| Academic Year: 2023-2024 | Semester: Fall | Starting Date: 15-10-2023 |
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| **Course Name** | Engineering Statistics | |
| **Module Language** | English | |
| **Instructor** | Dr. Zrar Sedeeq Othman | |
| **Teaching Assistance(s)** | | |
| **College/University** | College of Engineering – Salahaddin University-Erbil | |
| **Department** | Civil Engineering | |
| **Semester Duration** | 15 weeks | |
| **Course Overview** | This course covers the role of statistics in engineering, probability, discrete random variables, and probability distributions, continuous random variables and probability distributions, joint probability distributions. In addition, correlation and simple linear regression analysis are covered in this course. | |
| **Course Objectives** | Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas. The main objective of this course is to teach students how to apply statistical analysis in civil engineering applications. | |
| **Course Contents** | Week Lecture<br>1st Introduction to Statistics<br>2nd Descriptive Statistics-part1<br>3rd Descriptive Statistics-part2<br>4th Probability-part1<br>5th Probability-part-2<br>6th Probability Distributions<br>7th Discrete probability distributions-Binomial<br>8th Discrete probability distributions-Poisson<br>9th Midterm Exam<br>10th Continuous Distribution-Normal Distribution<br>11th Correlation and Regression Analysis<br>12th Sample size and Sampling Distributions<br>13th Estimation and Hypothesis Testing<br>14th Seminar Presentation<br>15th Final Exam | |
| **Textbooks and References** | 1- 1. Introduction to Probability and Statistics for Engineers and Scientists by Sheldon M. Ross, 2021.<br>2- Applied Statistics and Probability for Engineers, 6th Edition, by Douglas C. Montgomery and George C. Runger, 2014.<br>3- Probability and Statistics for Engineering and the Sciences by Jay L. Devore, 2004. | |
| **Teaching Style** | 3 hrs. in Class | |

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| **Requirements for credit points** | For the award of credit points, it is necessary to pass the module exam. It contains:<br>An examination during the academic semester, Quizzes, Assignments, and Final examination.<br>**Student's attendance is required in all classes**. |
| **Credit ECTS** | 6 |
| **Grade Distribution** | The following grade system is used for the evaluation of the module exam:<br>The module exam is based on the summation of two categories of evaluations:<br>**First: (50%)** of the mark is based on the academic semester effort which includes<br>- Midterm Exam = 20%.<br>- Quizzes = 10%<br>- Seminar = 10%<br>- Report = 10%<br>**Second: (50%)** of the mark is based on the final examination that is comprehensive for the whole of the study materials reviewed during the academic semester. |
| **Workload** | Workload 10hrs/w (150hrs/s): Contact face-to-face 3hrs/w (45hrs/s) and Non-Contact Self learning 7hrs/w (105hrs/s) |