

Toyama College		Year	2022	Course Title	Data Science II
Course Information					
Course Code	0032		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	School Credit: 1	
Department	Department of International Business		Student Grade	1st	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	Murayama Masako,Hagiwara Shingo				
Course Objectives					
To learn mathematical data science, AI, information literacy, security, etc., and to acquire basic knowledge that can be used in daily life and work in the future information society. To be able to make appropriate human-centered judgments by studying social situations and actual examples in society, and to be able to explain and utilize the knowledge and skills acquired. To acquire the ability to think about things from multiple perspectives through cooperative learning with students from departments other than their own. (1) Handling of data (2) Analysis of data (3) Relationship between corporate activities and mathematical data science/AI					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	Able to handle data appropriately and explain the details of its usage.		Able to handle data appropriately.		Inability to handle data properly.
Achievement 2	Able to analyze real data appropriately and explain the results correctly.		Can analyze real data and explain the results.		Cannot analyze real data and cannot explain the results.
Achievement 3	To be able to fully investigate the company in question, compile a report based on appropriate interviews, and fully consider the relationship between corporate activities and mathematical data science/AI from multiple perspectives.		To be able to investigate the company in charge, compile a report based on the interview, and discuss the relationship between corporate activities and mathematical data science/AI from various viewpoints.		Cannot investigate the company in charge and compose a report based on the interview. Cannot discuss the relationship between corporate activities and mathematical data science/AI.
Assigned Department Objectives					
Teaching Method					
Outline	"Data Science I" and "Data Science II" provide students with the information technology literacy, mathematical data science, AI, and security that technical college students, regardless of humanities or science, should learn. By learning not only knowledge but also its importance in the society through actual examples and practicing exercises using real data, students will acquire basic knowledge for discovering and solving problems in the real world and learning how to use them appropriately."				
Style	The class consists mainly of lectures and exercises using actual data. In the industry-academia collaboration education, teams consisting of students from all departments are formed as much as possible, and the teams investigate and interview the companies in charge, discuss the relationship between the data and the use of AI, and write a report.				
Notice	Evaluation: The assignment will be evaluated comprehensively. A grade of 50 points or more is required for credit. Admission Examinations: A student whose grade is less than 50 points may take a supplementary examination upon request. If the student is approved for credit as a result of the additional examination, the grade will be 50. Course Plan: The class plan is subject to change according to the students' level of understanding.				
Characteristics of Class / Division in Learning					
☐ Active Learning		☐ Aided by ICT		☐ Applicable to Remote Class	☐ Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	Data Science (1)	Understand the variables of specific programming languages.	
		2nd	Data Science (2)	Understand functions in concrete programming languages.	
		3rd	Data Science (3)	Understand arrays in concrete programming languages.	
		4th	Data Science (4)	Understand conditional branching in concrete programming languages.	
		5th	Data Science (5)	To be able to acquire data appropriately, and to understand how to handle them and what to keep in mind.	
		6th	Data Science (6)	Understand the types of data and be able to create appropriate graphs. Understand the frequency distribution and histogram.	

		7th	Data Science (7)	To be able to understand how to sort data and to understand representative values (mean, median, and mode) of data through exercises on actual data.
		8th	Data Science (8)	Through exercises on real data, you can understand the variability of data (variance, standard deviation).
	4th Quarter	9th	Data Science (9)	To understand box-and-whisker plots and scatter plots through exercises on actual data.
		10th	Data Science (10)	Through exercises on real data, you can understand the method of least squares.
		11th	Data Science (11)	Through exercises on real data, you will be able to understand the regression line, correlation, correlation coefficient, and coefficient of determination.
		12th	Data Science (12)	To understand the analysis of data and causal relationships through exercises on real data.
		13th	Teams & Industry-University Collaboration Education (1)	Understand how to use Teams. Understand how to proceed with corporate research activities and what to keep in mind.
		14th	Teams & Industry-University Collaboration Education (2)	Conduct a survey of a company, use Teams, and hold a meeting.
		15th	Teams & Industry-University Collaboration Education (3)	Conduct interviews with companies and write a report on the results and the relationship with data and AI applications.
		16th	Class evaluation questionnaire	

Evaluation Method and Weight (%)

	Issue	Others	Total
Subtotal	60	40	100
Basic Proficiency	30	20	50
Specialized Proficiency	0	0	0
Cross Area Proficiency	30	20	50