

**Geog 203: Environmental Systems**  
**Section 1: Outline and required readings**  
**Sept 6-Oct 4 2006 (13 lectures)**

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**Schedule of lectures and readings**

**Dates      Topics and readings**

Sept 6-8      Course introduction. The nature of solar radiation.      **Textbook: p 49-53, 63-70**

Sept 11- 15      Solar insolation patterns , Radiation-atmosphere interactions. Sensible and latent heat. Albedo.      Greenhouse effect. Global energy budgets and latitudinal imbalances.      **Tx. p. 70-84.**

Sept 18- 22      Global temperature patterns. Temp. structure of the atmosphere. Effects of Latitude and Altitude, Thermal contrasts between land and water. Global pattern of annual temp. ranges.      **Tx. p. 101- 122**  
Surface Energy Balances. Urban heat Island. Desert vs Oasis climates.      **Course pack p. 5-10 and Tx. : Focus on Systems 5.1 (p 102)**

The various water stores on earth and the overall water cycle. Water thermal properties. Relative Humidity. Air mass lifting, adiabatic cooling and condensation. Controls on precipitation.      **Tx. p. 135-152** Temperature inversions and air pollution trapping      **(Tx, p. 161-165)**

**Assignment 1 handed out**

**Sept 20**

Sept 25- 29      Winds and Global atmospheric circulation. (**Tx. p. 169-187**). Main climate zones (**Tx. p. 233-246**). Examples: Mediterranean and Marine West Coast climates (**Tx. pp. 291-297**)  
**HYDROLOGY:** The Water budget equation. Key hydrological processes: Interception, Infiltration, Evapotranspiration. Runoff (**Course pack, p. 11-30**). Groundwater and surface water (**Tx. p. 457-474**). The soil water balance (**Tx. p. 630-631**)

**Sept 29**      **Sept 29: Assignment 1 to be returned by all students at beginning of class**

Oct 2- Summary of Surface runoff processes: Infiltration excess (“Horton”) and  
4 saturation excess (“Hewlett”) overland flow processes (**course pack diagrams, p. 31-35**). Forestry Impacts on runoff and stream habitats.

**Oct 6** **MIDTERM ON SECTION 1 (IN CLASS)**