

COURSE SPECIFICATION DOCUMENT

School:	Business
Programme:	BA (Hons) Economics BA (Hons) Finance and Investment
FHEQ Level:	5
Course Title:	Probability & Statistics II
Course Code:	MTH 5120
Course Leader:	David M Munyinyi
Student Engagement Hours:	120
Lectures:	30
Projects / Tutorials:	15
Independent / Guided Learning:	75
Semester:	Fall
Credits Points:	12 UK CATS Credits 3 US Credits 6 ECTS Credits

Course Description:

This Course is a continuation of MTH125 and is concerned with inferential statistics. It covers sampling distributions, interval estimations and estimating confidence intervals for populations and proportions, hypothesis and significance testing, goodness-of-fit test and Chi-square test, one-way analysis of variance (ANOVA), applications of non-parametric statistics and linear regression analysis. All practical work will be done on SPSS statistical software.

Prerequisites: MTH4120

Aims and Objectives:

This Course aims to provide students with an understanding of the issues concerned with sampling distributions, estimation, hypothesis testing and practical interpretations of statistical outputs from SPSS in a manner that is understandable, relevant and using the correct statistical language.

Programme Outcomes:

Economics: A2, A4, B3, D

Finance and Investment: A2, A4, B4, D2, D3, D5

A detailed list of the programme outcomes are found in the Programme Specification.

This is located at the archive maintained by the Academic Registry and found at:

<http://www.richmond.ac.uk/admitted-students/programme-and-course-specifications/>

Learning Outcomes:

By the end of this course, successful students should:

- Understand the difference between descriptive and inferential statistics, and be able to apply a wide range of techniques that involve sampling distributions, interval estimations and confidence intervals for population and proportion data.
- Demonstrate a detailed knowledge of well established statistical theories and concepts and their applications in practical problems that involve using statistical tables to perform hypothesis testing, interval estimations, analysis of variance, linear regression and non- parametric methods.
- Identify suitable method of statistical analyses required for different types of data and be able to perform the required analysis either on paper or by use of suitable statistical software package such as SPSS and to interpret the output obtained in a manner that demonstrates a thorough understanding of statistical concepts.
- Be able to explore data statistically and identify patterns and relationships in data, and to use statistical models to judge the relevance and significance of data being investigated and also identifying the limitations of the method of enquiry.
- Be able to select appropriate techniques/criteria for evaluating data in a given problem and discriminate from competing methodologies the best method to use and for what data.

Indicative Content:

- Sampling distributions of sample statistics.
- Point and interval estimations of population means and proportions.
- Hypothesis and significance testing about the mean and proportion for one and two populations.
- Chi-square tests to cover goodness-of-fit test, test of independence, test of homogeneity and interpretation of test results from analyses using statistical software.
- One-way analysis of variance (ANOVA) to test homogeneity of means of at least three populations, and interpretation of ANOVA test results from analyses using statistical software.
- Linear regression to estimate least square line and test significance of estimated parameters to draw relevant conclusions on nature of estimated model, and interpretation of linear regression output from analysis using a

statistical software.

- Non-parametric methods and related tests.

Assessment:

This course conforms to the Richmond University Special Programme Assessment Norms for Mathematics approved by Academic Council on 28 June 2012.

Teaching Methodology:

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

Bibliography:

IndicativeText(s):

Mann, P.S., *“Introductory Statistics”*, 7th Edition, Wiley 2010

Pallant Julie, *“SPSS Survival Manual”*, 3rd Edition, Open University Press, 2007

Journals

Journal of Royal Statistical Society

Journal of Biometric Society

Journal of the American Statistical Association

Journal of Applied Statistics

Web Sites

Royal Statistical Society

<http://www.rss.org.uk/site/cms/contentCategoryView.asp?category=90>

American Statistical Association

<http://www.amstat.org/>

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 or Minor Change	Nature of Change	Date Approved & Approval Body (School or AB)	Change Actioned by Academic
Minor	Updated List of Programme Outcomes	School: 11 th Nov 16	

