

**Core Curriculum Course Submission  
Criteria: Science**

**1. General Information**

<b>a. Originating Person</b>	<b>b. Contact Person's E-mail</b>	<b>c. Contact Phone</b>	<b>d. Date</b>
Beth McMillan	memcmillan@ualr.edu	(501)569-3024	4/5/14
<b>e. College/School</b>	<b>f. Department/Program</b>		
College of Engineering & Information Technology	Civil & Architectural Engineering & Earth Sciences		

**Submission Statement**

By submitting this form, we acknowledge our understanding that the Core Council has the authority to review approved courses to ensure they continue to meet the established goals and outcomes of that category of the core; that the Council has authority to develop a core assessment program; and that the Council will be developing review and assessment policies by the end of 2014. Further, we agree that if this course is approved, we will participate in the university-wide assessment of the core.

**Chair and Dean Awareness**

Your department chairperson and college dean must be made aware of your submission for core. By submitting this form, you are acknowledging that this has occurred.

**2. Course Information**

<b>a. Course ID .</b>	<b>b. Current Title</b>
ERSC 1302/1102	Physical Geology/Physical Geology Lab

**c. Catalog Description**

ERSC 1302 An introduction to the science of geology, the geological view of the human environment, how geologists learn about Planet Earth, and how society and geology interact. Active learning applied to natural processes shaping the earth's surface, producing the solid and fluid earth, and historical development of geological paradigms. Three hours lecture per week. Three credit hours. Taken along with ERSC 1102, equivalent to GEOL 1114 in ADHE common course numbering system. ERSC 1102 Prerequisite or corequisite: ERSC 1302. A laboratory course designed to accompany ERSC 1302. Students observe, gather and manipulate data, interpret data, and make field measurements using minerals, rocks, graphs, and maps. The laboratory meets for two hours per week. One credit hour. Taken along with ERSC 1302, equivalent to GEOL 1114 in ADHE common course numbering system.

**d. How will your department ensure a level of consistency among sections of this course? Who will be responsible for this?**

The department's curriculum committee will review all syllabi for ERSC 1302/1102 each semester examining whether the learning objectives are covered. This will include verifying that the assignments cover the learning objectives. The curriculum committee will report this information to the chair. New faculty and new adjuncts will be given a copy of the Educational Goals and Learning Outcomes form submitted to the Core Council with instructions to use it to plan their course.

Educational Goals	Learning Outcomes students will...	Learning Objectives: At the end of the course students will be able to...	Assignments	Explanation
<b>Knowledge 1 – Concepts, methodologies, findings, and applications of mathematics and the social and natural sciences, engineering and technology.</b>	1. understand the theoretical perspective used in one or more science discipline;	<b>Learning Objectives 1.1</b>  demonstrate awareness and comprehension of major hypotheses, theories, and conceptual models in the Earth Sciences.	<b>Assignments 1.1</b>  Exams, assignments	<b>Explanation 1.1</b>  Exam questions cover first principles and major Theories of geology including Evolution and Plate Tectonics. Assignments may be in-class or homework and involve requiring students to explain major theories and how these can be used to understand and predict geological processes and features.
	2. understand observational and experimental methods used in one or more of the sciences;	<b>Learning Objectives 1.2</b>  demonstrate awareness and comprehension of how scientists collect data through observations and experiments.	<b>Assignments 1.2</b>  Exams, assignments, laboratory exercises	<b>Explanation 1.2</b>  Exam questions, assignments and laboratory exercises cover diverse methods of data collection - for example how field observations, in situ monitoring and controlled laboratory experiments help geologists understand phenomena like earthquakes, landslides and flooding. Assignments may be in-class or homework
	3. understand applications and limitations of the sciences;	<b>Learning Objectives 1.3</b>  demonstrate awareness and comprehension of the impact of the Earth Sciences on society.	<b>Assignments 1.3</b>  Exams, assignments, laboratory exercises	<b>Explanation 1.3</b>  Exam questions, assignments and laboratory exercises cover the diverse applications and limitations of the science of geology - for example how studying the location, size and frequency of earthquakes applies to identifying risk of future earthquakes, but not to the ability to predict the exact timing or location of major events. Assignments may be in-class or homework.

