The University of Vermont Spring Semester, 2018

 **Soils and Sustainable Civilization: Mesopotamia to Vermont**

**Schedule**: Wednesdays, noon-3:00 pm, Univ. Heights North 016

**Instructor**: Don Ross, Dept. of Plant and Soil Science, 260 Jeffords Hall

phone: 802-656-0138

email: dross@uvm.edu

Office Hours: Mondays 10:30-noon, Thursdays 3:00-4:30

**Course Description**: We will explore the connection between the rise and fall of civilizations and their use and abuse of soil. It is well documented, but not widely appreciated, that many past civilizations went into decline when their soils lost the ability to provide sustenance. The course will present the basics of sustaining soil fertility and examine the evidence for the relationship between soils and civilizations, both past and present. We will use our study of past problems as a reference for the study of sustainability in present-day Vermont. Topics will include the range of soil types in Vermont, the potential for carbon sequestration, the challenges of agricultural nutrients and Lake Champlain eutrophication and the overall maintenance of soil quality in a changing climate. For the service-learning component, we will work with Shelburne Farms towards the refinement and implementation of their sustainable soil plan.

**Course Objectives**: The objectives of this course are to help students:

1. Gain a basic understanding of the nature and properties of soils.
2. Learn how soil degradation affects food production.
3. Appreciate the clear link between soils and sustainable civilizations.
4. Develop an understanding of the soils of Vermont and ecosystem services provided.
5. Learn the concepts and challenges of soil quality and soil health.
6. Develop an understanding of the relationship of Vermont agriculture/forestry to water quality and to a sustainable food system.

**Course activities** include: lectures, labs, student presentations, guest presentations, discussions, and work on a service-learning project. Assignments will include reflective writing on service-learning activities, short papers, a research paper, and products related to the service-learning project.

**Service-Learning**: In academic service-learning courses, students work in reciprocal partnerships with community partners, applying the skills of their disciplines in real-world settings. Our community partners are Marshall Webb and Dana Bishop of Shelburne Farms, a non-profit organization. Shelburne Farms is dedicated to long-term sustainability and this class, in 2016, developed a sustainability plan for their soils. The current class will further develop this plan and include concrete steps towards implementation.

**Course Requirements:**

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| Assignments and evaluation | % |
| Reflections on assigned readings and guest lectures. Brief (1-2 pages) summaries of class activities and analysis of relevance to soil sustainability. Graded on accuracy and clarity of writing. | 24 |
| Research paper on some aspect of soil sustainability chosen from a list of possible topics. This will be due shortly after midterm and will have requirements for page length (5) and properly cited references. Graded on organization, completeness, writing and critical thinking. | 20 |
| Participation: In-class contribution to discussions and activities. | 10 |
| Draft of Service-Learning project report. Graded on organization and content. | 8 |
| Final Service-Learning project report--assembled from small group (four students) efforts. Graded on clarity, writing, impact and feedback from the community partner. | 22 |
| Final Service-Learning project presentation--small group in-class presentations to our service-learning partners. Graded on organization, presentation and content. | 8 |
| Final individual reflection on service-learning experience (2 pages). Graded on thoughtfulness. | 8 |

**Academic Integrity**: Integrity in all aspects of your academic and professional life is central to the meaning of the university, to the life of a professional, and to personal relationships between colleagues and friends. We expect you to follow the code of academic integrity set by this institution in the work that you submit to us for this class. We encourage you to review the UVM Academic Integrity Policy at <http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf>. You really should read the policy so you know what is expected of you. If you are having problems understanding material or completing assignments, please talk with us. We are here to help you, and we want you to succeed!

**Religious Holidays**:  Students have the right to practice the religion of their choice. If you need to miss class to observe a religious holiday, please submit the dates of your absence to me in writing by the end of the second full week of classes. You will be permitted to make up work within a mutually agreed-upon time.

**Student Learning Accommodations**: In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact ACCESS, the office of Disability Services on campus. ACCESS works with students to create reasonable and appropriate accommodations via an accommodation letter to their professors as early as possible each semester. Contact ACCESS: A170 Living/Learning Center 802-656-7753 access@uvm.edu ACCESS Office: <http://www.uvm.edu/~access/> Policy on disability certification and student support: http://www.uvm.edu/~uvmppg/ppg/student/disability.pdf