Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: https://catalog.uvu.edu/

Semester: Spring
Year: 2025
Course Prefix: EGDT
Course and Section #: 1400-001
Course Title: Surveying Applications and Field Techniques 1
Credits: 3

Course Description

For people seeking a surveyor's license, civil engineering majors, Engineering Graphics and Design Technology majors, Construction Management majors, and anyone else wishing to learn fundamentals of surveying. Covers history of surveying, mathematics, field notes, measurement and computations, basic surveying instruments and equipment, leveling procedures, bearing computations, topography, mathematical traverse closures, area computations, and basic property surveying. Completers should be able to work in the job-entry phase of the surveying field.

Course Attributes

This course has the following attributes:

☐ General Education Requirements
☐ Global/Intercultural Graduation Requirements
☐ Writing Enriched Graduation Requirements
☒ Discipline Core Requirements in Program
☐ Elective Core Requirements in Program
☐ Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Professor Darin Taylor

Student Learning Outcomes

1	Explain the history of surveying, the United States Public Land Survey system, basic surveying units of measure, and the State Plane Coordinate system;
2	Demonstrate proper handling, set-up and use, as well as maintenance of surveying equipment;
3	Perform basic horizontal distance measuring techniques using a surveyor's tape;
4	Demonstrate the proper completion of various forms of surveyor's field note sheets;
5	Demonstrate proper surveying procedures and safety to gather information and accomplish a topographic survey. The student will also produce the accompanying topographic map;

6	Demonstrate the proper set-up and use of an automatic level to accomplish a differential and profile leveling project;
7	Demonstrate the ability to carry out surveying mathematical computations, including bearing and azimuth calculations;
8	Demonstrate, using a total station, the proper techniques to complete a property traverse while demonstrating safe surveying techniques;
9	Demonstrate the ability to do a traverse mathematical closure using the Compass Rule Adjustment method and the accompanying area computation using the Double Meridian Distance method.

Course Materials and Texts

Required Materials: A Scientific Calculator. A drawing compass, civil engineering scale and .5 drafting pencil.

Required Text: No textbook required.

Course Requirements

Course Assignments, Assessments, and Grading Policy

Course Assignments

Week 1: Class Introduction, History of Surveying, Surveying Field Notes & Units of Measure.

Week 2: Horizontal Measure & Taping Techniques. Outdoor Traverse Horizontal Measure Assignment.

Week 3: Surveying Instruments Set-up, Care and Handling.

Week 4: Measuring Angles & Angular Closure. Outdoor Traverse Angular Measure Assignment.

Week 5: Surveying Safety. Differential Leveling Techniques.

Week 6: Differential Leveling Outdoor Project Assignment. Profile Leveling Techniques.

Week 7: Profile Leveling Outdoor Assignment. Test #1 Review and Administration.

Week 8: Bearing & Azimuth Calculations.

Week 9: Bearing & Azimuths, Basis of Bearings. Property Drawing Assignment Bearings and Distances.

Week 10: Topographic Mapping.

Week 11: Topographic Mapping and Contour Calculations.

Week 12: Topo Mapping Drawing Assignment. Boundary Surveys, Monumentation and Tie Sheets.

Week 13: Outdoor Boundary Survey Assignment. Traverse Computation – Compass Rule Method.

Week 14: Area Computation using the Double Meridian Distance Method. Final Project Drawing.

Week 15: Writing Legal Property Description. US Public Land System. State Plane Coordinates. Final Exam Review. Final Exam to Follow as Scheduled.

Grading Breakdown:

Final Exam	**10%**
Tests	**25%**
Class Projects	**55%**
Attendance	**10%**

100-95%	**A**
94-90%	**A-**
89-87%	**B+**
86-83%	**B**
82-80%	**B-**
79-77%	**C+**
76-73%	**C**
72-70%	**C-**
69-67%	**D+**
66-60%	**D**
59-50%	**D-**
49-00%	**E**

ALL LATE WORK WILL BE GRADED AT 75% OF POINTS EARNED

CLASS SCHEDULE

CLASS: EGDT–1400–001 SURVEYING I **CLASS DAYS:** 28 **SEMESTER:** SPRING 2025

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
6 JAN INTRODUCTION HISTORY OF SURVEYING	7	8 SURVEYING FIELD NOTES & UNITS OF MEASURE	9	10
13 HORIZONTAL MEASURE & TAPING TECHNIQUES	14	15 TRAVERSE HORIZONTAL MEASURE ASSIGNMENT	16	17
20 MARTIN LUTHER	21	22 SURVEYING INSTRUMENTS SETUP, CARE & HANDLING	23	24
27 SURVEYING INSTRUMENTS MEASURING ANGLES & ANGULAR CLOSURE	28	29 TRAVERSE ANGULAR MEASURE ASSIGNMENT	30	31
3 FEB SURVEYING SAFETY & DIFFERENTIAL LEVELING	4	5 DIFFERENTIAL LEVELING	6	7
10 DIFFERENTIAL LEVELING PROJECT ASSIGNMENT	11	12 PROFILE LEVELING	13	14
17 PRESIDENTS DAY	18	19 PROFILE LEVELING TEST #1 REVIEW **TEST #1 BEGINS**	20	21
24 BEARINGS & AZIMUTHS	25	26 BEARINGS & AZIMUTHS **TEST #1 ENDS**	27	28
3 MAR BEARINGS & AZIMUTHS BASIS OF BEARING	4	5 PROPERTY LAYOUT WITH BEARING & DISTANCE	6	7
10 SPRING BREAK	11 SPRING BREAK	12 SPRING BREAK	13 SPRING BREAK	14 SPRING BREAK
17 TOPOGRAPHIC MAPPING GRID LAYOUT	18	19 TEST #3 REVIEW TOPOGRAPHIC MAPPING GRID LEVELING & PHYSICAL TIES **TEST #3 BEGINS**	20	21
24 TOPOGRAPHIC MAPPING CONTOUR CALCULATIONS	25	26 TOPOGRAPHIC MAPPING CONTOUR CALCULATIONS **TEST #3 ENDS**	27	28
31 TOPOGRAPHIC MAPPING	1 APR	2 BOUNDARY SURVEYS MONUMENTATION & TIE SHEETS	3	4
7 TEST #2 REVIEW BOUNDARY SURVEYS FIELD NOTES & PROJECT FAMILIARIZATION **TEST #2 BEGINS**	8	9 TRAVERSE COMPUTATION COMPASS RULE METHOD	10	11
14 TRAVERSE COMPUTATION COMPASS RULE METHOD **TEST #2 ENDS**	15	16 AREA COMPUTATION DMD METHOD FINAL PROJECT DRAWING	17	18
21 FINAL PROJECT DRAWING WRITING LEGAL PROPERTY DESCRIPTIONS U.S. PUBLIC LAND SYSTEM & UTAH STATE PLANE COORDINATE SYSTEM	22	23 STUDY DAY – NO CLASSES	24 FINALS	25 FINALS
28 FINALS	29 FINALS	30 **FINAL EXAM** **9:00 A.M.–10:50 A.M.**	1 MAY	2

Required or Recommended Reading Assignments
Reading will consist of handouts that have been prepared and handed out by the instructor.

General Description of the Subject Matter of Each Lecture or Discussion
See explanations as shown above in class objectives and course assignments.

Required Course Syllabus Statements

Generative AI
AI is not used in this class as most of the projects take place hands-on in the field.

Using Remote Testing Software
☒ This course does not use remote testing software.

☐ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities
Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity
At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 541: *Student Code of Conduct*.

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.