

10/16/07

**The Ohio State University
General Education Curriculum (GEC)
Request for Course Approval Summary Sheet**

1. Academic Unit(s) Submitting Request

School of Environment + Natural Resources + School of Earth Sciences

2. Book 3/Registrar's Listing and Number (e.g., Arabic 367, English 110, Natural Resources 222)

Earth Sci 100 and ENR 101

3. GEC areas(s) for which course is to be considered (e.g., Category 4. Social Science, Section A. Individuals and Groups; and Category 6. Diversity Experiences, Section B. International Issues, Non-Western or Global Course)

Natural Science (BA) - Physical Science Sequence

4. Attach:

- A statement as to how this course meets the general principles of the GEC Model Curriculum and the specific goals of the category(ies) for which it is being proposed;
- An assessment plan for the course; and
- The syllabus, which should include the category(ies) that it satisfies and objectives which state how this course meets the goals/objectives of the specific GEC category(ies).

5. Proposed Effective Date Winter 2008

6. If your unit has faculty members on any of the regional campuses, have they been consulted? Ø

7. Select the appropriate descriptor for this GEC request:

- Existing course with no changes to the *Course Offerings Bulletin* information. Required documentation is this GEC summary sheet and the course syllabus.
- Existing course with changes to the *Course Offerings Bulletin* information. Required documentation is this GEC summary sheet, the course change request, and the course syllabus.
- New course. Required documentation is this summary sheet, the new course request, and the course syllabus.

For ASC units, after approval by the academic unit, the documentation should be forwarded to the ASC Curriculum Office for consideration by the appropriate college curriculum committee and the Arts and Sciences Committee on Curriculum and Instruction (CCI). For other units, the course should be approved by the unit, college curriculum committee, and college office, if applicable, before forwarding to the ASC Curriculum Office. E-mail the syllabi and supporting documentation to ascurofc@osu.edu.

9. Approval Signatures

Steve M. Bigler 10/16/07
 Academic Unit Date

Greg A. Puster 2/18/08
 College Office/College Curriculum Committee Date

Colleges of the Arts and Sciences Committee on Curriculum and Instruction Date

Office of Academic Affairs Date



Steven K. Lower, B.S., M.S. Ph.D.
Assistant Professor, The Ohio State University

August 24, 2007

Earth Sci.

Re: Creating a sequence from **GS100** to **ENR101**

To whom it may concern:

I have a joint appointment in the School of Earth Sciences (SES) and the School of Environment and Natural Resources (SENR). Over the past two years, I have taught GS100, (*Planet Earth*) for the SES and ENR101 (*Soils in our Environment*) for the SENR. GS100 concentrates primarily on "how" the Earth works, and discusses natural processes that occur within the lithosphere, hydrosphere, biosphere, and atmosphere. ENR101 focuses on the outer "skin" of the Earth, more commonly referred to as soil. Soil is that portion of the Earth that exists at the interface between the hydrosphere, lithosphere, atmosphere, and biosphere.

As I have taught these two classes, I have discovered that they have a natural synergy. For example, GS100 explores the formation of volcanoes; whereas ENR101 presents volcanoes as the source of the most productive agricultural soil on Earth. GS100 discusses the freshwater resource that exists under the Earth's surface (i.e., groundwater); whereas ENR101 illustrates the use of groundwater as irrigation for residential and agricultural fields, and discusses human contamination of groundwater reserves. As a final example of this synergistic relationship, GS100 discusses natural energy reserves (e.g., oil and coal) and their impact on global climate change. ENR101, on the other hand, discusses alternative fuel sources (e.g., biofuels), and ways to remove greenhouse gases from the atmosphere by storing them in the soil.

Recently, I conducted a survey to determine whether students would be interested in a GS100-ENR101 sequence. I asked students enrolled in my GS100 class whether they would take ENR101. The results were overwhelmingly positive: 91% ($n = 47$) and 94% ($n = 163$), but only under one condition. ENR101 had to be offered as an official sequence to GS100. I believe this is because most students take GS100 and ENR101 to fulfill a GEC requirement.

