### COURSESPECIFICATIONDOCUMENT

Academic School/Department: Richmond Business School

**Programme:** BA Business Management with Combined Studies

BA Finance and Investment with Combined Studies

**BA Marketing with Combined Studies** 

BA Fashion Management and Marketing with

**Combined Studies** 

**BA Economics with Combined Studies** 

BSc Accounting and Finance with Combined Studies

**BA Psychology with Combined Studies** 

FHEQ Level: 4

Course Title: Probability and Statistics I

Course Code: MTH 4120

Course Leader: Ali Aboutorabi

Student Engagement Hours:120Lectures:30Seminar / Tutorials:15Independent / Guided Learning:75

Semester: Fall/Spring/Summer

**Credits:** 12 UK CATS credits

6 ECTS credits
3 US credits

#### **Course Description:**

An introductory course in probability and statistics, primarily designed for business, economics and psychology majors. The course coverage will include: descriptive statistics, elementary probability theory, random variables and expectations, discrete probability distributions (Binomial and Poisson distributions), continuous probability distribution (Normal distribution), linear regression analysis and correlations, elementary hypothesis testing and Chi-square tests, non-parametric methods and SPSS lab sessions targeting applications of statistical concepts to business, economics and psychology. All practical work will be produced using SPSS statistical software.

Prerequisites: MTH 3000 or MTH 3110

**Aims and Objectives:** 

The course aims to provide students with an understanding of a number of topics in probability and statistics. Students will be encouraged to develop a keen interest in the subject based on their specific majors. In particular, the course will help students develop the right statistical vocabulary, understand and apply essential ideas and concepts of statistics, perform some of the most useful statistical methods such as using statistical tables and SPSS statistical software, be able to discern which statistical method is most appropriate in a given situation and be aware of the assumptions and pitfalls of the various statistical methods used. Students should be able to interpret and explain meaningfully an SPSS statistical output.

## **Programme Outcomes:**

Business Management, Marketing, Fashion Management and marketing, Finance and

Investment: B4, D2, D3

Accounting and Finance: A2, B2, C1, D2

**Economics: D** 

Psychology: Bi, Biii, Cii

A detailed list of the programme outcomes is found in the Programme Specification. This is maintained by Registry and located at: <a href="http://www.richmond.ac.uk/programme-and-course-specifications/">http://www.richmond.ac.uk/programme-and-course-specifications/</a>

### **Learning Outcomes:**

- Have a broad understanding of the concept of probability, random variables, discrete and continuous probability distribution and their applications in solving problems
- Have a broad understanding of how to organise raw data, use statistical software and interpret results
- Have a broad understanding of the principles of linear regression analysis and how to estimate model parameters by using least square method and interpret model parameters using examples of business, economics and psychology
- Have a broad understanding of the principles of hypothesis testing procedures, nonparametric methods, their viability and usefulness

#### **Indicative Content:**

- Introduction to statistical terms and definitions, types of data and its organisation
- Measures of Location and Measures of Dispersion
- Introduction to probability
- Discreet distribution
- Binomial Distribution
  - Poisson Distribution

Normal Distribution and applications

**Hypothesis Testing** 

Simple Linear Regression

Non-Parametric

Methods
Use of statistical software throughout

#### Assessment:

This course conforms to the Richmond University Assessment Norms approved by Academic Board.

### **Teaching Methodology:**

The Course will consist of interactive learning sessions of material presented using PowerPoint slides, small group discussions, integrated tutorials and computer projects.

## **Bibliography:**

#### IndicativeText(s):

P. S. Mann, "Introductory Statistics", 9th edition, Wiley, 2016

#### Recommended reading:

- M. Sheldon, "Introductory statistics", 4<sup>th</sup> edition, Elsevier/AP, 2017
- R. Sheldon, "A first course in probability", 9th edition, Publisher: Boston Pearson, 2014

Murray R. Spiegel, et al, "Probability and statistics", 4th edition, McGraw-Hill, 2013

- S. Lipschutz & J. J. Schiller, "Introduction to probability and statistics", McGraw Hill, 2012
- N. A. Weiss, "Introductory statistics", 7th edition, Addison-Wesley, 2004
- D.G. Rees, "Essential Statistics", 4th edition, Chapman & Hall/CRC, 2001
- A. Bryman, "Quantitative Data Analysis with IBM SPSS 17, 18 & 19", Routledge, 2011

#### Web Sites

SPSS tutorials, IBM corporation, <a href="https://www.spss-tutorials.com/basics/">https://www.spss-tutorials.com/basics/</a>, sited July 2019 [also available on the University network under licence]

Please Note: The core and the reference texts will be reviewed at the time of designing the semester syllabus

# Change Log for this CSD:

Major	Nature of Change	Date Approved &	Change
or		Approval Body(School	Actioned by
Minor		or AB)	Academic
Change?			Registry
	Reading list, course description, indicative content	September 19	

Richmond, the American International University in London September 2019