



The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.
Please consult the web for updates that may occur during the year.

Description: Engineering Management Science

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
ENG	4004	90321	2, 2009	ONC	1.00	Toowoomba

Academic group:	FOENS
Academic org:	FOENSV
Student contribution band:	2
ASCED code:	039999

STAFFING

Examiner: Harry Ku
Moderator: Bob Fulcher

SYNOPSIS

Management science techniques are used extensively in modern engineering industry to plan, organise and control construction and manufacturing. Management science is also referred to as 'operations research' and utilises quantitative analysis to assist with the decision making process. In this course several analytical techniques will be investigated including network analysis, project management, linear programming, simulation and quality control. Many of these quantitative methods are used, not only in engineering production and project work, but also in the management of other processes.

OBJECTIVES

The course objectives define the student learning outcomes for a course. The assessment item(s) that may be used to assess student achievement of an objective are shown in parenthesis. On completion of this course, students should be able to:

1. utilise CPA management techniques to plan, analyse, schedule and control engineering and surveying projects (assignment 1, examination);
2. use a variety of operational research techniques to analyse complex management problems and to synthesise and evaluate possible solutions to these problems (assignment 2, examination);
3. analyse production and supply in terms of various inputs, types of costs, break even analysis, and the effect of time on the value of money (examination).

TOPICS

	Description	Weighting (%)
1.	Network analysis	40.00
2.	Programming techniques	15.00

3.	Simulation	10.00
4.	Quality control techniques	25.00
5.	Micro economic functions	10.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

ENG4004 Engineering management science study book, USQ Publication,

ENG4004 Engineering management science solution manual, USQ Publication,

Russell & Taylor 2008, *Operations management: quality and competitiveness in a global environment*, 6th edn, Wiley, Hoboken, NJ.

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Jensen, PA & Bard, JF 2003, *Operations research models and methods*, Wiley, Hoboken, NJ.

Meredith, J & Mantel, S 2006, *Project management: a managerial approach*, 6th edn, Wiley, Hoboken, NJ.

Taylor, BW 2006, *Introduction to management science*, 9th edn, Pearson/Prentice-Hall, Upper Saddle River, NJ.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessments	12.00
Directed Study	26.00
Examinations	2.00
Lectures	13.00
Private Study	78.00
Tutorials	24.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	150.00	15.00	17 Aug 2009
ASSIGNMENT 2	250.00	25.00	12 Oct 2009
2 HOUR OPEN EXAMINATION	600.00	60.00	END S2 (see note 1)

NOTES

1. Student Administration will advise students of the dates of their examinations during the semester.

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:
To satisfactorily complete an individual assessment item a student must achieve at least 50% of the marks or a grade of at least C-. (Depending upon the requirements in Statement 4 below, students may not have to satisfactorily complete each assessment item to receive a passing grade in this course.)
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without extenuating circumstances then a penalty of 5% of the assigned mark may apply for each working day late up to a maximum of ten working days at which time a mark of zero can be recorded for that assignment.
- 4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade in a course a student must obtain at least 50% of the total weighted marks for the course.
- 5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the weighted aggregate of the marks (or grades) obtained for each of the summative assessment items in the course.
- 6 Examination information:
In an Open Examination, candidates may have access to any material during the examination except the following: electronic communication devices, bulky materials, devices requiring mains power and material likely to disturb other students. Students must bring their study book to the examination. Tables contained in the study book will be needed in the examination.
- 7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the examination period at the end of the semester of the next offering of this course.
- 8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene

University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

ASSESSMENT NOTES

- 1 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner.
- 2 Students must retain a copy of each item submitted for assessment. This must be despatched to USQ within 24 hours if required by the Examiner.
- 3 In this course students may submit assignments electronically in the format specified in the assignment requirements.
- 4 The Faculty will NOT accept submission of assignments by facsimile.
- 5 Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner of the course to negotiate such special arrangements.
- 6 In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.
- 7 Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded one of the temporary grades: IM (Incomplete - Make up), IS (Incomplete - Supplementary Examination) or ISM (Incomplete -Supplementary Examination and Make up). A temporary grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non directed personal study.
- 8 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete - Deferred Examination; IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).

OTHER REQUIREMENTS

- 1 Students will require access to e-mail and internet access to UConnect for this course.
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