (fishbone), scatter (distribution) diagram).

	Agile project management activity. Differences between general project management and software project management. SCRUM (What is Scrum?, Scrum process, product backlog, user stories, sprint, daily stand up, sprint review, sprint retrospektif). Instruction for agile project management activity. Roles and responsibilities. step-by-step instructions (team formation, tool setup, execution phase, sprint review, sprint retrospective, team report, team presentation, resources) Step-by-step explanation JIRA tool, setup and team & project formation).
Course Method/ Techniques	Lecture ☒ Question & Answer ☒ Presentation ☐ Discussion ☒
Prerequisites/ Corequisites	-
Work Placement(s)	-

Textbook/References/Materials

- "**Project Management**", The Open University of Hong Kong, Adrienne Watt, 2016
- "**A Guide to the Project Management Body of Knowledge (PMBOK Guide)**", PMI, 6th edt., 2017
- "**A Guide to the Project Management Body of Knowledge (PMBOK Guide)**", PMI, 7th edt., 2021
- "**101 Project Management Problems and How to Solve Them**", Tom Kendrick, 2011

Course Category				
Mathematics and Basic Sciences	☐		Education	☐
Engineering	☒		Science	☐
Engineering Design	☐		Health	☐
Social Sciences	☐		Profession	☐

Weekly Schedule

No	Topics	Materials/Notes
1	Introduction to Project Management	Lecture Notes-1
2	Introduction to "Software" Project Management	Lecture Notes-2
3	Integration & Scope Management	Lecture Notes-3
4	Time Management	Lecture Notes-4
5	Cost Management & Financial Feasibility	Lecture Notes-5
6	Resource Management	Lecture Notes-6
7	Quality Management	Lecture Notes-7
8	Midterm Exam	
9	Agile Project Management Activity	Lecture Notes-9
10	Introduction to Project Management Software: Jira™	Online resources
11	Applications of Project Management Software: Jira™	Online resources
12	Project Preparations	-
13	Project Preparations	-
14	Project Preparations	-
15	Project Presentations	-
16	Final Exam	

Assessment Methods and Criteria		
In-term studies	**Quantity**	**Percentage**
Attendance	at least %70 of the courses	%10
Lab		
Practice		
Fieldwork		
Course-specific internship		
Quiz/Studio/Criticize		
Homework		
Presentation / Seminar		
Project		%50
Report		
Seminar		
Midterm Exam		%40
Final Exam		
	Total	**100%**
Contribution of Midterm Studies to Success Grade		
Contribution of End of Semester Studies to Success Grade		
	Total	**100%**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration (Hrs)**	**Total Workload**
Course Hours	14	3	42
Lab			
Practice			
Fieldwork			
Course-specific Work Placement			
Out-of-class study time	14	3	42
Quiz/Studio/Criticize			
Homework			
Presentation / Seminar			
Project	5	6	30
Report	5	6	30
Midterm Exam and Preparation for Midterm	1	11	11
Final Exam and Preparation for Final Exam	1	20	20
Total Workload			**175**
Total Workload / 25			**7**
ECTS Credit			**7**

Course Learning Outcomes	
No	**Outcome**
L1	Gains managerial, project management oriented sensitivity, perception and awareness.
L2	To be able to analyze by questioning, thinking critically, and to reflect this in her/his projects.
L3	Ability to think critically, make systematic criticism, and to make analysis in this direction and to be able to reflect these in her/his professional life.
L4	Ability to propose appropriate solutions to problems in line with the inferences and learnings.
L5	Ability to make use of different problem solving, decision making tools and techniques.
L6	Ability to work in groups and ability to presents project, related ideas, model, findings, outcomes.

Contribution of Course Learning Outcomes to Program Competencies/Outcomes

Contribution Level: 1: Very Slight, 2: Slight, 3: Moderate, 4: Significant, 5: Very Significant

	P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**P9**	**P10**	**P11**	**Total**
L1	2	5	5		4			4		5		25
L2		2	4	5						5		16
L3		5	5	5								15
L4		5				4	4	5				18
L5				5	4					5		14
L6						5	5			4		14
											Total	102