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EVST 101N.01: Environmental Science

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EVST 101 ENVIRONMENTAL SCIENCE FALL 2008 Syllabus p. 1

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OFFICE: 101 Natural Science, office hrs: 10-12 Wed (usually) & by appointment

Class Goals: Provide students with opportunities to make a difference;
Help students build: scientific literacy; skills in critical thinking, research & self-instruction;
an understanding of the scientific basis of environmental issues, policies, laws;
habits of informed, active participation in social decisions, sustainable living,
and of service to their community and the earth.

| Date | LECTURE TOPICS at a glance | References (identified at page bottom*) |
|--------|---|--|
| 26-Aug | Course goals & mechanics; What is Env. Science? | FP p1-20, Mch1, www.earthcharter.org |
| 28-Aug | Literacy—Scientific & Ecological | M ch2, FP-13-14 (sci or philosophy?) |
| 2-Sep | Ecosystems—energy flow, matter cycles, watersheds | M on flooding; AO part I (ch4 recommended) |
| 4-Sep | env. fate (can't throw it away), biomagnification | FP-21-22 water cycle |
| 9-Sep | ecological services, climate change | check out the web sites on FP 23 |
| 11-Sep | Communities—connections—you can't do just one thing | M on communities, species interactions |
| 16-Sep | all creatures have a role; kinds of biodiversity | see world community types (ecoregions) at |
| | Change/succession, disturbance, condition | www.worldwildlife.org/wildworld |
| 18-Sep | Populations— evolution/adaptation, flexibility | Miller on populations & species |
| 23-Sep | population cont --growth, limits, carrying capacity (K) | Hardin on Cultural K in FP18 |
| 25-Sep | Ecofootprint – <i>Susan Anderson</i> , sustainablebusinesscouncil.org | FP 25.1-.6; www.myfootprint.org |
| 30-Sep | *****EXAM 1***** grades posted by Oct 3; <i>last day to drop/change grade system 'easily' Oct 6</i> | FP 23, www.panda.org/livingplanet |
| | Scientific Basis of Env Laws & Policies | M on env politics/law; FP 26a&b (NEPA) |
| 2-Oct | Scientists & env policy, NEPA, Tragedy of Commons | FP 18; full article: at dieoff.org/page95.htm |
| 7-Oct | LAND (MUSY,NFMA, Fire) | M on biodiv/ecosystems + fire ecology sites F12 |
| 9-Oct | WATER (Clean Water Act, etc) & Watershed CPR | M on water + FP 27 (CWA) + AO ch 10 + FP23 |
| 14-Oct | AIR (Clean Air Act) – <i>Garon Smith</i> , UM Chemistry | M on air |
| 16-Oct | LIFE/Biodiversity (ESA, etc) | M on biodiversity/species approach |
| 21-Oct | TOXICS (TSCA,FIFRA,etc), env fate again | M on risk & toxicology, FP p 28-29 |
| 23-Oct | WASTE/materials (RCRA, etc) -UM Recycling Edi Stan | M on waste; www.facs.umt.edu/recycle |
| | Using Science to Meet Our Needs Sustainably | Nov 4-- VOTE! ; Nov 11-Vet's day |
| 28-Oct | Energy — <i>Pat Judge</i> , www.meic.org | M on energy |
| 30-Oct | Food — <i>Josh Slotnick</i> , PEAS, www.gardencityharvest.org | M ch on soil/food; www.agroecology.org DOD |
| 6-Nov | Shelter -- <i>Steve Loken</i> Builders | green building web sites listed on FP12 |
| 13-Nov | Transportation — <i>Bob Giordano</i> , <i>MIST</i> & <i>Nancy Wilson ASUM trans</i> | use M index to find transportation |
| 18-Nov | Water— <i>Michelle Frodey-Hutchins</i> , Msl Water Quality District www.co.missoula.mt.us/wq/ | M on groundwater |
| 20-Nov | *** **EXAM 2 ***** | |
| 25-Nov | films & food | Nov 27 Thanksgiving (Think Globally,Eat Locally) |
| 2-Dec | Environmental impacts of war or student presentations | ER—Eco Literacy & MT Constitution by Watson |
| 4-Dec | Living Sustainably & Equitably, evaluations & fun | M's last chapter; & rest of FP & ER |
| 8-Dec | **MAKEUP EXAM , comprehensive, by appointment only** | Monday, 3:20-5:20 pm |

