Chemical Outreach
CHEM 493

Course Description

This course is designed to expose students to opportunities for sharing their chemical knowledge with members of the local community or other UMW groups. As a Chinese proverb states "Tell me, I'll forget. Show me, I'll remember. Involve me, I'll understand." Teachers know that they learn as much as their students through explaining concepts to others. This experience will help students understand chemical/scientific principles through developing lessons and hands-on experiences for other individuals. In addition, the students will improve their critical thinking skills, sharpen literature search skills, and hone their scientific communication, both oral and written.

Expectations

Each credit represents approximately 2 to 3 hours of work per week during the academic year (either readings, development of exercises, and/or the actual outreach program participation) as established by prior verbal agreement between the instructor and student and as indicated on the registration form obtained by the student and completed by him/her, the instructor and department chair), such that

credits	hours
1	2 - 3
2	4 - 6

The outreach program must be approved by the instructor. Ideas for outreach programs could include Wild Science Enrichment Program at Wilderness Elementary School or Mad About Science at Ni River Middle School (directed by Kelli Slunt), James Farmer Scholars Program (see Janet Asper), Governor's School, or others approved by the instructor, student, and department chair. By the end of the second week of the semester, a written contract outlining a plan for the outreach program must be completed and approved by the instructor and the department chair. A blank contract is attached to this syllabus.

It is the responsibility of the student to arrange to meet with the instructor at least once a week to discuss progress, difficulties, etc. The time for these meetings should be indicated on the contract.

Grading

Grades will be established by the instructor based on the following criteria: consulting meetings, participation in the outreach program, time spent developing exercises or searching the literature for readings, quality of the work accomplished, presentation of the activity to the target audience, final portfolio. These factors vary depending on the student and the nature of the scientific investigation/project.

The overall grade scheme will reflect the following from the *Dictionary of Academic Regulations*:

A	excellent
A-	
B+	
B	commendable
B-	
C+	
C	acceptable
C-	
D+	
D	marginal
F	failure

Honor System

All graded work (i.e., proposal, handouts for the outreach, and final report) must be your own and pledged according to the Honor Code: *I hereby declare upon my word of honor that I have neither given nor received any unauthorized help on this work.* *Signature*
In addition, it is expected that the work(s) of others are properly referenced in any written report according to the guidelines and style of the American Chemical Society. (A copy of the *ACS Style Guide* is available in Jepson 308.) Submission of a report devoid of appropriate referencing presupposes that all of the ideas/statements are your own and therefore constitutes plagiarism.

Expectations

- develop age appropriate and topic appropriate handout materials for outreach groups
- create hands-on materials/experiments to illustrate the concepts – sample exercises, activities are available for review
- discover if you enjoy teaching or interacting with public groups
- become self-motivated (I expect that you will push yourself in the development of the project and will contact me as needed *for guidance*)
- gain confidence in own hands-on abilities and problem solving skills, oral and written communication skills

Project Contract

The project contract is a formal written agreement between the student and the course advisor. Specified within it are the number of credits and hours per week expected to be devoted to the project, the due dates for the assignments for the course.

CHEMISTRY OUTREACH CONTRACT

I, _____, have enrolled in Chem 493, Chemistry Outreach, under the direction of _____ during _____ semester 20___. The outreach program in which I will participate is

_____.

I have elected to enroll in this course for ___ credits, fully cognizant of the fact that I will be expected to complete ____ hours of independent work/research (library, preparation, laboratory,etc.), participation in the outreach each week. I understand that I need to meet once a week with the instructor. The meetings will occur each week on _____ from _____.

I will participate in the outreach at the following dates and times:

_____

I understand that, if applicable, transportation to the activity must be provided by the student.

Having received a copy of the CHEM 493 syllabus, I am aware that I am responsible for submitting various assignments to the instructor. Details for each of these assignments can be found in the syllabus. I will submit these on the following dates:

Proposal	Due date:
Draft of Outreach Exercises	Due date:
Final Copy of Outreach Exercises	Due date:
Reflection Paper	Due date:

I understand that if the assignments are late, a penalty to the report grade will occur.

I am also fully aware of the safety rules that exist in all chemistry courses (including this one) and will abide by them in the laboratory. In addition, I may be permitted to work in the laboratory on my own during normal building hours after I have been adequately trained in the techniques/instrumentation I will be using. (I must use the "buddy" system at all other times.)

Through this experience I hope to develop my own strategies for problem-solving, troubleshooting and critical thinking. The instructor will not complete the exercises for me; however, she is more than willing and expects to assist me when questions/problems arise. I

have read the syllabus and completed this contract and understand the expectations for the course.

Student signature:_____

Faculty Advisor:_____

Department Chair: _____

Date: _____

Date: _____