SYSTEMS ANALYSIS AND ENGINEERING

1	Course Title:	SYSTEMS ANALYSIS AND ENGINEERING
2	Course Code:	END3061
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	5
7	ECTS Credits Allocated:	3.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	-
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. ASLI AKSOY
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	asliaksoy@uludag.edu.tr Tel: 0224 294 2078 Bursa Uludağ Üniversitesi Endüstri Mühendisliği Bölümü, Görükle, Bursa
17	Website:	
18	Objective of the Course:	To provide students the systematic methods that generate effective engineering solutions and to introduce the students the systems engineering approach that is used to develop new products or processes.
19	Contribution of the Course to Professional Development:	The contribution of the course to professional development is to provide the ability to apply basic knowledge and methods about determining and defining problems in production and service systems, analyzing the system, determining and applying solution methods.
20	Learning Outcomes:	

	1	Understand the principles and tools of systems analysis and design.
	2	Summarize the characteristics of the systems engineering approach.
	3	Problem definition by using systems analysis approaches
	4	To make decisions and economical analysis of problems by using systems analysis approaches
	5	Summarize the characteristics of manufacturing systems and service systems
	6	Draw up management tools of systems analysis approach
	7	Plan and undertake a major group project, prepare and deliver coherent and structured verbal and written technical reports.
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Systems definition	
2	Systems analysis thinking	
3	Systems analysis concept	
4	Problem definition and tools	
5	Systems modelling and tools	
6	Systems analysis tools	
7	Decision making tools in systems analysis	
8	Economic analysis tools in systems analysis	
9	Analyzing manufacturing systems	
10	Innovative tools in manufacturing analysis	
11	Analyzing service systems	
12	Systems engineering management and tools	
13	Life cycle analysis and tools	
14	Term project presentation	

22	Textbooks, References and/or Other Materials:	Blanchard, B.S., and W.J. Fabrycky, “Systems Engineering and Analysis”, 3rd edition, Prentice Hall, 1998. Daellenbach, H.G., and McNickle, D.C., ‘Management Science: Decision making throgh systems thinking’, Palgrave Macmillan, 2005. Ribbens, J.A., “Simultaneous Engineering for New Product Development. Manufacturing Applications”, Wiley, 2000. Baudin, M., “Manufacturing Systems Analysis: with Application to Production Scheduling”, Yourdon Press Computing Series”, 1990. Cleland, D.I., King, W.R., “Systems Analysis and Project Management”, McGraw-Hill, 1983. Erkut, H., “Sistem Yönetimi”, 2. baskı, İrfan Yayımcılık, İstanbul, 2000. Hazelrigg, G.A., “Systems Engineering: An Approach to Information-Based Design”, Prentice Hall, 1996. Kendall, K.E., Kendall, J.E., Systems Analysis and Design, Prentice Hall, 2002.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	20.00
Quiz	0	0.00
Home work-project	1	20.00
Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		Midterm exam, homework, term project, final exam

24	**ECTS / WORK LOAD TABLE**

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	13	3.00	39.00
Homeworks	0	0.00	0.00
Projects	1	25.00	25.00
Field Studies	0	0.00	0.00
Midterm exams	1	1.50	1.50
Others	0	0.00	0.00
Final Exams	1	1.50	1.50
Total Work Load			96.50
Total work load/ 30 hr			3.17
ECTS Credit of the Course			3.00

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	3	0	5	0	4	0	5	4	4	0	0	0	0	0	0	0
ÖK4	3	0	5	4	4	0	4	4	0	0	0	0	0	0	0	0
ÖK5	3	0	5	0	5	0	4	4	0	0	0	0	0	0	0	0
ÖK6	3	0	5	0	5	0	4	3	0	0	0	0	0	0	0	0
ÖK7	3	0	5	5	5	0	5	5	5	5	0	4	3	5	0	3
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**			**4 High**			**5 Very High**				