The University of Southern Queensland

Course Specification

<table>
<thead>
<tr>
<th>Description: Science Education 2</th>
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<tbody>
<tr>
<td>Subject</td>
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<tr>
<td>EDU</td>
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Academic Group: FOEDU
Academic Org: FOE002
HECS Band: 1
ASCED Code: 070301

STAFFING
Examiner: Jerry Maroulis

RATIONALE
This course represents a new, authentic, curriculum in science, society and technology education for undergraduate science educators. The open-inquiry based learning approach, advocated for this course, provides authenticity where students identify problems, ask further questions based on their prior and current knowledge and share findings and solutions. In this way scientific knowledge is transformed into meaning by an individual within the social and cultural context of education. Further, the course will extend students beyond information and inquiry skills in the direction of clarifying personal values about societal issues from a moral and an ethical standpoint. The authentic approach will demonstrate how society uses scientific knowledge and how different people and groups of people may view things differently. This course will cater for all students, not just those with a significant scientific background.

SYNOPSIS
Authentic science and society education, as presented in this course, will include the construction of knowledge and its transformation into meaning open inquiry and an appreciation of values within the broader scientific and educational community. Problem-solving skills will be advocated in the course and an attitude to science that incorporates honesty, open-mindedness and information sharing will be promoted. Students will experience scientific inquiry which includes learning in contexts characterized by ill-defined problems. They will experience uncertainties, ambiguities, and the social nature of scientific work and knowledge. Students will experience processes of inquiry in which knowledge and practices are shared.

OBJECTIVES
On successful completion of this course students will be able to:
• portray how science impacts on the lives of the students, the children they will teach and on the world around them;
• demonstrate an appreciation of the interrelationships between science and society through the language of science;
• articulate the ways used by science to build knowledge and the ways used to apply the knowledge;
• clarify personal values about societal issues from a moral and an ethical standpoint;
• promote an authentic pedagogical approach to school science; and
• demonstrate how society uses scientific knowledge and how different people and groups of people may view things differently.

**TOPICS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Introduction to Science Education</td>
<td>15.00</td>
</tr>
<tr>
<td>2. Science and Society</td>
<td>10.00</td>
</tr>
<tr>
<td>3. Science and Technology</td>
<td>20.00</td>
</tr>
<tr>
<td>4. Science Resources</td>
<td>10.00</td>
</tr>
<tr>
<td>5. Innovative Pedagogy and Problem-Solving in Science</td>
<td>30.00</td>
</tr>
<tr>
<td>6. Science Curriculum issues</td>
<td>15.00</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.

Additional Course information will be provided via the course website (details will be available in lectures).


**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.


**STUDENT WORKLOAD REQUIREMENTS**

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directed Study</td>
<td>116</td>
</tr>
<tr>
<td>Lectures</td>
<td>28</td>
</tr>
<tr>
<td>Workshops</td>
<td>28</td>
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</table>
ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
</tr>
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<tbody>
<tr>
<td>WORKSHOP PRESENTATION</td>
<td>10.00</td>
<td>10.00</td>
<td>Y</td>
<td>04 Mar 2003</td>
</tr>
<tr>
<td>SCIENCE ISSUE PAPER</td>
<td>30.00</td>
<td>30.00</td>
<td>Y</td>
<td>15 Apr 2003</td>
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<tr>
<td>MAJOR ASSIGNMENT</td>
<td>60.00</td>
<td>60.00</td>
<td>Y</td>
<td>12 Jun 2003</td>
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NOTES:
. Ongoing from Week 10.

OTHER REQUIREMENTS

1. The University Assignment Extension Policy will apply in the course. In particular the examiner may allow an extension of the due date for an assignment in extenuating circumstances. If students submit assignments after the due date without extenuating circumstances then a penalty of 10% of the assigned mark may apply for each working day late.

2. To complete this course successfully it is a requirement that students obtain at least 50% for each assessment item. All assessment items must be submitted/attempted.

3. Summative assessment items will be given a numerical score.

4. Course grades will be calculated by aggregating the weighted result of numerical score for each summative assessment item. Any ungraded assessment item will receive a Pass, Fail or Incomplete.

5. Where there is more than one marker for a single item of assessment, the distribution patterns and means for the different markers will be compared and marks adjusted if necessary.

6. Marking criteria are provided as mark sheets/guides or as part of the assignment specifications.

7. Students will be expected to develop their own resources and therefore may incur some additional costs.