LEC 3204 Research Methods and Statistics

Hours Per Week			Hours per Semester	Weighted Total Mark	Weighted Exam Mark	Weighted Continuous Assessment	Credit Units
LH	PH	TH	CH	WTM	WEM	WCM	CU
3	0	3	45	100	60	40	3

Rationale/Course Description

The course is about scientific ways of getting information. Construction managers should be able to carry out scientific research to acquire facts onto which to base action and decision. This course provides the student with research skills needed to conduct scientific research and report writing.

Objectives/aim

• Differentiate the five basic research methods.

1. *Mathematics for Economists: An Elementary Survey.* Prentice - Hall, Inc. Englewood Cliffs New Jersey.

Identify the strengths of each method. Identify the limitations of each method.

Course Outline

1. Foundations [10 CH]

1.1 Language Of Research

1.2 Philosophy of Research

1.3 Ethics in Research

1.4 Conceptualizing

1.5 Evaluation Research

2. Sampling [5 CH]

2.1 The convenient sample

2.2 The judgement sample

2.3 Random sampling (simple, systematic, stratified, cluster)

2.4 Purposeful sampling

3. Measurement [5 CH]

3.1 Scale of measurement

3.2 Sources of measurement errors

3.3 Development of measurement tools

3.4 Scaling techniques & their problems

3.5 Important scaling techniques

3.6 Types of scales

4. Research Design [5 CH]

4.1 Randomised experiment or true experiment

4.2 Quasi- experimental design

6.

[10 CH]

Write-up

4.3 Non-experimental design

5. Analysis [10 CH]

5.2 Preparation of data for analysis

5.3 Data validity

5.4 Data reliability

5.5 Triangulation

5.6 Descriptive statistics

5.7 Inferential statistics

7.1 Structure of Research report

7.2 Formatting

7.3 Challenges of writing

7.4 Citing sources and referencing

7.5 Plagiarism

Learning Outcomes

On completing this course the student should be able to conduct a basic scientific research and write a research report.

Method of Teaching/delivery

The course will be conducted through a mixture of lectures, tutorials and group discussions. Basic lecture materials and data will be provided by the Lecturer and this will be supplemented by individual reading effort by students.

Assessment Method

Assessment will be done through continuous coursework and final written examination. Continuous assessment will include assignments, classroom tests and practical exercises. A final examination will be offered at the end of each semester. Coursework will carry a total of 40% and a written examination will carry 60%. Coursework marks will be divided into: assignments 15%, attendance 5% and written tests 20%.

Reference books and materials.

1. . Addison *Probability and Statistics* - Wesley Publishing Company, London

2. *Econometrics.* McGraw -Hill Book Company, New York

3. *Statistics for Business and Economics Methods and Applications* W.W.Norton and Company, New York, London.

4. *Principles of Econometrics.* John Wiley and Sons Inc. New York/Chichester Brisbane and Toronto.