# ERTH20003 Past Climates: Icehouse to Greenhouse

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| **Credit Points:** | 12.5 |
| **Level:** | 2 (Undergraduate) |
| **Dates & Locations:** | 2016, Parkville<br>This subject commences in the following study period/s:<br>Semester 2, Parkville - Taught on campus. |
| **Time Commitment:** | Contact Hours: 48 hours Total Time Commitment: Estimated Total Time Commitment - 170 hours |
| **Prerequisites:** | None |
| **Corequisites:** | None |
| **Recommended Background Knowledge:** | |

| Subject | Study Period Commencement: | Credit Points: |
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| EVSC10001 The Global Environment | Semester 1 | 12.5 |

**Non Allowed Subjects:**

| Subject | Study Period Commencement: | Credit Points: |
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| ATOC30005 Global Climates of the Past | Semester 1 | 12.5 |

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| **Core Participation Requirements:** | For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: <a href="http://services.unimelb.edu.au/disability">http://services.unimelb.edu.au/disability</a> |
| **Coordinator:** | Prof Ian Simmonds |
| **Contact:** | simmonds@unimelb.edu.au |
| **Subject Overview:** | This subject discusses the Earth's past and present climates, from billion year to hundred year time scales. The subject also deals with the wide range of causes of past climates and of climate change. Climate episodes discussed may include: Precambrian Snowball Earth, Gondwanan Glaciations, the Mesozoic Hothouse, global cooling over the last 20 million years, and the evolution of the Antarctic and the messages in its ice cores. The subject also covers the record of increasing aridity in Australia over the last 5 million years, the regular Ice Ages of the last 2 million years, and climate change over the last few thousand and hundreds of years. Described is the use of 'proxy' records, such as tree rings, corals, and pollen, to identify more recent changes in the Australian region. |
| **Learning Outcomes:** | At the successful completion of this subject students will have learnt to:<br># describe the drivers of the Earth's climate over time-scales ranging from days to centuries<br># using these drivers explain why past climates such as ice-ages differ from our present climate<br># describe how palaeoclimate observations are made and explain how they are used in reconstructing the past climate<br># synthesize knowledge from historical records for the Australian region and use it to predict future climate |

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| **Assessment:** | Two take-home essays (or practicals) 2,000 words in total, due approximately weeks 4 and8 (50%) 2-hour examination (50%) |
| **Prescribed Texts:** | Ruddiman, W. F., 2013: Earth's Climate: Past and Future (third ed.). W.H. Freeman & Co Ltd. Anderson, D. E., A. S. Goudie and A. G. Parker, 2013: Global Environments through the Quaternary: Exploring Environmental Change (Second ed.). Oxford University Press. |
| **Breadth Options:** | This subject potentially can be taken as a breadth subject component for the following courses:<br># **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2016/B-ARTS)**<br># **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2016/B-COM)**<br># **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2016/B-ENVS)**<br># **Bachelor of Music (https://handbook.unimelb.edu.au/view/2016/B-MUS)**<br>You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects. |
| **Fees Information:** | Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees |
| **Generic Skills:** | A Student who successfully completes this course will:<br># demonstrate a high level of achievement in writing and problem-solving<br># apply analytical, quantitative and technical skills to problem solving<br># reflect and critique information as life-long learners<br># demonstrate excellent organisational, planning and time management skills<br># apply knowledge, skills and attitude to adapt to scientific, technological and social changes<br># examine critically, synthesise and evaluate knowledge across a broad range of disciplines |
| **Related Majors/Minors/ Specialisations:** | Science-credited subjects - new generation B-SCI and B-ENG. |