Through inspiration I gained from participating in the Chesapeake Bay Project workshop I modified exercises for a course that will be taught for the first time in Fall 2011. This 400 level course (PLSC 481) is geared for students who will be working in the fields of ecology, conservation, and sustainability. It will be required in the Urban Forestry track of the Plant Science major. In this course students will learn field sampling and computer analysis techniques use to describe vegetation in natural and urban settings. Two of the exercises are directly related to sustainability.   In the first one the students will learn to quantify the ecosystem services provided by trees in urban and suburban settings.   After gaining practical experience measuring the identity and condition of trees on the University of Maryland campus, they will use their data in combination with a larger data set to run models developed by the U.S.D.A. Forest Service to quantify carbon sequestration, pollution reduction, and temperature amelioration performed by these trees. They will be asked to develop a proposal that would increase ecosystem services provide by trees on campus and then quantify the potential costs versus benefits of their proposal using the models they have learned to use. Second, the students will learn techniques used to quantify the amounts and patterns of different land use types (e.g., natural vegetation communities and different types of development) using remotely sensed data.   They will apply these techniques to land cover data for the Chesapeake Bay Watershed from multiple time periods to assess an aspect of sustainability of their choosing that can be quantified based on changes in composition and configuration of the different land use classes over time and space. These two projects will allow students to gain insight into sustainability at two very different scales. First students will be quantifying benefits of trees that grow right where they spend most of their time. Second, by examining the entire Chesapeake Bay Watershed they will gain perspective on how activities from as far away as Pennsylvania, West Virginia, and New York affect the Bay. From both of these projects they will gain critical thinking and writing skills by developing questions, determining how to correctly apply techniques they have learned to answer their questions, and completing reports describing their results.