Course Description Form	
Course Code and Name	CENG483 DESIGN PATTERNS (TECH.ELECT.)
Course Semester	7
Catalog Content	Design patterns, use requirements and classification of design patterns. Examination of different design patterns in examples of software problems and proposing solutions to software problems
Textbook	Design Patterns: Elements of Reusable Object-Oriented Software by Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides, 1994.
Supplementary Textbooks	- Software Architecture: Foundations, Theory, and Practice, Richard N. Taylor, Nenad Medvidović, Eric M. Dashofy, 2009. - Lecture Notes, Cooper, James William. Java design patterns: a tutorial. Addison-Wesley Professional, 2000.
Credit	6
Prerequisites of the Course **(** *Attendance Requirements***)**	-
Type of the Course	Elective
Instruction Language	English
Course Objectives	Understanding of design patterns and understanding of different design patterns is aimed. It is aimed to learn the application requirements of design patterns and apply them to software problems.
Course Learning Outcomes	1. Having knowledge about principal of design pattern and different design patterns 2. Be able to identify problems that require the use of design patterns 3. Solving software problems by applying design patterns
Instruction Methods	The mode of delivery of this course is face to face
Weekly Schedule	1.Week: Design pattern description 2. Week: Design pattern description 3. Week: Need to use design patterns 4. Week: Need to use design patterns 5. Week: Design patterns categories 6. Week: Design patterns categories 7. Week: Creative classification 8. Week: Creative classification 9. Week: Structural classification 10. Week: Structural classification 11. Week: Behavioral design patterns 12. Week: Behavioral design patterns 13. Week: Design patterns and examples of applications 14. Week: Design patterns and examples of applications
Teaching and Learning Methods *(These are examples. Please fill which activities you use in the course)*	Weekly theoretical course hours: 3 Reading Activities Internet browsing, library work Preparation of Midterm and Midterm Exam Final Exam and Preparation for Final Exam

Assessment Criteria

	Numbers	**Total Weighting (%)**
Midterm Exams	1	30
Assignment	5	30
Application	0	
Projects	0	
Practice	0	
Quiz	0	
Percent of In-term Studies (%)		60
Percentage of Final Exam to Total Score (%)		40
Attendance		-

Workload

Activity	Total Number of Weeks	Duration (weekly hour)	Total Period Work Load
Weekly Theoretical Course Hours	14	3	42
Weekly Tutorial Hours			0
Reading Tasks	10	4	40
Studies	10	4	40
Material Design and Implementation			0
Report Preparing			0
Preparing a Presentation			0
Presentations			0
Midterm Exam and Preparation for Midterm Exam	1	12	12
Final Exam and Preparation for Final Exam	1	16	16
Other (should be emphasized)			0
Total Workload			150
Total Workload / 25			6
Course Credit (ECTS)			6

Contribution Level Between Course Learning Outcomes and Program Outcomes

No	Program Outcomes	1	2	3	4	5
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					