REFS: FP = Facpac; # = pages; AO = Alice Outwater's Water (one chapter from part I & one from part II)
M = Miller's Sustaining the Earth or any env science text (use table of contents & index to find)
ER = e-reserve at <http://eres.lib.umt.edu> (More reading guidance in lecture)
*** See EVST's online calendar www.umt.edu/conservationcalendar for field trips, service options, etc

Grade based on percentage of 600 points earned**HOW TO EARN POINTS (maximum possible points 670—so extra credit is already ‘built in’):**

- 200 pts 2 Midterm Exams (100 each); ‘final’ is a makeup – must have excused absence to take
- 100 pts Service Project & proposal (10) & report & thank you letter (90)
- 100 pts Research project: proposal (10), paper (70), letter to decision maker (20).
(extra credit for evidence of impact)
- 50 pts Portfolio—demonstrate your Science Literacy
- 80 pts Field trips & reports (due one week after the field trip)
- 50 pts Lecture participation (based on in-class essays)
- 50 pts Help session participation
- 30 pts Presentation (oral, poster, or web page) on service project or research paper
- 10 pts Learning Contract (required)

HOW TO LOSE POINTS:

- Unexcused absence from field trip once signed up – drop a letter grade for course.
- Late work – Each week an assignment is late, it loses half its value.

ASSIGNMENTS ARE DUE IN HELP SESSION during WEEK INDICATED BELOW;

Keep a copy of all assignments turned in. INSTRUCTIONS FOR ALL ASSIGNMENTS ARE IN FAC PAC

WEEK OF WHAT HAPPENS IN HELP SESSION – Discuss study questions, student concerns, and the items below

- 8-26 Claim a place in a help session; Introduce yourself and your interests; go over fac pac instructions
- 9-2 Discuss study questions, field trips, and project ideas
- 9-9 Service project proposal (10pts) due; you may change your project but submit new proposal if you do.
- 9-16 Project proposals returned and discussed. Be sure your project is approved.
- 9-23 Review for exam
- 9-30 **EXAM this week** -- nothing due; help sessions do not meet; TA’s will be grading.
- 10-7 Learning Contract (10 pts) and Research Project proposal (10pts) due; Exam returned & discussed.
- 10-14 Research Proposal returned; Exam challenges due; Progress report on Service Project due (short).
- 10-21 Progress report due on Research project (include a detailed outline & alphabetized list of references)
- 10-28 Research paper outline returned. **Day of Dialog activities** www.umd.edu/dayofdialogue
- 11-4 Review for exam; early presentations; Service project final report due (must include thank you letter);
- 11-11 Review for exam; early presentations
- 11-18 **EXAM this week** on Nov 20 -- nothing due; review for exam continued
- 11-25 Help sessions do not meet this week (Thanksgiving)
- 12-2 ALL Remaining WORK DUE (research papers, final reports, portfolios, presentations)
All your work must be picked up by end of finals week to receive credit.
After finals week + 1. IT WILL BE RECYCLED!

A. COMMUNITY SERVICE LEARNING PROJECT— up to 100 pts

UM wants all its graduates to develop the habit of community service and urges instructors to include community service in classes. Students can earn up to 100 pts by providing a community service (10 hr minimum) that serves to protect/restore our environment & build a more sustainable society. You may do group or individual projects. Provide your TA (help session leader) with a short proposal for your service (need/environmental benefit, group served, what you will do, time required) & get approval before proceeding. To earn points for your service project, you must submit a final report that includes your proposal, your project evaluation, and a letter of thanks from those served. Your evaluation of this experience should describe: what you did and learned; how it benefited the community and the earth by increasing sustainability; how you used skills or knowledge from this class; how the project contributed to your preparation for life &/or career; your level of satisfaction in the experience; how the project could have been improved. If you worked on a group project, you must also evaluate the contribution of each group member. Reports should be a couple of pages at least.

