Soils & Ecosystems (EVR-4592)
Advanced Soil Resources Analysis (SWS-5305)

Spring 2019

Objective: To develop an understanding of soils that will permit you to interpret and use soil information as applicable to your chosen profession.

Classroom: 445 PC Building  Time: TuTh 9.30 am-10.45 am
Text: Soils in Natural Landscapes by Earl B. Alexander
2014, CRC Press, Taylor & Francis Group
ISBN 978-1-4665-9435-7

Instructor: Dr. K (Jay) Jayachandran
Professor of Soil Science/Microbiology
Department of Earth and Environment
383 AHC 5 Building
Phone: 305-348-6553
E-mail: jayachan@fiu.edu

Office Hours: Open-door policy or call/e-mail me for an appointment.
Tuesdays and Thursdays 11.00 am – 1.00 pm

Internet Resources:
This is a web assisted course. A course webpage will be maintained with Canvas Learning. There will be syllabus, course materials, assignments, articles, videos, rubric, and announcements posted on Canvas.

To access this resource, go to https://ecampus.fiu.edu/ and click on Canvas under the Login menu. In the Canvas Login window, enter your FIU MyAccounts User Name and Password. Select EVR 4592 or SWS 5305 - Section U01 – spring 2019. For help with Canvas, click the Student menu on the ecampus website call the UTS Help Center at (305) 348-2284.

Attendance:
Everyone is expected to attend class and prepare for class in advance. Attendance is mandatory, and will be taken every class. If you miss class due to a valid, documented extenuating circumstance, it will not count as an absence. Examples of valid absences (excused absences) include: (a) family member serious illness or other emergency; (b) official academic/athletic event (e.g. field trip); or (c) recommendation from an MD. Missing more than FOUR classes will result in 5% loss of your final grade and missing more than SIX days will result in 10% loss of your final grade. Every additional absence will lower your class grade by 10 percentage points. TEN or more unexcused absences may result in an “F” for the semester.
If you arrive to the class more than 10 minutes late, you are required to sign in on the LATE ARRIVAL SIGN-IN SHEET. Please take instructors prior approval if you plan to leave early. If
you leave the class early, you are required to sign in on the EARLY DEPARTURE SIGN-IN SHEET. There will be deduction in participation points for being repeatedly late to the class and for leaving the class early. Participation points will be awarded for attentiveness and positive contribution to class discussions. Conversely, points will be lost for unexcused absences, being late to the class, leaving the class at will, class disruptions, etc.

Late assignments will not be accepted except when due to the above - cited circumstances.

Method of instruction is traditional lectures, one or two guest lectures from experts, and student discussion on relevant theme articles.

**Academic misconduct:**
Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

**Course behavior:**
Students will arrive on time, ready to participate in the day’s activities and remain until the end of class. Refrain from private conversations during the class. Although potential for beneficial use of technology in education is immense, based on my experience in the class during previous semesters, I found that laptop computer/tablet usage by students was mostly disrupting the class; use of laptops and tablets is not allowed during the class. Students are not allowed to use their cellphones in class. They must be put away and set on vibrate mode. Students violating this policy will be asked to leave the class. Any violations of the university honor code (available at http://www2.fiu.edu/~daiglerr/code.htm) will result in charges of academic misconduct. This includes any form of cheating such as use of unauthorized materials or communication during exams, plagiarism and so on. Students will behave in a respectful manner toward one another even during heated debates, regardless of how strongly you disagree. Students showing a lack of courtesy and consideration for the Instructor and other students will be asked to leave the classroom and will be marked absent for that session.

**Honor Code:**
Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students
are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook. Cheating and plagiarism are violations of the academic honesty section of the FIU student code of conduct and will be reported to Judicial Services. Plagiarism is a serious offence will not be taken lightly. Plagiarism can be intentional (copying another student’s work, collaborating too closely with another student) or unintentional (not citing all references, collaborating too closely with another student.) The best ways to avoid unintentional plagiarism are to reference all outside information, and to do all work on your own. If you have any questions about what is plagiarism, please ask the instructor. Instructors may use plagiarism detection software (such as turnitin.com) to determine if plagiarism has taken place. Suspected acts of plagiarism may be investigated and taken to the FIU Grievance Committee. Plagiarism will result in you receiving a 0 grade for your assignment (no exceptions) and may also result in your suspension or expulsion from the University.

**Sexual Harassment Policy:**
FIU’s sexual harassment policy is available at: http://hr.fiu.edu/index.php?name=sexual_harassment

**Office of Disability Services for Students:**
If you have a disability and need assistance, please notify me and also contact the Office of Disability Services for Students (University Park - GC 190; Ph. 348-3532). Upon contact, the Office of Disability Services for Students will review your request and contact your professors or other appropriate personnel to make arrangements for appropriate modification and/or assistance.

Please ask questions in class as this will greatly add to the discussion and learning process and let me know at any time throughout the term how I can be of help.

**Note:**
This syllabus and course schedule may be updated, if needed. An announcement of changes will be made in class and in Canvas Learning class web.

**Graduate Students** - The report will be over an appropriate soil science topic. It will: (a) contain 5 to 7 pages of text, (b) properly cited at least 5 technical references, (c) include 2 tables or figures, and (d) be written in a proper technical format (which includes neatness and grammar).

**Grading:**

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Examination I</td>
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<td>Examination II</td>
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<td>Final Examination (Take Home)</td>
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<td>Quizzes and Participation</td>
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<td>Home Work Assignments &amp; Reports</td>
<td>15%</td>
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<tr>
<td>Each Absence/Sleeping/Talking/Texting</td>
<td>-1%</td>
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Spring 2019

Dr. K (Jay) Jayachandran, 383 AHC 5 Building, 305-348-6553; e-mail: jayachan@fiu.edu
Lecture: TuTh 9.30 am-10.45 am, 445 PC Building
Text: Soils in Natural Landscapes by Earl B. Alexander
2014, CRC Press, Taylor & Francis Group

Course Description: Promotes knowledge of basic soil science concepts. Study basic soil
chemical and physical properties. Judge the suitability of a soil for agriculture, landscaping, park,
woodlot, or residential use. Emphasis on the soils of south Florida.

Tentative Syllabus

Introduction/objectives

Definitions/overview
Fundamental concepts and soil science vocabulary

Soils in the environment, Soils as a natural body,
Parent material

Soil formation, subprocesses and classification

Physical properties, Soil as a porus material,
Changing soil porosity

Examination I

Soil - the liquid phase, Conservation of soil water

Soil water properties, Water management techniques

Soil aeration and temperature

Soil erosion and soil conservation techniques

Soil - a mixture of chemicals, Ion exchange

Soil - the habitat for a variety of organisms

Examination II
Soil - a depository of organic materials, Conservation of Organic Matter

Soil and nutrients. Nutrient cycling

Nitrogen transformations and cycle

Phosphorus and potassium

Other nutrients – Calcium, Magnesium, Sulfur

Soils – Pollution and Management Techniques

Graduate Students Presentations on their Projects
Report due, Review

Final Examination – Take Home Exam