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# AGRN 125 SOIL JUDGING

*"We know more about the movement of celestial bodies than about the soil underfoot."*

— Leonardo da Vinci (circa 1500's)

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## COURSE DESCRIPTION

The description, interpretation, and evaluation of soil properties *in the field* provide critical information towards proper land use management, natural resource assessment, and environmental protection. This course provides training and practical experience for students seeking to learn proper methods of soil and site evaluation used by professional soil scientists.

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## INSTRUCTOR

Dr. Jim Thompson  
3115 Agricultural Sciences Building  
Phone: 293-2921  
E-mail: james.thompson@mail.wvu.edu

Office Hours: Wednesday and Friday, 11:00 a.m. – 1:00 p.m.; or by appointment

I was born and raised in Pittsburgh, PA. I received a B.S. in Agronomy from Penn State University in 1990, an M.A. in Geography from The Ohio State University in 1992, and a Ph.D. in Soil Science with a minor in Water Resources from the University of Minnesota in 1996. I was on the faculty in the Department of Agronomy at the University of Kentucky from May 1997 to February 2001, and in the Department of Soil Science at North Carolina State University from March 2001 to August 2004. I joined the faculty in the Division of Plant and Soil Science at West Virginia University in August 2004. Areas of study in soil science that interest me include soil management and land use planning, soils and landscapes, soil hydrology, wetland identification and delineation, and soil spatial variability.

I have taught or assisted in the teaching of many courses over the last 26 years, including introductory physical geography, introductory climatology, soil conservation and land use planning, wetland soils, problem solving in natural resources, and various introductory soil science courses. I teach soil judging (AGRN 125), soil survey and land use (AGRN 415), soil genesis and classification (AGRN 417), and pedology (AGRN 552); and I am a co-instructor of applied wetlands ecology and management (PLSC 574) here at WVU. While I have taught this material before, I am continually looking for opportunities to improve this course. As such, your input (comments, suggestions, etc.) throughout the term will be welcomed. My goal is to make this course, and soil science, interesting and challenging, yet enjoyable.

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## SCHEDULE

Lecture/Lab Friday, 2:00 – 4:50 PM, 1007 Agricultural Sciences Building

We will meet for this course only for the first nine weeks of the semester, with the last session on Friday, September 30. Attendance is mandatory for all class sessions. We will travel to the field for a minimum of two class sessions, with transportation to and from the field sites provided by the Division of Plant and Soil Sciences.

One objective of this course is to prepare students to compete in the Southeast Regional Soils Contest, which will be held hosted by Auburn University the week of October 2-6, 2016. Students wishing to compete as part of the WVU Soils Team will travel to Auburn, AL, to participate in several days of practice sessions prior to the contest on Thursday, October 6, 2016.

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## SOIL JUDGING

Intercollegiate soil judging is an activity that occurs across the country. West Virginia University competes in the Southeast Region, along with approximately twelve other schools from Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, and Alabama. At the Regional Contest students are required to describe soil morphology (color, textures, structure, horizonation, etc.) and determine landscape setting, land use limitations, and taxonomy for four soils. Students have three days to practice their skills in the area of the contest, and then compete with other students to see how close they can come to the assessments of the local soil scientists. Teams whose scores rank in the top five in the Southeast Region earn the opportunity to compete in the National Soils Contest.

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## PREREQUISITES

None

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## REQUIRED TEXTBOOK

Karathanasis, A.D., J.N. Shaw, J.M. Galbraith, and J.A. Thompson (ed.). 2008. *Handbook for American Society of Agronomy Collegiate Soils Contest, Southeastern Region*. (Available online with updates at [https://sites.google.com/a/vt.edu/se\\_region\\_soil\\_judging/](https://sites.google.com/a/vt.edu/se_region_soil_judging/).) [Last Updated: 08-09-16.]

Available at [http://james\\_thompson.plantandsoil.wvu.edu/courses/agrn\\_125/documents\\_and\\_files](http://james_thompson.plantandsoil.wvu.edu/courses/agrn_125/documents_and_files).

