# ATOC30004
# Dynamical Meteorology and Oceanography
Semester 1: 2022
School of Geography, Earth Sciences and Atmospheric Science, The University of Melbourne.

**Subject Coordinator and Lecturer:**
Prof. Craig Bishop
Room 449 McCoy Building. Ph. 8344-9022
E-mail. craig.bishop@unimelb.edu.au

**Lectures:** 2 Hours per week. Friday 9:00-11:00 in PAR-Alan Gilbert-G01

**Practical Session:** 2 hours per week. Friday 2:15-4:15 in PAR-Engineering C-428 (Collaborative Learning Space).

**Consultation times:** By appointment.

**Major Topics:**
- The equations of motion for a non-rotating fluid
- Flow in a rotating frame of reference
- Vertical wind variations
- Balanced vortices
- Vorticity
- Wave motion
- Frontogenesis and Baroclinic Instability

**Recommended Reading (available in library – no need to buy):**

Atmospheric and Oceanic Fluid Dynamics, G.K. Vallis, *Cambridge Univ. Press,* 2006.

**Additional reading/resources:**

An introduction to Dynamic Meteorology, J.R. Holton, 4th ed., *Elsevier*, 2004.

Applied Atmospheric Dynamics, A.H. Lynch and J.J. Cassano, *Wiley*, 2006.

The American Meteorological Society Glossary of Meteorology: (http://amsglossary.allenpress.com/glossary/)

**Subject website: https://canvas.lms.unimelb.edu.au/courses/124366**
**Recorded lectures, prac solutions, lecture notes, other information.**

**Assessment:**

Two-hour exam at end of semester (50% of final mark).

Practical assignments (40% of final mark):
        20% - 2 short assignments (10% each).
        30% - 2 long assignments (15% each).

Assignments are due via TurnItIn on Canvas

**Prac Outline (subject to change):**

| Week | Tutorial/Assignments released | Assignments Due |
|------|-------------------------------|-----------------|
| 1 | Tutorial: Assignment 1 (10% ) posted | |
| 2 | Tutorial | |
| 3 | Tutorial Assignment 2 (15% ) posted | A1 due Thu 2359 pm |
| 4 | Tutorial: | |
| 5 | Tutorial | |
| 6 | Tutorial: Assignment 3 (10%) posted | A2 due Thu 2359 pm |
| 7 | Tutorial: | |
| | Easter Break | |
| 8 | Tutorial: Assignment 4 (15%) posted | A3 due Thu 2359 pm |
| 9 | Tutorial | |
| 10 | Tutorial | |
| 11 | Tutorial / Revision | A4 due Thu 2359 pm |
| 12 | Tutorial / Revision | |