The University of Southern Queensland

Course specification

Description: Survey Computations A

<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>1104</td>
<td>35005</td>
<td>2, 2004</td>
<td>EXT</td>
<td>1.00</td>
<td>TWMBRA</td>
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Academic group: FOENS
Academic org: FOES05
Student contribution band: 2
ASCED code: 031101

STAFFING
Examiner: Kevin McDougall
Moderator: Shane Simmons

REQUISITES
Pre-requisite: SVY1102

RATIONALE
Much of a surveyor's work involves plane geometry. Traverse calculations, area calculations, coordinate calculations, road geometry and circular curve calculations are also regular components of a surveyor's workload. Surveyors normally work independently and must learn to identify a method of solving a survey problem, calculate a solution and prove that solution is correct by a different independent calculation. They must be VERY familiar with the functions available in a modern hand held programmable calculator; must be able to program a calculator and be able to utilize their programs to obtain solutions.

SYNOPSIS
This course introduces the student to standard problems in plane geometry which arise in surveying and to the use of a programmable calculator to solve those problems.

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

1. use a nominated hand held calculator to solve surveying problems;
2. perform plane surveying calculations including: (a) traverse closes; (b) area subdivisions; (c) missing components; (d) coordinate calculations; (e) traverse adjustments by Bowditch Rule; (f) areas; (g) cross section areas; (h) road secants and sides; (i) opposite side and intersection problems; (j) curves;
3. write simple surveying calculation programs for use in hand held programmable calculators.

**TOPICS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tr>
<td>Calculations involving missing components</td>
<td>20.00</td>
</tr>
<tr>
<td>Areas</td>
<td>14.00</td>
</tr>
<tr>
<td>Co ordinates</td>
<td>14.00</td>
</tr>
<tr>
<td>Traverse adjustment</td>
<td>14.00</td>
</tr>
<tr>
<td>Circular curve</td>
<td>13.00</td>
</tr>
<tr>
<td>Road secants</td>
<td>10.00</td>
</tr>
<tr>
<td>Calculator programming</td>
<td>15.00</td>
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</table>

**TEXT and MATERIALS required to be PURCHASED or ACCESSSED:**

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).

Hewlett Packard HP48G hand held battery operated programmable calculator.

CalcWare link for PC, connecting software for HP48 series calculators. Upload, download and backup files from or to your PC.

Programs suitable for the student's programmable calculator. As a minimum the programs must solve: for missing bearing and distance; for two missing distances; for two missing bearings; for missing bearing and distance (different lines); for three missing distances; for missing distance on one line and missing bearing and distance on a second line; for unadjusted areas; and for a Bowditch Adjustment.

**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>16.00</td>
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<tr>
<td>Directed Study</td>
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<tr>
<td>Examinations</td>
<td>3.00</td>
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<td>Private Study</td>
<td>84.00</td>
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**ASSESSMENT DETAILS**

<table>
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<tr>
<th>Description</th>
<th>Marks out of</th>
<th>Wtg(%)</th>
<th>Due date</th>
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<tr>
<td>ASSIGNMENT 1</td>
<td>130.00</td>
<td>13.00</td>
<td>23 Aug 2004</td>
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<tr>
<td>ASSIGNMENT 2</td>
<td>170.00</td>
<td>17.00</td>
<td>11 Oct 2004</td>
</tr>
<tr>
<td>3 HOUR OPEN EXAMINATION</td>
<td>700.00</td>
<td>70.00</td>
<td>END S2 (see note 1)</td>
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</table>

**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:
(i) 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. (ii) The final examination is prepared under the assumption that the student has a hand held battery operated programmable calculator with a CLOSE program as described in Text and Materials required to be Purchased or Accessed. It is also expected that students will have programmed their own calculator to solve other computation formula. (iii) Students must note the make and model of the calculator used on the front of the Answer Book or Examination Paper where applicable. This may be subject to checking by the supervisor.

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 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).