



<b>Subject:</b>	Biology BL (Elective)
<b>Subject Outline:</b>	This subject is designed to provide an understanding of natural systems and the living world. It introduces students to basic biological terminology, concepts and techniques and prepares them for further life science studies at the tertiary level.
<b>Objectives:</b>	On successful completion of this subject, students will be able to: <ol style="list-style-type: none"><li>1. Apply knowledge of biological facts and principles to solve problems (GA 2, 5);</li><li>2. Analyse, evaluate and present information on biological science topics (GA 1, 2, 7);</li><li>3. Solve problems in biological science using complex reasoning (GA 2, 5);</li><li>4. Deliver a presentation on a biology topic and contribute to group discussion (GA 1, 2, 6);</li><li>5. Evaluate the strengths and limitations of scientific work in relation to biological science (GA 2, 5, 7);</li><li>6. Operate safely and proficiently while conducting biological science activities (GA 2, 6).</li></ol>
<b>Graduate Attributes (GA):</b>	On completion of the Foundation Program, students will be able to: <ol style="list-style-type: none"><li>1. Communicate effectively in English in a variety of contexts, circumstances and modes</li><li>2. Demonstrate relevant, practical and theoretical knowledge in a subject area</li><li>3. Apply relevant academic literacy skills in a subject area</li><li>4. Apply relevant numeric literacy skills in a subject area</li><li>5. Apply critical, analytical thinking, and problem solving skills for academic contexts</li><li>6. Work independently and collaboratively in a cross-cultural context</li><li>7. Demonstrate academic integrity</li></ol>
<b>Contact Time:</b>	<ul style="list-style-type: none"><li>➤ <b>Standard Students</b> – Four (4) hours per week including one (1) hour tutorial</li><li>➤ <b>Express Students</b> – Five (5) hours per week.</li></ul>
<b>Attendance:</b>	Students are expected to attend all classes, lectures and practical sessions. Attendance is highly valued and contributes directly to the academic success of the student. Attendance is monitored as described in the Attendance Policy.
<b>Tutorials:</b>	Standard students receive assistance from tutors, which involves clarifying concepts discussed in teacher classes, helping students to comprehend and solve questions/problems and providing direction for students about current assessment activities. Express students while not having tutorials, do have less structured student led sessions as part of their program, which encourage students to actively participate in class.
<b>Student Textbook:</b>	<ul style="list-style-type: none"><li>❖ There is no prescribed textbook for this subject. It is recommended that students use <i>Openstax – Biology</i> as a reference text. It is a free textbook which is available online.</li><li>❖ Two IES Biology Manuals are also available online.</li></ul>
<b>Content:</b>	<ul style="list-style-type: none"><li>● Overview of Biology</li><li>● Biochemistry</li><li>● Cells</li><li>● Taxonomy</li><li>● Mammalian Biology</li><li>● Plant Biology</li><li>● Ecology</li><li>● Gene Expression</li><li>● Inheritance</li><li>● Evolution</li></ul>

**Students in the standard program are assessed through the following assessment activities:**

<b>Assessment Activity</b>	<b>Description</b>	<b>Weighting</b>
<b>Research Portfolio</b>	This assessment activity is divided into two parts. In Semester 1, students will need to create a scientific poster relating to a topic of interest in biological sciences. In Semester 2, students will need to conduct research using a variety of primary and secondary sources to identify a contemporary issue in biological sciences relating to a topic of interest and discuss the ethical issues related to the selected topic.	20%
<b>Progress Tests 1 and 2</b>	Students will complete two short 'in-class' tests (50 minutes); these tests are given at the completion of each unit of work. Progress Test 1 (Overview of Biology, Biochemistry and Cells) is in the first part of the course and Progress Test 2 (Plant Biology and Ecology) is in the second part of the course. Each test has multiple choice questions, short answer questions and an extended response question.	20%
<b>Practical Portfolio</b>	This assessment activity is divided into two parts. In Part 1, students must successfully complete two practical investigations at UQ laboratories, collecting and analysing results, and prove themselves competent at following procedures and using laboratory equipment. In Part 2, students visit the Moreton Bay Research Station where they carry out a range of hands on activities on North Stradbroke Island and report on the results of their findings. The activities include a Mangrove Study, Zooplankton study and comparing the ecosystems of Brown Lake.	20%
<b>Mid-Course Exam</b>	Students will complete a 90 minute (with 10 minutes perusal time) exam which covers Taxonomy and Mammalian Biology topics. The exam has multiple choice questions, short answer questions and extended response (multistep and novel) questions.	15%
<b>Workshops/Online quizzes</b>	During tutorials, students will engage in a wide range of hands-on activities and interactive workshops that are directly linked to the biology curriculum. In addition, students will be offered online quizzes ("Pre-class Quiz" and "Check your understanding" at the end of every chapter). The "Pre-class" quiz will assist students to prepare for the lesson and "Check your understanding" will test their knowledge of the topic.	10%
<b>Final Exam</b>	Students will complete a 90 minutes (with 10 minutes perusal time) exam which covers Gene expression, Inheritance and Evolution topics. The exam has multiple choice, short answer and extended response (multistep and novel) questions.	15%

**Students in the express program are assessed through the following assessment activities:**

Assessment Activity	Description	Weighting
<b>Research Portfolio</b>	This assessment activity is divided into two parts. In Semester 1, students will need to create a scientific poster relating to a topic of interest in biological sciences. In Semester 2, students will need to conduct research using a variety of primary and secondary sources to identify a contemporary issue in biological sciences relating to a topic of interest and discuss the ethical issues related to the selected topic.	20%
<b>Trimester exams</b>	Students will complete three 90 minute (with 10 minutes perusal time) exams at the completion of each trimester. Trimester 1 exam is in the first part of the course and covers units such as Overview of Biology, Biochemistry, Cells and Taxonomy. Trimester 2 exam is in the second part of the course and covers Mammalian and Plant Biology. Trimester 3 is in the final part of the course and covers Ecology, Gene expression, Inheritance and Evolution. Each trimester exam has multiple choice questions, short answer questions and extended response (multistep and novel) questions.	45%
<b>Practical Portfolio</b>	This assessment activity is divided into two parts. In Part 1, students must successfully complete two practical investigations at UQ laboratories, collecting and analysing results, and prove themselves competent at following procedures and using laboratory equipment. In Part 2, students visit the Moreton Bay Research Station where they carry out a range of hands on activities on North Stradbroke Island and report on the results of their findings. The activities include a Mangrove Study, Zooplankton study and comparing the ecosystems of Brown Lake.	20%
<b>Workshops/Online quizzes</b>	During tutorials, students will engage in a wide range of hands-on activities and interactive workshops that are directly linked to the biology curriculum. In addition, students will be offered online quizzes ("Pre-class Quiz" and "Check your understanding" at the end of every chapter). The "Pre-class" quiz will assist students to prepare for the lesson and "Check your understanding" will test their knowledge of the topic.	15%