In closing, I request that ENR101 become a sequence to GS100. I believe these two classes are a natural sequence. Furthermore, I believe a GS100-ENR101 sequence is in the best interest of students, particularly non-science majors who should have a solid, scientific understanding of our Earth and the lasting impact that we have upon it. I recommend that the sequence should be established in the Natural Science GEC requirements as a Physical Science sequence (i.e. Geol Sci 100 - ENR 101) for the Bachelor of Arts and Bachelor of Arts in Journalism Degree requirements.

Sincerely,

Steven K. Lower, Ph.D.
Assistant Professor

**School of Environment and Natural Resources**

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October 1, 2007

Dr. Jill A. Pfister
Assistant Dean
College of Food Agriculture
and Environmental Science
100 Ag. Admn. Bldg.
2120 Fyffe Rd.
Campus

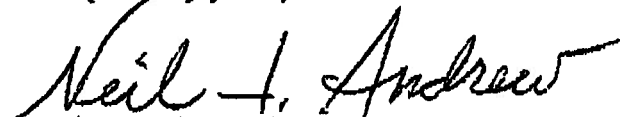
Dear Dr. Pfister

The School of Environment and Natural Resources Academic Affairs Committee (SENR-AAC) gave full consideration on September 28, 2007 to the proposal to sequence Geological Science 100 – Planet Earth and Environmental and Natural Resources 101 – Soils in our Environment as a GEC physical science requirement for the Bachelor of Arts (BA) and the Bachelor of Arts in Journalism (BAJ) degree requirements. The committee was in full agreement with this proposal and unanimously supported it.

The committee definitely agrees that all students should have a strong understanding of Earth and the lasting impact of civilization on it. This proposed sequence will provide that opportunity for a substantial segment of the undergraduate student population as mentioned above. These courses are indeed a natural sequence and definitely should be approved for GEC requirements in our view. This support is consistent with expressed student interest.

Therefore, it is supported and advised that GEOL SCI 100 and ENR 101 be approved as a sequence for a GEC physical science requirement for the BA and BAJ degrees.

Respectfully yours,


Neil J. Andrew, Chairman
SENR-AAC

DATE 8 October 2007

TO Curriculum Committee, School of Environment and Natural Resources

FROM Lawrence Krissek, Curriculum Committee Chair, School of Earth Sciences

SUBJECT Proposal for GEC sequence of Geol Sci 100 – ENR 101

As Chair of the SES Curriculum Committee, I am writing to express Earth Science's support of the proposal to link Geol Sci 100 (which will be Earth Sci 100 effective Winter 2008) and ENR 101 as a Physical Science GEC sequence for B.A. students. We recognize that this new sequence may reduce enrollments in other Geol Sci courses that presently form GEC sequences with Geol Sci 100, but we agree that the topics covered in Geol Sci 100 and ENR 101 link together well. As a result, students taking this sequence will benefit from a coherent treatment that reinforces the Learning Objectives for the Natural Science component of the GEC.

Although Geol Sci 100 itself presently meets all the Learning Objectives of the GEC Natural Science component, I anticipate that sequencing Geol Sci 100 with ENR 101 will especially reinforce Learning Objectives 3 and 4:

- *students provide examples of the interdependence of scientific and technological developments; and
- *students discuss social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

As a result, Earth Sciences supports this proposal to link Geol Sci 100 and ENR 101 as a GEC Natural Science sequence for B.A. students.

I am away from campus on an SRA until mid-December, so please contact me via e-mail (krissek.1@osu.edu or lkrissek@geology.ohio-state.edu) until then with any questions in this matter.

ENR 101 – SOILS IN OUR ENVIRONMENT
THE OHIO STATE UNIVERSITY, SPRING QUARTER

Lecture T, H 10:30-12:18; Mendenhall Lab (ML) Room 247 / Lab/Recitation H 2:30-4:18; ML Room 247

**Professor**

Dr. S. K. Lower

Office: ML Room 309

Email: Lower.9@osu.edu

Phone: 614-292-1571

Office hrs: Before/after class

Grades

2 Exams = highest 30%; lowest 20%

Final Exam = 25%

Presentation = 20%

Attendance = 5%

*There are NO make up exams!

