

COURSE: ISC 281 Living on Earth CREDIT HOURS : 4 Fall, 2009

Lecture: Tuesdays and Thursdays 8 – 9:15 am. Science Room 276

Lab: Science Room 200 Mondays 8 – 9:50 am. Section 101 CRN 2668

Mondays 10 – 11:50 am. Section 102 CRN 2669

Mondays 1 – 2:50 pm. Section 103 CRN 2670

Pre-requisite : MTH 121 or 121B or 123 or 127 or 130 or 130E or 203 or 229

Instructor: Samuel T. Colvin, office - G-31-G Morrow Library, colvin8@marshall.edu

(304) 696-5432 I can only return local phone calls.

Office hours : Mondays noon – 1 pm., Tuesdays and Thursdays 10:45 am. – 2:15 pm.

BY PRIOR APPOINTMENT ONLY Tuesdays and Thursdays 2:15 – 3:15 pm.

I AM NOT ON CAMPUS ON WEDNESDAYS, FRIDAYS, SATURDAYS OR SUNDAYS.

MARSHALL PLAN - Upon completion of the ISC component of the Marshall Plan, students will:

1. understand and apply the processes of scientific investigation to gather information and an understanding of the natural universe.
2. know how to distinguish the differences between science and pseudoscience.
3. gather, analyze, and draw conclusions based on valid interpret of data.
4. possess and exhibit improved skills and competencies in research, writing, and oral presentations.

Course Learning Objectives:

1. learn to think critically
2. understand the scientific method and learn the process the processes of scientific investigation
3. know how to distinguish the differences between science and pseudoscience
4. gather and analyze data to draw conclusions based on valid interpretation of results
5. garner skills and competencies in research, writing, and presentation
6. acquire knowledge and gain an understanding of natural science

Assessment Tool*		Learning Objective Assessed**					
		1.	2.	3.	4.	5.	6.
A.	Pre test/post test on the scientific process	✓					
B.	<u>Portfolio Assignment I.</u> Lab Report on the Process of Science. Students	✓	✓	✓	✓	✓	✓

	will make observations, develop hypotheses, design experiments, collect data, and draw conclusions. Submit as a Word document.						
C.	<u>Portfolio Assignment II.</u> Comparative critique of two papers one chosen as an example of science and one as an example of pseudo science. Minimum 3 pages, double spaced submitted as a Word document.	✓	✓		✓	✓	✓
D.	<u>Portfolio Assignment III.</u> Provide a synthesis based on three or more reference sources emphasizing scientific findings and the strength of those findings. Minimum, 3 pages double spaced submitted as a Word document.	✓	✓		✓	✓	✓
E.	<u>Portfolio Assignment IV —</u> Presentation or Report Summarizing an Area of Scientific Research. The emphasis is on presentation of scientific information as a stand-alone, kiosk-like presentation or report. Sound argument, clarity, and accuracy of conclusions are emphasized. Presentation in a format that allows wide distribution; PowerPoint required.	✓	✓		✓	✓	✓

Course Conduct: Students will work in groups and/or individually to examine the world's current environmental status. Students will gather information from various sources including the Internet, books, and other scientific references. Course materials will be mainly handouts. There is no required text or recommended reading outside of class.

The instructor is responsible to: 1. Introduce concepts and issues. 2. Model a scientific approach. 3. Evaluate student submissions. 4. Make interesting and relevant presentations.

Students are responsible to: 1. Participate in activities 2. Submit individual assignments and assure their proper receipt. 3. Take tests. 4. Remain interested and apply learning to life.

POLICIES:

Accommodations for learning disabilities will be arranged when an official form is received. For further information, log onto <http://www.marshall.edu/disabled>.

Students who consistently (2 or more times) come to class late will be subject to a reduction in points not to exceed a one letter grade reduction.

While attendance in lecture is not recorded, attendance is recommended. Absences from labs will be excused only with written excuses in accordance with University attendance policy. A student with an excused absence is responsible to make up the missed lab within seven (7) days after the excused absence.

Plagiarism or cheating will result in no credit for that activity and may result in further University sanctions.

Work turned in late or not in the prescribed format or not under the right assignment will be penalized, or at the discretion of the instructor, not accepted for grading. MU Online will be the only acceptable vehicle for submission of work unless the instructor announces a different vehicle.

Submission deadlines to MU Online are detailed below and will be enforced. Late submissions to MU Online will be accepted with penalty until the cutoff. After the cutoff, MU Online will not allow submissions.

No work received after the final will be graded. Not submitting work may lead to receipt of an incomplete or failing grade. Submissions will not be returned. Please keep copies of all work submitted.

Assignments I, II, III and IV are College of Science requirements, must pertain to the topic and references chosen by the student, and must be submitted to MU Online to successfully complete the course. If assignments are not submitted, the penalty will, at the discretion of the instructor, be (1) a reduction in points equaling at least one letter grade reduction for each assignment not submitted, (2) an incomplete for the course or (3) a failing grade.

Grades will be reported on MU Online allowing students to determine their grade status anytime, but especially prior to course withdrawal deadlines and end of the class. Assignments and labs will be marked, graded and comments (if any) returned through MU Online within two weeks after the due date. It is the student's responsibility to check grades and comments (if any) to assure the proper receipt of and credit for assignments and labs.

