

# ACS Environmental Science/ Outdoor Education (ESOE) Syllabus 2007-2008

Mr. Hollingworth

Room #308

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## **Course Description**

The ACS Environmental Science/Outdoor Education (ESOE) class is designed as an experiential and adventure education course in which students have the opportunity to learn about environmental, social, and cultural factors affecting Bolivia and the rest of the world. The goal of this class is to encourage students to be well-informed global citizens, to increase students' knowledge of environmental factors, to build self-knowledge and teamwork skills, and to foster an appreciation of the natural world that promotes sustainable ideas, beliefs, and living practices.

From a basic curriculum, students will be encouraged to investigate topics that are important to them and to their local, national, and global community. Students will investigate these topics in a traditional classroom setting and also during site-based investigations that will take place throughout Bolivia. Writing, data analysis, skill development, intrapersonal and interpersonal development, and physical activity will be stressed throughout the curriculum. A curriculum as well as a list of possible topics, activity sites, and activities is presented below.

Students will have the opportunity to earn science and community service project (CSP) credit during this course. This course includes a classroom attendance requirement as well as an after-school and/or weekend requirement—many of the investigations, trips, etc. will occur during weekends and/or CWW time.

**Rules and Expectations:**

<p><b>Materials Needed:</b> Each student should bring the following items to class <b>every day</b>:</p> <ul style="list-style-type: none"> <li>• Book or reference pertinent to the unit being studied</li> <li>• 3-Ring Binder</li> <li>• Journal</li> <li>• Notebook and Planner</li> <li>• Black Pen</li> <li>• Red Pen</li> <li>• Pencil</li> </ul> <p><b>Note:</b> Students will be required to bring other materials or equipment that are pertinent to the unit being studied—this will be specified by the instructor</p>	<p><b>Student Responsibilities</b></p> <ol style="list-style-type: none"> <li>1. Be present and on time for class.</li> <li>2. Be considerate of others.</li> <li>3. Complete assigned work on time.</li> <li>4. Follow school guidelines and instructions from the teacher, chaperones, and guides.</li> <li>5. Exercise sound judgment and work for the best of everyone in class.</li> <li>6. Be responsible for your own success in class.</li> </ol>	<p><b>Teacher Responsibilities</b> Mr. Hollingworth will:</p> <ol style="list-style-type: none"> <li>1. Treat every student fairly.</li> <li>2. Treat every student with respect.</li> <li>3. Work diligently to help students learn.</li> <li>4. Follow school guidelines.</li> <li>5. Exercise sound judgment during all activities.</li> <li>6. Have high expectations for every student.</li> <li>7. Assist students in growing as people and in their understanding of the subject matter.</li> </ol>										
<p><b>Grading Scale</b> 90-100% A 80-90% B 70-80% C 60-70% D Below 60% F</p>	<p><b>Grades Will Be Weighted As Follows:</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Assessments</td> <td style="text-align: right;">60%</td> </tr> <tr> <td>Homework</td> <td style="text-align: right;">30%</td> </tr> <tr> <td>Non-Academic</td> <td style="text-align: right;">10%</td> </tr> <tr> <td colspan="2" style="text-align: center;">-----</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total 100%</td> </tr> </table> <p><u>Sem 1:</u> Q1 (40%)+ Q2 (40%)+ Final Project (20%)= Semester Grade</p> <p><u>Sem 2:</u> Q3 (40%)+ Q4 (40%)+ Final Project (20%)= Semester Grade</p>	Assessments	60%	Homework	30%	Non-Academic	10%	-----		Total 100%		<p><b>Non-Academic Grade:</b> Students will be assessed in two areas and assigned a non-academic grade which will count for 10% of their quarter grade (as shown in the box to the left):</p> <p><b>Personal Timeliness-</b> are they on-time regularly with materials?</p> <p><b>Behavior-</b> do they regularly exhibit behavior that contributes to their success and to the success of other students in class?</p> <p><b>Personal Growth</b>—can they demonstrate personal growth as a result of their participation in the class?</p>
Assessments	60%											
Homework	30%											
Non-Academic	10%											
-----												
Total 100%												
<p><b>Homework Policy:</b> Homework is due the date and time it is due. If not turned in on time, the student will have up to one week to complete the homework for HALF CREDIT. After one week, the student may turn in the homework assignment, but it will NOT count for credit. Homework from a student that had an excused absence must be turned in within the amount of time that they were absent from school to receive full credit. Homework without a name on it, or that is illegible, will NOT be graded and will thus receive a score of ZERO.</p>	<p><b>Assessment Policy:</b> Assessments must be completed the day they are given. If you are absent during assessment day, you must make it up within the amount of time that you were absent from school, or a reasonable amount of time as agreed upon between you and the teacher. You must also have an excused absence. If you do not make the assessment up within the required time, you will receive a ZERO for the assessment.</p>	<p><b>Tardy Policy:</b> -Students must be seated and ready to start class when the second bell rings. -Students who are tardy will receive a teacher consequence appropriate to their infraction in accord with ACS policies as noted in the handbook.</p>										

