



COURSE INFORMATION				
Course Code	MSN610	Course Title	R&D, Innovation and Technology Management	
<i>Semester</i>	<i>Credits</i>	<i>ECTS</i>	<i>C +P + L Hour</i>	<i>Prerequisites</i>
Fall	3	10	3+0+0	-

Language of Instruction	Course Level	Course Type
English	Graduate	Elective
Course Coordinator	Prof.Dr.Volakan GÜNAY	
Instructors	Prof.Dr.Volkan GÜNAY	
Assistants	Merve UYSAL, Derya UĞURLU	
Goals	To get in deep understanding in history of science and technology and their effects on society with the understanding of technology and innovation management.	
Content	<ul style="list-style-type: none"> -What is science and technology -Innovation and its characteristics -Technological developments and implementations -How technology and innovation should be managed -leadership and teams -Science and Technology Policies 	
Contribution of the Course to the Professional Education	<ul style="list-style-type: none"> -Learn the historical developments of Science and Technology -R&D studies and their differences in scientific and applied research -Effects on society and to our lives -What is the differences in Technology management 	

Course Learning Outcomes	Detailed Program Outcomes	Teaching Methods	Assessment Methods
Ability to self-study	1,2	1,8,11	A,E,G
Ability to prepare homeworks on specific subject	1,2	1,8,11	A,E,G
Ability to prepare and present the homeworks	1,2	1,8,11	A,E,G



Teaching Methods:	1: Lecture by instructor, 2: Lecture by instructor with class discussion, 3: Problem solving by instructor, 4: Use of simulations, 5: Problem solving assignment, 6: Reading assignment, 7: Laboratory work, 8: Term research paper, 9: Presentation by guest speaker, 10: Sample Project Review, 11: Interdisciplinary group working, 12: ...
Assessment Methods:	A: Written exam, B: Multiple-choice exam C: Take-home quiz, D: Experiment report, E: Homework, F: Project, G: Presentation by student, H: ...

COURSE CONTENT

Week	Topics	Study Materials
1	Science and Technology (definitions)	Texbook, Lectuer Notes
2	Historical Developments in Science	Texbook, Lectuer Notes
3	Historical Developments in Technology	Texbook, Lectuer Notes
4	R&D at Universities and State Research Centres	Texbook, Lectuer Notes
5	R&D in company Research Centres	Texbook, Lectuer Notes
6	Innovation and its characteristics	Texbook, Lectuer Notes
7	Technology Management	Texbook, Lectuer Notes
8	Strategy, Strategical Leadership	Texbook, Lectuer Notes
9	Strategical Planning and implimentations	Texbook, Lectuer Notes
10	Effect of Technology and Technological Developments	Texbook, Lectuer Notes
11	Technological Developments and Society	Texbook, Lectuer Notes
12	Science and Technology Policies in Turkey	Texbook, Lectuer Notes
13	Homeworks and Presentations	
14	Homeworks and Presentations	



RECOMMENDED SOURCES	
Textbook	Tarık Baykara, "21. Yüzyılda Teknoloji&Yenilik/İnovasyon ve Yönetim", Nobel Yayınevi Yayın No:949, ISBN:978-605-133-848-4, Eylül 2014, İstanbul.
Additional Resources	Lecture Notes

MATERIAL SHARING	
Documents	Lecture Notes
Assignments	Homeworks and Presentations
Exams	

ASSESSMENT		
IN-TERM STUDIES	NUMBER	PERCENTAGE
Attendance	1	10
Homeworks	1	40
Presentations	1	30
Final	1	20
Total		
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		20
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		80
Total		100

COURSE CATEGORY	Field Course
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COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES		
No	Program Learning Outcomes	check √
1a	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline,	
1b	Ability to use theoretical and applied knowledge in these areas in complex engineering problems.	
2a	Ability to identify, formulate, and solve complex engineering problems,	



2b	Ability to select and apply proper analysis and modeling methods for this purpose.	
3a	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result,	
3b	Ability to apply modern design methods for this purpose.	
4a	Ability to devise, select and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice.	
4b	Ability to employ information technologies effectively.	
5a	Ability to design experiments for investigating complex engineering problems or discipline specific research questions,	
5b	Ability to conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.	
6a	Ability to work efficiently in intra-disciplinary teams,	√
6b	Ability to work efficiently in multi-disciplinary teams,	
6c	Ability to work individually.	√
7a	Ability to communicate effectively in Turkish, both orally and in writing,	√
7b	Knowledge of a minimum of one foreign language,	
7c	Ability to write effective reports and comprehend written reports, prepare design and production reports,	√
7d	Ability to make effective presentations,	√
7e	Ability to give and receive clear and intelligible instructions.	√
8a	Recognition of the need for lifelong learning, ability to access information, ability to follow developments in science and technology,	√
8b	Ability to continue to educate him/herself.	√
9a	Consciousness to behave according to ethical principles and professional and ethical responsibility.	√
9b	Knowledge on standards used in engineering practice.	
10a	Knowledge about business life practices such as project management, risk management, change management.	
10b	Awareness in entrepreneurship and innovation.	
10c	Knowledge about sustainable development.	
11a	Knowledge about the global and social effects of engineering practices on health, environment, and safety,	
11b	Knowledge about contemporary issues of the century reflected into the field of engineering.	√
11c	Awareness of the legal consequences of engineering solutions.	



ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration	14	3	42
Hours for off-the-classroom study (Pre-study, practice)	1	205	205
Presentations	1	3	3
Total Work Load			250
Total Work Load / 25 (h)			10
ECTS Credit of the Course			10

Prepared by: Volkan Günay	Preparation date: 15.01.2021
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