ATOC90007 Mesoscale Atmospheric Dynamics

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2011.
Time Commitment:	Contact Hours: Forty hours comprising two weeks of workshop-style lecture and practical activities 10.00am – 4.00pm daily with breaks as appropriate to conduct programming exercises. Total Time Commitment: Not available
Prerequisites:	625-334 Dynamical Meteorology and Oceanography or equivalent.
Corequisites:	None.
Recommended Background Knowledge:	None.
Non Allowed Subjects:	None.
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. This subject requires all students to actively and safely participate in laboratory activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit.
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Subject Overview:	This subject will examine the fundamental dynamics controlling the behaviour of atmospheric processes on the mesoscale, including convection, atmospheric waves, mountain meteorology, and frontal systems. In addition, the two-way interactions between mesoscale and larger scale processes will be discussed. These discussions will be augmented by a detailed presentation of methodologies used to develop models of the atmosphere that are used for research and operational weather prediction.
Objectives:	This subject builds on the skills obtained in undergraduate studies of atmospheric dynamics, and presents an advanced quantitative treatment of atmospheric dynamics, primarily on the mesoscale. On completion of this subject students should have an understanding of: # the physical processes that govern a range of mesoscale atmospheric phenomena; # the two-way interactions between these phenomena and larger scale processes; and # the necessary skills to build simple models of the atmosphere.
Assessment:	Two assignments involving programming and written exercises (not exceeding 1000 words each) (25% each), one essay (not exceeding 1000 words) (25%), one oral examination (not more than 1/2 hour) (25%).
Prescribed Texts:	None.
Recommended Texts:	None.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	A focus of the subject is to enhance your ability to understand detailed physical interactions and develop models to simulate these processes. The skills you develop will help you: # interpret complex phenomena;

	# provide you with the ability to interrogate parameters and discriminate between important and negligible influences; # develop the skills to build your own models; # critically examine the simulations provided by more complicated modelling systems. The modes of assessment are designed to help develop both your written and oral communication skills, particularly an ability to explain complex scientific phenomena.
Related Course(s):	Bachelor of Science (Degree with Honours) Master of Science (Earth Sciences)
Related Majors/Minors/ Specialisations:	Climate Change