Some ideas for community service projects (TAs will have more, also note Volunteer Fair in UC Sept 10, 10-2)

Help Missoula Health Dept. with its Household Hazardous Waste Collection Sept 19-20

Help restore Missoula open space lands on Public Land Day Sept 27

Help grow food for the food bank at the PEAS farm – all Sept

Help UM Recycling, ASUM Transportation, or UM Sustainable Campus Committee with projects

Help community groups (MUD, WEN, etc) with their projects (many will come to class)

see also web pages of UM Office of Civic Engagement and Internship Services

and **EVST's online calendar (www.umt.edu/conservationcalendar)**

B. RESEARCH PAPER AND LETTER TO DECISION MAKER — up to 100pts

UM wants its graduates to be informed, active participants in our democracy. Students can earn up to 100 pts by writing a letter & research paper on a timely environmental issue. Your 1-2 page letter to a key decision maker will be based on your research paper (about 5 pages, single spaced; double space between paragraphs). Give your TA a proposal (topic, why it is timely, who is target of letter). Your TA will provide you with feedback on your paper & letter, and you will mail the letter & paper to your target audience. If you develop a portfolio, include the proposal, paper, letter and any response you receive. Possible targets for your letter(s):

elected representative (national, state, local)– comment on pending legislation, ordinance, plan, voting record

executive agency decision maker (national, state, local)—comment on upcoming decision

(EIS, management plan, permit, etc)

editor of a newspaper, magazine – note that letters to the editor have word limits

You will be graded on the quality and depth of the research in the paper, not on the opinion or values expressed. You must present verifiable scientific info on a timely environmental issue, but consider your target audience (their knowledge level & attention span). Your research paper should back up the positions in your letter (ie, cite scientific sources & discuss logic—see TA in help session if you are unsure what constitutes a scientific source and logic). You may choose to provide info only, but we urge you to draw conclusions & take a stand: support your arguments with verifiable data & accepted scientific concepts. For topic ideas, see newspapers, newsletters/websites of groups working on environmental issues. Get help with your writing at:

<http://www.umt.edu/writingcenter/>

Group research papers (about 5 pages per person) may earn extra credit, but require extra work.

CITE YOUR SOURCES!!!!!! Very important. Both to show that you really did some research and to avoid plagiarism – that is, taking credit for the ideas or work of others. Plagiarism is grounds for failing the course and for dismissal from the university. Your research paper **MUST** include a **list of references** that cites all your sources in scientific citation style (not in footnote style). Scientific citation style is described in this faculty pac, and your TA can explain it further. Remember to cite sources as you use them in the paper as well as collect them all together in a list at the end of the paper (alphabetized by lead author's last name). See instructions for papers & citing sources.

C. PORTFOLIO –up to 50 points

EVST 101 Syllabus, 2008 p. 4

You can earn up to 50 points by collecting together the work you've done in this class and evaluating it in a portfolio in order to demonstrate you've developed proficiency in Science Literacy. Read UM's historic definition of 'Natural Science Literacy' in this FacPac. This states UM's historic goals for science literacy among its graduates. The first section states a number of things that scientifically literate citizens can do. Write an **essay** (1) explaining how you increased your skills in each of these areas in this course: use examples from the work you did in the course (essay tests, letters, research papers, field trips, service projects, etc).

UM's science literacy document then lists a number of desired outcomes for students. Write a short essay on each of these demonstrating your understanding of these concepts. **Essays** should be entitled:

- 2) The most critical concepts and processes of science I learned in Environmental Science
- 3) What are basic and applied environmental science, and how do they shape one another?
- 4) Science and technology—how have they harmed our environment? How can they help restore & protect it?

Your portfolio should be a 3 ring binder with dividers that includes **the above 4 essays, all your exams, assignments, & any evaluations** of these you are told to perform, including the one on community service.

For each **exam**, rewrite your essays to demonstrate your knowledge of these subjects. Include your field trip reports. **Note—to receive credit for your portfolio, you must pick it up at the end of the semester.**

D. FIELD TRIPS & CONFERENCES up to 80 pts

A large number of field trips will be offered early in the semester (subject to fire closures). Space in University vehicles is limited and will be allocated to those who sign up first. If space is full, a waiting list will be made. If you decide you cannot attend a field trip, notify instructor at least 48 hours in advance so others can be notified of available space. **IF YOU DO NOT NOTIFY INSTRUCTOR, YOU WILL LOSE POINTS.**

You can earn up to 10 points per hour of field trip time for a maximum of 80 pts. You must turn in a report to earn the points, and points received depend on the quality of the report. Reports should be about ½ page per hour. Reports should summarize the important technical info presented on the trip and relate these to concepts discussed in class. Reports should not simply say that you 'learned a lot and thought the trip was great'. Take careful notes on a field trip to help you write a good report. Because of fires or bad weather, some field trips may be cancelled. If so, attendance at certain conferences may be substituted if pre-approved (proof of attendance required). **Reports are due to your TA one week after the trip or conference.** Students have failed for copying reports. Write your own.

