Description: Introduction to Management Science

<table>
<thead>
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<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
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<tr>
<td>MGT</td>
<td>1100</td>
<td>28055</td>
<td>3, 2003</td>
<td>EXT</td>
<td>1.00</td>
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Academic Group: FOBUS
Academic Org: FOB002
HECS Band: 2
ASCED Code: 080301

STAFFING
Examiner: Mehryar Nooriafshar

RATIONALE
This course is the introduction to the discipline of Logistics and Operations Management. It provides students with a general understanding of techniques for managing both goods-producing and service-providing operating systems.

SYNOPSIS
This course introduces students to the concept and applications of quantitative and heuristic approaches to business problems. Most of these techniques are based on the understanding of probability and the methods of manipulating data in order to find optimum answers. Such methods include matrices, non-parametric statistical techniques, calculus and optimisation theory. All these approaches will be studied with the business-related problems so students can recognise their uses in business decision-making.

OBJECTIVES
On completion of this course students should be able to:

- identify the relationship of Operations Management to the functions of a business;
- identify the differences between optimisation and heuristic approaches to business situations;
- understand the concept of causality and fit an appropriate curve to the data;
- apply simple Markov Chain models to appropriate problems;
- apply simple cost/benefit optimisation models based on calculus;
- formulate linear programming problems, solve the two decision variable problems, using the graphical approach and interpret the results;
- apply non-parametric statistics to the evaluation of business results.
TOPICS

Description Weighting (%) 
1. Introduction to business structures and functional areas. 10.00 
2. What is modelling? Differences between an exact, or optimal, approach and a heuristic one. 10.00 
3. Use of graphics to portray business activity. Concepts of causality and curve fitting for business applications. 10.00 
4. Matrices and their application in business. 10.00 
5. Classical optimisation models using calculus. Extension to cost/benefit models, eg EOQ formula. 20.00 
6. Introduction to linear programming as resource allocation modelling. Tabular, algebraic and graphical solutions of two-variable models. 25.00 
7. Introduction to data which will not support parametric statistical procedure. Simple non-parametric tests eg Binomial, sign, Chi-squared, Mann-Whitney. Their use and interpretation. 15.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED:

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at http://bookshop.usq.edu.au by entering the author or title of the text.


(It has been negotiated with the publishers to shrinkwrap the text 'College mathematics' by Tan with an innovative multimedia system 'Journey through calculus')

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.


STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>Assessment</td>
<td>18</td>
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<tr>
<td>Directed Study</td>
<td>85</td>
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<td>Private Study</td>
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ASSESSMENT DETAILS

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<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
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<tr>
<td>PRACTICAL CASE STUDY</td>
<td>50.00</td>
<td>50.00</td>
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<td>12 Jan 2004</td>
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<tr>
<td>2.5 HOUR EXAMINATION</td>
<td>20.00</td>
<td>50.00</td>
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NOTES:

- The examination is scheduled to be held in the end-of-semester examination period. Students will be advised of the official examination date after the timetable has been finalised.

IMPORTANT ASSESSMENT INFORMATION

1. Attendance requirements:
   If you are an International student in Australia it is a requirement of your student visa that you attend all classes at your campus. For all other students, there are no attendance requirements for this course. However, it is the students' responsibility 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 complete each of the assignments satisfactorily, students must attempt all assignment questions. To complete the examination satisfactorily, students must attempt all examination questions.

3. Penalties for late submission of required work:
   If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks available for the assignment will apply for each working day late.

4. Requirements for student to be awarded a passing grade in the course:
   To be assured of receiving a passing grade a student must achieve at least 50% of the available weighted marks for the summative assessment items.

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 obtained for each of the summative assessment items in the course.

6. Examination information:
   This is a restricted examination. Candidates are allowed access to specific materials during the examination. The only materials that candidates may use in the restricted
examination for this course are: writing materials (non-electronic and free from material which could give the student an unfair advantage in the examination); calculators which cannot hold textual information (students must indicate on their examination paper the make and model of any calculator(s) they use during 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 next examination period.

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/SECARIAT/calendar/Part5/ or in the printed version of the current USQ Handbook. Students should also read The Guide to Policies and Procedures of the Faculty which can be found at the URL: http://www.usq.edu.au/handbook/2003/title663.html or in the printed version of the current USQ Handbook.

ASSESSMENT NOTES

1 Assignments: (i) 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. (ii) Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner. (iii) The Examiner may grant an extension of the due date of an assignment in extenuating circumstances. Students may apply for an extension through the DEC before the due date or by including an application with the submitted assignment after the due date. Such applications should be in writing and include supporting documentary evidence. The authority for granting extensions rests with the relevant Examiner.

2 Course Weightings: Course weightings of topics should not be interpreted as applying to the number of marks allocated to questions testing those topics in an examination paper.

3 Deferred Work: 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 E-mail and Internet Access: Students will require access to e-mail and Internet access to USQConnect for this course.