**Description: Decision Support Tools**

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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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<td>3, 2003</td>
<td>EXT</td>
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**Academic Group:** FOBUS  
**Academic Org:** FOB002  
**HECS Band:** 2  
**ASCED Code:** 020307

**STAFFING**

Examiner: Dom Pensiero  
Moderator: Joe Zhou

**RATIONALE**

Managers receive vast quantities of data, translate it to information, disseminate this within the organisation, analyse it, and interpret the outcomes in order to make informed and balanced decisions. This course is designed to improve the quality of management decision-making by the introduction of relevant statistical, operations research and operations management techniques. These techniques aim to bridge the gap between the theory and practical application of quantitative techniques as decision support tools.

**SYNOPSIS**

The course aims to enhance the ability of managers to make decisions by formulating real world problems, often featuring ambiguity, in a manner which allows the application of quantitative management tools. The generalised approach of problem formulation, modelling, solution, interpretation and implementation will be addressed. The course will deal with the issues of data reduction, inference testing, forecasting, decision analysis, scheduling, location and layout decisions, Just-In-Time, project management and quality management.

**OBJECTIVES**

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

- Assess, organise, summarise, present and interpret data for decision-making purposes;
- Demonstrate a systematic approach to decision-making by applying decision theory to business situations, determining how much additional data is required, and assessing whether it is cost effective to do so;
• Determine the relevant simple regression and correlation coefficients for a data set reflecting a given business situation and interpret the validity of the results obtained models;
• Select the forecasting tools applicable to a given situation, choose the most relevant, apply, and assess the validity and limitations of the outcomes;
• Analyse and apply appropriate hypothesis testing procedures for given data sets, and their assess applications to business problems;
• Understand and describe the relevant tools available in establishing and managing a quality management system; Apply these tools to the analysis of organisational systems seeking to control quality;
• Understand and Describe the importance of project management in a wider managerial context, apply simple project principles to given cases and interpret the outcomes;
• Apply and selected qualitative and quantitative managerial tools to scheduling, location and layout problems;
• Apply knowledge based (expert) systems to location and layout problems.

TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tr>
<td>1. Data Reduction</td>
<td>10.00</td>
</tr>
<tr>
<td>2. Use of Continuous Distributions</td>
<td>15.00</td>
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<tr>
<td>3. Regression and Correlation</td>
<td>15.00</td>
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<tr>
<td>4. Decision Theory</td>
<td>10.00</td>
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<tr>
<td>5. Business Forecasting</td>
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<tr>
<td>6. Selected Management Decision Tools</td>
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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.


The three recommended texts will be available as a shrinkwrap package from the USQ Bookshop at a discounted price for students. Purchases of individual texts can be negotiated through the bookshop or publisher but at a higher price. Students should note that if they choose not to purchase the shrinkwrap package, they may subsequently find they cannot purchase individual texts from their local supplier/bookstore. Therefore the shrinkwrap package option is strongly recommended for all students.


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>
</tr>
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<tbody>
<tr>
<td>Assessment</td>
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<tr>
<td>Directed Study</td>
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<td>Private Study</td>
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ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
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<tr>
<td>ASSIGNMENT</td>
<td>40.00</td>
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<td>3 HOUR EXAMINATION</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 the assessment items satisfactorily, students must obtain at least 50% for the assignment and at least 50% for the final examination.

3 Penalties for late submission of required work:
   Any assignment work received after the due date and which has no explanatory documentation attached will be penalised up to 5% per working day late up to two weeks; if an assignment is more than two weeks (10 working days) late without any supporting documentation or explanation, the grade of F (i.e. fail) will be recorded for that assignment.

4 Requirements for student to be awarded a passing grade in the course:
   To be assured of a passing grade, students must pass the assignment (i.e. at least 20/40) and must pass the final examination (i.e. at least 30/60) and achieve a composite score of 50% or more in 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:
   This is an open examination. Candidates may have access to any material during the examination except the following: electronic communication devices (eg mobile telephones, pagers), bulky materials, devices requiring mains power and material likely to disturb other students. Notebook computers are not permitted due to security concerns ie the screen may be visible to other candidates.

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/business/polproc/index.htm 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. As a general rule an extension of time will be granted if appropriate documentary evidence is attached with the assessment when submitted eg medical certificate, letter from employer etc. Students are requested to not apply for extensions in advance but to submit the assessment when available attaching a brief statement or letter together with any documentary evidence. Note that no extensions can be granted once model answers are available. This is generally 2-3 weeks after the due date. (iii) 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. (iv) 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.

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 Make-up Work: (i) 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 the temporary grade: IM (Incomplete - Make up). An IM 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.

4 Supplementary Work: Supplementary examinations may be awarded to students who have passed the assignment (i.e. at least 20/40) and who have achieved a composite score of 50% or more in the course but who have failed the final examination by less than 5% of the examination mark (i.e. a mark of 27/60 or above is required in the final examination to be considered for a supplementary examination provided the student has passed the assignment and achieved 50% or more in the aggregated score).
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).