There is no extra credit, re-testing or scaling.

The instructor may, at his discretion, consider awarding extra points to a student less than five (actual, not percentage) points away from the next grade level provided that student has completed all assignments, activities and labs in a timely fashion.

Questions from students about the class may be asked during class or sent by e-mail to colvin8@marshall.edu.

Due dates and assignments are subject to change. The final word on changes will be announcements in class. Due dates will only be moved back, not forward.

The University policies related to nondiscrimination, computing services acceptable use (<http://www.marshall.edu/ucs/CS/acceptuse.asp>), and inclement weather (http://www.marshall.edu/www/policy/policy_07.html) will be followed.

Course Evaluation: Students will be evaluated through :

- (1) laboratory activities maximum 350 points (maximum 25 points each lab);
- (2) a test (Exam 1) on lecture materials maximum 100 points;

(3) a test (Exam 2) on student presentations maximum 100 points;

(4) selected topic and references (11 total – 10 real science and 1 false science) for Assignments 1 – 4. Submitted to MU Online as a Word Document. maximum 50 points;**

(5) Assignment I - design an experiment - scientific lab report related to the chosen topic. Students will make observations, develop hypotheses, design experiments, collect data and draw conclusions. Submitted as a Word document to MU Online. maximum 100 points; **

(6) Assignment II - comparative critique of two papers(studies) related to the chosen topic - one chosen as an example of science and the other as an example of pseudo (false) science. Minimum 3 pages, double spaced, submitted as a Word document to MU Online. maximum 100 points;**

(7) Assignment III - written synthesis (report) based on 3 or more references emphasizing scientific findings and the strength of those findings related to the chosen topic. Minimum 3 pages, double spaced, submitted as a Word document to MU Online. maximum 100 points; **

(8) Assignment IV - oral presentation summarizing scientific research related to the chosen topic based on a minimum of 3 additional scientific references. Minimum 10 minutes, submitted as Power Point to MU Online. maximum 100 points; **

A total of 1,000 points is possible.

Grades: A 90-100% 900 to 1,000 B 80-89% 800 to 899 C 70-79% 700 to 799

D 60-69% 600 to 699 F < 60% 0 to 599

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COURSE OUTLINE AND SCHEDULE

PLEASE NOTE: Submission deadlines to MU Online are detailed below and will be enforced. Late submissions to MU Online will be accepted with penalty until the cutoff. After the cutoff, MU Online will not allow submissions. **Test - bold and italicized.**

Labs – Labs will be scheduled according to weather and other factors. All labs have an activity to be turned in. Among the topics typically addressed in lab are:

Safety and assessment, Experiment, Environmental Problem Solving, Plants and trees, Land use, Rocks and minerals, Energy, Stream assessment, Risk assessment, Campus Observation, Environmental issues/agencies/groups, Sustainability, Ecotourism.

Labs	Lectures
Week 1 8/24 - Lab 1	8/25 - syllabus, get acquainted, environmental scientist 8/27 - explanation of assignments
Week 2 8/31 - Lab 2	9/1 - scientific method, critical thinking 9/3 – basic science concepts
	9/3 - <u>Topic & references for Assignments I, II, III and IV submitted to MU Online by 10 pm.</u>
Week 3 9/7 – No lab	9/8 - basic ecology concepts 9/10 - matter, energy, systems
Week 4 9/14 – Lab 3	9/15 - population, biodiversity 9/17 - food/hunger/nutrition
	9/17 - <u>Assignment I - Design of Experiment submitted to MU Online by 10 pm.</u>
Week 5 9/21 – Lab 4	9/22 - earth and crust, soil, land use, land biomes 9/24 - water, water biomes, water pollution / treatment
	9/24 - <u>Assignment II - Critique submitted to MU Online by 10 pm.</u>
Week 6 9/28 – Lab 5	9/29 - air, weather, climate, air pollution / treatment, climate change 10/1 - environmental health, risk
Week 7 10/5 – Lab 6	10/6 - solid waste, recycling, composting 10/8 - sustainability, local environmental issues
	10/8 - <u>Assignments III - Synthesis submitted to MU Online by 10 pm.</u>
Week 8 10/12 – Lab 7	10/13 Review 10/15 – Exam 1
Week 9 10/19 – Lab 8	10/20 - <u>Ten-minute student presentations begin per schedule TBA.</u> 10/22 - Presentations continue.
	10/22 - <u>Assignment IV - Power Point submitted to MU Online by 10 pm.</u>
Week 10 10/26 – Lab 9	10/27 - Presentations continue.

10/29 - Presentations continue.

Week 11 11/2 – Lab 10 11/3 - Presentations continue.
11/5 - Presentations continue.

Week 12 11/9 – Lab 11 11/10 - Presentations continue.
11/12 - Presentations continue.

Week 13 11/16 – Lab 12 11/17 - Presentations continue.
11/19 - Presentations continue.

Week 14 Fall Break

Week 15 11/30 – Lab 13 12/1 - Presentations continue.
12/3 - Presentations continue.

Week 16 12/7 – Lab 14 12/8 - Presentations continue (if necessary). Review

Exam 2 – 12/10 8 – 10 am.