



The University of Southern Queensland

Course specification

Description: Exploring Science and Technology in Early Childhood

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
ECE	2017	35035	2, 2004	EXT	1.00	TWMBA

Academic group:	FOEDU
Academic org:	FOE004
Student contribution band:	1
ASCED code:	070101

STAFFING

Examiner: Lyn Bower

Moderator: Noel Geoghegan

RATIONALE

Fleer and Hardy (1996) suggest that children's early experiences with science-related concepts and materials are vital for the development of values and attitudes in science and technology. Early science learning and exploration covers the areas of cognitive, conative and affective development. Therefore, educators and parents play an important part as role models by supporting and guiding the development of positive attitudes in the early years and creating imaginative and challenging environments for learning. With increasing technology and availability of information it is also essential for early childhood educators to have the necessary skills to make appropriate choices and informed decisions to develop children's thinking skills and abilities.

SYNOPSIS

This course will examine the importance of developing children's creativity, curiosity, problem solving skills and sense of wonder and appreciation of the environment, in the exploration of science and technology. The course will focus on different approaches to teaching science and the development of positive attitudes for life long learning while taking into account children's cultural and diverse backgrounds. It aims to develop student's creativity, problem solving and analytical skills and their passion for science and technology.

OBJECTIVES

On completion of this course students will be able to:

1. demonstrate creative and problem-solving skills in their approach to science and technology;
2. discuss the value of hands-on experiences for children in science activities;

3. explain a number of approaches to teaching science;
4. demonstrate how to listen effectively and respond to children's questions;
5. demonstrate essential questioning techniques to further extend children's knowledge of science and technology;
6. select, organise and present suitable materials for science experiences for young children;
7. demonstrate the ability to develop children's appreciation of the natural environment;
8. demonstrate some knowledge of science content and an ability to effectively access such knowledge through a variety of sources including web-based materials;
9. develop an enthusiastic scientific attitude and an understanding of developing positive attitudes in young children;
10. analyse curriculum documents and appropriate assessment methods;
11. discuss the importance and impact of culture, values and diversity;
12. use written communication effectively and appropriately;
13. write clearly, grammatically correctly and with accurate spelling and punctuation.

TOPICS

	Description	Weighting (%)
1.	Learning and teaching styles	5.00
2.	Creative problem solving	15.00
3.	Listening and responding to young children's questions and effective questioning	10.00
4.	Approaches to teaching science in ECE	15.00
5.	Environmental science in early childhood - teaching appreciation and developing a sense of wonder	10.00
6.	Technology in early childhood	15.00
7.	Cultural and diverse backgrounds	5.00
8.	Using web-based materials	10.00
9.	Curriculum documents and other resources	5.00
10.	Using resources - community and parents	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).

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.

1998, , *Every Child*, Vol 4, no.4.

(Special Edition - Environment Australia Summer 1998)

Benson, C 1999, *Teaching Science and Design and Technology in the Early Years*, David Fulton, London.

De Vries, R et al 2002, *Developing Constructivist Early Childhood Curriculum: Practical Principles and Activities*, Teachers College Press, New York.

Elliott, S & Emmett, S 1991, *Snails Live in Houses Too: Environmental Education for the Early Years*, Horwitz Grahame Pty Ltd, Cammeray.

Falk, J H & Donovan, E 2001, *Free-choice Science Education: How We Learn Science Outside of School*, Teachers College Press, New York.

Fleer, M 2001, *I Want to Know...?: Learning About Science*, Australian Early Childhood Association, Watson, ACT.

Fleer, M & Hardy, T 2001, *Science for Children: Developing a Personal Approach to Teaching*, 2nd edn, Prentice Hall, Sydney.

Harlan, J & Rivkin, M 2000, *Science Experiences for the Early Childhood Years: An Integrated Approach*, 7th edn, Prentice Hall, USA.

Hooper, D 1999, *Integrating Technology into the Science Curriculum*, Hawker Brownlow Education, Australia.

Johnston, J 1999, *Enriching Early Scientific Learning*, Open University Press, Buckingham.

Koch, J 1999, *Science Stories: Teachers and Children as Science Learners*, Houghton Mifflin Company, Boston.

Rockwell, R, Williams, R & Sherwood, E 1992, *Everybody has a Body: Science from Head to Toe*, Gryphon House, Mt Rainer.

Siraj-Blatchford, J 1999, *Supporting Science, Design and Technology in the Early Years*, Open University Press, Buckingham, Philadelphia.

STUDENT WORKLOAD REQUIREMENTS:

ACTIVITY	HOURS
Assignments	30.00
Directed Study	90.00
Private Study	45.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg(%)	Due date
ASSIGNMENT 1	999.00	50.00	30 Aug 2004 (see note 1)
ASSIGNMENT 2	999.00	50.00	25 Oct 2004

NOTES:

1. 999 indicates that this course will be graded using one of the following letter grades: HD, A, B, C, F, or Incomplete. Plus and minus may be used with each of these letter grades.

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 assignments satisfactorily, students must obtain at least a grade of C- for each assignment.
- 3 Penalties for late submission of required work:
If assignments are submitted after the due date without an approved extension of time, University penalties may be applied.
- 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 a C grade 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 grades 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 1. Letter grades will be used for summative assessment items in this course 2. Students must retain a copy of each item submitted for assessment. This must be produced 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. (a) 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. (c) The examiner may grant an extension of the due date of an assignment in extenuating circumstances. (d) The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media. (e) The Faculty will NOT accept submission of assignments by facsimile. (f) 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. (g) 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.