Textbook*Visualizing Geol/Environmental Science**Linda Berg; John Wiley*

WEEK	DATE	TOPIC (topics are subject to change, but exam dates are firm)
1	Mar 27- Mar 29	Syllabus; Introduction; Why mess with dirt Minerals; Physical and mineral properties of soils
2	Apr 3- Apr 5	Soil and water; hydrology/hydrogeology; soil and biology (microorganisms)
3	Apr 10- Apr 12	Continue soil, water and biology (microorganisms) Chemicals composition of soil
4	Apr 17- Apr 19	Soil formation and classification; volcanoes and soil formation
5	Apr 24- Apr 26	EXAM 1 Soil and water pollution; Urban runoff; Lake Erie; Hypoxia in the Gulf
6	May 1- May 3	acid rain; buffering by soils; acid mine runoff; mine reclamation
7	May 8- May 10	Energy; global warming; use of soils to sequester carbon
8	May 15- May 17	Soils and public health & safety; pathogens and arsenic groundwater; desertification; wetlands EXAM 2
9	May 22- May 24	Continue soils and public health & safety
10	May 29- May 31	Role of soil in world hunger and food production PRESENTATIONS

Textbook

Outside readings will also be assigned during the quarter. These will be announced during lecture.

Final grade and exams

Your final grade will be based on two midterm exams: your highest midterm will be worth 30% and your lowest midterm will be worth 20%; a final exam: 25%; presentation: 20%; and attendance: 5%. There are NO make-up exams except for valid medical reasons. If you are sick, you MUST have a note signed by your medical doctor (i.e. a licensed physician with a M.D.) or you will receive a zero on the exam.

Examinations will be multiple choice and short answer / essay. Bring your ID card, several sharpened #2 pencils, an eraser, a calculator, and a ruler to every exam. A significant number of the questions on an exam will come from material presented in the lecture. Additional material will be drawn from the lab and the assigned readings. Be sure that you know how to operate your calculator BEFORE coming to an examination.

Instructions for the class presentation will be presented during lecture.

Academic integrity

Cheating will NOT be tolerated in class or lab. It will be reported as Academic Misconduct and result in a failing grade.

Other

Please see me at any point during the quarter if you have questions or concerns. Don't wait until the day before an exam. I always welcome suggestions, which may include potential questions for exams. If you have a disability, contact me at the beginning of the quarter so that I can make accommodations.

Periodic announcements and some lecture slides will be posted on Carmen at <http://telr.osu.edu/carmen/>. **BE SURE TO TRY THE LINK THIS WEEK! DO NOT WAIT UNTIL THE DAY BEFORE THE EXAM.**

I often communicate with the class using email. I will use your [name.#@osu.edu](mailto:yourname.#@osu.edu) account for this purpose. I realize that many of you have other email accounts through services such as Yahoo or Hotmail. You must remember to check your OSU account or you will miss important announcements.

GEOLOGICAL SCIENCES 100 –PLANET EARTH: HOW IT WORKS
THE OHIO STATE UNIVERSITY, SPRING QUARTER

Lecture M, W 12:30-2:18; Mendenhall Lab (ML) Room 100 / Lab T or H; ML Room 149 or 155



Professor
 Dr. S. K. Lower
 Office: ML Room 309
 Email: Lower.9@osu.edu
 Phone: 614-292-1571
 Office hrs: Before/after class

Grades
 2 Exams = highest 25%; lowest 20%
 Comprehensive Final Exam = 20%
 Lecture Quizzes = 10%
 Laboratory = 25%
 *There are NO make up exams!

Textbook and lab material
 (1) *Essentials of Geology*, 1st OR 2nd Ed.
 By S. Marshak. ISBN 0-393-92411-4.
 (2) GS100 Course Packet from Uni-Print/CopEZ. Purchase a *new* manual.

