Course Syllabus

Code - Course Title	**ARY523 - Data Collecting and Statistical Analysis in Quntitative Rese**
Course Type	I. SEMESTER
Laboratory + Practice	3+0
ECTS	**6.0**
Language of Instruction	Türkçe
Course Type	Required Courses
Course Instructor(s)	PROF. DR. ALİ ÖZDEMİR

Mode of Delivery	Face to Face
Place of Delivery	On Campus
Used Educational Platforms	Face-to-face
Prerequisites	There are no prerequisite courses for this course.
Courses Recomended	No courses are recommended.
Recommended Resources	Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods (3rd edition). Thousand Oaks, CA: Sage.
Work Placement	There is no internship requirement.
Aims of the Course	This course aims to demonstrate how numerical data in quantitative research are defined, how they are collected using appropriate measurement tools, and how the obtained data are analyzed using statistical methods in an objective, reliable, and generalizable manner.

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1	**LO-1**	History of Quantitative research	Lecture, Question & Answer, Discussion
Week - 2	**LO-1** **LO-2**	Introduction to Quantitative Research: Characteristics of quantitative research, research designs, research questions, and hypotheses	Lecture, Question & Answer, Discussion
Week - 3	**LO-3**	Variables and Measurement in Quantitative Research	Lecture, Question & Answer, Discussion
Week - 4	**LO-3**	Quantitative Data Collection Methods: Survey, structured observation, experimental methods, primary and secondary data	Lecture, Question & Answer, Discussion
Week - 5	**LO-3**	Population, Sample, and Sampling Methods	Lecture, Question & Answer, Discussion
Week - 6	**LO-5**	Validity and Reliability	Lecture, Question & Answer, Discussion
Week - 7	**LO-3** **LO-4** **LO-5**	Application	Discussion, Problem Solving, Research and Inquiry

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 8	LO-6	Data Preparation and Preprocessing: Data encoding, missing data analysis, outliers, and data transformations	Lecture, Question & Answer, Discussion, Problem Solving
Week - 9	LO-6	Descriptive Statistics and Data Visualization: Frequency, percentage, mean, median, mode, standard deviation, tables, and graphs	Lecture, Question & Answer, Discussion, Problem Solving
Week - 10	LO-6	Hypothesis development and inference making	Lecture, Question & Answer, Discussion, Problem Solving
Week - 11	LO-6	Relationships between variables	Lecture, Question & Answer, Discussion, Problem Solving
Week - 12	LO-6	Relationships Between Variables I (Numerical Variables: Regression and Correlation Analysis)	Lecture, Question & Answer, Discussion, Problem Solving
Week - 13	LO-6	Relationships Between Variables II (Categorical Data)	Lecture, Question & Answer, Problem Solving
Week - 14	LO-7 LO-8	Application	Case Study, Problem Solving, Brain Storming

Learning Outcomes

#	Learning Outcome
1	Define major concepts of quantitative research
2	Compare and contrast quantitative and qualitative research paradigms
3	Explain basic assumptions and principles of quantitative research
4	Summarize major phases and steps of quantitative research
5	Interpret reliability and validity in quantitative research
6	Apply statisticsl tests to quantitative research
7	Design a quantitative research
8	Evaluate quantitative research

Sustainable Development Goals

✓ Quality Education

Course Theme

✓ Data Science

AKTS Workload

Activity	Duration (Hour)	Count	Workload
Teorik Derse Katılım	42.00	1	42
Sınıf Dışı Çalışma (Ön Hazırlık & Pekiştirme Amaçlı)	28.00	1	28
Ödevler	4.00	6	24
Proje - Rapor - Sunum Hazırlama	3.00	6	18
Ara Sınav Hazırlığı (sınav süresi dahil)	14.00	1	14
Final Sınavı Hazırlığı (sınav süresi dahil)	18.00	1	18
Uygulama (Laboratuvar, Müzik/Enstrüman Uygulaması, Atölye/Saha Çalışması vb.)	0.00	0	0
Staj Uygulaması	0.00	0	0
		Calculated ECTS	**6.0**

Assessment Method and Passing Requirements

✓ Open-Ended Test ✓ Homework ✓ Presentation

Assessment Method and Passing Requirements	Quamtity	Percentage (%)
1.Midterm Exam	1	20
Final Exam	1	60
Homework	1	20
	Sum (%)	**100**