I. Course Title
Environmental Chemistry Lab

II. Course Prefix/Number
CHEM 334L

III. Credit Hours
1

IV. Prerequisites
CHEM 331

V. Catalog Description
Chemistry 334L is designed to complement the lecture course (CHEM 334) by giving the student practical experience with many of the concepts through innovative laboratory experiments. One three-hour laboratory period every week.

VI. Curricular Relationships
CHEM 334L is required for all BA Chemistry (Science Education) – Secondary Teacher Licensure

VII. Student Learning Outcomes
• Students will be able to keep an effective lab notebook as a permanent record of work done in the laboratory.
  • Students will be able to communicate scientific results and significance in written form.
  • Students will demonstrate the proper use of both qualitative and quantitative glassware.
  • Students will be able to perform appropriate statistical calculations on data and interpret their significance.
  • Students will be able to safely and effectively operate much of the available analytical instrumentation including UV-Vis spectrophotometer, fluorescence spectrophotometer, atomic absorption spectrophotometer, gas chromatograph, and high-performance liquid chromatograph.
  • Students will be able to demonstrate proficiency in the collection and analysis of authentic environmental samples.

VIII. Content Outline
• Analysis of Air Pollutants
• Analysis of Heavy Metals in Contaminated Soils
• Analysis of Organic Pollutants in Natural Waters
• Phytoremediation of Contaminated Soils
• Effectiveness and Durability of Sun Block

IX. **Course Procedures/Policies/Grading Scale**

• Students are required to attend all laboratory sessions. A formal paper is required for each project.

• Normal grading is used for this course.
  Grading Scale: >90 = A; 80-89 = B; 70-79 = C; 60-69 = D; <60 = F

X. **Required/Recommended Readings**

An in-house text is used for the course.

XI. **Issues Unique to this Course**

• Co-Requisite: CHEM 334

• This course, because of limited equipment and experimental procedures, may require additional time and/or special scheduling.

• This course is typically offered in the spring semester of even years.

XII. **Additional Departmental Issues**

None