## Curriculum

- I. Basic Outdoor Education Concepts
  - A. First Aid
  - B. Clothing/Ten Essentials
  - C. Navigation/Orienteering
  - D. Weather
  - E. Leave-No-Trace Ethics and Techniques
  - F. Wilderness Survival
  - G. Low-Impact Camping
  - H. Backpacking
  - I. Rock Climbing
  - J. Ice Climbing
  - K. Mountaineering
  - L. Kayaking
  - M. Mountain Biking
- II. Teamwork/ Leadership Skills
  - A. What is a Leader?
  - B. Initiatives/ Ropes Course
  - C. Patrol Method
- III. Service
  - A. The Philosophy of Service
  - B. Service Projects
- IV. Astronomy
  - A. Celestial Sphere
  - B. Constellations
  - C. Planets
  - D. The Moon
  - E. Celestial Navigation
- V. The Physical Landscape
  - A. Geology
  - B. Plate Tectonics
  - C. Glaciology
- VI. Ecosystems
  - A. Biomes/ Terrestrial Ecosystems
  - B. Aquatic Ecosystems
  - C. Niche/Population Interactions
- VII. Humans and the Environment
  - A. Human Population Growth
  - B. Economics/ Poverty
  - C. Global Climate Change
  - D. Energy
  - E. Resource Consumption
- VIII. Sustainable Living
  - A. Global Spaceship Concept
  - B. Smart Growth
  - C. Alternate Energy Sources
  - D. Deep Ecology
  - E. Resource Conservation
- IX. Expedition Planning
  - A. Plan a Class Expedition

## **Pedagogy/Projects/Assessments**

Students will be taught using a combination of information assimilation, experiential education, and adventure education pedagogies. Thus, part of class time will be used to outline topics that comprise the requisite knowledge required to safely and successfully carry out the explorations that will follow. Additionally, students will be encouraged to complete personal assessment and reflection activities in order to identify concepts and information that they deem to be important to study—these concepts will form the framework of the class’s study. Students will develop explorations based on “questions worth arguing about” that reflect their interests and their needs as a global citizen.

As this is a class that encourages students to be self-directed, students’ grades will be based on the projects they develop. Students will be graded on the quality of their project design, the execution of their project, how well they transmit the results of their project, and how well they demonstrate both increased personal growth and understanding of the subject matter through the process.

Examples of artifacts that may be used for assessment in this class include:

- Journals
- Lab Reports
- Oral Reports or Powerpoint Presentations
- Portfolios
- Demonstration of Skills
- Research Papers
- “Something Else”—an artifact that is especially pertinent to the area of study and/or that demonstrates personal growth.

Students will be assessed using process, authentic, and summative assessments through the utilization of these artifacts and performance rubrics developed by the instructor.

If applicable, students will be encouraged to work with an advisor or mentor throughout the duration of the course, or for certain parts of the course. This mentor or advisor may have a specific proficiency that is desirable in helping to promote student growth or skill development.

## **Service**

Students will participate in service projects during the ESOE class. These projects may be part of the after school/weekend requirement of the class or they may be developed as individual activities by the students. The rationale for these projects is to develop the following in students:

- Personal, Interpersonal, and Leadership Skills
- Empathy for others
- A larger worldview beyond oneself
- Sustainable attitudes, beliefs, and living practices

Thus, each service project that students participate in will be frontloaded (by the teacher or by peers) and debriefed (by teacher, peers, or individually through reflection). As a part of the debriefing/reflection process, students may be required to develop an artifact that describes what they learned during the project.

### **Unit Projects**

Students will be required to complete a project for each class unit. This project must address one or more of the following categories: technical skill development, content knowledge, and/or personal/interpersonal development. Students must complete AT LEAST one project of EACH category each semester.

Creativity, problem solving, critical thinking, and intuitive knowledge are to be stressed in each unit project. An emphasis should be placed on defining a problem that is important to the student completing the project, posing “questions worth arguing about” related to this problem, then finding information from various sources pertaining to these questions, and developing an original solution to the problem. Students may use one or more of the artifacts listed above for these projects in order to demonstrate what they have learned.

### **Final Project**

Students will be required to complete a Final Project each semester, which will be used in place of a final exam grade for the course. In this final project, they must demonstrate growth in three areas: technical skill development, content knowledge, and personal/interpersonal development. They may choose the areas of technical skill development, content knowledge, and personal/interpersonal development that they want to improve over the course of the semester, but their improvement must be documented over the course of the ENTIRE semester; thus, they must begin this project at the BEGINNING OF THE SEMESTER. Students may receive help from the instructor in completing this project, they may also find a mentor to help them with this.

