

# PHYSICAL SCIENCE – METEOROLOGY



Learn characteristics of our atmosphere, air pressure and winds, atmospheric moisture, large air masses, violent storms, oceans effects, and climates. The purpose of this course is to develop an understanding of our atmosphere and weather, with an emphasis on the Pacific Northwest. It is a one-term survey course that may be included as part of a year's sequence in physical science for college transfer credit. Taught by a former NOAA-NWS Meteorologist/Hydrologist.

GS-109, CRN #46883 (lecture and lab), 4 credits. Lecture and Laboratory, plus a field trip to the local NWS Office. Dates: Monday and Wednesday evenings, 6 pm – 8:50 pm, **Fall Quarter 2019**, 11 weeks (starting September 23<sup>rd</sup>).

Where: PCC-Southeast Campus, SE Division and SE 82nd, SCOM Room 308

Textbook: **Essentials of Meteorology**, 8<sup>th</sup> Edition (2017), by Ahrens/Henson (ISBN 978-1305628458)

Instructor: Prof. Kyle Dittmer, (503) 731-1314 (day), email: kyle.dittmer@pcc.edu

## COURSE TOPICS:

### Introduction

- Overall picture, atmospheric structure
- Observations; Tools of Measurement
- Energy budget, Heat distribution

### Clouds

- How do Clouds form?
- Types of Clouds, weather significance
- Precipitation process and types

### Atmospheric Motion and Circulation

- Driving and resisting forces
- Vertical changes in air motion
- General, regional, and local circulation
- Air Masses and Fronts

### Weather Forecasting

- Interpreting weather maps
- How to put together a forecast ☺
- How to evaluate a forecast

### Atmospheric Events

- Cyclones and anticyclones
- Thunderstorms, Tornadoes (NOVA film)
- Hurricanes (NOVA film), Flooding (NOAA film)

### Regional Climate and Climate Change

- Jet stream, Precipitation patterns
- El Niño and La Niña events
- Climate Change and Variability, PNW impacts

### Air Pollution

- Natural and Human Air Pollutants
- Driving Factors of Pollution

### Atmospheric Optics

- Light refraction, Aurora
- Halos, Rainbows, Sky-Colors

### Practical Applications and other topics

- Weather for Hikers, Travelers, Home Buyers
- Aviation Weather for Pilots
- Weather and Psychological Impacts
- Weather Patterns of Hawaii (impacts on PNW)
- *Student-chosen* Weather topics ☺

It's easy to register! To register online, go to: <<http://www.pcc.edu/enroll/registration/non-credit-registration.html>>. If you have taken a class since January 1998, you may use <[my.pcc.edu](http://my.pcc.edu)>. You can also register by calling 971-722-8888. You will need to know the 5-digit CRN for the class you want to take.



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