



The University of Southern Queensland

## Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.  
Please consult the web for updates that may occur during the year.

### Description: Climates of the Past, Present and Future

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
CLI	2120	90569	2, 2009	EXT	1.00	Toowoomba

<b>Academic group:</b>	FOSCI
<b>Academic org:</b>	FOS002
<b>Student contribution band:</b>	6
<b>ASCED code:</b>	010701

### STAFFING

Examiner: Joachim Ribbe  
Moderator: Andrew Le Brocque

### 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. Students will require regular internet access to successfully complete this course.

### OBJECTIVES

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

1. demonstrate an understanding of the complex nature of climate change and its many possible causes (Assignment; Exercise Modules; Exam);
2. 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 (Assignment; Exercise Modules; Exam).

### TOPICS

Description	Weighting (%)
1. Climates of the past, present and future - Pre-quatarnary, 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**

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

Bouma, WJ, Pearman, GI & Manning, MR (eds) 1996, *Greenhouse: coping with climate change*, CSIRO Australia, Collingwood, Vic.

Williams, MAJ et al 1998, *Quaternary Environments*, 2nd edn, Arnold, London.

### **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.

Crowley, TJ & North, GR 1991, *Paleo-Climatology*, Clarendon Press, Oxford.

Houghton, JT (ed) 1997, *Climate Change 1995: The Science of Climate Change*, Cambridge University Press, New York.

### **STUDENT WORKLOAD REQUIREMENTS**

ACTIVITY	HOURS
Directed Study	52.00
Examinations	2.00
Private Study	115.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT	100.00	20.00	28 Sep 2009
EXERCISE MODULES 1-20	100.00	20.00	23 Oct 2009
2 HR RESTRICTED EXAM	100.00	60.00	END S2 (see note 1)

### NOTES

1. 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 of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted.
- 4 Requirements for student to be awarded a passing grade in the course:  
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
- 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:  
Candidates are allowed access only to specific materials during a Restricted 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). Students whose first language is not English, may, take an appropriate unmarked nonelectronic translation dictionary (but not technical dictionary) into the examination. Dictionaries with any handwritten notes will not be permitted. 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 be held at the end of the next examination period.

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/corporateservices/calendar/part5.htm> or in 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. The examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances.