

**EPSc 413 Homework #1**  
Due January 30, 2017

*Write all answers on separate sheets of paper, not on this assignment. Please only write on one side of the page to make grading easier. Answers may also be typed. Homework may be submitted in class or via email to Prof. Catalano.*

**1.** *This question is designed to familiarize you with what soils are made of.*

- a.** What are the four main components of soils? What are their relative proportions in a typical loam surface soil? **(8 pts)**
- b.** Briefly describe each of the four main soil components. Make sure to explain what each is composed of. **(10 pts)**
- c.** Provide one example of what each component contributes to a soil. **(8 pts)**

**2.** *This question asks you to identify the different horizons that occur in soil.*

Describe the key features of O, A, E, B, and C horizons. Make sure to explain all of the major distinguishing features. **(30 pts)**

**3.** *This question is designed to familiarize you with diagnostic horizons.*

- a.** Describe the major characteristics of two epipedons. **(8 pts)**
- b.** Describe the major characteristics of two subsurface horizons. **(8 pts)**

**4.** *This question is designed to improve your understanding of soil orders.*

- a.** List one distinguishing feature of a typical soil profile of each of the 12 soil orders. **(12 pts)**
- b.** Go to the USDA-NRCS Official Soil Series Descriptions website:  
<https://soilseries.sc.egov.usda.gov/osdquery.aspx>  
Using the web form, choose a state in the “State(s) Using” box and click “Submit”. You will likely be told the list is too long to view, but you can see the full list by clicking “View” at the bottom of the page; you will need to allow pop-ups. Based on the list, identify four soil orders found in this state. You can determine the soil order by reading the ending of the taxonomic class of a soil series with the help of Table 3.3 in your textbook book. Repeat this for three additional states (four in total). If a state has less than four soil orders then only list the orders that are present. **(16 pts)**