**CENTRAL UNIVERSITY**

**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY**

**Course Code**: COMP209 **Credit Hour(s)**: **3** **Webpage**: www.central.edu.gh

**Course Title**: Probability and Statistics

**Course Lecturer: Mr. Frederick Adu Gardiner Room:C02**

**Email Address: kwesigardiner@gmail.com Tel no.: 0242757449**

**Office Hours: Monday 10:00 am – 12:00 noon**

# Course Objective

Students will understand and apply statistical concepts like Expectations, the Central Limit Theorem, Confidence Intervals, Statistical Inferences and Hypothesis Testing, Curve Fitting and Analysis of Variance to real life situation. Students will be able to analysed data using Data Analysis tools e.g. Excel, SPSS and SAS.

# Course Description

This course provides students with introductory concepts and methods of statistics and probability theory, and the modelling and analysis of probabilistic systems. Some of the topics covered include: Statistics, Measure of Central tendency and Dispersion, Probability, Random variables, Probability Distribution, Discret probability distributions, Continuous Probability Distributions Simple Regression and Correlation. Others are Expectations, the Central Limit Theorem. Students will be introduced to Data Analysis tools.

# Learning Outcomes

* Understand basic statistics concepts
* Understand basic probability theorems
* Analyze data statistically

# Instructional Methods

Instructional approaches to be used during the course. Mode of delivery: Lectures, Laboratory Work (where applicable), Tutorials and Assignments

# Required Course Materials and Readings

Bulwer, M. (2012). *Priniciple of Statistics (kindle ed.).* Dover Publications

Urban, T. (2012), *Statistics in Plain English. (kindle ed.).* Routledge Academic.

*Morris, H. &Schervish, M. J. (2010). Probability and Statistics. 4th Edition. Pearson Higher Education.*

Downey, A. B. (2011) *Probability and Statistics for Programmers.* Needham, MA: Green Tea Press.

Levine, D. M., Stephan, D. F., Krehbiel, T. C., & Berenson, M. L. (2013). *Statistics ForManagers Using Microsoft Excel* (7thed.). Upper Saddle River NJ: Prentice Hall.

# Evaluation

* Assignment 10 marks
* Term Project 15 marks
* Mid-semester examination 15 marks
* End of semester examination 60 marks

# Commit To Academic Integrity

Students in the department are expected to maintain **high degrees of professionalism,** **commitment to active learning, participation and academic integrity every time**.

# Academic Dishonesty

Please note that students involved in academic dishonesty will receive a **ZERO** mark on the particular component in which the infraction occurred and a notation of academic dishonesty in the departmental office. This may also reflect on references written by the department.

**It is the student’s responsibility to understand what constitutes academic dishonesty.**

# Missed Exams / Tests / Assignments

**Assignment Submission**: Assignments must be received on the due date specified for the assignment.

**Lateness Penalty:** Assignments received later than the due date will be penalized. Exceptions to the lateness penalty for valid reasons such as illness, etc., may be entertained by the Lecturer but will require supporting documentation (e.g., a doctor’s letter or report).

**Missed Tests:** Students with a documented reason for missing a course test, such as illness, which is confirmed by supporting documentation (e.g. doctor’s letter or report) will be handled by the Lecturer.

**WEEK BY WEEK COURSE SCHEDULE / ORGANISER:**

| **Week** | **Topic** | **Activities** | **Due Date** |
| --- | --- | --- | --- |
| 1 | Introduction to Statistics | Lectures begin |  |
| 2 | Variables | Lectures |  |
| 3 | Frequency Distribution | Lectures |  |
| 4 | Graphical represention of data | Lectures |  |
| 5 | Measure of Central tendency and Dispersion | Lectures |  |
| 6 | Measure of Central tendency and Dispersion | Lectures |  |
| 7 | Introduction to Probability | Lectures |  |
| 8 | Definitions of Probability | Lectures |  |
| 9 | Random Variables | Lectures |  |
| 10 | Probability Distribution | Lectures |  |
| 11 | Discrete Probability Distributions | Lectures |  |
| 12 | Continuos Probability Distribution | Lectures |  |
| 13 | Regression Analysis | Lectures end |  |
| 14 |  | Revision Week |  |
| 15 |  | Exams begin |  |
| 16 |  | Exams end / vacation |  |