

## MULT10011 Introduction to Life, Earth and Universe

<b>Credit Points:</b>	12.5
<b>Level:</b>	1 (Undergraduate)
<b>Dates &amp; Locations:</b>	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
<b>Time Commitment:</b>	Contact Hours: 3 x one hour lectures per week; 1 x three hour workshop/laboratory classes per week for ten weeks. Total Time Commitment: Estimated total time commitment of 170 hours
<b>Prerequisites:</b>	None
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	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 Disability Liaison Unit website: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>
<b>Coordinator:</b>	Assoc Prof Stephen Gallagher, Prof Geoffrey Mcfadden, Prof Rachel Webster
<b>Contact:</b>	<b>Email: <a href="mailto:MULT10011@physics.unimelb.edu.au">MULT10011@physics.unimelb.edu.au</a></b> <b>(mailto:MULT10011@physics.unimelb.edu.au)</b>
<b>Subject Overview:</b>	A multi-disciplinary approach is required to understand the most profound questions about life on Earth, and the possibility of life elsewhere in the universe. This subject will explore the key ideas from the major scientific disciplines to understand the nature of life, the formation of the Earth and the structure of the universe. The development of life on the planet Earth is dependent on evolution of the surface of the planet, and in turn has affected the surface of the planet. Armed with an understanding of how life might have evolved on Earth, the subject will then explore the possibilities for life elsewhere in the solar system and beyond. Topics covered will include: cosmology, extrasolar planets, the search for extraterrestrial life, the formation of the Earth, the early Earth and the evolution of the atmosphere, climatic evolution, definition and origin of life, early cellular evolution, evolution of metazoan life and mass extinctions, prebiotic chemistry, the rise of RNA and DNA, metabolic processes and ecosystems and the evolution of photosynthesis.
<b>Learning Outcomes:</b>	The subject will teach both the fundamental concepts in each of the core scientific disciplines: astrophysics, biology, geology and earth sciences, as well as developing the ability to use the scientific method to critically approach the key questions about the existence and evolution of life on the planet.
<b>Assessment:</b>	Ongoing assessment of workshop/laboratory classes (2.5% per session, totalling 25%); two 20-minute tests during the semester (totalling 10%); a poster presentation during the semester (5%); a 3-hour written examination in the examination period (60%).
<b>Prescribed Texts:</b>	Bennett & Shostak, Life in the Universe 2nd Ed. Pearson/Addison Wesley, 2007.

<b>Breadth Options:</b>	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> <li># <b>Bachelor of Arts</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-ARTS">https://handbook.unimelb.edu.au/view/2016/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-COM">https://handbook.unimelb.edu.au/view/2016/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-ENVS">https://handbook.unimelb.edu.au/view/2016/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2016/B-MUS">https://handbook.unimelb.edu.au/view/2016/B-MUS</a>)</li> </ul> <p>You should visit <b>learn more about breadth subjects</b> (<a href="http://breadth.unimelb.edu.au/breadth/info/index.html">http://breadth.unimelb.edu.au/breadth/info/index.html</a>) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<p>On completion of this subject, students should have developed the following generic skills:</p> <ul style="list-style-type: none"> <li># quantitative skills, including working with powers of ten, ratios and computer models;</li> <li># experimental skills developed in biology, astronomy and earth sciences laboratories; and</li> <li># the ability to use the scientific method to think through problems critically.</li> </ul>
<b>Notes:</b>	This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BAsC or a combined BSc course.
<b>Related Course(s):</b>	Bachelor of Science (Extended)
<b>Related Majors/Minors/Specialisations:</b>	Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED