

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
INTRODUCTION to RISK ANALYSIS and MANAGEMENT	IND4210794	Spring Semester	3+0	3	6
Prerequisites Courses	OLASILIK VE RASSAL DEĞİŞKENLER				
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Elective				
Course Coordinator	Assoc.Prof. Melis Almula KARADAYI				
Name of Lecturer(s)	Lect. Özgür EROL				
Assistant(s)					
Aim	In this course, applications of risk analysis and management issues in engineering systems are defined. The main purpose of the course is to understand the concept of risk and to ensure that risk-causing situations can be predicted at the design stage, if possible, or to plan in advance what kind of precautions will need to be taken after the risk occurs. Risk analysis and management issues should be planned at the design stage of the systems and it is an approach that should be addressed at all stages when the system is functional. Learn how to measure risk and how to calculate risk. Current events and case studies will be examined throughout the semester for a better understanding of all these concepts and topics. A project is prepared by considering a case study on risk analysis and management.				
Course Content	This course contains; Introduction to general concepts of risk ,Risk, risk analysis and risk management definitions ,Risk Assessment ,Probabilistic Risk Assessment (PRA),Risk Management,Case study about risk assessment and risk analysis ,Case study about risk management ,Course project teams and topics ,Introduction to reliability and reliability engineering,Proactive and reactive approaches to risk, resilience engineering,Case study about resilience engineering ,Special topics: Financial risk management,Final Project Presentations,Final project presentations.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1. Defines the concepts of risk, risk analysis and risk management through real-life cases.			10, 13, 2, 4, 9	A, E, F, G	
2. Analyzes the concept of reliability and the basics of reliability engineering.			10, 13, 2, 4, 9	A, E, F, G	
3. Defines the concepts of proactive and reactive approaches to risk.			10, 13, 2, 4, 9	A, E, F, G	
4. Identify the special topics in risk management, including technological, financial, and organizational risk management.			10, 13, 4, 9	A, E, F, G	
5. Evaluates how systems can be designed or redesigned to eliminate or minimize risk sources and the possible negative consequences of disruptive events.			10, 13, 2, 4, 9	A, E, F, G	
Teaching Methods	10: Discussion Method, 13: Case Study Method, 2: Project Based Learning Model, 4: Inquiry-Based Learning, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, E: Homework, F: Project Task, G: Quiz				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Introduction to general concepts of risk	Lecture Notes			
2	Risk, risk analysis and risk management definitions	Lecture Notes			
3	Risk Assessment	Lecture Notes			
4	Probabilistic Risk Assessment (PRA)	Lecture Notes			
5	Risk Management	Lecture Notes			
6	Case study about risk assessment and risk analysis	Lecture Notes			
7	Case study about risk management	Lecture Notes			
8	Course project teams and topics	Lecture Notes			
9	Introduction to reliability and reliability engineering	Lecture Notes			
10	Proactive and reactive approaches to risk, resilience engineering	Lecture Notes			
11	Case study about resilience engineering	Lecture Notes			
12	Special topics: Financial risk management	Lecture Notes			
13	Final Project Presentations	Project Presentations			
14	Final project presentations	Project Presentations			
Evaluation Methods		Weight(%)			
Midterm Exam		30			
General Exam		70			

Resources
Textbook: Reliability Engineering and Risk Analysis, Modarres and Kaminsky Course notes, slides and readings (provided by the instructor)