

## **Midland College Syllabus**

2022-2023

ENVR 1402 L (Face-to-face)

Environmental Science Lab

4 Semester Credit Hours

(3 lecture/3 Lab)

*Core Curriculum Course*

### **Instructor Information:**

**Instructor:** [Click here to enter text.](#)

**Phone:** [Click here to enter text.](#)

**Office Hours:** [Click here to enter text.](#)

**Office:** [Click here to enter text.](#)

**Email:** [Click here to enter text.](#)

### **Notice:**

Students MUST actively participate by completing an academic assignment required by the instructor by the official census date. Students who do not actively participate in an academically-related activity may be reported as never attended and dropped from the course.

### **Course Description:**

This course is devoted to the issues associated with human interactions with the environment. Lab topics include utilizing the Scientific Method to determine the effect of salinity on radish seed germination, calculating and graphing human population growth dynamics, determining the effect of altitude on a coniferous forest climax community, calculating the effect of conservation practices on aquifer utilization, conducting an environmental remediation of an industrial facility from the perspective of an environmental consultant, designing a residential solar power system and comparing the system based on the solar intensity in a northern versus southern U.S. city. Students will study and construct PowerPoint presentations of Texas Ecoregions with regard to urban influences, climate dynamics, soil composition, surface waters, aquifers, predominant vegetation and general land uses. This pool of student-generated Ecoregion data will be utilized to generate individual travelogue reports as students simulate travel through three Ecoregions. Finally, students will research and report on an environmental issue of their choice. Prerequisite: TSI complete in Reading and Math.

### **Core Objectives:**

This course fulfills one hour of the Life and Physical Science requirement in the Midland College **Core Curriculum**. The Core Curriculum is a set of courses that provide students with a foundation of knowledge, skills and educational experiences that are essential for all learning. Please visit the [Midland College Catalog](#) for any questions about the core. As part of the core, this course addresses the following four objectives:

Critical thinking skills –Students will demonstrate critical thinking by examining and solving applied environmental issues in the laboratory.  
Students will demonstrate critical thinking by interpreting graphs and making

conclusions regarding the dynamics of world population growth rates. Students will utilize climatic and vegetative data to extrapolate the impact of altitude in other regions from the assignment study area. Students will extract details from a wastewater treatment plant inspection and reach conclusions regarding the compliance of that facility with the water quality permit.

Communication skills – Students will demonstrate communication skills in written, oral, and/or visual form within the classroom setting through instructor posed questions, collaborative peer assignments, and exams. Students will compose PowerPoint presentations of Texas Ecoregions. Students will compose a summary report of an environmental issue.

Empirical and Quantitative skills – Students will demonstrate empirical and quantitative skills by calculating and graphing the impact of varied influences on human population growth, perform statistical t-test analyses to accept or fail to accept the null hypotheses in a scientific experiment, calculate volumetric impacts to an aquifer by various agricultural crops, calculate metrics to determine the effects of wastewater contamination on the aquatic life in a receiving stream.

Teamwork – Students will demonstrate teamwork skills by functioning as collaborative and cooperative small groups to answer instructor posed questions and/or complete assignments.

### **Text, References and Supplies:**

Canvas Accessible

Computer: Access to a working computer throughout the course with the ability to access the internet and Canvas.

### **Student Learning Outcomes:**

Upon successful completion of this course, students will:

1. Apply scientific reasoning to investigate questions, and utilize scientific tools such as laboratory equipment to collect and analyze data.
2. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
3. Communicate effectively the results of scientific investigations.
4. Understand ecological footprints with regards to resource use and overuse.
5. Calculate and graph human population dynamics associated with growth rate, education, economics and infant mortality.
6. Survey the Ecoregions of Texas, with regard to urban influences, climate dynamics, soil composition, surface waters, aquifers, predominant vegetation and general land uses. Generate a travelogue report between two locations going through three Ecoregions.
7. Understand the effect of altitude on coniferous forest climax communities.
8. Calculate the impact of water conservation measures on aquifer utilization.

9. Conduct an environmental remediation of an industrial facility from the perspective of an environmental consultant.
10. Design a residential solar power system and compare the system based on the solar intensity in a northern versus southern U.S. city.
11. Conduct research on an environmental issue and generate a summary report.

### **Student Contributions, Responsibilities and Class Policies:**

It is the student's responsibility to read and understand the official Midland College attendance and withdrawal policies as stated in the college catalog. Students that are tardy, take excessive break time, or leave before completion of the day's exercise (including proper clean-up), may be counted absent. This will be at the discretion of the instructor. Regular attendance is required to do well in lab. For safety concerns, students are not allowed to eat or drink in the laboratory, and are expected to follow all safety guidelines as instructed.

