



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: Asset Management in an Engineering Environment

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
ENG	8104	86009	1, 2009	EXT	1.00	Toowoomba

<b>Academic group:</b>	FOENS
<b>Academic org:</b>	FOENSV
<b>Student contribution band:</b>	2
<b>ASCED code:</b>	039999

## STAFFING

Examiner: David Thorpe  
Moderator: Ron Ayers

## RATIONALE

In the modern world we are living today, the highest expenditure for any government is the cost of infrastructure and maintenance, providing vital services for the community. This is a continuous process and the demand for quality design, construction and maintenance of infrastructure has become an essential requirement for all the governments throughout the world. Asset management in an engineering environment involves the total economic analysis of infrastructure for the total lifespan of the assets.

## SYNOPSIS

The aim of this course is to enhance the ability of technology managers in making better economical and financial decisions for the construction and maintenance of infrastructure assets. This course is designed to cover all aspects of Asset management applied to infrastructure. The students are guided through the historical development of asset management, the role of asset management in an engineering environment, development of strategic planning for asset management, economic management of assets including asset valuation, asset operations and maintenance, integrated asset management, and computer based asset management systems.

## 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. demonstrate an understanding of the role of asset management (Assignment 1, Examination);
2. apply cost effective whole of life financial planning for engineering and technological assets (Assignment 1, Examination);
3. critically evaluate and apply options for asset replacement, rehabilitation or upgrading (Assignment 1, Examination);

4. evaluate and manage the application of computer based asset management systems (Assignment 1, Examination).

## TOPICS

Description	Weighting (%)
1. Historical development of asset management	5.00
2. Role of asset management in an engineering environment	5.00
3. Development of strategic planning for asset management	10.00
4. Asset performance requirements	5.00
5. Asset management planning	5.00
6. Asset management economics	15.00
7. Asset operations, maintenance and renewal	15.00
8. Integrated asset management	15.00
9. Application of computer based asset management systems	20.00
10. Emerging issues in asset management	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).

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

Hudson, WR, Haas, R & Uddin, W 1997, *Infrastructure management: integrating design, construction, maintenance, rehabilitation, renovation*, McGraw-Hill, New York.

## 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.

Various web sites will be cited in the more dynamic components of this course.

Association of Local Government Engineering NZ Inc 2006, *International infrastructure management manual, version 3.0*, Wellington, New Zealand.

(Australia/New Zealand Edition)

Haas, R, Hudson, WR & Zaniewski, J 1994, *Modern pavement management*, Krieger Publishing Company, Florida.

Hodges, NW 1996, *The economic management of physical assets*, Mechanical Engineering Publications Limited, St Edmunds, UK.

Queensland Department of Main Roads 2007, *Road maintenance performance contract manual, Ver 5.4*, 5th edn, Department of Main Roads, Brisbane, Vol 1.

(This is available online via the Library catalogue.)

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessments	37.00
Directed Study	50.00
Examinations	2.00
Private Study	76.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	400.00	40.00	01 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.

## **OTHER REQUIREMENTS**

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