

SYLLABUS

Vocational School of Higher Education

Course Code	Course Title		Credits	ECTS Value	
SKI-218	Artificial Intelligence and Automation in Healthcare		2-0-2	5	
Prerequisite Courses:	None				
Course Language:	Turkish	Course Delivery Mode:		Online	
Course Type and Level:	Elective / 2st Year / Spring Semester				
Instructor's Title, Name, and Surname		Course Hours	Office Hours	Contact	
Lecturer Adem BİLGİN		2	Monday 10:00-12:00	adembilgin@cag.edu.tr	
Course Coordinator:	Lecturer Adem BİLGİN				
Course Objectives					
Course Learning Outcomes	Upon successful completion of this course, the student will be able to;			Relations	
				Program Outcomes	Net Contribution
	1	Defines and explains the concepts of artificial intelligence and automation, as well as their applications in the healthcare sector.	1,5	5,5	
	2	Compares different health technologies and automation systems and evaluates their performance.	1,7,8	5,4	
	3	Applies and analyzes artificial intelligence and automation technologies using case studies and scenarios.	2,4,5	5	
	4	Designs artificial intelligence and automation strategies aimed at improving healthcare processes and develops related recommendations.	1,7,8	5,4	
	5	Interprets and evaluates the ethical, legal, and social impacts of artificial intelligence and automation applications in healthcare.	3,9	5	
Course Content:	Within the scope of this course, students will be introduced to and able to explain the concepts of artificial intelligence and automation in the context of their applications in healthcare. They will apply and analyze clinical decision support systems and data analytics processes through practical examples. Additionally, students will interpret and evaluate the ethical, legal, and social dimensions of digitalization in healthcare. By comparing various digitalization applications and automation systems, they will develop the ability to synthesize information aimed at improving healthcare processes..				
Course Schedule (Weekly Plan)					
Week	Topic	Preparation		Teaching and Learning Strategies	
1	Course Introduction and Syllabus Overview	None		Lecture, Expectation Mapping (Padlet)	
2	Introduction to Concepts of Artificial Intelligence and Automation	Research on the fundamental concepts of artificial intelligence and automation.		Lecture, Discussion, Brainstorming	
3	Applications of Artificial Intelligence in the Healthcare Sector	Examination of examples of artificial intelligence applications in clinical.		Lecture, Case Study Review	

		administrative, and management settings.	
4	Automation Systems and Healthcare Processes	Reading and analysis of articles on the impact of automation on workflow processes.	Group Discussion, Case Solution
5	Clinical Decision Support Systems (CDSS)	Investigation of Clinical Decision Support Systems (CDSS) examples and their purposes.	Case Analysis, Presentation, Role-Playing
6	Data Analytics and Health Data Management	Short reading on health data and data analysis methods.	Hands-on Example, Data Analysis, Group Work
7	Artificial Intelligence Algorithms and Healthcare Applications	Research on the concepts of machine learning and deep learning.	Lecture, Practical Application, Discussion
8	Midterm Exam		Written Exam
9	Midterm Exam		Written Exam
10	Digital Health and E-Health Applications	Examination of E-Nabız and other digital health applications.	Presentation, Discussion, Hands-on Example
11	Improving Business Processes through Automation	Research on examples of automation in health management processes.	Case Analysis, Group Work
12	AI-Supported Diagnosis and Treatment Methods	Investigation of diagnosis and treatment applications supported by artificial intelligence.	Case Presentation, Discussion
13	Ethical, Legal, and Social Dimensions	Reading on ethical and legal regulations related to artificial intelligence and automation in healthcare.	Discussion, Role-Playing, Evaluation
14	Future Trends and Innovative Applications	Review of current articles and reports.	Presentation, Brainstorming, Group Discussion
15	Sector Presentation on Artificial Intelligence in Healthcare	Examination of E-Nabız and other digital health applications.	Industry Perspective Guest Speaker
16	General review		Structured Lecture, Classroom Discussion
17	Final Exam		Written exam
18	Final Exam		Written exam

Course Resources

Textbook:	Yapay Zeka İle Sağlık – Sistemlerden Uygulamalara- Özel Sebetci 2023 Sağlıkta Yapay Zeka ve Dijital Hastaneler - Fırat Seyhan ve Sezer Korkmaz'ın 2024
Recommended References:	Sağlıkta Dijital Yaklaşımlar -Doç. Dr. Özlem Özer ve Doç. Dr. Okan Özkan

Course Assessment and Evaluation

Activities	Number	Percentile	Notes
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Midterm Exam	1	%40	
Final	1	%60	
ECTS Table			
Content	Number	Hours	Total
Course Duration	14	2	28
Out-of-Class Study	14	3	42
Midterm Exam (Midterm Exam Duration + Midterm Exam Preparation)	1	30	30
Final Exam (Final Exam Duration + Final Exam Preparation)	1	40	40
Total:			140
Total / 30:			140÷30=4,6
ECTS Credit:			5