Environmental Science II
4 credits
ENV-112-1 (Face to Face)—No Prerequisite Required
Spring 2022/COVID-19

Instructor:	Steven Chischilly	**Email:**	schischilly@navajotech.edu
	Room 301	**Office Phone:**	786-4147
Office Information:	9:30AM-11AM, MWF	**Home or Cell:**	N/A

Class Location: Tech. Building, Room 301

Meeting Times: Lecture: 9:30AM-11AM, MWF Lab—Friday, 9AM-12Noon

Required Materials:

Text(s):
Living in the Environment, by G. Tyler Miller, Fifteenth Edition, Thomson Publishing, ISBN Number: 0495015989
The Invasion of Indian Country in the Twentieth Century: American Capitalism and Tribal Natural Resources by Donald Fixico, University of Colorado Press, Niwot, CO, ISBN Number: 0870815172

Tools: Calculator**,** removable storage (jump) drive
Lab Fee: $100 per student per semester

Course Description:

This course introduces students to more advanced concepts in environmental science and ecology, they will also obtain knowledge about climate and terrestrial biodiversity, aquatic biodiversity, community ecology, population ecology, terrestrial biodiversity and sustainability. Laboratory is included.

Course Objectives:

- Students will demonstrate through the use of classroom and field examples of how to test a hypothesis using the steps found in the scientific method;
- Students will incorporate the use of basic statistics into their analysis of data obtained from labs where raw data is obtained from field work;
- Students will utilize ecological concepts and theories, in addition to verbally explaining how energy and nutrients flow through a system that ultimately affects humans and natural systems;
- Students will study, through hands on field visits and assignments, ecosystems and communities learning specific species found within those habitats;
- Students will visit and measure lotic systems to collect, measure and analyze water quality parameters found at these locations;
- Students will analyze, through research and assigned readings, how Native American communities and nations have been affected by colonialistic philosophies in North and South America.

COURSE OUTCOMES	COURSE MEASUREMENTS
Describe the process of scientific inquiry.	Students complete lab reports, exercises, quizzes, and exams for evaluation incorporating concepts and steps involved in the scientific method using independent, critical thinking on evaluating data upon analysis.
Solve problems scientifically.	Students are observed for appropriate use of laboratory techniques. Students collect and analyze data that they have obtained from the field and graph the results to show trends, and then calculations are done on these data to show if they are statistically different.
Communicate scientific information.	Students review current research related contemporary environmental issues. Students view and critically evaluate raw data collected from field collection field trips, from documentary films covering topics of concern regarding the environment, and written and verbal summaries are also written and submitted from guest speaker visits or workshops.
Apply quantitative analysis to scientific problems.	Students use calculators and computers to calculate and analyze data that has been collected from the field, or otherwise obtained in the classroom laboratory.
Apply scientific thinking to real world problems.	Students are required to watch and critically analyze films that show and discuss environmental issues on Indigenous homelands globally and are tasked discussing solutions for these problems.

Grading Plan:

Grading		Grading Scale	
Exams/Quizzes	30%	A	100 - 90
Book Review	15%	B	89 - 80
Lab	20%	C	79 - 70
Homework, Assignments	20%	D	69 - 60
Attendance, Participation	15%	F	59 - below
Total	100%		----------

Book Review: Table of Contents

Date	Assignment	Homework	Due
Week 1	Miller Ch 5 Review, Fixico 1; Epilogue/Research Author	Read/Take Notes/15 plants	
Week 2	Miller Ch 6, Fixico 2; Research Author	Read, Study for Quiz	**Quiz 1**, Ch 5 T&S, Author Summary-One page
Week 3	Miller Ch 6, Fixico 3	Read, Problems, Lab-Add 15 plants	Homework, Ch 6 T&S
Week 4	Miller Ch 7, Fixico 4	Study, Read, Problems	**Quiz 2**
Week 5	Miller Ch 7, Fixico 5	Read, Study,	Homework

