



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: Web Based Geographic Information System

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
GIS	4407	78928	2, 2008	EXT	1.00	Toowoomba

<b>Academic group:</b>	FOENS
<b>Academic org:</b>	FOES05
<b>Student contribution band:</b>	2
<b>ASCED code:</b>	031103

### STAFFING

Examiner: Badri Basnet  
Moderator: Armando Apan

### REQUISITES

Pre-requisite: GIS1402 or Students must be enrolled in one of the following Programs: GCGS or GDGS or MSST

### RATIONALE

There is a need to integrate spatio-temporal data from various organisations to provide an analytical and support system for participants across the community. The growing capability of the Internet, World Wide Web and Geographic Information System (GIS) has created a demand for distributed applications of GIS. Development applications for the Internet and Web demand a correct choice between system design, architecture and technologies. The course will focus on the conceptual and practical aspects of developing Web based GIS applications.

### SYNOPSIS

The course covers the fundamental concepts of developing a Web based GIS system. It also discusses the concepts of computer networking and system architecture, design, hardware, and software, an understanding of which is vital to building a successful Web based GIS. The study materials will focus on the theories and principles behind Web mapping, including distributed component technologies, Web interface designs and network communications. Students will focus on how to design and publish Web maps.

### 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. understand basic Web mapping concept (Assignment 1 and Online Quiz);

2. conceptualise distributed information systems and client/server computing (Assignment 1, Online Quiz and Exam);
3. evaluate Web interface design processes and requirements (Online Quiz and Exam);
4. comprehend network and networking environment (Online Quiz and Exam);
5. understand basics of Geographic Mark-up Language (Online Quiz and Exam);
6. appraise performance and security issues related to Web based GIS (Online Quiz and Exam);
7. identify current Web mapping software development trend (Assignment 1); and
8. visualise different types of Web based GIS applications (Assignment 1 and Online Quiz).

## TOPICS

	Description	Weighting (%)
1.	Web mapping: evolution, definitions and concepts	15.00
2.	Introduction to distributed systems and client/server computing	15.00
3.	Web interface design	15.00
4.	Networking fundamentals of Web GIS	15.00
5.	Geographic markup language	10.00
6.	Quality of service and security in Web based GIS	10.00
7.	Web mapping, software	10.00
8.	Web based GIS applications	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).

Peng, Zhong-Ren & Tsou, MH 2003, *Internet GIS - distributed geographic information service for the internet and wireless networks*, John Wiley & Sons, Inc,

## 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.

Mitchell, T 2005, *Web mapping illustrated*, O'Reilly Media Inc. Sebastopol.  
(Also available electronically through library catalogue via Safari Books)

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assignments	50.00
Directed Study	51.00
Examinations	2.00
Private Study	52.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	200.00	20.00	12 Sep 2008
ONLINE QUIZ	100.00	10.00	24 Oct 2008
2 HOUR CLOSED EXAMINATION	700.00	70.00	END S2 (see note 1)

### NOTES

1. Students will be advised of the date of final examination.

## 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-).
- 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/SECARIAT/calendar/Part5/> or in the online USQ Handbook.

## **ASSESSMENT NOTES**

- 1 The due date for an assignment is the date by which a student must despatch the assignment to USQ. The onus is on the student to provide proof of the dispatch 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 - 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. The following temporary grade may be awarded: IDM (Incomplete Deferred Make-up).

## **OTHER REQUIREMENTS**

- 1 Students must have internet access with minimum connection speed of 56kbps (preferably ADSL) to access web materials related to the course as well as e-mail and USQConnect.
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