

**DEPARTMENT of INDUSTRIAL ENGINEERING  
COURSE CATALOGUE FORM**



<b>Course Code:</b> INDE3233				<b>Course Title:</b> Ergonomics			
<b>Semester</b>	<b>L + R + L</b>	<b>Credits</b>	<b>AKTS</b>	<b>Language</b>	<b>Category</b>	<b>Instructional Methods</b>	<b>Prerequisites</b>
6	3 + 0 + 0	3	5	English	Elective	Lecture	INDE1001
<b>Course Objectives</b>			To give information about ergonomics; create awareness towards elements of efficiency and effectiveness.				
<b>Course Content</b>			Elements of human-machine systems and functions of human in these systems. Mechanical and automatic systems. Limitations of human abilities. Physical, conceptual and organizational ergonomics. Design of the working environment. Fit of job to human. The basic elements of human performance. Qualities of human-machine systems.				
<b>Course Learning Outcomes</b>			Students, who pass the course satisfactorily: 1. Learn the optimum use of human body in business life. [2] 2. Ability to identify the ideal factors of the working environment, increase efficiency and design of optimal environments. [2] 3. Ability to carry out motion and time study and use various tools, equipment and techniques for this purpose. [2]  [Note: Numbers in brackets are indicating the related program outcomes]				
<b>ISCED Category of the course</b>			52 Engineering				
<b>Textbook</b>			Work Systems and the Methods, Measurement, and Management of Work, Groover, M.P.				
<b>Supplementary Material</b>			Motion and Time Study for Lean Manufacturing, F. E. Meyers, J. R. Stewart				

**COURSE PLAN**

Week	Topics	Laboratory / Tutorial Work
1	History of ergonomics	-
2	Ergonomics' tools and materials	-
3	Motion study	-
4	Time study	-
5	Pace and tolerances, standard time calculation	-
6	Job sampling	-
7	Human-machine interaction	-
8	Physiology	-
9	Human factors engineering	-
10	Human factors engineering	-
11	Time systems	-
12	Workplace, the relationship between the environment and efficiency	-
13	Health and safety	-
14	Legal issues in work	-

**COURSE ASSESSMENT SYSTEM**

	Activities	Contribution (%)
<b>Semester Activities</b>	<b>Semester Written Exams</b>	40
	<b>Homework</b>	5
	<b>Reports</b>	-
	<b>Labs</b>	-
	<b>Seminars</b>	-
	<b>Presentations</b>	-
	<b>Term Project</b>	15
	<b>Other (attendance, field trip etc.)</b>	5
<b>FINAL EXAM</b>		35
<b>Total</b>		100

**CONTRIBUTION of the COURSE on INDUSTRIAL ENGINEERING PROGRAM OUTCOMES**

	<b>Program Outcomes</b>	Low	High
1	Adequate knowledge in mathematics, science and subjects pertaining to Industrial Engineering; ability to use theoretical and applied knowledge in these areas in complex engineering problems.		
2	Ability to identify, formulate, and solve complex Industrial Engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.		<b>X</b>
3	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.		
4	Ability to devise, select, and use modern techniques and tools needed for analyzing and solving problems encountered in engineering practice; ability to employ information technologies effectively.		
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.		
6	Ability to work efficiently individually and in intra-disciplinary / multi-disciplinary teams.		
7	Knowledge of Turkish and English languages; ability to communicate effectively orally, inscriptive and visually by using these languages (via business methods such as reports, presentations and instructions).		
8	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.		
9	Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice.		
10	Knowledge about business life practices (management activities such as project, risk, change and quality etc.); awareness in entrepreneurship, innovation; knowledge about sustainable development.		
11	Knowledge about the global and social effects of engineering practices on health, environment, economics and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.		

**ECTS - WORK LOAD TABLE**

<b>COURSE ACTIVITIES</b>	<b>Quantity</b>	<b>Time (hr)</b>	<b>Work Load (hr)</b>
<b>Lectures</b>	14	3	42
<b>Final Exam (Preparation included)</b>	1	20	20
<b>Semester Written Exams (Preparation included)</b>	2	10	20
<b>Out of class study time</b>	12	1	12
<b>Homework</b>	5	2	10
<b>Reports</b>	-	-	-
<b>Labs</b>	-	-	-
<b>Seminar</b>	-	-	-
<b>Presentations</b>	-	-	-
<b>Term Project</b>	1	20	20
<b>Total Load (hr)</b>			124
<b>ECTS Credits of the course (Total Work Load / 25)</b>			5

<b>Revision / Date</b> 5/02/2020	<b>Coordinator / Prepared By</b> Çağlar Aksezer	<b>Approved By</b> Çağlar Aksezer
-------------------------------------	--	--------------------------------------