The University of Southern Queensland

Course Specification

Description: Civil Engineering Management

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
<th>Campus</th>
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</thead>
<tbody>
<tr>
<td>CIV</td>
<td>5602</td>
<td>24738</td>
<td>2, 2003</td>
<td>WEB</td>
<td>1.00</td>
<td>TW MBA</td>
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Academic Group: FOENS
Academic Org: FOES03
HECS Band: 2
ASCED Code: 030901

STAFFING
Examiner: David Thorpe
Moderator: Ron Ayers

RATIONALE
The graduate engineers may, at various times in their careers, be responsible for the administration and control of both day labour and contract construction works. It is therefore essential that the engineer has a sound knowledge of organisational principles, human resource management, financial management, and contract administration.

SYNOPSIS
The course briefly revises and then builds upon basic undergraduate management studies in the major areas of works estimating and planning, feasibility studies, contract law, accounting, management theory and personnel management.

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

- estimate and programme civil engineering construction works;
- carry out engineering feasibility studies;
- know and apply the principles of contract law and industrial law;
- prepare and administer civil engineering contracts;
- understand the principles of bookkeeping and accounting;
- understand and apply the principles of personnel management;
- procure and manage engineering plant;
- set up and control an engineering office management system.
## TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Management principles.</td>
<td>10.00</td>
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<tr>
<td>1.1. Introduction to the theory of leadership (management).</td>
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<tr>
<td>1.2. The management functions of decision making, organising, staffing,</td>
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<td>planning, controlling, communicating and directing.</td>
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<td>1.3. Role of organisations.</td>
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<td>1.4. Role of the manager in organisations</td>
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<td>1.5. Evolution of management theory.</td>
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<td>1.6. Defining goals and objectives.</td>
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<td>1.7. Managing organisational change.</td>
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<td>1.8. Staffing and human resource planning.</td>
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<tr>
<td>2. Works management.</td>
<td>15.00</td>
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<tr>
<td>2.1. Works planning, programming and project development, including</td>
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<td>operations research techniques (eg CPM, PERT, Line of Balance).</td>
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<tr>
<td>2.2. The selection of works standards and an inspection system.</td>
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<tr>
<td>2.3. Estimating and the relationship between estimating and programming.</td>
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<tr>
<td>2.4. Purchasing, storekeeping and stock control.</td>
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<td>2.5. Strategic and tactical planning.</td>
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<td>2.6. Forecasting.</td>
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</table>
3. Engineering economics.  
3.1. Feasibility of projects.  
3.2. Benefit and cost including interest and depreciation.  
3.3. Methods of economic comparison of alternatives.  

4.1. Review of basic statistics and probability.  
4.2. Statistical quality control.  
4.3. Use of statistics in management.  

5. Law relating to civil engineering.  
5.1. The law of contract.  
5.2. The law of master and servant.  
5.3. Injuries to workmen.  
5.4. Trade union law.  
5.5. Industrial disputes and their settlement.  
5.6. Arbitration proceedings.  
5.7. The engineer as an expert witness.
6. Contracts. 10.00

6.1. Types of contracts and their uses.

6.2. Selection of the correct type of contract.

6.3. Preselection of contractors.

6.4. Subcontracting.


6.6. General conditions of contracts and specific responsibilities of engineers.

6.7. Administration of contracts.

6.8. Certifying of work for payment.

6.9. Progress payments.

6.10. Extras and deductions, sureties.


7. Accounting methods and cost control.  


7.3. Final account and balance sheets.  

7.4. Depreciation methods.  

7.5. Cost accounts.  

7.6. Constituents of cost.  

7.7. Methods of costing.  


7.9. Budgeting and budgetary control.  

8. Personnel.  

8.1. The development of an individual within a workplace environment.  

8.2. Human resources and work demands.  

8.3. Leadership, motivation.  

8.4. Communication, group behaviour.  

8.5. Personnel principles and techniques associated with staff selection, training, education and staff development, interviewing and counselling, safety and industrial hygiene, the role of the supervisor.  

8.6. Industrial awards.

9.1. Economics of plant selection and purchase.


9.3. Replacement.

9.4. Plant records.

9.5. Plant hire.


10. Office management.

10.1. Communication systems.

10.2. Filing systems.

10.3. Computer usage.

10.4. Roles.

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.

Baden Hellard, R. 1995, Project Partnering - Principle and Practice, Thomas Telford,
Callahan, M. T., Quackenbush, D. G. & Rowings, J. E. 1992, Construction Project Scheduling, McGraw Hill,
Harris, F. & McCaffer, R. 2001, Modern Construction Management, 5th edition, Blackwell Science,
Kelly, R., Morledge, R., Wilkinson, S. 2002, Best Value in Construction, Blackwell Science,
STUDENT WORKLOAD REQUIREMENTS

ACTIVITY | HOURS
--- | ---
Assessment | 30
Directed Study | 132
Examinations | 3

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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<tbody>
<tr>
<td>ASSIGNMENT</td>
<td>300.00</td>
<td>30.00</td>
<td>Y</td>
<td>26 Sep 2003</td>
</tr>
<tr>
<td>3 HOUR CLOSED EXAMINATION</td>
<td>700.00</td>
<td>70.00</td>
<td>Y</td>
<td>END S2</td>
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</table>

NOTES:
- Student Administration will advise students of the dates of their examinations during the semester.

IMPORTANT ASSESSMENT INFORMATION

1 Attendance requirements:
   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 assessment items satisfactorily, students must obtain at least 50% of the marks available (or at least a grade of C-) for each assessment item.

3 Penalties for late submission of required work:
   If students submit assignments after the due date without prior approval then a penalty of 20% 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 submit all of the summative assessment items and achieve at least 50% of the available weighted marks for those 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 (or grades) obtained for each of the summative assessment items in the course.

6 Examination information:
In a Closed Examination, candidates are allowed to bring only writing and drawing instruments into 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/SECARIAT/calendar/Part5/ or in the printed version of 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 accordance with University's Assignment Extension Policy (Regulation 5.6.1), the examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances.

4 In this course students may submit assignments electronically in the format specified in the assignment requirements.

5 The Faculty will NOT accept submission of assignments by facsimile.

6 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.

7 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.

8 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.

9 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 USQConnect for this course.