

Syllabus

ENR 3001

Introduction to Soil Science Laboratory
GE Foundations, Natural Science: 1 credit
Autumn Semester: In-person

Course overview

ENR 3001 is a traditional in-person laboratory that fulfills 1-credit of the General Education (GE) Category Foundations: Natural Science. It is intended to be taken with the 3-credit GE Foundations: Natural Science course titled “Introduction to Soil Science Lecture” (ENR3000). Together the ENR3000 lecture (3 credits) and ENR3001 laboratory (1 credit) fulfill 4-credits of the General Education (GE) Category: Foundations, Natural Science.

Course Information

- **Course times and location:**

Class Sections	Days & Times	Location
ENR 3001-0050 (32331)	Mo 10:00AM - 1:00PM	403 Kottman Hall
ENR 3001-0060 (33253)	Tu 9:10AM - 12:10PM	403 Kottman Hall
ENR 3001-0010 (32237)	Tu 4:00PM - 7:00PM	403 Kottman Hall
ENR 3001-0020 (32328)	We 12:00PM - 3:00PM	403 Kottman Hall
ENR 3001-0030 (32329)	We 6:00PM - 9:00PM	403 Kottman Hall
ENR 3001-0040 (32330)	Th 9:10AM - 12:10PM	403 Kottman Hall

Instructor

Instructor: Sandy Jones (MS)

Email: jones.13@osu.edu

- My preferred method of communication for questions is email.
- My class-wide communications will be sent through the Announcements tool in Carmen Canvas. Please check your notification preferences (go.osu.edu/canvas-notifications) to be sure you receive these messages.



Instructional Assistants

- **Name:** Anna Bosworth **Email:**
- **Name:** Mabel Neemes **Email:**

Course description

ENR 3001 will promote an understanding of principles, theories, and methods of modern soil science, relationships between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world, particularly environmental issues, food security, and human health. Students will learn that soil science is an interdisciplinary field of study, which combines practices, theories and methods from the biological sciences, physical sciences and geological sciences. Students will develop an understanding for the pivotal role that soils play in sustaining life on Earth and how nearly all living organisms rely on ecosystem services provided by soils.

Expected learning outcomes

New General Education Curriculum

This course fulfills the General Education (GE) rationale for the Foundations, Natural Science category. ENR 3001 fulfills Specific Goal 1 Natural Science and Expected Learning Outcome 1.3.

When this 1-credit ENR 3001 laboratory is taken in combinations with the 3-credit ENR 3000 lecture, together these 4-credits (i.e., 1-credit laboratory + 3-credit lecture) fulfills ALL Goals (i.e., Goals 1 and 2) and ALL Expected Learning Outcomes (i.e., ELOs 1.1, 1.2, 1.3, 2.1, 2.2, 2.3) for the Foundations, Natural Science GE category.

ENR 3001 Fulfills

GOAL 1: Successful students will engage in theoretical and empirical study with the natural sciences, gaining an appreciation of the modern principles, theories, methods, and modes of inquiry used generally across the natural sciences.

Expected Learning Outcome 1.3: Successful students are able to employ the process of science through exploration, discovery, and collaboration to interact directly with the natural world when feasible, using appropriate tools, models, and analysis of data.

Prior General Education Curriculum

ENR 3001, Soil Science Laboratory is available for GE credit when taken with ENR 3000, Soil Science Lecture. Both courses must be completed for GE credit, yet both need not be taken during the same semester.

How this course works

Mode of delivery: ENR 3001 is a 100% in-person laboratory. ENR 3001 course topics will be divided into 11 learning modules (see list below). One module will be taught approximately each week of the semester. Modules are delivered in-person as laboratories with hands-on experiential components. A laboratory manual is made available for purchase from Zip Publishing at the beginning of the first lab meeting. All background material and lab report forms are provided in the Soil Science Laboratory Manual. Other course materials for ENR 3001 will consist of downloadable reading materials, lecture slides, lecture presentations, lecture transcripts, practice quizzes, and grading rubrics.

Pace of online activities: This laboratory is divided into weekly modules. Students will complete one module per week (7 days). Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within each week.

Credit hours and work expectations: This is a 1-credit-hour laboratory. Students should expect to spend 3 hours per week in this laboratory. Each practical period will include up to 1 hour of lecture in which important principles and procedures of soil data collection, analysis and interpretation will be discussed. This introduction will be followed by practical exercises to illustrate the soil properties and processes discussed in the lab presentation. Subject matter will be presented in a variety of formats, including demonstrations, videos, lab measurements, problem solving, and reference materials.

Attendance and participation requirements: Because this is an in-person laboratory, your attendance is required. Please attend assigned lab section unless prior arrangements are made. No make-up labs are offered. Lab reports are not accepted without attendance.

Course materials and technologies

Textbook

Environment and Natural Resources 3001 Soil Science Laboratory (required) available at beginning of lab class or from Zip Publishing, 1091 W 1st Ave, Grandview Heights, OH 43212.