**You are required to print a copy of the Handbook and bring it with you to each class session.**

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## COURSE WEBSITE

A companion web site at [http://james\\_thompson.plantandsoil.wvu.edu/courses/agrn\\_125](http://james_thompson.plantandsoil.wvu.edu/courses/agrn_125) has been developed to support this course. It includes the syllabus and other course-related documents, WVU Soils Team history, and images from previous years. As a work in progress, any comments or suggestions you have will be most welcome.

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## LEARNING OUTCOMES

Upon successful completion of this course you will be able to:

1. Describe soil profiles in the field using the accepted techniques of professional soil scientists.
2. Collect information on site characteristics and important landscape properties.
3. Provide basic land use interpretations based on attributes described soil and site.
4. Identify diagnostic soil properties (epipedons, subsurface horizons) and use these to classify soils using *Soil Taxonomy*.
5. Explain the properties of several soils commonly found in Monongalia Co., WV, and similar landscapes.

## EXPECTATIONS

I will expect you to:

1. Read and understand the information contained in this syllabus.
2. Attend all lectures and laboratory sessions.
3. Read assigned portions of the Handbook **BEFORE** each lecture.
4. Ask questions and participate in class discussions.
5. Notify me ahead of time if you cannot be present for a lecture, lab, or quiz.

You should expect me to:

1. Come to class and be well prepared.
2. Start and end class on time.
3. Use a variety of teaching methods, not just lecture.
4. Encourage and accept points of view different from my own.
5. Encourage questions and discussion during class.
6. Be available after class, during office hours, or any other time you have questions, comments, or concerns.
7. Return graded assignments and quizzes in a timely manner and provide appropriate feedback on your performance. My goal is to return them one week after the due date.
8. Appreciate that this is not the only class you are taking this semester.

## EVALUATION AND GRADING CRITERIA

Your course grade will be determined by from a variety of different assessment techniques. Three quizzes will make up 37.5% of your grade. Another 25% will come from weekly assignments, some of which will be completed during class and some of which you will complete away from class and submit the following week at the start of class. A bonus will be awarded if you complete all assignments. Attendance accounts for another 12.5% of your course grade. Again, a bonus will be awarded for perfect attendance. The remaining 25% of your grade will come from a special project, which will be due the week prior to the Thanksgiving break.

Assessment	Date	Points
Quiz 1	9 September	50
Quiz 2	23 September	50
Quiz 3	30 October	50
Class Assignments (6 @ 15 points each + bonus)	Weekly	100
Attendance (6 weeks @ 7 points each + bonus)		50
Special Project	18 November	100
<b>TOTAL</b>		<b>400</b>

The **CLASS ASSIGNMENTS** will consist of thought questions and numerical problems based on the content of lectures and laboratory activities. Some of these assignments will be completed during our weekly meetings, while others will be assigned as homework to be completed prior to the next class meeting. Homework assignments are **DUE WHEN YOU ARRIVE** for each week's class session. Homework assignments will NOT be accepted for credit once the class session has begun.

**QUIZZES** will consist of thought questions and numerical problems based on the content of lectures and laboratory activities, with answers given in a multiple choice, matching, or fill-in-the-blank format. A majority of the information covered by the quizzes is found in the *Handbook for Collegiate Soils Contest—Southeast Region*. The topics for the three quizzes are as follows:

Quiz 1	Quiz 2	Quiz 3
Horizon depth	Master horizons	Erosion potential
Distinctness of boundary	Transitional horizons	Surface runoff
Texture	Subordinate designations	Epipedons
Color	Redoximorphic features	Diagnostic subsurface
Structure	Infiltration rate	Soil orders
Moist consistence	Available water	Soil use limitations
Position of site	Hydraulic conductivity	
Parent material	Soil wetness class	
Slope gradient		

If you cannot take a quiz because of an excused absence (see [Excused Absences](#)), a make-up exam will be given **WITHIN ONE WEEK** after the regularly scheduled quiz. If you know in advance that you will need to take the make-up quiz, you must notify me in writing prior to the scheduled quiz date. The make-up quiz may not be the same quiz that is given to the rest of the class.

