

# ATOC90007 Mesoscale Atmospheric Dynamics

<b>Credit Points:</b>	12.5								
<b>Level:</b>	9 (Graduate/Postgraduate)								
<b>Dates &amp; Locations:</b>	2016, Parkville This subject commences in the following study period/s: May, Parkville - Taught on campus.								
<b>Time Commitment:</b>	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: 170 hours								
<b>Prerequisites:</b>	The following subject, or equivalent. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Subject</th> <th style="text-align: center;">Study Period Commencement:</th> <th style="text-align: center;">Credit Points:</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">ATOC30004 Dynamical Meteorology and Oceanography</td> <td style="text-align: center; padding: 5px;">Semester 1</td> <td style="text-align: center; padding: 5px;">12.50</td> </tr> </tbody> </table>			Subject	Study Period Commencement:	Credit Points:	ATOC30004 Dynamical Meteorology and Oceanography	Semester 1	12.50
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ATOC30004 Dynamical Meteorology and Oceanography	Semester 1	12.50							
<b>Corequisites:</b>	None								
<b>Recommended Background Knowledge:</b>	None								
<b>Non Allowed Subjects:</b>	None								
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;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.&lt;/p&gt; &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>								
<b>Coordinator:</b>	Assoc Prof Todd Lane								
<b>Contact:</b>	Todd Lane <a href="mailto:tplane@unimelb.edu.au"><u>tplane@unimelb.edu.au</u></a> ( <a href="https://mce_host/faces/htdocs/tplane@unimelb.edu.au">https://mce_host/faces/htdocs/tplane@unimelb.edu.au</a> )								
<b>Subject Overview:</b>	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.								
<b>Learning Outcomes:</b>	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: <ul style="list-style-type: none"> <li># the physical processes that govern a range of mesoscale atmospheric phenomena;</li> <li># the two-way interactions between these phenomena and larger scale processes; and</li> <li># the necessary skills to build simple models of the atmosphere.</li> </ul>								

<b>Assessment:</b>	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%).
<b>Prescribed Texts:</b>	None
<b>Recommended Texts:</b>	None
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<p>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:</p> <ul style="list-style-type: none"> <li># interpret complex phenomena;</li> <li># provide you with the ability to interrogate parameters and discriminate between important and negligible influences;</li> <li># develop the skills to build your own models;</li> <li># critically examine the simulations provided by more complicated modelling systems.</li> </ul> <p>The modes of assessment are designed to help develop both your written and oral communication skills, particularly an ability to explain complex scientific phenomena.</p>
<b>Related Course(s):</b>	Master of Science (Earth Sciences)
<b>Related Majors/Minors/ Specialisations:</b>	<p>Earth Sciences        Earth Sciences        Honours Program - Earth Sciences        Tailored Specialisation        Tailored Specialisation</p>