Department	International College of Liberal Arts		
Semester	Spring 2025	Year Offered (Odd/Even/Every Year)	Every Year
Course Number	QREA/PSCI/ECON203		
Course Title	Statistics		
Prerequisites	None		
Course Instructor	JHINGAN Sanjay	Year Available (Grade Level)	2
Subject Area	Quantitative Reasoning & Natural Sciences	Number of Credits	3
Class Style	Lecture	Language of instruction	English

(NOTE 1) Depending on the class size and the capacity of the facility, we may not be able to accommodate all students who wish to register for the course

Course Description	Cap (registrant capacity): 25 students Statistics is a branch of mathematics focused on the collection, analysis, and interpretation of data, playing a vital role in all quantitative disciplines. This course introduces students to key statistical methods, reasoning, and evaluation techniques used in various fields of study. Topics covered include: 1. Critical thinking with statistics 2. Methods of data collection, graphical and numerical data representation 3. Probability 4. Discrete and continuous distributions 5. Confidence intervals 6. Significance tests 7. Linear regression
Class plan based on course evaluation from previous academic year	Based on student feedback from the previous offering of this course, regular in-class quizzes will be introduced. These quizzes will help students better assess their understanding and overall progress.
Course related to the instructor's practical experience (Summary of experience)	Not applicable.
Learning Goals	Proficient students will be able to: 1. Develop independent, critical thinking and quantitative reasoning skills. 2. Select and apply appropriate statistical techniques for data production (surveys, experiments, observational studies, simulations) and data analysis (graphical methods, probability, distributions, and error analysis). 3. Draw meaningful conclusions from data using confidence intervals and significance tests. 4. Communicate statistical results clearly and effectively.

iCLA Diploma Policy	DP1／DP2

iCLA Diploma Policy

(DP1) To Value Knowledge - Having high oral and written communication skills to be able to both comprehend and transfer knowledge

(DP2) To Be Able to Adapt to a Changing World - Having critical, creative, problem-solving, intercultural skills, global and independent mindset to adopt to a changing world

(DP3) To Believe in Collaboration - Having a disposition to work effectively and inclusively in teams

(DP4) To Act from a Sense of Personal and Social Responsibility - Having good ethical and moral values to make positive impacts in the world

Active Learning Methods	Problem-Based Learning／Discussion, Debate				
More details/supplemental information on Active Learning Methods	Students will be evaluated through in-class quizzes that assess their ability to apply lecture concepts to real-world problems. Active participation in class discussions, where students connect learned concepts to real-life situations, is strongly encouraged.				
Use of ICT	UNIPA for communication with instructor, accessing class materials, and tracking attendance.				
Contents of class preparation and review	Students are encouraged to access class material on UNIPA, and prepare themselves before coming to lecture.	Hours expected to be spent preparing for class (hours per week)	2 hours	Hours expected to be spent on class review (hours per week)	3 hours
Feedback Methods	UNIPA, and Office 365 will be used for regular feedback to quizzes. Student can use office hours for discussion.				

Grading Criteria		
Grading Methods	Grading Weights	Grading Content
In-class quizzes	100%	Seven quizzes will be conducted during the course.

Required Textbook(s)	J. T. McClave, P. G. Benson, T. Sincich, Statistics for Business and Economics (13th edition), Pearson. Brase, Brase, Dolor, and Seibert, Understanding basic statistics (9th edition), Cengage.
Other Reading Materials/URL	There are several good books on statistics thatcan be used. Introductory Statistics, Barbara Illowsky and Susan Dean, (available for free download at: https://openstax.org/details/books/introductory-statistics)
Plagiarism Policy	Plagiarism is the dishonest presentation of someone else' s work as one' s own. Submitting the same work for multiple assignments (duplicate submission) is also considered plagiarism. Depending on the severity, plagiarism may result in failing the assignment or the course. Repeated offenses will be reported to the University, which may impose further penalties.
Other Additional Notes (Outline crucial policies and info not mentioned above)	Students are not allowed to use mobile phones or laptops during lectures. However, digital note-taking devices are permitted.

(NOTE 2) Class schedule is subject to change

Class Schedule	
Class Number	Content
Class 1	Lecture 1 Statistics, Data, Statistical Thinking: Fundamental Elements.
Class 2	Lecture 2 Statistics, Data, Statistical Thinking: Types of Data, Thinking with Statistics.
Class 3	Lecture 3 Statistics, Data, Statistical Thinking: Review. In-class quiz 1.
Class 4	Lecture 4 Describing Data: Qualitative data, Graphical Description.
Class 5	Lecture 5 Describing Data: Measures of Central tendency.
Class 6	Lecture 6 Describing Data:: Measures of Variability.
Class 7	Lecture 7 Describing Data: Critical thinking with data
Class 8	Lecture 8 Describing Data: Review. In-class quiz 2.
Class 9	Lecture 9 Probability: Introduction
Class 10	Lecture 10 Probability: Probability Rules, Mutually Exclusive Events.
Class 11	Lecture 11 Probability: Conditional Probability. Bayes theorem.
Class 12	Lecture 12 Probability: Review. In-class quiz 3.
Class 13	Lecture 13 Random Variables - Discrete Variables: Binomial Distribution.
Class 14	Lecture 14 Random Variables - Discrete Variables: Poisson Distribution.
Class 15	Lecture 15 Random Variables - Discrete Variables: Review. In-class quiz 4.
Class 16	Lecture 16 Random Variables - Continuous Variables: Uniform Distribution.

Class 17	Lecture 17 Random Variables - Continuous Variables: Normal Distribution.
Class 18	Lecture 18 Random Variables - Continuous Variables: Review. In-class quiz 5.
Class 19	Lecture 19 Sampling Distributions: Unbiasedness and minimum variance.
Class 20	Lecture 20 Sampling Distributions: Large Number Hypothesis, Central Limit Theorem.
Class 21	Lecture 21 Sampling Distributions: Review.
Class 22	Lecture 22 Inference Based On A Single Sample - Confidence Interval: Population Mean.
Class 23	Lecture 23 Inference Based On A Single Sample - Confidence Interval: Normal (z) Statistics.
Class 24	Lecture 24 Inference Based On A Single Sample - Confidence Interval: Review. In-class quiz 5.
Class 25	Lecture 25 Inference Based On A Single Sample - Hypothesis Testing: Formulation.
Class 26	Lecture 26 Inference Based On A Single Sample - Hypothesis Testing: Significance Levels, Test of Hypothesis.
Class 27	Lecture 27 Inference Based On A Single Sample - Hypothesis Testing: Review. In-class quiz 6.
Class 28	Lecture 28 Simple Linear Regression: Probabilistic Models.
Class 29	Lecture 29 Simple Linear Regression: Fitting a Model - Least Square Approach.
Class 30	Lecture 30 Simple Linear Regression: Review. In-class quiz 7.