You may contest the points awarded for individual questions after graded quizzes and assignments are returned to you, but you must do so in writing. This will require you to clearly formulate your arguments. Your petition should reference the Handbook or other source that supports your argument.

Assigning of course grades will be on the following scale:

Letter Grade	Percentage	Points
A	90.0-100	360-400
B	80.0-89.9	320-359
C	70.0-79.9	280-319
D	60.0-69.9	240-279
F	<60.0	<240

## LABORATORY AND FIELD TRIP POLICIES

When in the laboratory there shall be:

- No tobacco use.
- No food or drink.
- No sandals or open-toed shoes.
- No cellular telephone use.

For field trips, we go as scheduled, regardless of weather. Come prepared for potential weather conditions, and plan to take notes outside. The Division of Plant and Soil Sciences will provide transportation for field trips. The University assumes no responsibility when Students provide for their own transportation.

## ATTENDANCE

You are expected to attend all class sessions.

Please be on time. Arriving late disrupts class and is inconsiderate of other students. Quizzes will be based primarily on material covered in class. Therefore, regular attendance should lead you to greater success in this course. A valid written excuse (see [Excused Absences](#)) is required for missing a class session.

## EXCUSED ABSENCES

You must have a valid excused absence to submit a late homework exercise without deduction or to take a make-up exam. Valid excuses include participation in scheduled University events or emergencies (illnesses, accidents, natural disasters, or family crises). In the case of scheduled conflicts (field trips, athletic events, judging contests), you must provide a written notice from the instructor, coach, or other official **IN ADVANCE**. For unanticipated absences, you must provide documented proof of the incident leading to your absence upon your return to campus.

## CONDUCT

You are expected to conduct yourself in a mature manner that is considerate and respectful of your classmates, the instructor, and yourself to insure an atmosphere that is conducive to learning. Any person who disrupts class or lab will be asked to leave.

## ACADEMIC INTEGRITY

We all share responsibility for upholding the principles of academic integrity. This includes students, faculty, staff, and administrators. To that end, cheating, plagiarism, or any other acts of academic misconduct will not be tolerated, and will be punishable in accordance with University policy. According to the WVU Student Conduct Code (<http://campuslife.wvu.edu/r/download/180235>):

*West Virginia University expects that every member of its academic community share its historic and traditional commitment to honesty, integrity, and the search for truth. In addition, West Virginia University is concerned with the living and learning environment of all its students. It is expected that each person will grow to have greater respect for self, others, and property.*

Any student found to have committed or have attempted to commit academic misconduct is subject to the disciplinary sanctions outlined in Article IV of the Student Conduct Code. Academic misconduct is defined to include, but is not limited to, any of the following:

1. *Acts of dishonesty, including but not limited to the following:*
  - (a) *Plagiarism includes, but is not limited to, the following: (i) Submitting as one's own work the product of someone else's research, writing, artistic conception, invention, or design; that is, submitting as one's own work any report, notebook, speech, outline, theme, thesis, dissertation, commercially prepared paper, musical piece or other written, visual, oral or electronic/computerized material that has been copied in whole or in part from the work of others, whether such source is published or unpublished; (ii) Incorporating in one's submission, without appropriate acknowledgment and attribution, portions of the works of others; that is, failing to use the conventional marks and symbols to acknowledge the use of verbatim and near-verbatim passages of someone else's work or failing to name the source of words, pictures, graphs, etc., other than one's own, that are incorporated into any work submitted as one's own.*
  - (b) *Cheating and dishonest practices in connection with examinations, papers, and projects including, but not limited to: (i) Obtaining help from another student during examinations; (ii) Knowingly giving help to another student during examinations, taking an examination or doing academic work for another student, or providing one's own work for another student to copy and submit as his/her own; (iii) The unauthorized use of notes, books, or other sources of information during examinations; (iv) Obtaining without authorization an examination or any part thereof.*
2. *Disruption or obstruction of, or leading or inciting others to disrupt or obstruct, teaching, research, administration, disciplinary proceedings, other University activities.*
3. *Physical abuse, verbal abuse, threats, intimidation, coercion and/or other conduct which threatens or endangers the health or safety of any person. Engaging in harassment or repeated unwanted contact, rising to the level of illegal harassment, including, but not limited to, stalking.*

