The University of Southern Queensland
Course Specification

Description: Environmental Engineering Practice

<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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<tr>
<td>ENV</td>
<td>3904</td>
<td>14679</td>
<td>2, 2002</td>
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Academic Group: FOENS
Academic Org: FOES03
HECS Band: 2
ASCED Code: 039901

STAFFING
Examiner: Ernest Yoong
Moderator: Rod Smith

PRE-REQUISITES
Co-requisite: ENV 4203

RATIONALE
The environmental engineer is involved in the practice and solutions of problems of environmental sanitation notably the provision of a safe, palatable and adequate public water supply; the treatment and disposal of or recycle of wastewater and solid wastes; the drainage of urban and rural communities; and the control of water, soil and atmospheric pollution. Other concerns include engineering problems related to public health, the elimination of industrial health hazards, and the effect of technological advances on the environment. The environmental engineer is required to evaluate some simple practical tests that are relevant to the above activities.

SYNOPSIS
Students will gain an understanding of the engineering practice of environmental sanitation and evaluate some tests to ascertain the quality of water using bio-chemical and engineering principles. Students will engage in a range of activities related to environmental engineering practice through laboratory experiments, field excursion, and lecture/tutorial.

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

- describe the operational functions involved in a water treatment plant that represent chemical and physical processes;
• describe the operational functions involved in a wastewater treatment plant that represents the physical, chemical and biological processes;
• review basic chemistry concepts and calculations related to water quality;
• evaluate equipment used in the examination of water quality;
• conduct tests to ascertain the quality of water;
• conduct tests related to noise and odour pollution.

**TOPICS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Unit processes, flow rates, residence times, equipment capacities and waste generation involved in water treatment.</td>
<td>20.00</td>
</tr>
<tr>
<td>2. Unit processes, flow rates, residence times, equipment capacities and waste generation involved in wastewater treatment.</td>
<td>25.00</td>
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<td>3. Basic water chemistry and calculations</td>
<td>10.00</td>
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<td>4. Water testing equipment</td>
<td>10.00</td>
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<tr>
<td>5. Tests for Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Sludge Volume Index (SVI), and their relevance to water quality.</td>
<td>25.00</td>
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<tr>
<td>6. Noise and odour</td>
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**TEXT and MATERIALS required to be PURCHASED or ACCESSED:**

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at http://bookshop.usq.edu.au by entering the author or title of the text.

Hand held battery operated calculator.

Laboratory coat.

**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.


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**STUDENT WORKLOAD REQUIREMENTS**

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
</tr>
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<tbody>
<tr>
<td>Assessment</td>
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<tr>
<td>Directed Study</td>
<td>10</td>
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<td>Laboratory or Practical Classes</td>
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**ASSESSMENT DETAILS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
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<tr>
<td>ASSIGNMENT &amp; REPORT</td>
<td>1.00</td>
<td>100.00</td>
<td>Y</td>
<td>21 Oct 2002</td>
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</table>

**OTHER REQUIREMENTS**

1. Attendance at a minimum of 80% of practical and/or residential school sessions is compulsory for a passing grade to be awarded in this course.
2. The only final grades awarded in this course are Pass (P) or Fail (F) grades.
3. To receive a passing grade in this course a student must normally attempt all of the assessments and achieve at least 50% of the available marks for the course.
4. Exemption from practical classes may only be granted by virtue of documented relevant practical experience submitted by the student and approved by the examiner.
5. Practice activities will normally be undertaken in small working groups rather than individually.
6. A minimum standard of communication skills must be demonstrated in order for a passing grade to be achieved.
7. The due date for an assignment is the date by which a student must submit the assignment to the USQ. The onus is on the student to provide proof of the submit date, if requested by the Examiner.
8. Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner.
9. 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.
10. If students submit assignments after the due date without prior approval then a penalty of up to 20% of the total marks for the assignment will apply for each working day late.
11. 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.
12. The Faculty of Engineering and Surveying will NOT accept submission of hand written or typed assignments by facsimile, e- mail or computer diskette. Students in remote locations who do not have regular access to postal services may be given special consideration.
13 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 the temporary grade: IM (Incomplete - Make up). An IM 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.

14 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; IDSM (Incomplete Deferred Examination and Make-up).