FOR S3123.001, FOR S3123.002, FOR S3123.003
Land Measurements
1 Credit, Summer 2023

Instructors: Dr. Daniel R. Unger Dr. I-Kuai Hung Dr. Yanli Zhang
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Department: Forestry Forestry Forestry

Class: Sunday; May 14; 5:00 p.m. - 9:00 p.m.; ATCOFA Room 117
Monday thru Thursday; May 15 – May 18; 7:00 p.m. - 9:00 p.m.; ATCOFA Room 117

Lab: Monday thru Thursday; May 15 – May 18; 7:00 a.m. - 5:00 p.m.; Field
Friday; May 19; 7:00 a.m. – 5:00 p.m.; ATCOFA Field Test; Exit Exams

Course Description: One semester hour. Study of boundary surveying of forestland. Required field trips. Prerequisite: FOR S1311, 1352, 2305, 2309, 2319, 240, 2351, 3347, 3349, and GISC 2324. Students must have an overall GPA of 2.0 at the end of the fall semester prior to attending field station. Course fee required. Summer only at forestry field station.

Program Learning: The student will demonstrate proficiency in understanding how to survey for the creation of a small pond, how to collect waypoints, linear features, and areas using GPS, how to navigate with a compass, how to survey land with a staff compass, how to use GPS in a forest inventory, and how to create an elevation profile of a track of land.

Student Learning Outcomes: Students will learn how to survey for the creation of a small pond, how to collect waypoints, linear features and areas using GPS, how to navigate with a compass, how to survey land with a staff compass, how to use GPS units in a forest inventory, and how to create an elevation profile of a track of land.

Course Outlines:
- **Navigation and GPS Data Collection:** This topic introduces how to navigate in the field with a hand-held compass and how to collect GPS data in the field with a cell phone and App. The students will learn how to navigate from one location to another using a hand-held compass and how to use a GPS App for collecting waypoints, linear features, and areas in a forested setting, and transferring data to a computer for map composition and accuracy assessment.
- **Differential and Profile Leveling:** This topic introduces fundamental elevation concept and practical method to accurately measure elevation differences. The students learn how to use auto-level and leveling rod in the field and how to evaluate measurement accuracy. Leveling is a vital operation for mapping, engineering design, and construction.
- **Pond Design:** This topic discusses the many aspects of building a pond, including its functions, the location and terrain, dam construction and drainage design, water quality and vegetation control, and aquatic species stocking etc. Through leveling and polygon traverse, the students conduct a field survey on a potential site for a new pond to determine the structure and location of the dam and the shorelines when the pond is inundated to its full capacity.
- **Stand Boundary and FIA Plot Surveys:** This topic conducts a forest stand boundary survey through polygon traverse with staff compass and laser rangefinder. The boundary map is generated both by hand drawing and by a COGO (coordinate geometry) program in GIS. Also included is using a cell phone and GPS App for mapping the boundary of the same stand. All of the surveyed boundaries will be generated at the same 1:5000 scale for comparison. In the same time, a FIA (Forest Inventory and Assessment) plot will be setup to measure existing trees about their geographic coordinates, species, dbh and height, etc. The plot survey will apply offset feature collection using GPS, compass, and laser rangefinder for better efficiency and accuracy.
Assignments:

<table>
<thead>
<tr>
<th>Day</th>
<th>Item</th>
<th>Percent Value</th>
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<tbody>
<tr>
<td>Monday</td>
<td>GPS Data Collection</td>
<td>15</td>
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<tr>
<td>Tuesday</td>
<td>Differential and Profile Leveling</td>
<td>15</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Pond Design</td>
<td>15</td>
</tr>
<tr>
<td>Thursday</td>
<td>Stand Boundary and FIA Survey</td>
<td>15</td>
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<tr>
<td>Friday</td>
<td>Field Test and Exit Exam</td>
<td>40</td>
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<td></td>
<td><strong>Total</strong></td>
<td><strong>100.0 %</strong></td>
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Grading:  A ≥ 90%,  B 80-89%,  C 70-79%,  D 60-69%,  F < 60%

Attendance:  Mandatory attendance for lecture or lab is required. **Failure to attend a daytime activity without prior approval of an excused absence will result in a 20% reduction of your total course grade.** If you arrive after the vans have departed, you may not meet us in the field in your personal vehicle. Do not attempt to do so, as this violates University policy and you have already received the point deduction. Attending the daytime activity but failing to attend an evening class without prior approval of an excused absence will result in a 10% reduction of your total course grade.

Academic Integrity:  Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at http://www.sfasu.edu/policies/4.1-student-academic-dishonesty.pdf

Withheld Grades
Policy:  Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Students With Disabilities:  To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Responsible Use of Technology:  It is expected that all students will only use cell phones, PDAs, laptop computers, MP3 players and other technology outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course may be grounds for dismissal from.

Classroom Behavior:  Disruptive, distracting, or disrespectful behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic, or other penalties. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom.
SFASU values students’ mental health and the role it plays in academic and overall student success. SFA Health: provides a variety of resources to support students mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
SFASU Counseling Services
www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services Room 202
936-468-1041

Crisis Resources:
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline 1(800) 273-TALK (8255)
Crisis Text Line: Text HELLO to 741-741

Please note: Students with documented disabilities who need course adaptations or accommodations please make an appointment with the instructor as soon as possible.