Please talk to me if you have any questions or concerns regarding any activity that may be interpreted as an attempt at academic dishonesty. In particular, if your questions relate to your own work, please see me **before** the assignment is due to discuss the matter.

### COLLABORATION

You will frequently break into small, informal groups during class activities. You will also sometimes work together in the field to complete soil and site descriptions. This will allow for greater participation and more open discussion of current topics. You are also encouraged to discuss course content and prepare for quizzes together. In addition to me, your classmates (or former students, or other professors) are valuable resources—use them. However, all work you submit is to be solely your own (see Academic Integrity).

### STATEMENT OF REASONABLE ACCOMMODATION

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 mandates that faculty provide reasonable accommodations to students with disabilities. These accommodations are based on the premise that students with disabilities need an equal opportunity to acquire information and demonstrate what they have learned; not have an advantage over others in the class. This does not mean lowering class standards, but it may mean having students learn and express knowledge in a different mode.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please make appropriate arrangements with the WVU Office of Accessibility Services, located at 1085 VanVoorhis Road, Suite 250 (293-6700; <http://accessibilityservices.wvu.edu/>).

### CHILDREN AND GUESTS IN CLASS

Many students have children and it is not always possible to find reasonable childcare. If you are unable to find child care facilities, your children are welcome in class. It is the parent's responsibility to minimize the disturbance to the class. Also, a guest of yours on campus is welcome to attend class with you.

### TENTATIVE COURSE SCHEDULE

**NOTE: ALL DATES AND TOPICS ARE SUBJECT TO CHANGE**

WEEK	TOPIC	DATE	READING
<b>1</b>	<b>COURSE OVERVIEW</b> <i>Introduction to soil morphology, soil profile description, and the Southeast Regional Soils Contest; techniques for description of soil texture, soil structure, and soil color</i>	<b>26 AUGUST</b>	<b>SYLLABUS</b>
<b>2</b>	<b>SOIL PROFILE DESCRIPTION IN THE FIELD</b> <i>Identification of soil horizons and description of soil morphological properties of each horizon</i>	<b>2 SEPTEMBER</b>	<b>PART A, P. 14-31</b>
<b>3</b>	<b>PEDON INTERPRETATIONS &amp; SITE CHARACTERISTICS</b> <i>Introduction to evaluation of soil morphology and site characteristics for purpose of developing interpretations for soil use and management</i>	<b>9 SEPTEMBER</b>	<b>PARTS B &amp; C, P. 32-44</b>
<b>4</b>	<b>SOIL PROFILE DESCRIPTION IN THE FIELD</b> <i>Identification of soil horizons and description of soil morphological properties of each horizon; interpreting pedon information and evaluation of site characteristics</i>	<b>16 SEPTEMBER</b>	<b>REVIEW PARTS A, B, AND C</b>
<b>5</b>	<b>SOIL CLASSIFICATION</b> <i>Introduction to diagnostic features and horizon, and the classification of the soils using Soil Taxonomy</i>	<b>23 SEPTEMBER</b>	<b>PART D, P. 45-56</b>
<b>6</b>	<b>REVIEW; PREPARE FOR SE REGIONAL SOILS CONTEST</b>	<b>30 SEPTEMBER</b>	<b>REVIEW ALL</b>
<b>7</b>	<b>SOUTHEAST REGIONAL COLLEGIATE SOILS CONTEST</b>	<b>2-6 OCTOBER, AUBURN, AL</b>	