

Course Outline (Higher Education)

School:	School of Education
Course Title:	SCIENCE CURRICULUM 1
Course ID:	EDMAS6017
Credit Points:	15.00
Prerequisite(s):	Students wishing to undertake this course must have completed the required level of undergraduate study in the appropriate discipline areas as specified in Specialist Area Guidelines published by the Victorian Institute of Teaching.
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED Code:	070301

Description of the Course :

This course is the first in a sequence of two that focuses on curriculum and pedagogy in the Science specialist teaching area for postgraduate Pre-Service Teachers (PSTs). It provides PSTs with an understanding of the nature of science, the role of science in our community, and the changing role of science education. These broad themes combine with introductory Science teaching skills such as: questioning, explaining, practical work, motivation, constructivist teaching and learning, safety, lesson planning and assessment.

Grade Scheme: Graded (HD, D, C, etc.)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks..

Program Level:

AQF Level of Program						
	5	6	7	8	9	10
Level						
Introductory	■	■	■	■	■	■
Intermediate	■	■	■	■	■	■
Advanced	■	■	■	■	✓	■

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EDMAS6017 SCIENCE CURRICULUM 1

Learning Outcomes:

Knowledge:

- K1.** Develop understandings about the nature of Science as a constantly developing field of knowledge and the processes of scientific thinking which support this development.
- K2.** Know about recent developments in Science and how Science impacts on the everyday world.
- K3.** Gain understanding of contemporary curriculum policies and guidelines relevant to teaching and assessing Science in the middle years.
- K4.** Be aware of a range of theoretical and pedagogical approaches, including constructivism, relevant to learning and teaching in Science.
- K5.** Demonstrate a repertoire of effective learning, thinking, literacy and numeracy teaching strategies related to Science.

Skills:

- S1.** Reflect critically on practice, make positive use of feedback and learn in ongoing ways about teaching Science.
- S2.** Use appropriate theoretical frameworks and a range of effective and inclusive teaching strategies to produce effective and engaging learning experiences which cater for a range of learners.
- S3.** Articulate and justify planning, teaching and assessment practices.
- S4.** Use a variety of resources in the classroom to enhance learning.
- S5.** Communicate effectively with learners and colleagues.
- S6.** Pursue interests related to Science and model curiosity, leadership, resilience and problem-solving capacities.
- S7.** Actively participate in professional conversations and debates about the teaching of Science, the role of Science in the community as well as ethical responsibilities.

Application of knowledge and skills:

- A1.** Collaboratively prepare, deliver and evaluate a Science activity which includes links to curriculum policies and pedagogical knowledge.
- A2.** Collaboratively research, design and teach a lesson to science learners. Use video analysis to reflect on critical affective moments and to evaluate the teaching and learning of the participants.
- A3.** Plan and present a sequence of lessons showing links to curriculum policy and explanations about how students achieve learning intentions.

Course Content:

- Examining science as a field of human knowledge and endeavour, the links between science and other areas of knowledge and between the traditional science disciplines.
- A critical evaluation of teaching approaches and dispositions, strategies and resources and their application in Science, including constructivism and scaffolding, inquiry and discovery learning, strategies for building subject-specific literacy, numeracy and practical work.
- Science teaching - using curriculum policies and guidelines for lesson planning, implementation, teaching, evaluation, reflection and assessment purposes
- Critical examination of educational, social and cultural issues that impact on Science education and how these might be addressed.

Course Outline (Higher Education)

EDMAS6017 SCIENCE CURRICULUM 1

Values:

- V1.** Science is relevant to all students and can be made engaging to students.
- V2.** Open to the changing roles Science teachers play in schools and believe that inquiries into practice and personal assumptions, lead to ongoing professional development.

Graduate Attributes:

FedUni graduate attributes statement. To have graduates with knowledge, skills and competence that enable them to stand out as critical, creative and enquiring learners who are capable, flexible and work ready, and responsible, ethical and engaged citizens.

Attribute	Brief Description	Focus
Knowledge, skills and competence	PSTs develop an increased understanding of learners, the nature of teaching and learning processes and the way learning occurs in Science contexts and situations. They identify key needs for their professional growth as a Science teacher and engage in on-going professional learning.	High
Critical, creative and enquiring learners	PSTs are able to plan for learning, make judgments about learning and communicate learning and teaching processes. They critically examine and reflect on teaching practice. PSTs build confidence, creativity and capability in teaching Science.	High
Capable, flexible and work ready	PSTs gain an insight into the social and cultural diversity of communities and ways to build these understandings through teaching Science. They contribute to the growth of Science in education and help to create more scientifically literate people.	High
Responsible, ethical and engaged citizens	PSTs engage in professional discussions with peers and colleagues. They are actively involved in a learning community and develop understandings of social and civic responsibilities and how these can be fostered through the teaching of Science.	High

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K2, K3, K4, K5 S1, S2, S3 S4, S5, S6 A1 V1, V2	Practical demonstration and preparation of a teaching guide for class members showing links to curriculum policies and theoretical perspectives on Science and pedagogy as well as safety requirements.	Presentation to Science learners and evaluation	30 - 40%
K1, K2, K3, K4, K5 S1, S2, S3, S4, S5, S7 A2 V1, V2	Participation in a Lesson Study professional learning community where a lesson is prepared, enhanced, taught, reflected on in a written report, and where further research questions are identified.	Lesson Study Research Task	30 - 40%

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EDMAS6017 SCIENCE CURRICULUM 1

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K2, K3, K4, K5 S2, S3, S4 A3 V1	Preparation of a teaching sequence that allows students to attain stated learning outcomes and which includes inclusive core teaching practices, strategies for teaching subject-specific literacy and numeracy, assessment approaches and articulates effective resourcing (including ICT) and safety requirements.	Curriculum Design	30 - 40%

Adopted Reference Style:

APA