E. PARTICIPATION/ATTENDANCE AT LECTURE AND HELP SESSIONS (up to 50 & 50 pts)

Students who attend lecture regularly get much more out of the course (or at least earn better grades). To encourage attendance, I will periodically request that a short essay question be answered in class. Those who regularly attend & turn in thoughtful essays will receive up to 50 additional points on their final grade.

Help sessions are intended to provide students with a place to interact in smaller groups with a discussion leader (the TA). Help sessions are a good place to discuss concepts or assignments that confuse you or topics that you feel have not received enough attention in class. Help sessions will also serve as exam review sessions and places to turn in assignments and receive graded work. **Assignments will not be accepted or returned in lecture class—this is too disruptive.** Help sessions should be used as open office hours with TAs. Students who actively participate in help sessions have earned higher grades in the past. To encourage active participation in help sessions, those who regularly participate actively in help sessions will receive up to 50 additional points.

F. PRESENTATIONS ON PROJECTS – up to 30 pts

Students may give a presentation on your service and/or research projects near the end of the semester. Most will probably choose to give oral presentations, but you may develop a poster to display & you are encouraged to find a high visibility place to display it (such as a library or the mall). Or you may develop a web page on your project. Those who demonstrate to their TA that they can give an excellent oral presentation on their project may be asked to present to the entire class (but you may decline if you wish).

EVST 101 Frequently Asked Questions:

Watson Syllabus 2008, p. 5

The course fac pac (available at the bookstore) clearly explains:

Lecture schedule, grading policy, texts, required reading & other assignments, exam schedules, office hours and how to contact the class instructors.

Basic Class Etiquette

You should arrive before class starts and wait until class is over to depart. If you must arrive late, enter as quietly as possible. If you must leave early, let the instructor know in advance and leave as quietly as possible. Avoid scheduling conflicts that would cause late arrivals and early departures. When in class, participate in class activities and avoid disrupting class by talking during lectures. Class etiquette is especially important when guest speakers visit class. They are giving their time to you without pay; respect that.

In help sessions, work with the TA to develop a respectful method of ensuring that all can participate in discussion. Respect all viewpoints, including your own.

What constitutes a Pass for P/NP option?

Earn 60 % of possible points.

Attendance policy:

Attendance is occasionally taken in lecture (usually when guest speakers appear) and always taken in help sessions. Regular attendance at lectures and active participation in help sessions earns points. Attendance is taken by having students answer a short question about the lecture. To receive full credit, answers should reflect that the student was present in mind as well as body.

Policy on making up exams: To make up an exam, student must contact Professor Watson soon after missing the exam and explain reason for missing the exam (medical or personal emergency). If a student misses either of the 2 mid term exams, the makeup exam is a comprehensive exam offered during the final exam period for this course. Taking this exam is by appointment only.

Receiving an incomplete: To receive a grade of I or 'incomplete', student must request an incomplete and explain what unexpected emergency made it difficult or impossible for the student to complete course work by the due dates. Student must also agree to a date by which the work will be completed and turned in. Some late work penalties will still apply.

Late work: As fac pac says, assignments lose half of their value for each week late. Hence, work that is 2 weeks late will receive no points. Extreme hardship cases may negotiate some reduction in late penalties but will likely have to request an Incomplete if a large number of assignments must be handed in late.

What is the late drop policy for this course?

According to UM's 'Important Dates' at

http://cyberbear.umt.edu/instructions/calendar_autumn_2008.htm:

The last day to add or drop online and receive refunds is Sept 15.

The last day to drop (or change grading system) without a refund and with only advisor & instructor signatures is Oct 6 (after that, the Dean's signature is required and fees are assessed). Professor Watson does not require a reason for requesting a late drop, but the Dean probably will.

The VERY last day to drop is Dec 5 (last day of classes). After that, take your petition to God.

(this is known as the 'drop dead' drop deadline).

Expectations of Auditors -- Auditors must practice the same basic class etiquette as regular students. This is the only expectation of unofficial auditors. Official auditors must attend class regularly (as evidenced by in class essays) and answer the 4 essay questions described in the portfolio. Failure to meet these expectations, will result in a notation in the student's academic record indicating that attendance/participation was not satisfactory.