

GAU, Faculty of Engineering

Course Unit Title	Software Process and Management	
Course Unit Code	SEN411	
Type of Course Unit	Compulsory for SE	
Level of Course Unit	4th year BSc	
National Credits	3	
Number of ECTS Credits Allocated	5	
Theoretical (hour/week)	3	
Practice (hour/week)	0	
Laboratory (hour/week)	0	
Year of Study	4	
Semester when the course unit is delivered	7	
Mode of Delivery	Face to face, E-learning	
Language of Instruction	English	
Prerequisites	SEN201	
Corequisites		
Recommended Optional Programme Components		
Objectives of the Course:		
<ul style="list-style-type: none"> • Introduce software process models and software project management principles • Develop student ability to perform estimation, scheduling, and risk management • Provide knowledge of quality management, metrics, and process improvement • Prepare students for real-world software project planning and management 		
Learning Outcomes		
When this course has been completed the student should be able to		Assess.
1	Learn how to explain software process models and lifecycle management concepts	1,3
2	Learn to plan software projects including scope, estimation, and scheduling	1,3
3	Learn how to analyze risks and apply risk management strategies	1,3
4	Learn how to apply quality assurance and process improvement techniques	1,3
5	Understand metrics, productivity, and performance evaluation in software projects	1,3
6	Learn how to develop and present a complete software project plan	1,3
Assessment Methods: 1. Written Exam, 2. Assignment, 3. Project/Report, 4. Presentation, 5. Lab Work		
Course's Contribution to Program		
		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	2
2	Ability to design and conduct experiments as well as to analyze and interpret	2
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	3
4	Ability to apply systems thinking in problem solving	3
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	3
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	3
7	Ability to express their ideas and findings, in written and oral form	3
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	2

9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner		3
CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate, 4: High, 5: Very High)			
Course Contents			
Week	Chapter	Subject	Exams
1	1	Introduction to Software Process and Management	
2	2	Software Process Models	
3	3	Project Initiation and Scope Planning	
4	4	Effort Estimation and Cost Models	
5	5	Scheduling and Resource Allocation	
6	6	Risk Management in Software Projects	
7	7	Quality Management and Standards	
8			Midterm
9	8	Configuration and Change Management	
10	9	Process Metrics and Measurement	
11	10	Team Organization and Communication	
12	11	Process Improvement Models (CMMI, Agile)	
13	12	Project Planning and Case Studies	
14	13	Project Presentation	
15			Final
Recommended Sources			
<ul style="list-style-type: none"> Textbook: Software Engineering, 10th Edition, Ian Sommerville Supplementary: Software Project Management, 6th Edition, Bob Hughes, Mike Cotterell Supplementary: A Guide to the Project Management Body of Knowledge (PMBOK Guide), Project Management Institute 			
Assessment			
Midterm exam	25 %		
Final exam	35 %		
Project/report	30 %		
Quizzes	10 %		
ECTS Allocated Based on the Student Workload			
Activities	Number	Duration (hour)	Total Workload (hour)
In-class lecture (including exam weeks)	15	3	45
Midterm exam	1	1.5	1.5
Midterm exam preparation	1	15	15
Final exam	1	1.5	1.5
Final exam preparation	1	20	20
Quiz	2	2	4
Assignment	3	3	9
Project/presentation/report writing	1	22	22
Lab and tutorial	0	0	0
Self-study	15	2	30
Total Workload			148.00
Total Workload / 30 (h)			4.93
ECTS Credit of the Course			5

