



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: Photogrammetry and Remote Sensing

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
SVY	3202	86543	1, 2009	EXT	1.00	Toowoomba

Academic group:	FOENS
Academic org:	FOES05
Student contribution band:	2
ASCED code:	031199

STAFFING

Examiner: Albert Kon-Fook Chong
Moderator: Armando Apan

RATIONALE

There is increased and wider use being made of remotely sensed data from terrestrial and aerial photogrammetry, laser scanners and satellite sensed data to gather information for geographic information systems. Computer and electronic technology advances are continually increasing the availability, variety and usefulness of this photogrammetric and satellite sensed data, increasing its importance within the spatial information industry. It is necessary for the spatial science professional to be aware of the methods of acquisition of these data forms, their accuracies and precision, their uses and the relative economics compared to other spatial science techniques.

SYNOPSIS

This course will enable students to extract, interpret and evaluate data from aerial photographs, terrestrial photographs and laser scanned images. This data will be presented and related to the environment or integrated with other data forms for direct application or information system storage. This course will also develop the student's understanding of the physical basis and properties of remotely sensed data. During the investigation of applications of this satellite sensed data, students will develop basic skills and knowledge in extracting, manipulating, interpreting, analysing and presenting this data.

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 (to be advised);

1. explain the basic principles, theory and accuracy of various aerial and terrestrial photogrammetric methods (assignment 1 and exam);
2. design of photogrammetric surveys (assignment 1);
3. compare the methodologies and techniques of using analytical or digital photogrammetric equipment, to extract information from photographs (assignment 1 and exam);

4. appraise the application of photogrammetric methods to topographic mapping, engineering projects and information gathering for geographic information systems (assignment 1 and exam);
5. illustrate the accuracies and application of laser imaging (assignment 1);
6. describe the basic principles of remote sensing and possible applications (assignment 2 and exam);
7. describe the physical basis of remote sensing; these include spectral, temporal, spatial and resolution properties; the spectrum and its radiation and reflectance properties; and image properties (assignment 2 and exam).

TOPICS

	Description	Weighting (%)
1.	Aerial photogrammetry and remote sensing principles and properties	15.00
2.	Aerial and terrestrial photogrammetry	20.00
3.	Photogrammetry and remote sensing image interpretation	15.00
4.	Photogrammetric project planning	10.00
5.	Photogrammetric data acquisition	25.00
6.	Laser imaging principles and techniques	10.00
7.	Photogrammetry, remote sensing and GIS relationships	5.00

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).

SVY3202 Photogrammetry and Remote Sensing External Study Package, USQ Publication, Toowoomba.

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.

Lillesand, TM, Kiefer, RW & Chipman JW 2004, *Remote sensing and image interpretation*, 5th edn, John Wiley & Sons, New York.

(Library 621.3678 Lil)

Mikhail, EM, Bethel, JS and McGlore, JC 2001, *Introduction to modern photogrammetry*, Wiley, New York.

Rees, WG 2001, *Physical principles of remote sensing*, 2nd edn, Cambridge University Press, Cambridge.

(Library 621.3678 Ree)

Wolf, PR and Dewitt, BA 2000, *Elements of photogrammetry: with applications in GIS*, 3rd edn, McGraw Hill, New York.

(Library 526.982 Wol)

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessments	21.00
Directed Study	50.00
Examinations	2.00
Private Study	82.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	250.00	25.00	29 Apr 2009
ASSIGNMENT 2	150.00	15.00	26 May 2009
2 HOUR CLOSED EXAMINATION	600.00	60.00	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:
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 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 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).