<table>
<tr><td rowspan="2">Course Title</td><td rowspan="2">Research Methods 2: Data Analysis</td><td>Instructor(s)</td><td>Tunn Cho Lwin</td></tr>
<tr><td>E-mail</td><td></td></tr>
<tr><td>Class Style</td><td>Lectures, Guided hands-on practice, and Discussion</td><td>Office Hours</td><td></td></tr>
<tr><td>Track</td><td></td><td>Mode of Instruction</td><td></td></tr>
<tr><td>Credits</td><td></td><td>Allocated Year</td><td></td></tr>
<tr><td>Active Learning</td><td>1-(3) Written Paraphrases and Summaries
2-(3) Presentations
4-(11) Oral Peer Review of Written Work</td><td>Compulsory or Elective</td><td></td></tr>
<tr><td>Course Overview</td><td colspan="3">This course introduces students to the practical use of data analysis in research. Students will learn how to understand research datasets, apply basic quantitative and qualitative analytical procedures, interpret findings, and connect results to research questions. Topics include comparative analysis, relationships among variables, inferential analysis, hypothesis testing, confidence intervals, and case study application. The course will also introduce the use of analytical tools for simple demonstrations and practical application in data analysis. Through exercises, assignments, tests, and a group project presentation, students will build practical experience in analyzing and explaining research data.</td></tr>
<tr><td>Course Objectives</td><td colspan="3">By the end of this course, students will be able to:
develop a practical understanding of how research data can be analyzed and interpreted.
strengthen their ability to apply basic quantitative and qualitative analytical procedures.
improve their skills in identifying dataset types and selecting suitable approaches for analysis.
build confidence in interpreting inferential results.
gain introductory experience in using analytical tools for demonstration and practical application.</td></tr>
<tr><td>Prerequisite</td><td colspan="3">None</td></tr>
<tr><td rowspan="8">Course Schedule</td><td>No</td><td>Contents</td><td>Homework</td></tr>
<tr><td>1</td><td>Introduction to Data Analysis and Data Analytics in Research
- Course overview and assessment
- The role of analysis in the research process
- Difference between data analysis and data analytics</td><td>Complete the software setup.</td></tr>
<tr><td>2</td><td>Procedures for Quantitative Analysis
- Basic steps in quantitative data analysis
- Overview of quantitative analytical workflow</td><td>Exercise 1: Review the steps of quantitative analysis and summarize them briefly.</td></tr>
<tr><td>3</td><td>Methods for Qualitative Analysis
- Basic ideas of qualitative data analysis
- Overview of qualitative analytical workflow</td><td>Exercise 2: Review the sample qualitative responses and identify simple themes.</td></tr>
<tr><td>4</td><td>Quiz 1 and Dataset Structure
- Understanding rows, columns, cases, variables, and simple coding schemes
- Identifying variable types for analysis</td><td>Exercise 3: Review the sample dataset and identify variables, coding, and data structure.</td></tr>
<tr><td>5</td><td>Comparative Analysis of Group Differences
- Comparing groups or categories in research data
- Interpreting simple summaries in context</td><td>Assignment 1: Complete the assigned task on comparative analysis and submit it by e-mail.</td></tr>
<tr><td>6</td><td>Analysis of Relationships Among Variables</td><td>Assignment 2: Complete the</td></tr>
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		- Understanding associations among variables - Interpreting relationships carefully in research settings	assigned task on relationships among variables and submit it by e-mail.
	7	**Quiz 2** and Inferential Analysis - Sample and population - Basic ideas of inference and uncertainty in research	Exercise 4: Practice the assigned problems
	8	Hypothesis Testing in Research - Null and alternative hypotheses - Basic interpretation of significance and p-values	Exercise 5: Interpret simple hypothesis-testing examples.
	9	Estimation and Confidence Intervals - Sample estimates and confidence intervals - Understanding uncertainty in research findings	Exercise 6: Estimation and Confidence Intervals using analytical tools.
	10	Diagnostic and Inferential Interpretation of Research Findings - Moving from description to explanation. - Using analytical results to answer research questions.	**Assignment 3**: Complete the assigned task on interpretation of research findings and submit it by e-mail.
	11	**Quiz 3** and Application of Research Data Analysis: Case Study I	None
	12	Application of Research Data Analysis: Case Study II	**Assignment 4**: Complete the case study analysis and submit it by e-mail.
	13	Group Project Planning and Proposal Development - Forming groups and selecting a project topic - Developing the research purpose, dataset, and analytical plan	**Group Project Proposal**: Submit the group project proposal by e-mail.
	14	Preparation for Group Project Presentation - Organizing findings for presentation - Preparing slides, explanation, and interpretation of results	Prepare and finalize the group presentation slides.
	15	Final Group Project Presentation - Group presentation of the project topic, dataset, analytical methods, findings, and conclusion	Submit the final group project presentation file and data sources used in the project.
Grading	**<u>Assessment</u>** Assignments (4): 40% Quizzes (3): 30% Group Project Proposal: 15% Final Group Project Presentation: 15% **<u>Notes</u>** Students must avoid plagiarism when preparing the project proposal and writing assignment reports. Any sources used must be properly acknowledged and cited.		
Textbooks	No fixed textbook. Handouts and instructor-prepared materials will be used in class.		
References	None		
NOTES	Regular attendance and punctuality are expected throughout the course. A respectful and cooperative attitude toward class activities and discussion is required. Electronic devices may be used only for learning purposes during class. In the case of absence, prior notice by e-mail is required whenever possible. Additional instructions will be provided as needed.		