

ISC 281 Living on Earth 4 hrs. Lecture – Tuesdays & Thursdays 8-915 am. Science 276

Lab – Mondays 8 – 950 am Science 200 CRN 2937 Section 105

Mondays 10 - 1150 am Science 200 CRN 2938 Section 106

Mondays 1 – 250 pm Science 200 CRN 2939 Section 107

Samuel T. Colvin G-31-G, Morrow Library colvin8@marshall.edu (304) 696-5432

Office Hours: M noon -1pm, T & R 915 am – 1230 pm, T & R 145 – 3 pm, subject to posted and / or announced changes

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

Integrated Sciences Learning Objectives:

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.

Concepts: 1. Scientific Method 2. False/Real science 3. Atoms/Molecules

4. Organisms 5. Biological Community 6. Matter/Energy 7. Systems 8. Ecosystems

9. Earth/soil/land 10. Water 11. Air/Weather/Climate

Environmental Issues: 1. Population 2. Biodiversity 3. Food/Hunger 4. Health 5. Energy

6. Air Pollution 7. Climate Change 8. Water Pollution 9. Solid Waste/Recycling/Compost

10. Sustainability 11. Local issues

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. The instructor will be responsible to: 1. Introduce concepts and issues and 2. Model a scientific approach. Students will be responsible to: 1. Conduct group activities 2. Submit individual assignments and 3. Take tests.

Course Evaluation: Students will be evaluated through :

- (1) laboratory activities worth 140 points (10 points each);

- (2) a test covering concepts worth 100 points;
- (3) a test covering environmental issues worth 100 points;
- (4) the final exam covering student oral presentations, sustainability and local issues worth 100 points;
- (5) selected topic and references for Assignments 1 - 4 (Submitted to Vista as a Word Document) worth 30 points;
- (6) Assignment I - design an experiment - scientific lab report (Students will make observations, develop hypotheses, design experiments, collect data and draw conclusions. Submitted as a Word document to Vista. Oral summary) worth 100 points;
- (7) Assignment II - comparative critique of two papers (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 Vista. Oral summary.) worth 100 points;
- (8) Assignment III - written synthesis (report) based on 3 or more references emphasizing scientific findings and the strength of those findings (Minimum 3 pages, double spaced, submitted as a Word document to Vista. Oral summary.) worth 115 points;
- (9) Assignment IV oral presentation summarizing scientific research based on a minimum of 3 additional scientific references (Minimum 10 minutes, submitted as Power Point to Vista) worth 115 points.
- (10) Five additional activities: a. Stream assessment; b. Campus observation; c. Issues, agencies, groups; d. Risk assessment; e. Disposal journal. Worth 15 points each for a total of 75 points.
- (11) Acknowledgements of receipt and understanding of: a. syllabus; b. explanation of assignments; c. explanation of activities; d. grade status prior to course drop deadline; e. grade status prior to final. Worth 5 points each for a total of 25 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

Policies: Accommodations for learning disabilities will be arranged when an official form is received. 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. Absences will be excused only with written excuses in accordance with University attendance policy. Students with excused absences are responsible to make up work within one week (seven days) of returning to class. Plagiarism or cheating will result in no credit for that activity and may result in further University sanctions. Work turned in late will be penalized up to five points per day after the due date through the cutoff date, after which the work may not be accepted for grading at the discretion of the instructor. Work not submitted in the prescribed format will be penalized, or at the discretion of the instructor, not accepted for grading. No work received after the final will be graded. Not submitting work may lead to receipt of an incomplete or failing grade. Submissions may not be returned. Please keep copies of all work submitted. Grades will be reported in VISTA allowing

students to determine their grade status prior to course withdrawal deadlines, at mid-term and prior to the final. Assignments will be marked, graded and comments returned through VISTA within two weeks after the due date. 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 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. ISC classes are frequently chosen for University assessment testing.

COURSE OUTLINE AND SCHEDULE

Please note every Tuesday by 1 pm. a submission is due on VISTA/Web CT as designated by underlined items. Tests are in bold and italicized.

Dates

Lectures

Day 1 8/21 syllabus, get acquainted, environmental scientist Acknowledge syllabus.

Day 2 8/23 Explanation of assignments

Day 3 8/28 Explanation of activities Acknowledge assignments.

Day 4 8/30 atoms / molecules / compounds / cells / tissues / organs / systems

Day 5 9/4 matter / energy / life / organisms / species / populations Acknowledge activities.

Day 6 9/6 biological communities / ecosystems

Day 7 9/11 biomes Topic and references for Assignments 1 - 4 due.

Day 8 9/13 earth and its crust, soil, land use

Day 9 9/18 water Assignment I - Design of Experiment due and presented.

Day 10 9/20 air / weather / climate

Day 11 9/25 review Stream Assessment due.

Day 12 9/27 ***Test on concepts.***

Day 13 10/2 Assignment II - Critique due and presented.

Day 14 10/4 population/ biodiversity/ food / hunger / nutrition

Day 15 10/9 environmental health, energy management Campus Observation due.

Day 16 10/11 air pollution / treatment, global climate change

Day 17 10/16 water pollution / treatment Assignment III – Synthesis due and presented.

Day 18 10/18 solid waste / recycling / compost

Day 19 10/23 **Test on environmental issues.** Acknowledge grade status prior to course drop deadline.

Day 20 10/25 sustainability and local issues

Day 21 10/30 Assignment IV - Ten-minute presentation due and made per schedule TBA.

Day 22 11/1 Presentations continue.

Day 23 11/6 Presentations continue. Risk Assessment due.

Day 24 11/8 Presentations continue.

Day 25 11/13 Presentations continue. Environmental Issues, Agencies, Groups due.

Day 26 11/15 Presentations continue.

Day 27 11/27 Presentations continue. Disposal Journal due.

Day 28 11/29 Presentations continue.

Day 29 12/4 Presentations continue. Acknowledge grade status prior to final.

Final Exam 12/6 Thursday 8 – 10 am.

LABS - Lab schedule subject to change due to weather. * = Lab activity to be turned in.

** = Student must have completed activity before lab to receive credit for lab.

1 – 8/20 assessment, lab safety, scientific method * 2 – 8/27 plants and trees *

3 – 9/10 rocks and minerals * 4 – 9/17 land use * 5 – 9/24 planning America Recycles Day*

6 – 10/1 stream assessment presentation**/ compilation*

7 – 10/8 energy * 8 – 10/15 campus observation presentation**/ compilation*

9 – 10/22 CO 2* 10 – 10/29 environmental indicators *

11 – 11/5 compost, garbage survey, ecotourism*

12 – 11/12 risk assessment presentation**/ compilation*

13 – 11/26 environmental issues & agencies & groups **/ ranking*

14 – 12/3 disposal journal presentation**/ reduction strategy *