



Unit Outline (Higher Education)

Institute / School: Institute of Education, Arts & Community

Unit Title: SENIOR SCIENCE CURRICULUM 1

Unit ID: EDBED3038

Credit Points: 15.00

Prerequisite(s): (Pass in 3 Senior Science Courses)

Co-requisite(s): Nil

Exclusion(s): (EDDDE3018)

ASCED: 070301

Description of the Unit:

This unit 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, Pre-service teachers will relate their work to Physics, Chemistry, Biology or Environmental Science.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

Not wholly work experience: Student is not undertaking work experience in industry or student is undertaking work experience in industry where learning and performance is directed by the provider.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment.

CourseLevel:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:**Knowledge:**

- K1.** Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies relevant to teaching VCE Study Designs in Biology, Chemistry, Physics or Environmental Science particularly in Units 1 and 3. in years 7-10
- 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.** Demonstrate developing understandings of the rationale, methodology and teaching techniques relevant to VCE Biology, Chemistry, Physics or Environmental Science and how these subjects relate to the teaching of Science.
- K4.** Identify a range of resources, including ICT, relevant to the teaching of Biology, Chemistry, Physics or Environmental Science at VCE level that engage students in their learning..
- K5.** Examine the links between effective planning, teaching, and assessment areas.
- K6.** Know and understand literacy and numeracy teaching strategies and their application in Senior Science

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.** Show developing skills in the teaching of Biology, Chemistry, Physics or Environmental Science, using theoretical frameworks and practical ability to produce effective learning for a wide range of students.
- S3.** Use a variety of technologies in the classroom in order to assist learning.
- S4.** Be skilled communicators who can effectively articulate and justify their practices.

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

Unit Content:

Topics to be covered

- 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 concepts 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 a range of resources including 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.
- Know and understand literacy and numeracy teaching strategies as applied to Senior Science.

- 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.
- Investigation of the introduction of the Specialist Science Centres in Victoria, and linking their programs with VCE Sciences.

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2, K3, K4, K5, K6 S1, S2, S4 A1 APST 2.3, 2.5, 3.3, 3.5, 4.1, 4.2, 5.1	Presentation of an engaging introductory lesson, or component of a lesson, synthesising key concepts and probing student ideas of an Area of Study	Performance-based task	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 with rationale the selection and implementation of assessment tasks for a VCE unit, including one extended practical investigation	Curriculum planning and assessment task.	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	Review the required VCE curriculum, knowledge, skills and understanding, and design VCE semester plans for Units 1 and 3 that include a range of learning activities that may be informed by school visits and observations.	A task building discipline-based theoretical knowledge with an educational focus.	40-50%

Alignment to the Minimum Co-Operative Standards (MiCS)

The Minimum Co-Operative Standards (MiCS) are an integral part of the Co-Operative University Model. Seven criteria inform the MiCS alignment at a Course level. Although Units must undertake MiCS mapping, there is NO expectation that Units will meet all seven criteria. The criteria are as follows:

1. Co-design with industry and students
2. Co-develop with industry and students
3. Co-deliver with industry
4. FedTASK alignment
5. Workplace learning and career preparation
6. Authentic assessment
7. Industry-link/Industry facing experience

MiCS Course level reporting highlights how each Course embraces the principles and practices associated with the Co-Operative Model. Evidence of Course alignment with the MiCS, can be captured in the Course Modification Form.

MICS Mapping has been undertaken for this Unit No

Date:

Adopted Reference Style:

APA

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)

Professional Standards / Competencies:
Australian Professional Standards for Teachers (AITSL) - Graduate Teacher: Initial

Attribute	Assessed	Level
Professional Knowledge		
2. Know the content and how to teach it		
2.1 Content and teaching strategies of the teaching area Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area.	Yes	Advanced
2.2 Content selection and organisation Organise content into an effective learning and teaching sequence.	Yes	Advanced
2.3 Curriculum, assessment and reporting Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans.	Yes	Advanced
2.5 Literacy and numeracy strategies Know and understand literacy and numeracy teaching strategies and their application in teaching areas.	Yes	Advanced
Professional Practice		
3. Plan for and implement effective teaching and learning		
3.1 Establish challenging learning goals Set learning goals that provide achievable challenges for students of varying abilities and characteristics.	Yes	Advanced
3.2 Plan, structure and sequence learning programs Plan lesson sequences using knowledge of student learning, content and effective teaching strategies.	Yes	Advanced
3.3 Use teaching strategies Include a range of teaching strategies.	Yes	Advanced
3.4 Select and use resources Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning.	Yes	Advanced
3.5 Use effective classroom communication Demonstrate a range of verbal and non-verbal communication strategies to support student engagement.	Yes	Advanced
4. Create and maintain supportive and safe learning environments		

<p>4.1 Support student participation Identify strategies to support inclusive student participation and engagement in classroom activities.</p>	<p>Yes</p>	<p>Advanced</p>
<p>4.2 Manage classroom activities Demonstrate the capacity to organise classroom activities and provide clear directions.</p>	<p>Yes</p>	<p>Advanced</p>
<p>5. Assess, provide feedback and report on student learning</p>		
<p>5.1 Assess student learning Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative and summative approaches to assess student learning.</p>	<p>Yes</p>	<p>Advanced</p>