The University of Southern Queensland

Course specification

Description: Automated Surveying Systems

<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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<tbody>
<tr>
<td>SVY</td>
<td>2301</td>
<td>30954</td>
<td>1, 2004</td>
<td>EXT</td>
<td>1.00</td>
<td>TW MBA</td>
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Academic group: FOENS
Academic org: FOES05
Student contribution band: 2
ASCED code: 031101

STAFFING
Examiner: Kevin McDougall
Moderator: Peter Gibbings

REQUISITES
Pre-requisite: SVY1103 and SVY1104 and ENG1101

SYNOPSIS
Today's surveying graduate needs skills in the use and application of electronic field equipment in particular, total stations and hand held data recorders. They also need the ability to be able to utilise computer software to process this data for design and plan production purposes. This course introduces the student to a variety of electronic total stations and data recorders and develops their skills in the use of this equipment in a practical field situation. Instruction is also given in the use of relevant computer hardware and software packages associated with data processing. The methodology of automated field surveying is also discussed.

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

- use a survey total station and electronic data recorder in a practical field situation;
- understand and use the concepts of field codes, point numbers, strings and breaklines to code a field survey;
- understand the meaning and use of digital terrain modelling and its associated triangulation;
- demonstrate a knowledge of hardware interfacing to enable data transfer between devices;
- demonstrate an in depth knowledge of at least one PC based surveying software package by completing projects;
• use a software package for survey/engineering design including volumetric calculations;
• use the CAD option of the software to produce hard copy output;
• utilise electronic survey systems for the field set out of computer designs;
• understand and discuss the legality of electronically produced survey records.

TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Introduction</td>
<td>5.00</td>
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<tr>
<td>2. Electronic Total Stations and Electronic Levels</td>
<td>15.00</td>
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<tr>
<td>3. Developments in Automated Surveying Systems</td>
<td>5.00</td>
</tr>
<tr>
<td>4. Field Coding Systems</td>
<td>10.00</td>
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<tr>
<td>5. Electronic Data Recording</td>
<td>10.00</td>
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<tr>
<td>6. Data Reduction and Processing</td>
<td>20.00</td>
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<tr>
<td>7. Review of Computers and Communication</td>
<td>5.00</td>
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<td>8. Software Systems</td>
<td>10.00</td>
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<td>9. Output of Plans</td>
<td>5.00</td>
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<td>10. Job Planning, Progress and Quality Assurance</td>
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<tr>
<td>11. Examples of Case Studies</td>
<td>5.00</td>
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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).

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>Directed Study</td>
<td>30.00</td>
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<tr>
<td>Examinations</td>
<td>3.00</td>
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<tr>
<td>Private Study</td>
<td>46.00</td>
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<tr>
<td>Project Work</td>
<td>56.00</td>
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<tr>
<td>Report Writing</td>
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</table>

ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks out of</th>
<th>Wtg(%)</th>
<th>Due date</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSIGNMENT 1</td>
<td>200.00</td>
<td>20.00</td>
<td>05 Apr 2004</td>
</tr>
<tr>
<td>ASSIGNMENT 2</td>
<td>300.00</td>
<td>30.00</td>
<td>24 May 2004</td>
</tr>
<tr>
<td>3 HOUR CLOSED EXAMINATION</td>
<td>500.00</td>
<td>50.00</td>
<td>END S1</td>
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NOTES:

1. 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 achieve at least 45% in each of the summative assessments and 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 (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/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 produced within five days 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 The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media.

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 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.

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).

10 This is a communication benchmark course and a major component of the assessment of this course will be associated with the demonstration of communication skills.

OTHER REQUIREMENTS

1 IMPORTANT NOTES!! ACCESS TO AUTOMATED SURVEYING SYSTEMS
Students are expected to organise their own use of a total station, data collector and software package in order to complete Assignment 2. If this proves to be impossible you are urged to contact the course examiner as soon as possible after the semester commences.

2 Students will require access to e-mail and internet access to USQConnect for this course.