HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Technology and R&D Management				
CODE: FE102	**SEMESTER:** SPRING			
LANGUAGE: ENGLISH	**TYPE:** COMPULSORY			
PRE-REQUISITES: - **CO-REQUISITES: -**	**THEORY**	**PRACTICAL**	**CREDIT**	**ECTS**
WEEKLY HOURS:	2	0	2	2

CONTENT OF THE COURSE:

Definition and importance of innovation, types of innovation, innovation strategies, new product development.

Definition and importance of entrepreneurship, types of entrepreneurship, entrepreneurship strategies, business models, entrepreneurship, product portfolio management.

What is the project and definition of modern project management.

Estimate project time and cost, cpm method.

To have general information about environmental law, to have information about patent and intellectual property rights.

Product recovery options: Recycling, repair, renovation, reproduction.

OBJECTIVE OF THE COURSE:

To increase students' interest in new technologies and innovation and to ensure continuity.

Researching and sharing the developments in the world and in our country in the field of new and advanced technologies.

To make students think in an innovative, creative, systematic and project logic.

In order to increase the number of organizations producing new technologies and benefiting from the technology, the responsibilities of the individual and the organization are to be given to young people starting from their student years.

To increase the level of knowledge and consciousness so that students can think about innovation and technology and to implement their new ideas in the logic of the project.

WEEKLY SCHEDULE	
Week	**Topics**
1	What is Innovation?
2	Types of Innovation
3	Selected Topics
4	What is R&D?
5	Strategic Aspects of R&D Management
6	Selected Topics
7	Project Planning
8	Midterm
9	Budgeting
10	Selected Topics
11	Sustainability and Product Improvement
12	Patent and Intellectual Property Law
13	Selected Topics
14	Selected Topics

TEXTBOOK: "Innovation, Research and Development Management", Patrick Gilbert, Natalia Bobadilla, Lise Gastaldi, Martine Le Boulaire, Olga Lelebina.
"R&D Management", Akhilesh, K B.
"Design for Sustainability: A Practical Approach", Tracy Bhamra, Vicky Lofthouse.
REFERENCE BOOKS:

EVALUATION SYSTEM:		
IN-TERM STUDIES	**QUANTITY**	**PERCENTAGE (%)**
Midterm Exam	1	30
Homework	1	30
Laboratory works		
Quiz		
Final Exam	1	40
TOTAL	3	100
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	2	60
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	40
TOTAL	3	100

COURSE CATEGORY:	**PERCENTAGE (%)**
Mathematics and Basic Sciences	
Engineering	40
Engineering Design	
Social Sciences	40

TABLE OF ECTS / WORKLOAD:			
Activities	**QUANTITY**	**Duration (Hour)**	**Total Workload**
Course Duration	13	2	26
Hours for off-the-classroom study (Pre-study, practice)	14	1	14
Laboratory works			
Mid-term	1	2	2
Final examination	1	2	2
Homework	1	5	5
Quiz			
Total Work Load			**49**
Total Work Load / 30			**1,63**
ECTS Credit of the Course			**2**

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
LO1	0	0	0	0	0	0	3	3	0	0	0
LO2	0	0	0	0	0	0	3	3	0	0	0
LO3	0	0	0	0	0	0	2	3	0	0	0
LO4	0	0	0	0	0	0	2	3	0	0	0
LO5	0	0	0	0	0	0	3	3	0	0	0
	PO: Program Outcomes | LO: Learning Outcomes Values: 0: None | 1: Low | 2: Medium | 3: High										

INSTRUCTOR(S):	Lec. Mustafa Bıçakçı
FORM PREPARATION DATE:	22.05.2019

LEARNING OUTCOMES OF THE COURSE:	**PROGRAM OUTCOMES:**
LEARNING OUTCOMES OF THE COURSE: **LO1:** Awareness about innovation and innovative strategies. **LO2:** Awareness that creativity management and innovation can lead to entrepreneurship. **LO3:** Ability to schedule by using project identification, cost estimation and critical path method. **LO4:** National and international environmental law and patent and intellectual property law. **LO5:** Awareness about the importance of sustainability issues, product recovery and product improvement options.	**PO1:** Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems. **PO2:** Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose. **PO3:** 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; ability to apply modern design methods for this purpose. **PO4:** Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively. **PO5:** Ability to design and conduct experiments, gather data, analyze and interpret results for

	investigating complex engineering problems or discipline specific research questions. **PO6:** Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually. **PO7:** Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions. **PO8:** Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself. **PO9:** Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice. **PO10:** Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development. **PO11:** Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.