QUANTITATIVE TECHNIQUES

1	Course Title:	QUANTITATIVE TECHNIQUES	
2	Course Code:	IIS4401	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
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:	Dr. Ögr. Üyesi ŞÜKRÜ DOKUR	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	sukrudokur@uludag.edu.tr Tel: 0224 29 41046	
17	Website:		
18	Objective of the Course:	Anayzing the business cases and mathematical modelling, solving the models, interpreting the solutions and presenting to the decision-makers in a useful format for the effective management of decision making activities.	
19	Contribution of the Course to Professional Development:	Building models for business problems, decision making based on quantitative data, using software ve developing analytical skills.	
20	Learning Outcomes:		
		1	To be able to analyze business problems successfully;
		2	To be able to model the problems mathematically;
		3	To be able to solve a linear programming model with graphical method. ;
		4	To be able to solve linear programming problems that include different constraint types with simplex method.;
		5	To be able to define and solve complex business problems. ;
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21	Course Content:		
	Course Content:		
Week	Theoretical		Practice

1	Definition of numerical methods and model building	
2	Linear programming and establishment of linear programming models	
3	Graphical method solution of maximum problems	
4	Graphic method solution of minimum problems	
5	Simplex method algorithm	
6	Simplex method solution of maximum problems	
7	Simplex method solution of minimum problems	
8	Special cases (degenerations and unlimited solutions)	
9	Invalid starting solution models and solutions	
10	Solutions with two stage method	
11	Duality in linear programming	
12	Simplex method solution of dual problem and economical interpretation	
13	Sensitivity analysis and simplex method	
14	Application of graphic and simplex method	

22	Textbooks, References and/or Other Materials	* Zekai, Yılmaz, Sayısal Yöntemler, Ekin Kitabevi, Bursa, 2004 * Ahmet Öztürk, Yöneylem Araştırması, Ekin

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	0	0.00	0.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm Exams	1	60.00	60.00
Others	0	0.00	0.00
Contribution of Term (Year) Learning Activities to Course Grade	40.00	75.00	75.00
Total Work Load			237.00
Total work load/ 30 hr			7.90
Contribution of Final Exam to Success Grade	60.00		5.90
ECTS Credit of the Course			6.00

Measurement and Evaluation Techniques Used in the Course	Online multiple-choice/ online written exam/ written exam

24	**ECTS / WORK LOAD TABLE**

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	2	2	2	3	4	4	2	3	3	3	3	4	0	0	0	0
ÖK2	3	1	2	3	2	0	3	2	4	1	0	0	0	0	0	0
ÖK3	3	4	3	0	3	0	4	1	4	5	0	4	0	0	0	0

ÖK4	5	3	3	5	2	4	4	3	3	3	3	4	0	0	0	0
ÖK5	2	3	4	3	4	1	2	4	4	4	2	1	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**