



Navajo Technical University

<http://navajotech.edu>

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Course Title: Geographic Information Systems I
Course #: GIT 110-1

Credit Hours: 3.0
Semester: Spring 2022
Cap: 10

Faculty: Nsalambi V. Nkongolo, PhD

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Office: Tech 325

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Office Hours : MW 9:00-11:00 am; TR: 10:00-12:00 pm

Preferred Communication (email and/or text; will respond within 24 hours)

Class Location: Tech 325

Class Meeting Times: 8:00 – 9:20 am

Required Materials:

Laptop: Every student is required to have a laptop

Textbooks: Introduction to Geographic Information Systems, 9th Edition, by Kang-tsung Chang

Tools: Jump drive (to save your work)

Lab Fee (if applicable): None

Mission Statement

Navajo Technical University’s mission is to provide University readiness programs, certificates, associate, baccalaureate, and graduate degrees. Students, faculty, and staff will provide value to the Diné community through research, community engagement, service learning, and activities designed to foster cultural and environmental preservation and sustainable economic development. The University is committed to a high quality, student-oriented, hands-on-learning environment based on the Diné cultural principles: *Nitsáhákees, Nahátá, Ína, Siihasin.*

Course Description

This course introduces the hardware and software components of a Geographic Information System (GIS). Students will use ArcView to familiarize themselves with GIS thereby gaining an understanding of the concept of the points, lines, and polygons used to define GIS themes. Fundamental concepts of geography will be introduced, providing the foundation of geographic knowledge that will be built upon in subsequent classes.

Learning Outcomes	Course Measurements
A strong understanding of GIS components, capabilities and applications	Complete reading assignments, homework assignments, exams, projects, and quizzes. Lab assignments and projects are designed to give you practical experience, develop
A strong understanding of how to work with geospatial data	
A strong understanding of map projections	

A strong understanding of GIS job requirements	core GIS skills, and experience course material firsthand. Exams and quizzes test your knowledge and subject mastery. Critical thinking questions require you to solve practical problems and apply what you have learned.
A strong ability to think spatially	
A strong ability to make decisions and communicate with maps	
A strong ability to solve problems with GIS	
A strong ability to think spatially	
A strong knowledge of how data is organized, analyzed and shared through GIS	
An ability to communicate effectively, and spatially through maps	

Connections to Program Assessment (course-embedded measures)

List program outcomes to be measured

General Education Assessment

List general education Outcomes to be measured

Week	Date	Chapters	Assignments	Quizzes
1	Jan 18	Introduction	Lab 1:	
	Jan 20		Introduction	
2	Jan 25	Coordinate Systems	Lab 2:	
	Jan 27		Coordinate Systems	
3	Feb 3	Maps projections		
	Feb 8		Lab 3: Coordinate Systems	
4	Feb 10	Vector Data Model	Lab 4: Vector	
	Feb 15		data model	
5	Feb 17	Raster Data Model	Lab 5: Raster	
	Feb 22		Data Model	
6	Feb 24	GIS Data Acquisition: Existing Data		
	March 3			
March 7-11: Mid-Term				
March 14-18: Spring Break				
7	March 22	GIS Data Acquisition: Creating New Data	Lab 6: Data	
	March 24		Acquisition	
8	March 29	Geometric Transformation	Lab 7: Geometric	
			Transformation	

11	March 31	Spatial Data Accuracy and Quality	Lab 8a: Spatial data accuracy	
12	April 5	Attribute Data Management	Lab 8b: Attribute Data Management	
	April 7			
13	April 12	Data Display	Lab 9: Data Display and Cartography	
	April 14			
14	April 19	Cartography		
	April 21			
15	April 26	Data Exploration	Lab 10: Data Exploration	
	April 28			
16	May 3	Project Presentation		
	May 5	Review		
17	May 10	Final Exam		
	May 14	Final Grades Due		

Grading Plan

Homework	20%	A = 100 - 90%
Mid-term	20%	
Final Exam	25%	B = 89 - 80%
Project	10%	
Quizzes	20%	C = 79 - 70%
Class Participation	3%	D = 69 - 60%
Portfolio:	2%	F < 60%

Grading Policy

Each student must do his or her own homework and case studies. Discussion among students on homework and cases is encouraged for clarification of assignments, technical details of using software, and structuring major steps of solutions - especially on the course's Web site. Students must do their own work on the homework and exam. Cheating and Plagiarism are strictly forbidden. Cheating includes but is not limited to: plagiarism, submission of work that is not the student's own, submission or use of falsified data, unauthorized access to exam or assignment, use of unauthorized material during an exam, supplying or communicating unauthorized information for an assignment or exam.

Participation

Students are expected to attend and participate in all class activities- as listed above, as it **is 3% 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 headphone 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. Headphones are to be removed before coming to class.

Attendance Policy

Students are expected to regularly attend all classes for which they are registered. A percentage of the student's grade will be based on class attendance and participation. Absence from class, regardless of the reason, does not relieve the student of his/her responsibility to complete all course work by the required deadlines. Furthermore, it is the student's responsibility to obtain notes, handouts, and any other information covered when absent from class and to arrange to make up any in-class assignments or tests if permitted by the instructor. Incomplete or missing assignments will necessarily affect the student's grades. Instructors will report excessive and/or unexplained absences to the Counseling Department for investigation and potential intervention. Instructors may drop students from the class after three (3) absences unless prior arrangements are made with the instructor to make up work and the instructor deems any excuse acceptable.

Study Time Outside of Class for Face-to-Face Courses

For every credit hour spent in a class, a student is expected to spend two hours (2) outside of class studying the course materials.

Study Time for Hybrid or Blended Courses

For a hybrid or blended course of one (1) credit hour, a student is expected to spend three (3) hours per week studying the course materials.

Study Time for Online Courses

For an online course of one (1) credit hour, a student is expected to spend four hours (4) per week studying the course materials.

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 who engage in academic dishonesty diminish their education and bring discredit to the 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. **The use of another person's ideas or work claimed as your own without acknowledging the original source is known as plagiarism and is prohibited.**

Diné Philosophy of Education

The Diné Philosophy of Education (DPE) is incorporated into every class for students to become aware of and to understand the significance of the four Diné philosophical elements, including its affiliation with the four directions, four sacred mountains, the four set of thought processes and so forth: Nitsáhákees, Nahát'á, Íina and Siih Hasin which are essential and relevant to self-identity, respect and wisdom to achieve career goals successfully.

Students with Disabilities

The Navajo Technical University and the School of Science are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels he/she may need an accommodation based on the impact of disability or needs special accommodations should inform NTU in accordance with the procedures of the subsection entitled “Students with Disabilities” under Section 7: Student Support Programs, NTU Student Handbook.

Final Exam Date: May 10, 2022