

Course Description Form	
Course Code and Name	CENG481 SYSTEM ENGINEERING (TECH. ELECT.)
Course Semester	7
Catalog Content	Fundamentals of system-driven applications, introduction to system engineering, software design and development process, risk analysis
Textbook	Benjamin S. Blanchard and Wolter J. Fabrycky, Systems Engineering and Analysis, 5th ed., Prentice Hall International Series in Industrial and Systems Engineering, (Upper Saddle River, NJ), 2006.
Supplementary Textbooks	Alexander Kossiakoff, et al, Systems Engineering Principles and Practice, 2nd Ed., Wiley, 2011 Charles S. Wasson, System Analysis, Design, and Development: Concepts, Principles, and Practices; Wiley-Interscience, John Wiley and Sons, Inc.: Hoboken, NJ; 2006.
Credit	6
Prerequisites of the Course (Attendance Requirements)	-
Type of the Course	Elective
Instruction Language	English
Course Objectives	Teaching fundamentals of system engineering, software design and development process and risk analysis.
Course Learning Outcomes	At the end of the course, the students will have basic knowledge about; 1) Fundamentals of System Engineering, 2) Responsibilities of a System Engineer, 3) Software design and development process, 4) Risk analysis
Instruction Methods	The mode of delivery of this course is Face to face
Weekly Schedule	1. Week: System engineering overview 2. Week: Technical Products 3. Week: System engineering responsibilities and products 4. Week: The software project planning and control 5. Week: The software design and development 6. Week: Project management plan, project time management, business diffraction tree 7. Week: Software metrics acquired value analysis method 8. Week: System engineering management 9. Week :System engineering management plan 10. Week: Integrated product development 11. Week: Risk management 12. Week: System analysis, systems analysis methodologies (structural, object-based) 13. Week: Operating concept document the system needs,

<p>Teaching and Learning Methods</p> <p><i>(These are examples. Please fill which activities you use in the course)</i></p>	<p>Weekly theoretical course hours: 3 Internet browsing, library work Report Preparing Preparing a Presentation Presentations Preparation of Midterm and Midterm Exam Final Exam and Preparation for Final Exam</p>					
<p>Assessment Criteria</p>		<p>Numbers</p>	<p>Total Weighting (%)</p>			
	Midterm Exams	1	30			
	Assignment	1	30			
	Application					
	Projects					
	Practice					
	Quiz					
	Percent of In-term Studies (%)		60			
	Percentage of Final Exam to Total Score (%)		40			
	Attendance					
<p>Workload</p>	<p>Activity</p>	<p>Total Number of Weeks</p>	<p>Duration (weekly hour)</p>	<p>Total Period Work Load</p>		
	Weekly Theoretical Course Hours	14	3	42		
	Weekly Tutorial Hours					
	Reading Tasks					
	Studies	9	3	27		
	Material Design and Implementation					
	Report Preparing	3	10	30		
	Preparing a Presentation	2	10	20		
	Presentations	2	10	20		
	Midterm Exam and Preparation for Midterm Exam	1	5	5		
	Final Exam and Preparation for Final Exam	1	6	6		
	Other (should be emphasized)					
	Total Workload			150		
	Total Workload / 25			6		
	Course Credit (ECTS)			6		
<p>Contribution Level Between Course Learning Outcomes and Program Outcomes</p>	<p>No</p> <p>Program Outcomes</p>	<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>	<p>5</p>
	1 Sufficient knowledge on mathematics, science and computer engineering; ability to apply theoretical and practical knowledge in these areas to model and solve engineering problems				X	
	2 Ability to identify, define, formulate and solve complex engineering problems; ability to choose and apply appropriate analysis and modelling methods for these purposes					X

	3	Ability to design a complex system, process, device, software, algorithm, or product under realistic constraints and circumstances to meet certain requirements; ability to apply modern design techniques for this purpose			X			
	4	Ability to choose, develop and use modern techniques and tools necessary for engineering applications; ability to effectively use computing technologies				X		
	5	Ability to design and implement systems or experiments to solve engineering problems, collect and interpret data to evaluate and analyze the results of solutions				X		
	6	Ability to work effectively in intradisciplinary and interdisciplinary teams or individually	X					
	7	Ability to efficiently prepare, evaluate and interpret reports			X			
	8	Ability to make presentations and conduct effective verbal and written communication in Turkish and English			X			
	9	Awareness of the necessity of lifelong learning; ability to access information, follow scientific and technological developments; ability to perpetually renew oneself	X					
	10	Awareness of professional and ethical responsibility, ability to act in accordance with ethical principles				X		
	11	Ability to apply knowledge on project management, risk management and change management			X			
	12	Awareness of entrepreneurship and innovation, ability to design and build sustainable systems	X					
	13	Ability to devise local and global solutions to contemporary issues considering the effects of engineering applications on health, environment and security	X					
	14	Awareness of the legal consequences of engineering solutions	X					
	15	Ability to apply knowledge on software development process and documentation rules		X				
	16	Knowledge on standards used in engineering applications				X		
	17	Awareness of occupational health and security, information security and privacy	X					
	The Course's Lecturer(s) and Contact Information		Computer Engineering Department Chair bmbb@gazi.edu.tr					