RECOMMENDED/OPTIONAL

Soils: An Introduction by Singer and Munns (not required, reference only) or *Elements of the Nature and Properties of Soils* by Brady and Weil (not required, reference only)

Prerequisites:

1. ENR 3000 or concurrent enrollment
2. Understanding soils requires a working knowledge of the principles and vocabulary of the sciences, including elementary chemistry. Students taking ENR 3001 without having received credit for Chemistry 101 or 121 (or an equivalent course) should be aware that understanding of relevant material from these courses is assumed, and time to review basic concepts of chemistry will be limited.

Course technology

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Baseline technical skills for online courses

- Basic computer and web-browsing skills
- Basic skills with Microsoft Word, Excel and PowerPoint
- Navigating Carmen: for questions about specific functionality, see the [Canvas Student Guide](#).

Required equipment

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Microphone: built-in laptop or tablet mic or external microphone
- (Recommended) Webcam: built-in or external webcam, fully installed and tested
- Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

Required software

- **Microsoft Office 365:** All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Full instructions for downloading and installation can be found [at go.osu.edu/office365help](http://go.osu.edu/office365help).

Carmen access

You will need to use [BuckeyePass](#) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](#) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click “Enter a Passcode” and then click the “Text me new codes” button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the [Duo Mobile application](#) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and the IT support staff will work out a solution with you.

If you experience connection problems with Carmen then the very first thing that you should try is another web browser such as Firefox, Explorer, Chrome, and Safari. If you are having difficulty opening a document or viewing an image or any other issue associated with this class, then it is most likely a problem with your computer, Internet connection or Internet browser. While everything for this class has been thoroughly tested, if you experience a mistake, please let us know so that we can correct it.

Grading and faculty response

See [Course Schedule](#) for due dates.

How your grade is calculated

Assignment category	PERCENTAGE
11 – Laboratory Assignments (lowest lab score dropped)	63.583% (5.78% each)
1 – Land Use Project	11.56%
11 – Weekly Short quizzes (lowest quiz grade dropped)	6.358% (0.578% each)
1 – Final Exam	18.497%
Total	100%

**See course schedule for due dates.*

Laboratory Assignments (11, 5.78% each, 63.583% total):

You will complete a total of 11 laboratory assignments this semester (1 assignment per week) all of which will be due on a weekly basis and submitted at the beginning of each laboratory period. Students assimilate into collaborative groups of 4 and employ standard methods of soil science to record observed soil behavior, analyze data and report their findings. Students propose explanations of phenomena, drawing upon basic facts, principles and theories of modern soil science. Students extrapolate their findings to answer questions regarding impacts of soil behavior on land use. Lab reports consist of tables of data, descriptions and a series of questions related to data collected in the lab, data interpretation, and synthesis of the information presented. Lab reports are submitted on paper and generally are due at the subsequent lab on a weekly basis; most of the report will be done during the lab period, with a week available for any outstanding questions and interpretations to be completed. Collaborating or completing labs with your group members is permitted but not necessary to successfully complete the lab. This course fulfills ELO 1.3 through the sequence of presentations, laboratory assignments, quizzes, individual feedback, assigned readings and the land use planning project.

ENR 3001 -Objectives of weekly laboratory assignments

1. Introduce students to standard methods for measuring important soil characteristics
2. Introduce students to standard laboratory techniques and good laboratory practice
3. To encourage collaboration in problem-solving among students within groups
4. To solve simple problems related to soil management, based on soil property data collected and measured in a laboratory setting
5. Extrapolate laboratory scale results to landscape scale recommendations
6. To classify soils at a broad categorical level using US Soil Taxonomy

For select laboratory assignments students will collect, graph, analyze and interpret data.

Land Use Project Report (11.56% total):

Each student submits an individual (not group) project design of their own creation in the form of a written report to a county zoning board for plan approval. The student includes written text describing their plan elements and their locations based on soil suitability or limitation. The student must draft figures and tables to be referenced in their written discussion. Land use project reports are given three weeks to be uploaded to Carmen for grading by rubric.

ENR 3001- Objectives of land use project report

1. Students navigate the Web Soil Survey and use its soils data resource for land use planning

2. Students assemble figures, tables and text into a well-organized and readable document
3. Students demonstrate an understanding of soil limitation and suitability for their land use plans
4. Students demonstrate their ability to convey to the reader information and ideas in written communication

Short Weekly Quizzes (11, 0.578% each, 6.358% total):

Each student submits answers to 10 questions (short answer, true-false, multiple choice).

ENR 3001- Objective of weekly short quizzes

1. Prepare students to efficiently execute laboratory procedures
2. Encourage study of reading materials prior to meeting in the laboratory

Final exam (18.497% total):

The final exam will be comprehensive, consisting of a variety of multiple choice, short answer, and true-false questions along with problems related to soil data provided. Typically, the final has about 100 questions to be completed in 1hr 45 minutes.

Late policy

Assignments submitted late will decrease in score by 10% per school day. No assignments will be accepted after posting of answer keys. Extenuating circumstances that prevent the student from submitting assignments, taking quizzes or exams by the due date must be discussed with the instructor as soon as possible, preferably before the due date. Otherwise, opportunities to makeup missed quizzes will be granted upon submission of a valid written excuse.

