

## EPSC 2401 Atmospheric Science – Review Sheet for Exam #3

### Chp. 7– Clouds and Precipitation

#### Definitions:

Supersaturation	Cloud condensation nuclei (CCN)	
Ice-forming nuclei (IN)	Supercooled water	Cirrus
Cirrostratus	Cirrocumulus	Altostratus
Alto cumulus	Stratocumulus	Stratus
Nimbostratus	Cumulus	Cumulonimbus
Fog	Cloud Droplet	Cold-cloud process
Warm-cloud process	Rain	Drizzle
Freezing Rain (Drizzle)	Snow	Sleet
Hail	Reflectivity Mode	Doppler Mode

#### Concepts:

What types of solid materials can serve as condensation nuclei for clouds?

Is it true liquid water can exist below 0 °C?

What are the two ways CCN can form within cloud droplets?

What are the two ways IN can form within cloud droplets?

What are the two ways in which fog can develop?

Does size influence the rate at which objects fall to earth?

What are the two ways in which cloud droplets can gather together to form precipitation?

How is precipitation measured?

How does weather radar work? Know what information is provided by each mode

### Chp. 8 – Winds and Weather

#### Definitions:

Pressure Gradient	Centripetal	Coriolis Effect
Friction	Gravity	Atmospheric Boundary Layer
Geostrophic Wind	Gradient Wind	Surface Wind
Planetary Scale	Synoptic Scale	Mesoscale
Microscale	Anemometer	Wind Profiler

#### Concepts:

What forces act together to generate wind

How does the pressure gradient force always act?

Comment on how the spacing between isobars can reflect the intensity of the pressure gradient force

How does the Coriolis Effect deflect objects in the northern hemisphere? southern hemisphere?

What forces act to produce a geostrophic wind? A gradient wind?  
What force affect surface winds that do not affect upper air winds?  
In complete detail know how the air moves around a high and low pressure system both at the surface and at upper levels in the atmosphere.  
Know how wind is measured (with what devices) both at the surface and in the upper levels of the atmosphere.

## **Chp. 9 – Planetary Circulation**

### Definitions:

Hadley Cell	Ferrell Cell	Polar Cell
Convergence	Divergence	ITCZ
Subtropical High	NE Trade Winds	Westerlies
Zonal Flow	Meridional Flow	Rossby Wave
Ridge	Trough	Cutoff High (Low)
Polar Front	Polar High	Jet Stream
Jet Streak	Monsoon	El Nino

### Concepts:

Know whether surface convergence or divergence occurs at 0, 30 and 60° latitude.

What is the weather normally associated with the ITCZ and how does the ITCZ change in terms of its position during the course of a year?

Contrast weather conditions on the eastern versus western sides of a subtropical high.

Where does a trade wind inversion occur and how can it influence weather particularly along the US west coast?

How does the altitude of the tropopause change with latitude?

Know about the two different configurations of the westerlies.

Where do the jet streams form?

Know how differences between upper level convergence and divergence associated with troughs and ridges can influence the development of surface low and high pressure systems

What happens during an El Nino/La Nina to the sea water off of the western coast of South America? How can this affect the weather in Texas