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| Course Title | Introduction to Statistics | Instructor(s) | Tunn Cho Lwin |
| | | E-mail | |
| Class Style | Lecture and Discussion | Office Hours | |
| Track | | Mode of Instruction | |
| Credits | | Allocated Year | |
| Active Learning | 3-(5) Symbolized Paraphrases and Summaries<br>4-(1) Interactive Lectures<br>1-(3) Written Paraphrases and Summaries | Compulsory or Elective | |
| Course Overview | This course offers a practical introduction to statistics through clear explanation, guided practice, and applied examples. Core topics include data organization, tables and graphs, measures of central tendency and variation, and introductory ideas of probability and confidence intervals. Importance is placed not only on performing statistical procedures but also on interpreting results in a clear and meaningful way. Regular exercises, assignments, and guided practice sessions are included to strengthen understanding and support steady progress throughout the course. | | |
| Course Objectives | By the end of this course, students will be able to:<br>• understand the fundamental concepts and purposes of statistics.<br>• read, interpret, and communicate information presented in tables, graphs, and numerical summaries.<br>• apply basic statistical ideas in everyday life and social contexts.<br>• recognize how statistical information is used and sometimes misused in media and society.<br>• use basic statistical literacy to support academic study, informed judgment, and decision-making in diverse fields. | | |
| Prerequisite | None | | |

| **Course Schedule** | No | Contents | Homework |
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| | 1 | Introduction to Statistics and Statistical Thinking<br>- Course guidance, the meaning and purpose of statistics, and examples of statistics in everyday life, media, and society. | Confirm access to Excel and make sure it is ready for use in this course. |
| | 2 | Types of Data, Variables, and Levels of Measurement<br>- Cases, variables, qualitative and quantitative data, and basic levels of measurement. | Exercise 1: Distinguish the types of data |
| | 3 | Organizing Data with Tables and Frequency Distributions<br>- Data matrices, frequency tables, and basic methods of arranging data clearly and systematically. | Exercise 2: Frequency Distributions |
| | 4 | Exploring Data with Graphs<br>- Common graph types and their uses in presenting data | Exercise 3: Graph Interpretation |
| | 5 | **Quiz 1** and Measures of Central Tendency<br>- Calculation, interpretation, and comparison of common measures of center. | **Assignment 1**: Complete the assigned task on central tendency and submit it by e-mail. |
| | 6 | Measures of Variation<br>- Basic measures of spread and their use in describing variability in data | None |
| | 7 | **Quiz 2** and Measures of Relative Standing and Boxplots | **Assignment 2**: Complete the |

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| | | - Basic measures of spread and their use in describing variability in data. | assigned task on relative standing and boxplots and submit it by e-mail. |
| | 8 | Guided Statistical Practice I<br>- Organizing and summarizing data using the methods covered in the first half of the course.<br>- Preparing a short-written interpretation of results. | **Midterm report:** Submit the analysis and interpretation report by e-mail. |
| | 9 | Basic Concepts of Probability<br>- Introduction to chance, uncertainty, and simple probability ideas. | Exercise 4: Basic Probability |
| | 10 | Additional Rule and Multiplication Rule<br>- Basic rules for calculating probabilities of simple events | None |
| | 11 | Conditional Probability and Bayes' Theorem<br>- Probability under given conditions and simple applications of Bayes' Theorem | **Assignment 3:** Complete the assigned task on conditional probability and Bayes' Theorem and submit it by e-mail. |
| | 12 | **Quiz 3** and Estimation and Confidence Intervals<br>- Understanding the meaning of confidence intervals | Exercise 5: |
| | 13 | Probability in Everyday Life and Decision-Making<br>- Applying basic probability ideas to uncertainty and simple decision-making. | None |
| | 14 | Review and Practical Applications of Statistics<br>- Review key concepts and discuss practical applications of statistical thinking in academic, social, and everyday contexts. | Prepare for the Final Exam |
| | 15 | Guided Statistical Practice II<br>- Practice on probability, confidence intervals, and practical applications of statistical thinking. | **Final report:** Submit the analysis and interpretation report by e-mail. |
| Grading | **<u>Assessment</u>**<br>Assignments (3): 30%<br>Quizzes (3): 30%<br>Midterm Report: 20%<br>Final Report: 20%<br><br>**<u>Notes</u>**<br>Three assignments will be assigned during the semester. A sample dataset will be provided, and a report is to be prepared based on the dataset. Plagiarism is strictly prohibited. Appropriate references must be included whenever external sources are used in the report. | | |
| Textbooks | No fixed textbook. Handouts and instructor-prepared materials will be used in class. | | |
| References | 1. Allan G. Bluman, Elementary Statistics: A Step-by-Step Approach, 10th Edition, McGraw-Hill Education.<br>2. Triola, Elementary Statistics, 14th edition, Pearson (Custom Lehman Edition) | | |
| NOTES | Regular attendance and punctuality are expected throughout the course. Students are expected to maintain a respectful and cooperative attitude toward class activities and discussion. 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. Students are encouraged to ask questions at any time during class and may interrupt the instructor when clarification is needed. Additional instructions will be provided as needed. | | |