

Course Outline (Higher Education)

School:	School of Education
Course Title:	SENIOR SCIENCE CURRICULUM 1
Course 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 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, Pre-service teachers will relate their work to Physics, Chemistry, Biology or Environmental Science.

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

Program Level:

Level of course in Program	AQF Level of Program					
	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 a sound knowledge of the VCE Study Designs in Biology, Chemistry, Physics or Environmental Science particularly in Units 1 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.** 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 resources relevant to the teaching of Biology, Chemistry, Physics or Environmental Science at VCE level.
- K5.** Examine 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.** 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

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

Values:

- V1.** Being flexible and prepared to adapt to change through knowing how to learn.
- V2.** The importance of being equipped with the skills, motivation and confidence to engage in continuous learning in order to meet the challenges of a changing world.

- V3.** The significance of generally accepted norms of ethical behaviour in the teaching profession and acting in a socially responsible manner in the workplace and other settings.
- V4.** Being engaged and socially responsible citizens.

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the [Higher Education Graduate Attributes Policy](#) (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	S1, A1	AT1
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	S2, A2	AT3
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	S2	AT3
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	K5, S4, A3	AT2, AT3
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	K2, S1	AT2

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	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%

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>	Yes	Advanced
<p>4.2 Manage classroom activities Demonstrate the capacity to organise classroom activities and provide clear directions.</p>	Yes	Advanced
<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>	Yes	Advanced