EDUC90429 Learning Area Biology 1

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2014.
Time Commitment:	Contact Hours: 36 hours Total Time Commitment: 125 hours. Attendance at all classes (tutorial/ seminars/practical classes/lectures/labs) is obligatory. Failure to attend 80% of classes will normally result in failure in the subject.
Prerequisites:	Teacher Candidates must meet the minimum academic study requirements for teaching in specialist areas, in accordance with the Victorian Institute of Teaching's **Specialist Area Guidelines (http://www.vit.vic.edu.au/finditfast/Teacher-education-programs/Pages/Assessmentofqualifications.aspx)** , for entry into this subject.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the HDisability Liaison Unit websiteH: Hhttp:// www.services.unimelb.edu.au/disability/H
Contact:	Education Student Centre 234 Queensberry Street Call: 13 MELB (13 6352)
Subject Overview:	This subject explores the rationale, resources, methodology and specific techniques appropriate to teaching, learning and assessing Biology, drawing from the current VCAA Biology Study Design (particularly Units 1 and 3) and the Australian Curriculum and Assessment Authority (ACARA). Teaching skills in biological investigation and inquiry, application of biological understandings and communication of biological information and understandings will be developed. In Unit 1 the emphasis is on cell microstructures and functions and systems in functioning organisms and taxonomical research. In Unit 3 the emphasis is on molecular and biochemical processes and medical technologies: investigating DNA structure and proteomics and its application in medicine, cell communication, immunology and bioinformatics. This will be addressed with particular emphasis on the use of ICT to demonstrate and understand structures. Many elements of numeracy are evident in Biology, particularly with regard to *Inquiry Skills*. These include practical measurement and the collection, representation and interpretation of data from investigations. A commitment to numeracy development is an essential component of Biology. This will be addressed by developing strategies which enable teachers to: # identify the specific numeracy demands of Biology # provide learning experiences and opportunities that support the application of students' mathematical knowledge and skills # use the language of numeracy in their teaching as appropriate. A combined science component, shared with the other science methods, has a focus on the design and management of the general science curriculum and teaching in years 7-10. Teacher candidates will explore pedagogical strategies to engage science learners in the middle years of secondary school. This is taught through practice with pupils in small groups in school classrooms, and through workshops and excursions delivered by Science education experts. Teacher candidates will be introduced to the use of research on student's naïve conceptions

	in various science topics, principles of constructivist teaching, socially situated and peer-based learning, lesson planning, laboratory and classroom management and laboratory safety. Contemporary ICT practice will be incorporated where appropriate in the development of knowledge, skills and abilities to use ICT to support students learning and professional practice.
Learning Outcomes:	On completion of this subject, teacher candidates will be able to: # Show theoretical frameworks and practical ability to produce effective learning for a wide range of school students, including in junior science; # Display a solid knowledge of the biological sciences, and educational contexts and how they interact in effective pedagogy; # Understand the links between effective planning teaching and evaluation in biology; # Use a variety of technologies in the classroom to assist learning in biology classes; # Apply biological understandings to familiar and new contexts; # Analyse issues and implications relating to scientific and technological developments and analyse and evaluate the reliability of information and opinions presented in the public domain; # Demonstrate the knowledge, skills and abilities to use ICT to support student learning and professional practice. The subject covers a range of the National Professional Standards for Teachers (for Graduate Teachers). In particular, the subject will contribute to students attaining the following standards: 2.1 Content and teaching strategies of the teaching area 3.3 Use teaching strategies 3.4 Select and use resources 3.5 Use effective classroom communication 4.1 Support student participation 4.4 Maintain student safety 5.1 Assess student learning
Assessment:	There are 3 assessment tasks for this subject. Planning and assessment for Biology, equivalent 1300 words, due early semester, 34% Report on teaching of biology in Victorian schools, equivalent 1300 words, due mid-semester, 33% Either a practice-based reflective task, (equivalent 1300 words) due mid-semester, 33% OR a project exploring pedagogical strategies (equivalent 1300 words) due end of semester, 33% NOTE: Teacher candidates doing one LA science subject will submit the practice-based reflective task while those doing 2 LA science subjects will submit both assessment tasks listed in dot point 3, completing one for each of their LA science subjects.
Prescribed Texts:	• VCAA(2006) VCE Biology Study Design (also available online)• Australian Curriculum, Assessment and Reporting Authority (ACARA) website• A collection of readings
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of the course, teacher candidates will have the knowledge, skills and understanding to enable them to: # Understand Secondary education as part of a spectrum of learning and development, linked to primary schooling and to post-schooling outcomes of further study and/or employment. # Develop in-depth knowledge of the complexity and diversity of secondary students' learning and development # Be expert in the disciplines they teach and committed to continual updating of their discipline knowledge; # Be able to intelligently and creatively plan, implement and critique mandated curriculum. # Be able to use data to identify and address the learning needs and capacities of individual students # Be able to intentionally draw on a range of teaching practices to extend individual student's learning and development # Shape and deliver responsive and inclusive curricula.

	# Be a self-reflective teacher who can work constructively and innovatively through relationships with parents, colleagues and the community across a range of contexts.
Links to further information:	www.education.unimelb.edu.au
Related Course(s):	Master of Teaching (Secondary) Master of Teaching (Secondary)