COURSE INFORMATON					
Course Title	*Code*	*Semester*	*L+P Hour*	*Credits*	*ECTS*
OR Applications in Healthcare	**ESYE 605**		**3 + 0**	**3**	**10**

Prerequisites	

Language of Instruction	English
Course Level	Ph.D.
Course Type	Elective
Course Coordinator	
Instructors	Asst.Prof. Canan Pehlivan
Assistants	
Goals	The objective of the course is to develop an understanding of complex healthcare systems and teach the participants how to apply classical and advanced modelling techniques for dealing with stochastic healthcare problems.
Course content	The main topics in healthcare delivery systems that we will focus on are Location and Allocation Models, Resource Planning, Staffing workforce, Scheduling Resources

Learning Outcomes	**Program Learning Outcomes**	**Teaching Methods**	**Assessment Methods**
Develop an understanding of healthcare systems and its characteristics	1, 2	1, 2	A, D
Identify problems encountered in real world service/healthcare systems.	1, 2	1, 2	A, D
Recall various quantitative OR techniques to solve those problems	4	1, 2	A, D
Ability to understand, present and discuss the related studies (papers) in healthcare literature.	4, 9	2	A, D

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Laboratory, 4: Case-Study
Assessment Methods:	A: Testing, B: Experiment, C: Homework, D: Project (Paper assignments)

COURSE CONTENT		
Week	**Topics**	**Study Materials**
1	Introduction to Service Systems/Healthcare Systems	Textbooks, Course Notes
2	Introduction to Service Systems/Healthcare Systems	Textbooks, Course Notes
3	Location and Allocation Models	Textbooks, Course Notes
4	Location and Allocation Models	Textbooks, Course Notes
5	Paper 1 Presentation/Discussion	Article
6	Paper 2 Presentation/Discussion	Article
7	Capacity Planning	Textbooks, Course Notes
8	Capacity Planning	Textbooks, Course Notes
9	Paper 3 Presentation/Discussion	Article
10	Paper 4 Presentation/Discussion	Article
11	Scheduling Resources	Textbooks, Course Notes
12	Scheduling Resources	Textbooks, Course Notes
13	Paper 5 Presentation/Discussion	Article
14	Paper 6 Presentation/Discussion	Article

RECOMMENDED SOURCES	
Textbook	Ozcan, Yasar A. Quantitative methods in health care management: techniques and applications. Vol. 4. John Wiley & Sons, 2005.
Other Sources	Operations research and healthcare: A handbook of methods and applications ML Brandeau, F Sainfort, WP Pierskalla, 2004.

MATERIAL SHARING	
Documents	Lecture notes, https://coadsys.yeditepe.edu.tr
Presentations	Selected papers
Exams	Midterm exam, Final exam

ASSESSMENT		
IN-TERM STUDIES	**NUMBER**	**PERCENTAGE**
Mid-term	1	35
Paper Presentations	1	25
Final	1	40
Total		**100**
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		40
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		60
Total		**100**

COURSE CATEGORY	Expertise Courses

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activity	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Excluding exam weeks: 14x Total course hours)	14	3	42
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Midterm	1	30	30
Presentations	6	15	90
Final examination	1	30	30
Total Work Load			262
Total Work Load / 25 (h)			10.48
ECTS Credit of the Course			10