Description: Climates of the Past, Present and Future

<table>
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<th>Subject</th>
<th>Cat-Nbr</th>
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<th>Term</th>
<th>Mode</th>
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<td>2, 2003</td>
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Academic Group: FOSCI
Academic Org: FOS002
HECS Band: 2
ASCED Code: 010701

STAFFING
Examiner: Joachim Ribbe
Moderator: Roger Stone

PRE-REQUISITES
Pre-requisite: CLI2110

RATIONALE
Climate change is increasingly being recognised as a key shaping force of our political and physical environments. Analysis of past climate changes and their casual mechanisms will enable better understanding of possible future climate changes and their impacts.

SYNOPSIS
This course provides a detailed understanding of past climate changes over many time scales and spatial scales. This includes the techniques for data collation and for reconstruction of past climate, mechanisms for climate change, and climate modelling techniques. The impacts of past and future climate change on global environments provide the introduction to political and social implications.

OBJECTIVES
On successful completion of this course students will be able to:

- demonstrate an understanding of the complex nature of climate change and its many possible causes;
- demonstrate a comprehension of the social, political and environmental implications of global climate changes which require an understanding of the evolution, data requirements, use and limitations of models for development of climate scenarios.
TOPICS

Description Weighting (%)  
1. Climates of the past, present and future - Pre-quaternary, Holocene, 20th Century climate future 14.00  
2. Internal and external mechanisms for climate change - Milankovitch, solar luminosity, astronomical, volcanism, atmospheric gases/particulates, surface characteristics, human activities 15.00  
3. Variability versus change - Glacial-interglacial transitions, decadal variability, interdecadal, interannual 15.00  
4. Data - Tree ring data, fossil, pollen, sediment, landforms, dating techniques 14.00  
5. Modelling climate change - General circulation models, statistical models, limitations 14.00  
6. Impacts of climate change - Humans, other natural systems 14.00  
7. Political implications - Kyoto Protocol 14.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED:

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at http://bookshop.usq.edu.au by entering the author or title of the text.


REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.


STUDENT WORKLOAD REQUIREMENTS

<table>
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<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
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<tr>
<td>Directed Study</td>
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<td>Examinations</td>
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### ASSESSMENT DETAILS

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<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
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<td>EXERCISE MODULES 1-10</td>
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<td>EXERCISE MODULES 11-20</td>
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**NOTES:**
- Examination dates will be available during the Semester. Please refer to the examination timetable when published.

### IMPORTANT ASSESSMENT INFORMATION

1. **Attendance requirements:**
   - It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.

2. **Requirements for students to complete each assessment item satisfactorily:**
   - To complete each of the assignments satisfactorily, students must obtain at least 50% of the marks available for each assignment. To complete the examination satisfactorily, students must obtain at least 50% of the marks available for the examination.

3. **Penalties for late submission of required work:**
   - If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks gained by the student for the assignment will apply for each working day late.

4. **Requirements for student to be awarded a passing grade in the course:**
   - To be assured of a passing grade, students must demonstrate, via the summative assessment items, that they have achieved the required minimum standards in relation to the objectives of the course by: (i) satisfactorily completing the examination and assignments; and (ii) obtaining at least 50% of the total weighted marks available for all summative assessment items.

5. **Method used to combine assessment results to attain final grade:**
   - The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.

6. **Examination information:**
   - In a Restricted Examination, candidates are allowed access to specific materials during the examination. The only materials that candidates may use in the restricted examination for this course are: writing materials (non-electronic and free from material which could give the student an unfair advantage in the examination);
calculators which cannot hold textual information (students must indicate on their examination paper the make and model of any calculator(s) they use during the examination. With the Examiner’s approval, candidates may, take an appropriate non-electronic translation dictionary (but not technical dictionaries) into the examination. Translation dictionaries will be subject to perusal and may be removed from the candidate's possession until appropriate disciplinary action is completed if found to contain material that could give the candidate an unfair advantage.

7 Examination period when Deferred/Supplementary examinations will be held:
   Any Deferred or Supplementary examinations for this course will normally be held at the end of the Semester 1 examination period of the following academic year.

8 University Regulations:
   Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL http://www.usq.edu.au/SECARIAT/calendar/Part5/ or in the printed version of the current USQ Handbook.

ASSESSMENT NOTES

9 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner. Students must retain a copy of each item submitted for assessment. If requested by the Examiner, students will be required to provide a copy of assignments submitted for assessment purposes. Such copies should be despatched to USQ within 24 hours of receipt of a request being made. In accordance with University's Assignment Extension Policy (Regulation 5.6.1), the examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances.