

UNM Bosque Internship

Bosque Ecosystem Monitoring Program - BEMP

Spring 2010

Course Call Numbers: BIOL 408L or 508L for 3 credit hours

Course Instructors:

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1. Program Description: The Bosque Ecosystem Monitoring Program (BEMP) is both a research project and a community outreach program. Its primary objective is to involve citizen volunteers (mainly school students and their teachers) in long-term, hands-on monitoring of key indicators of ecological change in the middle Rio Grande bosque. **We want all participants in BEMP to learn about the structure, functioning, and biological diversity of this vital New Mexico ecosystem.** There is a dual nature to this effort in that the collection of accurate and useful information is as important as the environmental education outreach aspects of the program.

BEMP's UNM Intern Program, which you are a part of, provides a critical link between the volunteers and the biologists concerned with the management of this greatly altered riparian (riverside) forest. There is a dual nature to the intern's role as well. **The intern is responsible for the transmission of accurate information from the field to the UNM Biology Department. At the same time, the intern has the opportunity to learn about both the biological and the educational aspects of the program.** As an intern, you will soon become an organizer, interpreter, and possibly mentor to volunteers at one of 25 similar monitoring sites. Each site is set up in a very different part of the bosque. All sites are monitored simultaneously for certain key ecological variables according to a schedule drawn up several years ago.

2. Grading: Grading will be based on: 1) site interactions, 2) reflective analyses & WebQuests, 3) class participation and attendance, 4) special project hours, 5) field notebook, 6) environmental education activity, and 7) final report. Your final grade will be a composite of the following percentages:

Site Interactions (monthly monitoring)	20
Readings & WebQuests: Reflective Analyses & Discussions	20
Attendance	10
Special Project Hours	10
Field Notebook	10
Environmental Education Activity	10
Final Paper (Final Presentation for repeat and graduate students)	10
Final Exam	10
Extra Credit	Instructor discretion
Final Score	100 + extra credit

3. Site Interactions/Scheduling (20%): During the coming semester you will participate in a series of class meetings, field work, and other activities designed to increase your knowledge of the bosque and its surrounding ecosystem. These opportunities will also enhance your ability to communicate your knowledge of it to others. As with anything, the effort you put in will correlate with what you get out of the course.

Tuesdays are when most of our meetings, field work and data collections occur. Much of the work during this course **needs to be scheduled** between yourself and other people working on the site(s) that you choose.

4. Readings for Reflective Analyses, WebQuests & Participation in Class Discussions (20%): The BEMP Intern Handbook is the required text for this class and will be handed out by the instructor. Copies of the reports are available at www.bosqueschool.org/bemp.htm or can be loaned to you by the UNM BEMP office.

Reflective analyses should be 1½ - 2 pages for undergraduates and 3 pages for graduate students (1" margins, 12 font, double-spaced). The point of the analyses and associated questions is to demonstrate that you have read and thought about the paper in preparation for class discussion. We try to return these analyses with comments back to you by the next class period. All reflective analyses should be turned in (or e-mailed) at the start of class the day they are due. They will be graded on a 5-point system based on answering the question specified, spelling and grammar, turning the paper in on time, format and insights/thoughts.

WebQuests, participation in discussions, debates and panels will also be reflected in this 20% of your grade.

Late: *each day late 0.25 will be taken off your grade, until you reach 1 full point (4 days). After that it is one full point off for each week it is late.*

5. Attendance (10%): It is the responsibility of the intern to attend all class and field sessions for a full grade. Absences and appropriate make-up work should be discussed with Dr. Kim Eichhorst.

6. Special Project Hours Guidelines (10%): Part of your grade entails 10 hours assisting BEMP in some way. Five hours need to be completed before **Friday, April 2nd** (see syllabus – if 5 hours are not completed by this date you will not be able to make them up and may not be able to earn extra credit hours). Special projects can vary widely based on student interest and program needs. The project should be meaningful, in the sense that it makes BEMP a stronger program. Sometimes projects may be less-than-glamorous and can include some repetitive aspects. We encourage students to take on projects that are challenging and help you and your students develop new skills. At the end of the semester, you will share with the class what you did for your special project in a brief oral report.

Ideas for special projects include:

- Present your environmental education activity to your assigned class (recommended).
- Due to increased driving times, you can also choose: Ohkay Owingeh, Santo Domingo, Sevilleta or Lemitar as your monthly monitoring site.
- Choose additional sites for monthly monitoring or pitfall traps (for sites not covered already).
- Participate in BEMP program promotion (take BEMP display to a conference or a special event).
- Process leaf litter in the lab at UNM.
- Participate in additional field work (i.e. site maintenance, groundwater chemistry, fuel load or wildlife programs)/

7. BEMP Field Journal Guidelines (10%): You will be assigned a field journal and are expected to maintain the index and take notes in the field. This notebook is the property of the BEMP program and will be passed on to interns for use in succeeding semesters. Please maintain your notebook throughout the semester rather than waiting until the end to remember details of field trips.

a. Maintaining the Index

To help BEMP staff find your background data quickly, it is important to maintain the index. Each time you participate in a BEMP field data collection, include:

- the page number of your entry,
- where you were,
- what you did,
- the date,
- riverflow (<http://waterdata.usgs.gov/nm/nwis/uv?08330000>) and
- your name

b. Keeping a record of the data

You must keep the pink copy of the monthly monitoring form in your field notebook. If this is not possible, write the data in your notebook. **Turning in the white page of the monitoring form is a critical part of your grade in the class.** Please also record any pertinent information for that site (i.e. dam was inflated, cutting, restoration or flooding has recently occurred, etc.)

c. Additional

Since other people will have access to this notebook, please do not include private information such as unlisted phone numbers, unprofessional remarks about other people, or any other inappropriate information. However, drawings, weather info, sketches, things taped in, etc. are welcome!

8. Environmental Education Activity Guidelines (10%): You will pick an environmental education (EE) activity from the Bosque Education Guide (or another environmental education source, approved by BEMP instructors) to present to the class. The activity needs to meet national or state education standards. Your in-class presentation should be **10 – 15 minutes**, so some activities will need to be altered/shortened accordingly. The activity should increase the participants' understanding and/or appreciation of the local ecosystem, thereby enriching their experience with BEMP. The presentation to the BEMP intern course will help you refine your skills at presenting and give you experience and feedback in teaching an environmental education activity. We strongly encourage you to bring this activity (or another) to your K-12 class to fulfill some of your Special Project hours. Finally, write a 1-page paper briefly describing the activity and its goals, as well as one of the education standard(s) that it meets.

9. Final Paper Guidelines (10%): Your final report is worth **10% of your grade**. Here is a list of the four criteria we use to allocate grading points to the first and final reports:

- Was it turned in on time?
- Does the student write in a clear and professional manner, including proper English grammar and spelling, and **reference/cite material when necessary**?
- Is the report in the proper format? (Introduction, Methods, Results, Conclusions, **References**; *1" margins, 12 font, double-spaced*; 5 pages for undergraduates; 8-10 for graduates)
- Has the student answered the question/questions asked (including at least one graph)?

Also included in the final report grade is your editing job on a fellow student's paper.

- Does the student edit peer's paper with care and honesty?

The first draft is worth 40% of the final paper grade (and so should not be a rough draft, but a well-constructed and edited paper). The peer review (editing) of your fellow student's paper is worth 10% of the final paper grade. Your final, rewritten paper is worth 50% of the final paper grade. **PLAGERISM earns a ZERO!**

Final reports should include an **Introduction** that addresses the type of data discussed (e.g., cottonwoods in the bosque and aspects that could affect their leaf production). Included in the Introduction should be citations from readings (these can be readings from the course or outside readings) that support some of your statements. Your statements from these sources can be paraphrased or in direct quotes, followed by the author and date in parentheses. A **Methods** section should follow the Introduction. Here you will state what methods were used to collect the data (these can be found in your BEMP intern handbook under the monitoring directions, in the BEMP First Report, or you can use your experience in the field. This section does not need to be greatly detailed; it just needs to indicate your understanding of how the data were collected. Your **Results** section is next, containing at least one graph of the data (which may be hand-drawn on graph paper or graphed using a computer program), and what the data indicate. Finally, your **Conclusion** section will be *your* interpretation of the data. You may combine these last two sections into one section titled "Results and Conclusions". Finally, the **sources you used in the paper will need to be listed** at the end of the paper under "**Citations**" or "**References**" in proper bibliography format.

Repeat & Graduate Student ONLY - Final Presentation Guidelines (10%): The student will be responsible for presenting some component of BEMP data to the rest of the class. Presentation time is approximately 15 minutes and must include each of the sections mentioned in final paper guidelines (including hypothesis and graphs). Speak with instructors regarding subject matter.

10. Extra Credit (up to 10%): Extra credit is typically earned through additional special project hours (if the required 5 hours have been met by **April 2nd**), monitoring additional field sites and/or the optional arthropod reading and reflective analysis. **For each additional 2 hours worked, one point of extra credit can be earned.** Please speak with instructors if you have additional ideas for extra credit.

Last, but not least!!!

- You are expected to interact with site representative/class several times a semester (for both monthly monitoring & pitfall traps).
- **Have FUN in the field and with students!** But do remember you may be working with kids – appropriate language, attire and attitude are required!
- We are flexible and willing to work with you on scheduling conflicts. **Please remember that your effort in this class is important to the community...** you will get out of it what you put into it!



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