

Material to Know for Final

Lecture – South Texas Sustainability

Terms you need to know:

Sustainability Desalination Greenhouse Gas Global Warming

Concepts you need to know:

What are the impacts on an expanding urban footprint?

Is there a mis-match between groundwater aquifers and the location of urban centers in South Texas

Why in the future does water use not increase at the same rate as population in South Texas

Describe what desalination is and discuss some of its issues both economic and environmental.

What type of energy is used to produce most of the electricity in Texas

Be able to discuss how the burning of fossil fuels is connected to global warming

Lectures – The Atmosphere, Global Warming and Climate Change

Terms you need to know:

Electromagnetic Spectrum	UV Light	IR Light	Visible Light
Greenhouse Effect	Nitrogen	Oxygen	Argon
Carbon Dioxide	Methane	Ozone	CFC's
Fossil Fuels	Tree Pollen	Tree Rings	Proxies
Troposphere	Stratosphere	Formas	

Concepts you need to know:

What is the chemical composition of the atmosphere in terms of major and minor gas content?

What are the layers of the atmosphere?

How does the energy carried by light change with wavelength?

What gas can vary in its percentage up to 4%?

Know in detail about the greenhouse effect?

What gasses cause the greenhouse effect?

Be able to compare an earth that has and does not have a greenhouse effect.

How has carbon dioxide values change over the last 150 yrs? How has global temperature changed over the last 150 yrs.?

Over the last 150 yrs the burning of what material has caused carbon dioxide values to increase in the atmosphere?

How do we know about past climate conditions?

How will global temperature increase over the next century?

What is our source of information for projecting what the future climate might be like?

What will be some affects of global warming?

Lecture – Water Quality and Pollution

Terms you need to know:

TDS	DO	Aerobic	Anaerobic
Nutrients	Heavy Metals	Pesticides/Herbicides	Solvents

Petroleum ppb	Fecal Coliform Bacteria ppt	Cations	ppm Anion
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Concepts you need to know:

What materials make up the TDS in water?

What is eutrophication?

What is the difference between aerobic and anaerobic conditions?

What is the difference between how gasoline and solvents contaminate an aquifer?

What are the different types of water pollutants and what health impacts do they have?

Lecture – Indoor Air Pollution

Terms you need to know:

Asbestos	Chrysotile	Crocidolite	Radon
Mold	Lead	Uranium	

Concepts you need to know:

What are the problems caused by lead?

What are the problems caused by asbestos?

What are two options in terms of dealing with/mitigating asbestos in a building?

What are the health problems caused by radon?

What geological situations maximize radon exposure?

What indoor air pollution problems are there in South Texas?

Lecture – Solid Waste Disposal

Terms you need to know:

Recycle	Reduce	Reuse	Leachate	Open Dump
Sanitary Landfill	NIMBY			

Concepts you need to know:

What are the four types of waste?

What are the three R's?

What is the difference between an open dump and a sanitary landfill?

What are some of the pollutants that can leak out of a landfill?

Can methane from landfills be used as a resource?

What are the key components of a sanitary landfill?

Know in detail the considerations associated with deciding a site for a landfill.

Lecture – Acid Rain

Terms you need to know:

pH	Ions	Cations	Anions
H ion	OH ion	Sulfur Dioxide	Nitrogen Oxides
Sulfuric Acid	Nitric Acid	Acid	Base
Neutral		Acid Mine Drainage	

Concepts you need to know:

Know the pH scale

Is natural rainwater acid or base?

What compounds cause acid rain and where are they derived from?

Where does acid rain pose the greatest problem in the US?

How can the soils and geology influence the impact of acid rain on the landscape?

How can acid rain impact ecosystems?

Comprehensive Component

Terms you need to know:

Resource	Reserve	Flux	Reservoir
Oil	Natural Gas	Coal	Reoccurrence Interval
Concentration Factor	Aquifer	Aquitard	Permeability
Porosity	Critical Mass	Maturation	Coalification

Concepts you need to know:

What are the different types of alternative energy?

Know the elements of the hydrological cycle in detail.

What is the definition of a mineral?

What specific hazards are associated with a volcano?

What are the different types of sediment? Be able to arrange them in order from largest to smallest.

What are the two different ways geologist quantify earthquake intensity?