Course Outline (Higher Education)

School: School of Education

Course Title: SENIOR SCIENCE CURRICULUM

Course ID: EDMAS6018

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: 070105

Description of the Course :

This course is designed to introduce pre-service teachers to the philosophy and structure of the Victorian Certificate of Education and the requirements of teaching classes in Units 1, 2, 3, and 4 of the VCE, Ore-service teachers will relate their work to Physics, Chemistry, Biology or Environmental Science.

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

Work Experience:

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

Placement Component: No

Program Level:

AQF Level of Program						
	5	**6**	**7**	**8**	**9**	**10**
Level						
Introductory						
Intermediate						
Advanced					✔	

Learning Outcomes:

This course is designed to enable pre-service teachers to develop the following knowledge, skills and values.

Knowledge:

K1. Articulate a sound knowledge of the VCE Study Designs in Biology, Chemistry, Physics or Environmental Science particularly in Units I and 3.

K2. Display a solid knowledge of the appropriate biological, chemical, physical or earth & space sciences, the relationship to educational contexts, and how they interact in effective teaching.

K3. Understand the rationale, methodologyand teaching strategies relevant to VCE Biology, Chemistry, Physics or Environmental Science and how these subjects relate to the teaching of Science.

K4. Examine resources relevant to the teaching of Biology, Chemistry, Physics or Environmental Science at VCE level.

K5. Identify the links between effective planning, teaching, and assessment areas.

Skills:

S1. Devise valid methods for assessment in VCE Units 1 and 3 in line with VCE guidelines for Biology, Chemistry, Physics or Environmental Science.

S2. Trial and evaluate teaching approaches for Biology, Chemistry, Physics or Environmental Science, using theoretical frameworks and practical ability to produce effective learning for a wide range of students.

S3. Select and use a variety of technologies in the classroom in order to assist learning.

S4. Communicate effectively and articulate and justify decisions related to practice.

Application of knowledge and skills:

A1. Plan and teach an engaging introductory lesson synthesising key concepts and probing student ideas of an Area of Study in Unit 1 or Unit 3 of Biology, Chemistry, Physics or Environmental Science

A2. Design assessment tasks for VCE Unit 1 of Biology, Chemistry, Physics or Environmental Science, including one extended practical investigation, with implementation advice, rationale and assessment strategies

A3. Create a curriculum map encompassing a sequence of lessons relevant to VCE Units 1 and Unit 3 of Biology, Chemistry, Physics or Environmental Science, demonstrating curriculum knowledge, skills and understandings, assessment approaches, and which is informed by school visits and observations

Course Content:

- The Victorian Certificate of Education: the structure, role of VCAA and assessment approaches where formative assessment is used to inform the summative assessment.
- The specific structure and content in VCE Units 1, 2, 3 and 4 in Biology, Chemistry, Physics or Environmental Science with a focus on Units 1 and 3, and the organisation of this into an effective learning and teaching sequence.
- Discussion of methodology and teaching strategies to engage students in VCE Biology, Chemistry, Physics or Environmental Science with particular focus on clear directions for laboratory work, incorporation of ICT, demonstrations, safety in all areas, activity based learning and classroom management.
- Observing practicing teachers of Units 1 and 3 in Biology, Chemistry, Physics or Environmental Science and discussing content, teaching approaches and assessment areas.
- Evaluation and assessment issues at VCE level issues at the school level for Unit 1 and school assessed coursework introduction at Unit 3.
- Preparing students with a range of abilities for examinations (VCAA) in Biology, Chemistry, Physics, and Environmental Science.

Values:

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V1. Be flexible and prepared to adapt to change through knowing how to learn.

V2. Be motivated and confident to engage in continuous learning in order to meet the challenges of a changing world.

V3. Be ethical in the teaching profession and act in a socially responsible manner in the workplace and other settings.

V4. Be engaged and socially responsible citizens.

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 demonstrate knowledge and understanding of concepts, and organise content into effective learning sequences using a range of assessment, literacy, and numeracy teaching strategies.	High
Critical, creative and enquiring learners	PSTs reflect on their practice, and continually develop their understanding and knowledge about effective teaching and learning practices to build confidence and creativity in teaching Senior Science.	High
Capable, flexible and work ready	PSTs plan well organised classroom activities that enable inclusive participation and engagement using effective communication and clear expectations for a range of student abilities and characteristics.	High
Responsible, ethical and engaged citizens	PSTs engage with topical issues in Science, and reflect on how they may impact on learning and teaching. PSTs create meaningful links between scientific knowledge and social issues and make informed decisions about the about the use of science in our society and environment.	High

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K2, K3, K4, K5 S1, S2, S4 A1 APST 2.3, 2.5, 3.3, 3.5, 4.1, 4.2, 5.1	Plan and teach an engaging introductory lesson synthesising key concepts and probing student ideas of an Area of Study in Unit 1 or Unit 3 Biology, Chemistry, Physics or Environmental Science.	Teaching Performance	15-20%
K1, K2, K3, K4, K5 S1, S3, S4 A2 APST 3.1, 3.2, 3.4, 4.1, 4.2, 5.1	Design two assessment tasks for VCE Units 1 and 2, including one extended practical investigation, with implementation advice, rationale and assessment strategies.	Assessment Design	30-40 %
K1, K2, K3, K4, K5 S1, S2, S3, S4 A3 APST 2.1, 2.2, 2.3, 3.2, 3.3, 3.4, 4.1, 5.1	Create a curriculum map encompassing a sequence of lessons relevant to VCE Units 1 and Unit 3 demonstrating curriculum knowledge, skills and understandings, assessment approaches and which is informed by school visits and observations.	Curriculum Design	40-60 %

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Adopted Reference Style:

APA