Department of Geography
University of North Texas
Spring Semester, 2026

Dr. Harry Williams
EESAT 210G
Email: HarryF.Williams@unt.edu
Web: www.geog.unt.edu/~williams
Office Hours: T, R 10-11 or by appointment

INTRODUCTION TO CARTOGRAPHY

Geography 3050 T 2.00-4.50, EESAT 345
Course Outline

Course Description:
This is an introductory-level course in cartography. Course topics include the theory of map projections; grid systems; the construction and interpretation of topographic maps that show the shape of the Earth's surface; the use of thematic maps to portray various types of geographically-referenced data; a brief introduction to fieldwork and lab work in GIS, total station surveying and GPS mapping. This course covers technical aspects of cartography and includes frequent use of mathematical calculations (for example, calculating distance and area on maps).

Instruction:
Lecture, Tuesday (2-2.50) in EESAT 345 and laboratory, Tuesday (3-4.50) in EESAT 345.

Project:
The project will involve using a GPS (Global Positioning System) to map a parking lot on campus. Detailed instructions will be given out later in the semester.

Grade breakdown:

Laboratory exercises	40%
Project	10%
Theory exams (3 @ 6.7%)	20%
Lab exams (3 @ 10%)	30%

Late penalty: 10% per day up to 4 days and then late penalty is capped at 40%. Contact me ASAP if you will miss a deadline.

Laboratory Supplies:
Pencil, eraser, good-quality ruler(s) (metric (cm and mm) and English (inches and 1/10's inch) units), calculator (with trigonometric functions), USB drive for storing computer files.

Text book: None. Course materials will be posted on the course web page.

DEPARTMENTAL POLICIES:

DISABILITY ACCOMMODATION

The Department of Geography, in cooperation with the Office of Disability Accommodations, complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request by the second class.

EXTRA CREDIT

The Department of Geography does not allow extra credit assignments (work not specified on a course syllabus).

ACADEMIC DISHONESTY

Students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam. Additionally, the incident will be reported to the Office of Student Rights and Responsibilities for further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to: (a) use of any unauthorized assistance in taking quizzes, tests, or examinations; (b) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (c) the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university; (d) dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or (e) any other act designed to give a student an unfair advantage. Altering a returned test and claiming a grader or scanning machine made an error is also considered cheating.

The term "plagiarism" includes, but is not limited to: (a) the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment; and (b) the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

CLASSROOM COURTESY

Please follow these guidelines to avoid disrupting the class:

(1) Turn off cell phones before arriving.
(2) Do not arrive late or leave early (except for a bathroom break or emergency).
(3) Do not sleep or eat during class.
(4) Do not work on other assignments during class.
(5) Do not talk when the instructor is lecturing, unless prompted for feedback by the instructor.

Lecture and Laboratory Schedule

DATE	TOPICS
Jan 13	Lecture: Introduction; history of cartography (no lab).
20	Lecture: Map projections.
	Lab.1. Map projections.
27	Lecture: Grid systems, positioning.
	Lab. 2. Latitude and longitude, UTM and state plane grids; locations.
Feb 3	Lecture: Scale, distance, areas.
	Lab. 3. Distance, areas.
10	**Lecture: 1st theory exam**
	Lab. 1st lab exam
17	Lecture: Elevation - bringing in the third dimension.
	Lab. 4. Contours, profiles and slopes.
24	Lecture: Surveying by total station I.
	Lab. 5. Total station mapping in the field.
March 3	Lecture: Surveying by total station II.
	Lab. 6. Total station mapping in the lab (in EESAT 336).
10	**Spring Break (no classes)**
17	Lecture: Surveying by GPS I.
	Lab. 7. GPS mapping in the field.
24	**Lecture: 2nd theory exam.**
	Lab. 2nd lab exam.
31	Lecture: Surveying by GPS II.
	Lab. 8. GPS mapping in the lab (in EESAT 336).
April 7	Lecture: Thematic mapping - mapping spatial data.
	Lab. 9. Thematic maps (in EESAT 336).
14	Lecture: Introduction to GIS 1.
	Lab. 10. GIS - Files, Tables, Layers (in EESAT 336).
21	Lecture: Introduction to GIS 2.
	Lab. 11. Problem Solving with Spatial Analysis (in EESAT 336).
28	Review session. (****Projects due in class****)
	Lab. **Final lab exam** (take-home).
May ?	**FINAL THEORY EXAM**