COMMUNICATIONS AND COMPUTER ENGINEERING PROGRAM
EMP301 – PROJECT GUIDELINES
(2023/2024)

Description

The project is for groups of 5-8 students each, each group is required to deliver the following:

1. **Write Python codes for:**

Discrete random variables (Bernoulli, Binomial, Geometric, Uniform, and Poisson) & Continuous random variables (Uniform, Exponential, and Gaussian) with the help of the code presented in the Textbook.

The codes should do the following for each random variable:

- Generate the random variable
- Plot the PMF/PDF and CDF
- Compute The Expectation and the Variance.

2. **Explain in details 2-4 real life examples that uses some of these random variables.**

Requirements

Every group is to deliver

1. **The source code files**: the programs you implemented. (30%)
2. **A report**: describing the Functions used in the code, screen shots of the running code, and the Explanation of the real life examples. (35%)
3. **A presentation** to be performed and evaluated by the subject instructor. (35%)

Additional rules

In the written project report, each team must include a "task assignment" page at the end of the report detailing the tasks performed for this project, and each team member's percentage contribution to each task. Failure to turn in this page will results in 5% deduction of the project grade. If each member contributes roughly the same amount of efforts, the same grade will be assigned to all members.

Instructions for submitting project reports

1) **Cover page.** It should contain:
   a. Project Title
   b. Course Number
   d. Student's Names, IDs, and Edu Email.
   e. Date due & Date handed in
2) **Random variables definitions, equations, and properties.**
3) **Technical discussion.** This section should contain the explanation of the functions used and the main equations and its implemented.
4) **Results.** Include sample results generated.
5) **Real life examples in details.**
6) **List of References**