

## **DBS SCHOOL OF BUSINESS**

### **LJMU DEGREE PROGRAMMES**

#### **MODULE PROFORMA**

---

**Module Title: Business Maths & Research Techniques**

**Level:1**

Assessment: Continuous Assessment: 30%

Examination: 70%

Prerequisite: None

Credits:10

#### **Objectives**

---

1. To introduce students to various mathematical and statistical concepts.
2. To develop skills in the practical application of these concepts in relevant business situations.
3. To cultivate an approach and methodology to business problem solving using appropriate mathematical models.
4. To introduce students to the theories and concepts of research techniques and show how mathematical models can be applied to basic research activities.

#### **Learning Outcomes:**

---

On completion of this programme students will be able to:

- Understand and apply the key mathematical techniques relevant to business.
- Display an understanding of the concepts involved and the mathematical problem solving skills required in the research process.
- Use appropriate graphical methods to present data effectively.
- Identify and use common mathematical and statistical functions.

#### **Syllabus:**

---

##### **Business Maths**

##### **Basic Mathematical Techniques**

- Linear and Quadratic Equations; Simultaneous Equations; Using Mathematical tables

##### **Index Numbers**

- Simple Aggregate Index; Laspeyres Price Index; Paasche Price Index; Chain Index.

##### **Financial Mathematics**

- Simple and Compound Interest; Annuities, Mortgages and Sinking Funds; Investment Appraisal: Present Value and Internal Rate of Return.

##### **Probability Theory and Statistical Inference**

- The rules of probability; conditional probability; Drawing probability trees; Binomial, Poisson and Normal Distribution.

##### **Calculus**

- Differentiation; Profit Maximisation.

## **Research Techniques**

### **Introduction to Research**

- The Role of Research in Business; Factors that Influence Research Decisions.

### **Data Types and Research Methods**

- Primary Research; Secondary Research; Quantitative Versus Qualitative Research; Sample Techniques.

### **Collection Methods**

- Management Decision-making; Sampling: techniques and randomness; Review of Published Economic data.

### **Presentation of Data**

- Effective Presentation of Data: tables, diagram and graphs; Frequency distribution: grouped and cumulative.

### **Analysis of Data**

- Measures of Central Tendency, dispersion and skewness; Measures of Association between two variables: scattergraphs; correlation and linear regression.

### **Hypothesis Testing**

- Estimation and hypothesis testing; Confidence Intervals.