The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.
Please consult the web for updates that may occur during the year.

Description: Geodetic Surveying A

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
SVY	2106	86542	1, 2009	ONC	1.00	Toowoomba

Academic group: FOENS
Academic org: FOES05
Student contribution band: 2
ASCED code: 031101

STAFFING

Examiner: Peter Gibbings
Moderator: Albert Kon-Fook Chong

REQUISITES

Pre-requisite: SVY1110

RATIONALE

Surveyors require the knowledge and skills necessary to precisely locate features on the Earth's surface. To do this, they require an understanding of the equipment and methods used to observe precise angles, and differences in level, as well as the determination of coordinates from GPS equipment.

SYNOPSIS

The purpose of this course is to provide the student with an understanding of the equipment and methods used to carry out precise surveys, including sources of error and the techniques used to minimise or eliminate them. In addition the students are expected to gain the necessary skills to complete these surveys at an appropriate standard.

OBJECTIVES

The course objectives define the student learning outcomes for a course. The assessment item(s) that may be used to assess student achievement of an objective are shown in parenthesis. On completion of this course, students should be able to:

1. describe the geodetic relationships of the size and shape of the earth (assignment 2 and exam);
2. use statistics to analyse geodetic observations, values and positional results (assignments 1, 2 and exam);
3. explain the construction properties and uses of the UTM map projection and identify its fundamental elements (exam);

4. demonstrate a knowledge of the sources of errors in precise angle observations and the techniques used to minimise their effects (assignments 1, 2 and exam);
5. demonstrate a knowledge of the effects of curvature and refraction on lines of sight (assignment 2 and exam);
6. apply this knowledge of curvature and refraction to trigonometrical levelling (assignment 2 and exam);
7. demonstrate an understanding of the fundamental principles of GPS carrier phase observations (exam);
8. describe the RTK and other GPS system components and explain their use and operation (exam);
9. describe the principles of data acquisition, data presentation and uses of the RTK GPS technique (exam);
10. demonstrate ability to enter data, without errors or omissions, into standardised systems for electronic processing (assignment 1 and exam).

TOPICS

	Description	Weighting (%)
1.	Introduction to Geodesy	10.00
2.	Statistical Analysis in Surveying	10.00
3.	Map Projections and the UTM	10.00
4.	Precise Angles Observations	10.00
5.	Trigonometrical Heighting	10.00
6.	The GPS phase Observable	20.00
7.	The Real-Time Kinematic (RTK) system	20.00
8.	Applications and data collection	10.00

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).

1980, *Eton statistical and math tables*, 4th edn, Heinemann, Auckland.

SVY2106 Geodetic surveying a: external study package, University of Southern Queensland, Toowoomba.

Microsoft Excel 97 or later (students purchasing this software will find it more economical to purchase the Microsoft Office package which includes Excel).

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.

Other references are provided at specific places in the USQ texts.

McElroy, S 1992, *Getting started with GPS surveying*, GPSCO, Bathurst, NSW, Australia. (526.982 MacE)

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessments	48.00
Examinations	2.00
Laboratory or Practical Classes	24.00
Lectures	24.00
Private Study	57.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	150.00	15.00	06 Apr 2009
ASSIGNMENT 2	150.00	15.00	11 May 2009
2 HOUR CLOSED EXAMINATION	700.00	70.00	END S1 (see note 1)

NOTES

1. Student Administration will advise students of the dates of their examinations during the semester.

IMPORTANT ASSESSMENT INFORMATION

1 Attendance requirements:
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and 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 satisfactorily complete an assessment item a student must achieve at least 50% of the marks or a grade of at least C-. Students do not have to satisfactorily complete each assessment item to be awarded a passing grade in this course. Refer to Statement 4 below for the requirements to receive a passing grade in this course.

3 Penalties for late submission of required work:

If students submit assignments after the due date without extenuating circumstances then a penalty of 5% of the assigned mark may apply for each working day late up to a maximum of ten working days at which time a mark of zero can be recorded for that assignment.

4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade in a course a student must obtain at least 50% of the total weighted marks for 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:
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 on the online 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 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 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).

OTHER REQUIREMENTS

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