Description: Science Education 2

Subject: EDU  
Cat-nbr: 2431  
Class: 31119  
Term: 1, 2004  
Mode: ONC  
Units: 1.00  
Campus: WIBAY

Academic group: FOEDU  
Academic org: FOE002  
Student contribution band: 1  
ASCED code: 070301

STAFFING
Examiner: Bruce Waldrip  
Moderator: Jerry Maroulis

RATIONALE
This course represents a new, authentic, curriculum in science education for undergraduate 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 a knowledge and understanding of Queensland 1-10 science syllabus and its related science concepts;
• demonstrate an appreciation of the interrelationships between science and society through the language of science;
• demonstrate the application of pedagogical content knowledge to relevant science concepts;
• 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>10.00</td>
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<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 concepts relevant to Queensland science syllabus</td>
<td>25.00</td>
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</tbody>
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**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](http://bookshop.usq.edu.au) click 'Semester', then enter your 'Course Code' (no spaces).

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>116.00</td>
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<tr>
<td>Lectures</td>
<td>28.00</td>
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<tr>
<td>Workshops</td>
<td>28.00</td>
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</table>

**ASSESSMENT DETAILS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks out of</th>
<th>Wtg(%)</th>
<th>Due date</th>
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<tbody>
<tr>
<td>ASSIGNMENT 2</td>
<td>35.00</td>
<td>35.00</td>
<td>02 Apr 2004</td>
</tr>
<tr>
<td>ASSIGNMENT 3</td>
<td>35.00</td>
<td>35.00</td>
<td>07 May 2004</td>
</tr>
<tr>
<td>ASSIGNMENT 1</td>
<td>30.00</td>
<td>30.00</td>
<td>21 May 2004</td>
</tr>
</tbody>
</table>

(see note 1)

**NOTES:**

1. A continuous form of assessment for assignment 1 will commence in week 1.

**IMPORTANT ASSESSMENT INFORMATION**

1. Attendance requirements:
   It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and 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 for each assessment item.

3 Penalties for late submission of required work:
   If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks available for the assignment will apply for each working day late.

4 Requirements for student to be awarded a passing grade in the course:
   To be assured of receiving a passing grade a student must achieve at least 50% in each of the summative assessments and at least 50% of the available weighted marks for the summative assessment items.

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 obtained for each of the summative assessment items in the course.

6 Examination information:
   There is no examination in this course.

7 Examination period when Deferred/Supplementary examinations will be held:
   There will be no Deferred or Supplementary examinations in 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. The student must retain this copy until the grade for this course has been finalised.

3 The examiner may grant an extension of the due date of an assignment in extenuating circumstances.

4 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 working day. Students are to note on the assignment cover the date of the public holiday for the Examiner’s convenience.

5 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.
6 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).

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

8 The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media.

9 Marking criteria are provided in course material as mark sheets/guides or as part of assignment specifications.

10 All assessment items must be submitted and passed.

11 Summative assessment items will receive a numerical score. Any ungraded assessment requirement will receive a Pass, Fail or Incomplete.

OTHER REQUIREMENTS

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

2 Students are to use a recognised referencing system as specified by the course examiner.

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