Educational Goals	Learning Outcomes students will...	Learning Objectives: At the end of the course students will be able to..	Assignments	Explanation
<b>Skills 1 – Communication</b>	1. develop an understanding of how to communicate scientific procedures, results from the inquiry and conclusions resulting from applying the scientific method;	<b>Learning Objectives 1.1</b> demonstrate the ability to communicate their understanding of how scientists know about how the Earth works.	<b>Assignments 1.1</b> Laboratory exercises	<b>Explanation 1.1</b> Laboratory exercises will include written work following the scientific method.
Educational Goals	Learning Outcomes students will...	Learning Objectives: At the end of the course students will be able to...	Assignments	Explanation
<b>Skills 2 – Critical Thinking, Quantitative Reasoning, and Solving Problems Individually and Collaboratively</b>	1. develop basic skills from the scientific method including inquiry, data collection, analysis, and interpretation in order to explore a scientific problem from hypothesis testing to formulating a conclusion based on the inquiry;	<b>Learning Objectives 2.1</b> demonstrate critical thinking, quantitative reasoning and problem solving through data collection, data analysis, interpretation of results, hypothesis testing and making conclusions.	<b>Assignments 2.1</b> Exams, Laboratory exercises	<b>Explanation 2.1</b> Laboratory exercises will include development of a hypothesis, hypothesis testing, data collection, data analysis, and drawing conclusions. Students work collaboratively in pairs or small groups. Exams will cover individual efforts in this skill set.
	2. learn about the world through observation and experimentation, through modeling and interpretation, and through analysis and evaluation;	<b>Learning Objectives 2.2</b> demonstrate critical thinking, quantitative reasoning and problem solving by making observations, reviewing experiments, interpreting models, and analyzing and evaluating results	<b>Assignments 2.2</b> Exams, Laboratory exercises	<b>Explanation 2.2</b> Laboratory exercises will require students to make observations, to understand experiments and be able to use some simple experimental methods, to understand modeling and to use some simple models, and to analyze and evaluate data derived from all of these sources. Students work collaboratively in pairs or small groups. Exams will cover individual efforts in this skill set.

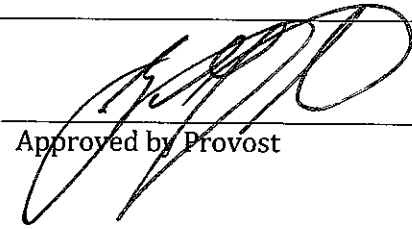
<b>Educational Goals</b>	<b>Learning Outcomes students will...</b>	<b>Learning Objectives: At the end of the course students will be able to...</b>	<b>Assignments</b>	<b>Explanation</b>
<b>Skills 3 – Information Technology</b>	1. develop and apply technological tools for inquiry, analysis, and presentation of scientific information and data;	<b>Learning Objectives 3.1</b> apply technical knowledge of relevant computer applications, laboratory methods, and field methods to solve geological problems.	<b>Assignments 3.1</b> Exams, Laboratory exercises	<b>Explanation 3.1</b> Laboratory exercises include use of computer technology, field technology, and laboratory technology to collect and analyze data. Assignments include use of online technology - search engines, interactive websites - for data collection and analysis.
<b>Educational Goals</b>	<b>Learning Outcomes students will...</b>	<b>Learning Objectives: At the end of the course students will be able to...</b>	<b>Assignments</b>	<b>Explanation</b>
<b>Values 1 – Personal Responsibility and Ethical Behavior</b>	1. take responsibility for completing assignments in an ethical manner, working on one's own when required and acknowledging resources when used;	<b>Learning Objectives 1.1</b> avoid plagiarism, cite correctly from reference sources, and follow the UALR policies on academic integrity	<b>Assignments 1.1</b> Exams, assignments, Laboratory exercises	<b>Explanation 1.1</b> The syllabus contains the instructor's expectations for personal responsibility and ethical behavior.
	2. develop an understanding of the ethical obligations in conducting research, and of being precise and accurate with data, including how this obligation applies to communication of information;	<b>Learning Objectives 1.2</b> demonstrate an awareness of the ethical guidelines for conducting and communicating scientific research.	<b>Assignments 1.2</b> Assignments and/or discussions.	<b>Explanation 1.2</b> Ethical conduct that has been identified within the scientific community will be a source of discussion material or critical thinking questions.

Educational Goals	Learning Outcomes students will...	Learning Objectives: At the end of the course students will be able to...	Assignments	Explanation
<p><b>Values 2 – Civic Responsibility</b></p>	<p>1. develop an understanding of the ethical issues that may result when applying scientific knowledge that is incomplete.</p>	<p><b>Learning Objectives 2.1</b> demonstrate awareness of the ethical obligations of communicating uncertainty.</p>	<p><b>Assignments 2.1</b> Assignments and/or discussions</p>	<p><b>Explanation 2.1</b> Ethical issues that have been raised in the media will be a source of discussion material or critical thinking questions. For example, a discussion might focus on the 2012 conviction of six Italian seismologists for manslaughter based on how they assessed and communicated risk before a major earthquake hit and killed people in L'Aquila, Italy.</p>

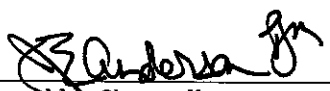
**Additional Comments:**

Belinda Blewins-Kneib  
Approved by Core Curriculum Committee

5-6-14  
Date

  
Approved by Provost

5/7/2014  
Date

  
Approved by Chancellor

5/8/14  
Date