QUS 4102 Operations Research Techniques

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	4

Course description

This course examines projects with emphasis on planning, scheduling and general principles of Operation Research.

Objective(s)

To give students methods of scheduling, management planning and control of projects in the course of designing and production.

Course contents

1. Introduction to operations research and its application in construction; productivity in construction [30 CH]
2. Construction Management Tools and Techniques [30 CH]

2.1 Project Work Breakdown

2.2 Work Scheduling

2.3 Critical Path Method of Analysis

2.4 Project Evaluation and Review Technique

2.5 Precedence Network Analysis

2.6 Manpower Scheduling

2.7 Planning for Construction Materials

2.8 Planning for Construction Equipment

2.9 Construction Costs and Budgets

2.10 Statistical Approach

2.11 Computer Applications

Learning outcomes.

On completion of the course the student should be able to apply various methods of Network Analysis to schedule project activities and resources, and also estimate project durations.

Method of delivery.

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

Method of assessment.

Assessment will be done through continuous coursework and final written examination. Continuous assessment will include assignments and classroom tests. A final examination will be offered at the end of each semester and will carry 60% of

the total mark. Coursework will carry a total of 40% and will be divided into: assignments 20%, and written tests 20%.

Reference books and materials.

1. Pilcher R.. 1976. ***Principles of Construction Management.*** 1976 (2nd Edn.) Mc Graw-Hill Book Company London

2. Harris F. and Mc Caffer D. 1983. ***Modern Construction Management,*** Granada Publishing, London

3. Peurifoy R. L. 1970. ***Construction planning, equipment & Methods,*** McGraw - Hill book company, Ltd.

4. Donald S.B. & Boyd C.P 1992. ***Professional construction Management,*** McGraw Hill International Editions, New York.