UNIVERSITY of NICOSIA

Course Syllabus

Course Code	Course Title	ECTS Credits
MATH-221	Statistics I	6
Prerequisites	**Department**	**Semester**
MATH-105	Computer Science	FALL/SPRING
Type of Course	**Field**	**Language of Instruction**
Required	Mathematics	English/Greek
Level of Course	**Lecturer(s)**	**Year of Study**
1st Cycle	Dr. Stavros Pouloukas	2nd
Mode of Delivery	**Work Placement**	**Corequisites**
Face-to-face	NA	None

Course Objectives:

The main objectives of the course are to:
- Make students aware of the concept of measures of central tendency and variation.
- Make students aware of probability concepts.
- Cover in detail all aspects of the binomial and the normal random variables and distributions.
- Cover in detail all aspects of Sampling Distributions
- Provide students with knowledge of the Central Limit Theorem.
- Discuss thoroughly estimation and hypothesis testing.

Learning Outcomes:

After completion of the course students are expected to be able to:
1. Explain the meaning of statistical measures and compute measures of central tendency and variation from data.
2. Solve basic theoretical and empirical probability problems.
3. Demonstrate the basic concept of discrete and continuous random variables.
4. Compute Probabilities for the binomial distribution and for the normal distribution.
5. Compute confidence intervals.
6. Execute hypothesis testing on the value of the population mean.

Course Content:

1. Descriptive Statistics: Measures of Central Tendency and Variation.
2. Classical and Empirical Probability.
3. Discrete probability distributions: the binomial random variable.
4. Continuous probability distributions: the normal random variable.
5. Sampling distribution of the Mean.
6. Estimation and Confidence Intervals.
7. Hypothesis Testing for the value of the Population Mean.

Learning Activities and Teaching Methods:

Lectures, Handouts, Assignments and In-class Exercises

Assessment Methods:

Final Examination, Midterm Examinations, Assignments and Participation.

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Understandable Statistics	Brase and Brase	Wiley	2018	978-1337119917

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Statistics for Management & Economics	Keller Gerald	Thompson	2018	978-1337093453