COURSE DESCRIPTION FORM	
Course Code and Name	CENG371 INTRODUCTION ARTIFICIAL INTELLIGENCE (TECH.ELECT.)
Course Semester	5
Catalogue Data of the Course (*Course Content*)	Introducing basic artificial intelligence techniques such as search strategies, representation schemes, problem-solving paradigms, logic programming, planning problems, machine learning algorithms, probability, and uncertainty.
Course Textbooks	Artificial Intelligence: Foundations of Computational Agents, L. Poole, Alan K. Mackworth, Cambridge University Press.
Supplementary Textbooks	Artificial Intelligence: A Modern Approach, Stuart J. Russell and Peter Norvig. Applied Artificial Intelligence: A Handbook For Business Leaders Paperback, Mariya Yao, Adelyn Zhou, Marlene Jia, Topbots Inc.
Credit (*ECTS*)	6
Prerequisites for the Course (*Attendance Requirements*)	There is no prerequisite or co-requisite for this course.
Course Type	Elective
Language of Instruction	English
Course Objectives	To have a basic proficiency in programming of AI and machine learning systems including an ability to write simple to intermediate programs and an ability to understand code written in that language.
Course Learning Outcomes	1. Use and apply current technical concepts and practices in core computing and information technologies in AI related topics 2. Analyze a problem, and identify and define the computing and algorithmic requirements appropriate to its solution.
Instruction Method (*Face-to-face, Distance education etc.*)	The mode of delivery of this course is face-to-face.
Weekly Schedule of the Course	Week 1: Definitions of intelligence and artificial intelligence Week 2: State-space approach, problem-reduction approach Week 3: Problem model, problem presentation Week 4: Detailed search algorithms (breadth-first, depth-first, iterative deepening) Week 5: Heuristic search algorithms Week 6: Game theory Week 7: Syntax and semantics Week 8: Deductive inference, predicate logic, production systems Week 9: Semantics networks and frameworks Week 10: Rule based expert systems, inference engine Week 11: Machine learning: induction, command learning, learning with examples Week 12: Classification, explanation-based learning, relational and intuitive learning Week 13: Artificial intelligence applications Week 14: Term Assignments
Teaching Activities (*The time spent for the activities listed here will determine the amount of credit required*)	Weekly theoretical course hours Reading activities Internet search and library work Midterm and revision for midterm Final exam and revision for final exam

		Number(s)	Weight (%)
Assessment Criteria	Midterm exam	1	30
	Assignment	1	30
	Application	0	0

Project	0	0	
Practice	0	0	
Quiz	0	0	
Final exam	1	40	
Total	3	100	

	Activity	Number of Weeks	Duration (Weekly Hour)	End of Semester Total Workload
Workload of the Course	Weekly theoretical course hours	14	3	42
	Weekly practical course hours	0	0	0
	Reading activities	10	4	40
	Internet search and library work	10	4	40
	Designing and implementing materials	0	0	0
	Making a report	0	0	0
	Preparing and making presentations	0	0	0
	Midterm and revision for midterm	1	13	13
	Final exam and revision for final exam	1	15	15
	Total workload			150
	Total workload/ 25			6
	Course Credit (ECTS)			6

	No	Program Outcomes	1	2	3	4	5
Contribution Level between Course Outcomes and Program Outcomes	1	Knowledge of mathematics, science, basic engineering, computing, and computer engineering; ability to use this knowledge in solving complex engineering problems.					X
	2	Ability to define, formulate and analyze complex engineering problems using basic science, mathematics and engineering knowledge and considering the UN Sustainable Development Goals relevant to the problems addressed.				X	
	3	Ability to design creative solutions to complex engineering problems; ability to design complex systems, processes, devices, software, algorithms or products to meet current and future requirements, considering realistic constraints and conditions.					X
	4	Ability to select, use and develop appropriate techniques, resources and modern engineering and informatics tools, including estimation and modeling, for the analysis and solution of complex engineering problems while being aware of their limitations.					X
	5	Ability to use research methods to examine complex engineering problems or research topics in computer engineering, including reviewing the literature, designing experiments, conducting experiments, collecting data, analyzing and interpreting results.					X
	6	Knowledge of the effects of engineering practices and the standards used in these practices on society, health and safety, economy, sustainability and environment within the scope of the UN Sustainable Development Goals; awareness of the consequences of engineering solutions in the fields of information security and law.		X			

	7	Acting in accordance with engineering professional principles and knowledge on ethical responsibility; awareness of acting impartially, without discrimination on any issue, and being inclusive of diversity.			X		
	8	Ability to work effectively individually and as a team member or leader in intradisciplinary and multidisciplinary teams (face-to-face, remote, or hybrid).					
	9	Ability to conduct effective verbal and written communication on technical issues in Turkish or English, prepare reports, make effective presentations and prepare software documentation, considering the various differences of the target audience (such as education, language, profession).				X	
	10	Knowledge of business practices such as project, risk and change management and economic feasibility analysis; awareness of entrepreneurship and innovation.			X		
	11	Lifelong learning skill that includes the ability to learn independently and continuously, to adapt to new and developing scientific practices and technologies, and to think inquisitively about technological changes.					X
Lecturer(s) and Contact Information		Assist. Prof. Dr. Yılmaz Atay yilmazatay@gazi.edu.tr					