Students may utilize a portfolio or PowerPoint presentation to demonstrate growth in these three areas—one of these formats should be used to organize their project. They may also incorporate other artifacts from the semester, including journal entries, lab reports, skill assessments, etc.; however, these artifacts must be summarized and discussed in the final project. This project must be turned in by the beginning of finals week each semester. The class may decide whether they would like to present their portfolios or PowerPoint presentations to the school or the community at the end of the semester.

**Sample List of Topics and Activities:**

<b>Topic</b>	<b>Category</b>	<b>Where Studied—possible sites</b>	<b>Activities</b>
Limnology/ Water Testing	-Science	-Lake Titicaca -Condoriri	-Kayaking -Water Samples -Canoeing -Camping
First Aid	-Outdoor Education	-ACS	-Scene Analysis and role playing -Accident simulations
Rock Climbing	-Outdoor Education -Physical Education	-ACS -Amor de Dios -Muella del Diablo -Huayana Potosi	-Indoor Rock climbing theory and practice -Outdoor rock climbing
Geology	-Science	-Huayana Potosi -Amor de Dios -Muella del Diablo	-Rock climbing -Mountaineering -Rock sample analysis
Glaciology	-Science	-Huayana Potosi -Condoriri	-Mountaineering -Low-impact camping -Ice climbing
Wilderness Survival	-Outdoor Education	-ACS -Condoriri	-Fire Building -Proper clothing -Cooking -Shelter building -Low-impact camping
Navigation	-Outdoor Education	-ACS -Condoriri	-Topographic map reading and Navigation -Orienteering course
Backpacking	-Outdoor Education -Physical Education	-Taqesi trek -Illampu circuit -Condoriri-Huayana Potosi trek	-Packing a backpack -Navigation -Low-impact camping -Cooking
Ecology	-Science	-Madidi -Sajama -Other applicable sites	-Documentation of flora and fauna -Description of biotic and abiotic conditions -Population counts of indicator species -Niche identification
Energy	-Science	-Zongo Pass—Huayana Potosi	-Tour hydroelectric facilities

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## Continued

<b>Topic</b>	<b>Category</b>	<b>Where Studied—possible sites</b>	<b>Activities</b>
Human Population Growth	-Science	-La Paz/El Alto -Other applicable sites	-Discuss urban sprawl and see how it affects the communities of La Paz and El Alto -Discuss how population growth has indirect effects on all ecosystems studied.
Natural Resource Management	-Science	-Madidi National Park -Sajama National Park	-Investigate issues that Bolivia faces in managing natural resources -Interview park rangers, indigenous groups, etc.
Teamwork	-Outdoor Education -Physical Education	-ACS -All Sites	-Initiative Games -Low Ropes Course -Frontloading/Reflection
Indigenous Cultures	-Anthropology	-Lake Titicaca -Madidi -La Paz	-Artesania construction -Interviews
Service	-Service	-All Sites	-Work on service projects that promote resource management, reduction of resource consumption, recycling, etc.
Weather/Climate	-Outdoor Education	-All sites	-Use of barometer -Reading weather patterns, clouds, etc.
Sustainable Development	-Science -Sustainability Education	-ACS -Applicable field sites	-Investigate sustainable housing, city planning, energy, and resource consumption patterns.

**Tentative Excursion Schedule**

<b>Month</b>	<b>Excursion Type</b>	<b>Possible Sites</b>	<b>Comments</b>
August	Campfire	Palca Canyon	-Campfire—Friday night after school -Skills/Curriculum: teamwork, astronomy, firebuilding, service
September	Camping/Backpacking Trip	-Condoriri Base Camp -Taqesi trek -Condoriri-Huayana Potosi trek	-Camping or Backpacking trip—Weekend - Skills/Curriculum: camping, cooking, backpacking, orienteering, geology, glaciology, service
October	Rock Climbing	-Amor de Dios -Muella del Diablo	-Rock Climbing Clinic—Weekend—1 or 2 days -Skills/Curriculum: rock climbing, belaying, geology, service
November	Camping/Hiking/Ecology	-Sajama	-Camping/Hiking/Environmental Studies Trip—Weekend - Skills/Curriculum: camping, hiking, cooking, wildlife sits, ecology, natural resource management, service
December	To Be Announced		Activities chosen by students to practice outdoor skills or content knowledge.