WEEK	DATE	TOPIC (lecture topics are subject to change, but exam dates are firm; there are NO make-up exams)	TEXT CHAPTER (from 1 st edition)
1	Mar 26	Introduction; Syllabus; Metric system; Powers of 10	Ch 1 & Prelude
	Mar 28	Scientific Method; Origin of solar system & the Earth	Ch 1 & Prelude
2	Apr 2	Origin of solar system & the Earth	Ch 1
	Apr 4	Origin of solar system & the Earth	Ch 1
3	Apr 9	Atoms, bonds, & minerals; X-ray diffraction	Appendix A & Ch 3
	Apr 11	Atoms, bonds, & minerals; X-ray diffraction	Appendix A & Ch 3
4	Apr 16	Intro to rocks; Igneous Rocks; Volcanoes	Interlude A, Ch 4 & Ch 7
	Apr 18	EXAM 1	--
5	Apr 23	Igneous rocks; Volcanoes; Plate tectonics	Ch 7 & Ch 2
	Apr 25	Volcanoes; Plate tectonics	Ch 7 & Ch 2
6	Apr 30	Earthquakes; Tsunamis	Ch 8
	May 2	Rock Cycle, Weathering; Sedimentary rocks and sedimentary environments	Ch 5
7	May 7	Water cycle; Rivers	Ch 14
	May 9	Groundwater; Groundwater contamination	Ch 16
8	May 14	Glaciers	Ch 18
	May 16	EXAM 2	--
9	May 21	Geologic time; Relative and Absolute ages	Interlude D Ch 10
	May 23	Absolute age; Life on Earth; Life without sunlight; possibility of ET	Ch 10 & Ch 11
10	May 28	No class; Memorial Day	Ch 11
	May 30	Impact of humans on climate; Greenhouse effect	Ch 19
MONDAY JUNE 4, 11:30-1:18, ML 100; COMPREHENSIVE FINAL EXAM			

Required textbook and laboratory manual (*you should read the textbook and lab manual BEFORE coming to class*)
 (1) The textbook titled *Essentials of Geology* by Marshak (ISBN 0-393-92411-4) is available from the *campus bookstores*. You may purchase the 1st or 2nd edition. This book complements the lecture portion of the class.

(2) Exercises for the laboratory portion of the class are contained within a course packet for GS100, which is available at UniPrint (formerly CopEZ) on Tuttle Road or Neil Avenue. See <http://uniprint.osu.edu/coursepackets/>. You must purchase a new lab manual (do not purchase a used copy of the lab manual).

Laboratory (see lab syllabus)

The lab is an important part of this course and it accounts for 25% of your overall grade in the class. A Graduate Teaching Assistant (TA) will oversee your progress in the lab and assign your lab grade. You must attend your assigned laboratory and work on the problems during the lab. There are NO makeup labs. You are required to read the lab exercise before coming to the lab. Please bring the following to lab: a sharpened pencil, an eraser, a calculator, and a ruler. Some lab study material will be kept in ML275 (Carman Room), which is open from 8AM to 5PM on Monday thru Friday. Additional lab guidelines will be provided by your TA.

Final grade and exams

Your final grade will be based on two midterm exams: your highest midterm will be worth 25% and your lowest midterm will be worth 20%; a comprehensive final exam: 20%; lecture quizzes: 10%; and laboratory: 25%. There are NO make-up exams except for valid medical reasons. If you are sick, you MUST have a note signed by your medical doctor (i.e. a licensed physician with a M.D. degree) or you will receive a zero on the exam. Grades and answers to the exams will be posted in the glass cabinets outside of the lecture room.

Examinations will be multiple choice and short answer / essay. Bring your ID card, several sharpened #2 pencils, an eraser, a calculator, and a ruler to every exam. A significant number of the questions on an exam will come from material presented in the lecture. Additional material will be drawn from the textbook and lab exercises. Examinations must be finished within the allotted time. It would be wise to arrive 5-10 minutes early on the day of an examination. Be sure that you know how to operate your calculator BEFORE coming to an examination.

Final Grade Scale

A 93.00 to 100.00	A- 90.00 to 92.99	
B+ 87.00 to 89.99	B 83.00 to 86.99	B- 80.00 to 82.99
C+ 77.00 to 79.99	C 73.00 to 76.99	C- 70.00 to 72.99
D+ 67.00 to 69.99	D 60.00 to 66.99	

An overall score of 59.99 or lower is a failing grade

"Bonus points" for lecture attendance

I am often asked by students, "May I complete an exercise for bonus points?" The answer is, NO. However, there is one easy way to earn "bonus points". Unannounced lecture quizzes account for 10% of your overall grade. Each quiz is a straight forward question that relates to the day's lecture. These quizzes are essentially a way for me to take attendance and an easy way for you to increase your final grade. Take advantage of this gift.

Academic integrity

Cheating will NOT be tolerated in class or lab. It will be reported as Academic Misconduct and result in a failing grade.

Other

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I often communicate with the class using email. I will use your name.#@osu.edu account for this purpose. I realize that many of you have other email accounts through services such as Yahoo or Hotmail. You must remember to check your OSU account or you may miss important announcements.