The Hong Kong University of Science and Technology

UG Course Syllabus

Statistics for Engineers

IEDA2540

3 Credits

Prerequisite: IEDA2520 Probability for Engineers

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Course Description

This is a systematic introduction to basic statistics theory for engineers. Topics includes descriptive statistics, useful distributions in statistics, population and random sample, estimation of a parameter, interval estimation, hypothesis testing, Analysis of Variance (ANOVA), and linear regression.

Learning outcomes

1. Able to understand basic ideas and elements of modern statistics, including estimation theory, hypothesis testing, regression models.

2. Able to implement statistical models in Python.

3. Able to conduct empirical analysis of real-world data.

4. To be prepared for more advanced statistical courses, such as machine learning, data mining and Bayesian statistics.

5. Able to recommend statistical solutions based on quantitative data analysis.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Mid-Terms	50% (25%×2)
Homework	20%
Final examination	30%

Required Texts and Materials

No textbooks required. The lecture slides are self-contained.

Reference book:

Douglas C. Montgomery and George C. Runger, Applied Statistics and Probability for Engineers, 7th Edition.