

Ingoa Akoranga | Title of course: Atmospheric, Oceanic and Climate Dynamics

Waehere Akoranga | Course code: PHYS319/PHYS419
15 te hua | 15 points

Ingoa Kairuruku Akoranga | Name of course co-ordinator:

Prof. Adrian McDonald (Week 7-12)

Im•ra/Waea | Email/phone contact details:

adrian.mcdonald@canterbury.ac.nz, 03 369 2064

Ingoa Ahorangi Akoranga |Name of Lecturers:

Associate Prof. Laura Revell (Week 1-3)

Im•ra/Waea | Email/phone contact details:

laura.revell@canterbury.ac.nz, 03 369 0169

Prof. Dave Frame (Week 4-6)

Im•ra/Waea | Email/phone contact details:

david.frame@canterbury.ac.nz, 03 3691909

Whakamahuki | Course Description:

Principles of the dynamics of a rotating fluid applied to large-scale motion of the Earth's atmosphere, oceans and climate will be detailed. Details of the global energy balance driving the observed general circulation of the atmosphere and the impacts of variations in atmospheric composition (changes in greenhouse gases) and solar irradiance on this energy balance and climate change will also be discussed. This course will also focus on atmospheric thermodynamics and large-scale dynamics in the atmosphere, with a focus on weather extremes. The latter section of this course will briefly examine ocean dynamics and their linkages to atmospheric circulations, the El Niño Southern oscillation will be used as an example of atmosphere-ocean linkages in this discussion.

Mahi ••• konga | Workload (expected distribution of student hours, note 15 points = 150 hours):

36 hours of contact time (3 hours per week); i.e. two 1-hour lectures per week and one 1-hour tutorials per week.

9.5 hours of study per week (on average) which will consist of course reading, four assignments, and exam preparation.

Lectures:

Monday 15:00-16:00	E14 Lecture Theatre
Tuesday 15:00-16:00	F1 Lecture Theatre

Tutorial:

Thursday 1200-1300	Jack Erskine 111
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Aromatawai | Assessment:

20% Tutorial *active* participation. The maximum grade can be achieved for participation in 10 out of the 12 sessions.

20% Four assignments (5% each)

60% Final Exam

Note PHYS419 students will receive extra questions to complete for each assignment.

Tuhinga | Text and Readings:

The official textbook for this course is:

Marshall and Plumb, “Atmosphere, Ocean and Climate Dynamics: An Introductory Text”, Elsevier Academic Press, 2008.

Herenga Akoranga | Academic Policies (e.g. special consideration, dishonest practice):

The School of Physical and Chemical Sciences has general policies that apply to all courses regarding such matters as Dishonest Practice, Allowed types of calculators, Marks and Grades boundaries, Late Work, Academic Liaison, Assistance for Students with Disabilities, Reconsideration of Grades, Aegrotat Applications, Missing of Tests etc. Please consult the School website for details.