		Problems, Lab-Add 15 plants and Beef Breeds (15 breeds)	
Week 6	Miller Ch 8, Fixico 6	Read, Study, Problems	**Quiz 3**; Ch 7 T&S
Week 7	Miller Ch 8, Fixico 7	Read, Study, Problems, Lab-Add 15 plants and Beef (10)	Homework, Study for the Midterm Examination
Week 8	MIDTERM EXAM	STUDY	
Week 9	Miller Ch 8, Fixico 8	Read, Study, Problems, Lab-Add 15 plants and Beef	Homework, Ch 8 T&S
Week 10	Miller Ch 9, Fixico 9	Read, Study, Problems; Lab--30 animals endemic to the southwest; natural history of each	**Quiz 4**
Week 11	Miller Ch 9, Fixico 10, EPDs	Read, Study, Problems, Lab--15 horse breeds and 30 animals/ Beef	Homework, Ch 9 T&S; Quiz 30 animals
Week 12	Miller Ch 10, Fixico 11	Read, Study, Problems	**Quiz 5**; Book Review Draft Due
Week 13	Miller Ch 10	Read, Study, Problems, Lab-20 Native American heirloom crops and their uses	Homework
Week 14	Review for Final Exam/Book Review Due	Read, Study, Problems	**Quiz 6**; Ch 10 T&S; Quiz-Beef/Plants
Week 15	FINAL EXAM		

Course Policies:

Participation:

Students are expected to attend and participate in all class activities – as listed above, as it is 15% of the grade. Points will be given to students who actively participate in class activities including field trips, laboratories, and ask questions of guest speakers and other presenters.

Cell Phone and Head Phone Use:

Please turn cell phones off or place them on silence or vibrate mode BEFORE coming to class. Also, answer cell phones **OUTSIDE OF CLASS** (not in the classroom). Exercising cell phone use courtesy is appreciated by both the instructor and classmates. Head phones are to be removed before coming to class. All cells phones and other devices will be placed in the cardboard box at the beginning of each lecture or class period, they can be retrieved after class. No texting is to be done during class periods including labs.

Lecture Quizzes and Exams:

Quizzes will cover topics from the previous week and will be given bi-weekly unless otherwise instructed. Exams will be given once a section is completed, usually after each chapter unless otherwise instructed. The exams will be comprehensive and will cover the main concepts and ideas covered in lecture and during field trips.

Lab Reports:

Lab reports record all laboratory activities and are due the Friday after the week they are assigned, the lab reports will cover natural resources, range management, and different aspects of nutrient cycling and ecosystems. Points will be deducted from lab reports submitted after the Friday deadline. Labs and late homework will not be accepted after a deadline is set.

Attendance Policy:

Credit is given for the time the student is actually present in class. Students, who repeatedly miss classes without prior notice, will be reported to Student Services. If the problem persists, students may be expelled from this course indefinitely.

If a student misses 3 classes without an excused absence, they will be dropped from the course. Absence is defined as not arriving for class by the scheduled start of the class. Additionally, students that are more than 15 minutes late to class will result in the reduction of 10 points for each tardy.

Not staying for the entirety of the class period will result in the student being absent, unless scheduled in advance with the Instructor. The class period is over when the Instructor states that the class is over.

Academic Integrity:

Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students engage in academic dishonesty diminish their education and bring discredit to university community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the Instructor.

Plagiarism will result in an "F" for that particular assignment, and, if it occurs a second time, the student will be dropped from the course with an "F".

Diné Philosophy of Learning:
The Diné Philosophy of Learning is expressed through **nitsáhákees** – thinking; **nahat'á** – planning; **iiná** – living; and **sihasin** – evaluating. We will study **níłch'i** – air; **nahasdzáán** – earth; and **tó** – water. We will also study global and local measures taken to protect **Nahasdzáán Nihimá** - Mother Earth.

Students with Disabilities:
Navajo Technical University and the Science Department are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels s/he may need an accommodation based on the impact of disability, or needs special accommodations should inform the instructor privately of such so that accommodations arrangements can be made. Students who need an accommodation should also contact the Vocational Rehabilitation Counselor whose phone number is 786-4138.