

## **MODULE: QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS (course code BABSH-QABD)**

**Griffith College Dublin – Business Studies**

**Fall Semester**

**This module has no pre-requisites.**

### **INTRODUCTION**

This module provides students with the essential quantitative skills to support an analytical approach to decision making. Emphasis is placed on developing problem solving skills relevant to a modern business environment. The module is specifically designed to develop the student's ability to use mathematical models as an aid to decision making.

### **SYLLABUS**

Collection and presentation of data

- Data types and sampling methods
- Tables, diagrams and graphs
- Frequency distributions

Analysis of Data

- Measures of central tendency
- Measures of dispersion
- The Normal distribution
- Confidence intervals for population mean and proportion
- Sample error and sample size
- Hypothesis testing: Z-tests, t-tests and  $\chi^2$ - tests

Probability

- Permutations and combinations
- The laws of probability
- Calculating probabilities using Binomial, Poisson and Normal distributions
- Bayes Theorem

Financial Mathematics

- Simple and compound interest
- Depreciation
- Nominal and effective interest rates
- Annuities, perpetuities, mortgages and sinking funds
- Discounting
- Net present value and internal rate of return

Modelling Business/Economic Problems Linear equations

- Solving simultaneous equations
- Quadratic and cubic equations
- Differential calculus
- Supply and demand curves
- Cost, revenue and profit functions
- The economic order quantity
- Linear Programming

#### Correlation and Regression

- Scattergraphs
- The correlation coefficient
- The coefficient of determination
- The least squares regression equation
- Interpolation and extrapolation
- Spearman's rank correlation coefficient