Grading Scale

93–100: A
 90–92.9: A-
 87–89.9: B+
 83–86.9: B
 80–82.9: B-
 77–79.9: C+
 73–76.9: C
 70–72.9: C-
 67–69.9: D+
 60–66.9: D
 Below 60: E

Instructor feedback and response time

- **Grading and feedback:** For assignments, you can expect a grade and feedback within **7 days**. Grading and feedback for the land use project will require several weeks after the due date.
- **Email:** Instructors check and reply to emails daily. Please use your Ohio State email account to send emails to jones.13@osu.edu.

Other Course Policies

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.
- **Backing up your work:** Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.
- **Synchronous sessions:** During our Zoom sessions I ask you to use your real name and a clear photo of your face in your Carmen profile. During our full-group lecture time, you may turn your camera off if you choose. When in breakout rooms or other small-group discussions, having cameras and mics on as often as possible will help you get the most out of activities. You are always welcome to use the [free, Ohio State-themed virtual backgrounds](https://go.osu.edu/zoom-backgrounds) (go.osu.edu/zoom-backgrounds). Remember that Zoom and the Zoom chat are our classroom space where respectful interactions are expected.]

Academic Integrity Policy

See [Descriptions of Major Course Assignments](#) for specific guidelines about collaboration and academic integrity in the context of this online class.

Ohio State's Academic Integrity Policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's [Code of Student Conduct](https://studentconduct.osu.edu) (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- [Committee on Academic Misconduct](http://go.osu.edu/coam) (go.osu.edu/coam)
- [Ten Suggestions for Preserving Academic Integrity](http://go.osu.edu/ten-suggestions) (go.osu.edu/ten-suggestions)
- [Eight Cardinal Rules of Academic Integrity](http://go.osu.edu/cardinal-rules) (go.osu.edu/cardinal-rules)

Copyright for Instructional Materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate based on age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, [on-demand mental health resources](https://go.osu.edu/ccsondemand) (go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is closed at [614- 292-5766](tel:614-292-5766). **24-hour emergency help** is available through the [National Suicide Prevention Lifeline website](https://www.nationalsuicideline.org) (suicidepreventionlifeline.org) or by calling [1-800-273-8255\(TALK\)](tel:1-800-273-8255). [The Ohio State Wellness app](https://go.osu.edu/wellnessapp) (go.osu.edu/wellnessapp) is also a great resource.

Accessibility Accommodations for Students with Disabilities

Requesting Accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with [Student Life Disability Services \(SLDS\)](#). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. Considering the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services.

Disability Services Contact Information

- Phone: [614-292-3307](tel:614-292-3307)
- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: [Baker Hall 098, 113 W. 12th Avenue](#)

Accessibility of Course Technology

This online course requires use of Carmen Canvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- [CarmenCanvas accessibility](http://go.osu.edu/canvas-accessibility) (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- [CarmenZoom accessibility](http://go.osu.edu/zoom-accessibility) (go.osu.edu/zoom-accessibility)

Laboratory Schedule

Refer to the Carmen Canvas course for up-to-date due dates.

Date	Week	Lab	Topic	Due
Aug 21-24	1			
Aug 28-31	2	1	Course intro, rocks, minerals, sediments and soil parent materials, Ohio soil geography	
Sep 4-7	3		<i>Week of Labor Day Holiday (no lab meetings)</i>	
Sep 11-14	4	2	Legal description of land, Exploring the Web Soil Survey, Land Use Projects	Soil Parent Materials Report
Sep 18-21	5	3	Soil texture, Clay dispersion and flocculation, Particle density	Exploring the Web Soil Survey Report
Sep 25-28	6	4	Soil consistence, plasticity class determination, linear extensibility, heat of wetting	Soil Texture Report
Oct 2-5	7	5	Physical Properties, Soil-Water-Air Relationships, K_{sat} and Volumetric water content measurements	Soil Consistence Report
Oct 9-12	8		<i>Week of Autumn Break (no lab meetings)</i>	
Oct 16-19	9	6	Soil morphology, structure, color and drainage	Land Use Project, Soil Physical Properties Report
Oct 23-26	10	7	Soil cation exchange capacity, clay Mineralogy, soil potassium	Soil Morphology Report
Oct 30- Nov 2	11	8	Soil organic carbon & permanganate oxidizable carbon analyses	Cation Exchange and Potassium Report
Nov 6-9	12	9	Soil pH, acidity, lime equilibration with acid soil, soil phosphate	Soil Carbon Fractions Report
Nov 13-16	13	10	Soil organic matter decomposition and soil nitrogen	Soil Acidity and Phosphate Report
Nov 20-23	14		<i>Week of Thanksgiving Holiday (no lab meetings)</i>	
Nov 27-30	15	11	Classification and Soil Taxonomy	Soil Organic Matter and Nitrogen Report
Dec-4-7	16	12	Review, practice exam	Soil Taxonomy and Classification Report
Dec-8-14	16-17		Final Exams	