**ES473 Environmental Geology Textbook Review Questions**

Instructions: visit the ES473 class web site and download a digital MS word document version of the text review questions. Review and read the relevant textbook chapter posted on the ES486 moodle site (moodle.wou.edu) and answer the following questions. Answers should be word-processed with MS Word using figures and pasted images from the text book or favorite internet resources. Your work should look complete and professional.

**Chapter 3 Soils**

1. Define the term “soil”, discuss the similarities and differences between perspectives on soils as related to engineers, soil scientists, and geologists.
2. Describe the process of “pedogenesis” or development of soil horizons on regolith deposits. Draw sketches to illustrate your answer.
3. Sketch an idealized soil profile showing the primary soil horizons with a brief definition of each, what they are composed of, and how they are formed.
4. Draw a triangular diagram illustrating the soil classification scheme based on texture / grain size of sediment in the sand-silt-clay range.
5. Define the following engineering geology terms, as related to soil properties, provide sketches as needed:
	1. Well-Graded vs. Poorly-Graded textures
	2. Plasticity
	3. Soil Strength
	4. Cohesion
	5. Internal Friction
	6. Mass Density (provide equation)
	7. Specific Weight (provide equation)
	8. Porosity (provide equation)
	9. Permeability
6. True or False: the engineering geology term “well graded” is equivalent to the sedimentology term “well sorted”.
7. Write the Universal Soil Loss equation, list each parameter and define.
8. How are soils maps used to guide land-use planning, provide some examples.