**Tentative Excursion Schedule (cotd.)**

<b>Month</b>	<b>Excursion Type</b>	<b>Possible Sites</b>	<b>Comments</b>
January	Ice Climbing/ Mountaineering Basics	-Huayana Potosi Base Camp/lower glacier	--Ice Climbing/Mountaineering Skills Clinic—Weekend 1 or 2 days depending on class preference - Skills/Curriculum: ice climbing, glacier travel, glaciology, geology, service
February	Mountain Biking	-Sorata -Palca -Zongo	-Mountain Biking Basics Clinic— Weekend -Mountain Biking, navigation, sustainable living, service
March	Kayaking/Limnology	-Lake Titicaca	Kayaking/Limnology Trip— Weekend 1 or 2 days - Skills/Curriculum: kayaking, navigation, limnology, service
April	Backpacking, Rock Climbing, Ice Climbing, Mountaineering, Mountain Biking, or Kayaking	-To Be Announced	-Chosen by students to practice skills and content knowledge - Skills/Curriculum: to be chosen by students, service
May	Class Expedition	-To Be Announced	-Class chooses and plans an expedition to an outdoor area in Bolivia. They may choose what types of outdoor activities they want to do and what curriculum they would like to study, within the parameters set by the teacher.

**Texts**

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- Fos, D.L. (1997). *Mountaineering: The Freedom of the Hills, Sixth Edition*. Seattle, WA: The Mountaineers.
- Goleman, D. (1995). *Emotional Intelligence*. New York, NY: Bantam Books.
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- Houston, M., & Cosley, K. (2004). *Alpine Climbing: Techniques to Take You Higher*. Seattle, WA: The Mountaineers Books.
- Kouzes, J., & Posner, B. (1987). *Leadership Challenge: How to Get Extraordinary Things Done in Organizations*. San Francisco, CA: Jossey-Bass Publishers.
- Langlais, R. (1991). Living in the World: Mountain Humility, Great Humility. In Sessions, G. (Ed.) (1995). *Deep Ecology for the 21<sup>st</sup> Century: Readings on the Philosophy and Practice of the New Environmentalism* (pp. 195-203). Boston, MA: Shambahala Publications, Inc.
- Long, J. (1989). *How to Rock Climb!* Evergreen, CO: Chockstone Press.
- Molles, M. (1999). *Ecology: Concepts and Applications*. Dubuque, IA: WCB McGraw-Hill.
- Morrissey, J. (2000). *Wilderness Medical Associates Field Guide, 3rd Edition*. Bryant Pond, ME: Wilderness Medical Associates
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- Rohnke, K. (1991). *The Bottomless Bag*. Dubuque, IA: Kendall/Hunt Publishing Company.
- Rohnke, K., & Butler, S. (1995). *Quicksilver*. Dubuque, IA: Kendall/Hunt Publishing Company.
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- Sessions, G. (1992). Ecocentrism, Wilderness, and Global Ecosystem Protection. In Sessions, G. (Ed.) (1995). *Deep Ecology for the 21<sup>st</sup> Century: Readings on the Philosophy and Practice of the New Environmentalism* (pp. 356-375). Boston, MA: Shambahala Publications, Inc.
- Turner, J. (1991). "In Wildness is the Preservation of the World." In Sessions, G. (Ed.) (1995). *Deep Ecology for the 21<sup>st</sup> Century: Readings on the Philosophy and Practice of the New Environmentalism* (pp. 331-338). Boston, MA: Shambahala Publications, Inc.
- Hudson, C., Davis, C., & Loomis, K. (Eds.) (2001). *Publication Manual of the American Psychological Association (5th Ed.)*. Washington, D.C. American Psychological Association.
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- Woodmency, J. (1999). *Reading Weather*. Helena, MT: The Globe Pequot Press.

**Academic Honesty and Personal Integrity**

Personal integrity is expected of all students. It is your responsibility to conduct yourself in a manner that demonstrates respect for one’s self, others, and the community at large. Honesty in word and deed is an expectation and a requirement. It is not possible to anticipate all potential breaches of personal integrity. However, you are urged to avoid conflicts stemming from cheating. Cheating is defined as:

- Copying another student’s work during an examination or on homework
- Asking for or giving unauthorized assistance during any exam, paper, homework assignment, etc.
- Using written, verbal, or mechanical source(s) of information during an assessment without previous approval from the teacher
- Studying any copy of the current or previous assessments without authorization by the teacher
- To falsify information given in a written report, examination, or oral presentation
- To fail to follow specified instructions during an assessment

Any breaches of personal integrity outlined above, or possibly in other areas of individual behavior, will be considered a major infraction at the American Cooperative School and may result in the student receiving no credit for the paper, project, assessment, or course.

**Plagiarism**

Academic integrity requires that any ideas or materials taken from another source be fully acknowledged. Offering the work of someone else as one’s own is plagiarism. This may range from isolated formulas, sentences, or paragraphs to entire articles or works copied from books, periodicals, the internet, speeches, or the writing of other students.

Parent Name (Printed):_____	Signature:_____
Student Name (Printed):_____	Signature:_____
Date:_____	