### **Attendance Policy:**

It is the responsibility of the students to know the policies and procedures associated with absences. These policies are set by instructors and can be found on the instructor's handout. It is the student's responsibility to contact the lab instructor regarding absences. Excused absences may include, but are not limited to, illness, severe weather, and death in the family. Instructors will determine whether or not an absence is excused. Please visit the [Midland College catalog](#)

### **Withdrawal Policy:**

Students who have enrolled in a Texas public institution of higher education as a first-time freshman in fall 2007 or later are permitted to drop no more than six courses during the entire undergraduate career. This limit includes all transfer work taken at a Texas institution of higher education and to second baccalaureate degrees. This statute was enacted by the State of Texas in spring 2007 (Texas Education Code 51.907). Any course that a student drops after Census Day is counted toward the six-course limit if "(1) the student was able to drop the course without receiving a grade or incurring an academic penalty; (2) the student's transcript indicates or will indicate that the student was enrolled in the course; and (3) the student is not dropping the course in order to withdraw from the institution." Please visit the [Midland College Catalog](#)

### **Scholastic Dishonesty:**

Midland College does not tolerate scholastic dishonesty or academic misconduct in any form. Please read the MC Student Handbook on this subject. Please visit the [Midland College Catalog](#)

Students are strongly encouraged to seek extra help if they are having difficulty with the assigned material.

### **Evaluation of Students:**

Course Grade will be determined according to the following.

**Lab:** 30% of total course grade, may be composed of the following

	<b>% of Grade</b>
Exams	50-100
Lab Report and Activities	0-50
Attendance	0-10

Grade Range (90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D, less than 60%=F)

### **Course Schedule:**

This class meets for 3 laboratory hours per week. For a tentative schedule of the class meetings and laboratory meetings, please refer to the schedule distributed to each student on the first class meeting.

### **Non-Discrimination Statement**

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individual has been designated to handle inquiries regarding the non-discrimination policies:

#### **Tana Baker**

Title IX Coordinator/Compliance Officer

3600 N. Garfield, SSC 131

Midland, Texas 79705

(432) 685-4781

[tbaker@midland.edu](mailto:tbaker@midland.edu)

For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

### **Americans with Disabilities Act (ADA) Statement:**

Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit [www.midland.edu/accommodation](http://www.midland.edu/accommodation) and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a "Notice of Accommodations" letter will be sent to instructors outlining any reasonable accommodations.

### **Continuity of Instruction Statement**

In the event that on campus activities are suspended due to extenuating circumstances, such as weather or quarantine, the instructor will continue instruction in a manner that best supports the course content and student engagement. In this event, your instructor will notify students of the change via [Click here to enter text](#). At that time, they will provide details about how instruction and communication will continue, how academic integrity will be ensured, and what students may expect during the time that on campus activities are suspended. If a student becomes unable to continue class participation due to extenuating circumstances, (e.g., health and safety, loss of power, etc.) the student should

contact their instructor and advisor for guidance. Resources are available to students via the SOS program. Information can be found at <https://www.midland.edu/services-resources/student-services/sos.php>.

### **Grievances or complaints**

Concerns should be expressed as soon as possible to allow for early resolution. Midland College encourages students to discuss their concerns with their instructor first. If you feel uncomfortable discussing your situation with your instructor, students should discuss their concerns with the Chair of the appropriate department (Biology Chair – Mr. Tomas Hernandez (432-685-6751), Chemistry Chair – Mr. John Anderson (432-685-6737), Engineering and Physics Chair – Dr. Brian Flowers (432-685-4586), Geology Chair – Mr. Antony Giles (432-685-5580), Kinesiology Chair – Ms. Sheena Thompson (432-685-4579), Math Chair – Dr. Krista Cohlmia (432-685-4541) then the Dean of Math and Science – Dr. Miranda Poage (432-685-4561). If a resolution is still not possible, students may proceed with the formal complaint process.

<http://catalog.midland.edu/content.php?catoid=14&navoid=2579#grievances-and-complaints>.

### **Math & Science Division Information:**

Division Office: AHSF 124 (432) 685-4561

Division E-Mail: [mns@midland.edu](mailto:mns@midland.edu)

Department Chair: Mr. Tomas Hernandez (432) 685-6751

Dean: Dr. Miranda Poage

Secretary: Sarah Anderson

Clerk: Liliana Orcutt

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