University of Asia Pacific

Department of Basic Sciences & Humanities

Courses Title: Probability and Statistics; Complex Variable and Harmonics

Course Code: MTH 301 (EEE)

Course Outline:

Complex Variable: complex number system.

General functions of a complex variable.

Limits and continuity of a function of a complex variable and related theorems.

Complex differentiation and the Cauchy-Riemann equations.

Infinite series. Convergence and uniform convergence.

Line integral of a complex function. Cauchy integral formula.

Liouville's theorem. Taylor's and Laurent's theorem.

Singular points. Residue. Cauchy's residue theorem.

Harmonics: solution of Laplace's equation.

cylindrical harmonics.

spherical harmonics.

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Course Outline:

Definition and use of statistics in Engineering

Frequency distribution, mean median and mode and other measures of central tendency

Measures of dispersion and importance standard deviation in statistics

Measures of skew ness and kurtosis

Elementary probability theory

Discrete and continuous probability distribution

Binomial and possum and continuous probability distribution

Sampling theory and sampling distribution

Hypothesis testing

Different test statistics and their applications

Correlation and regression analysis