

CATALOG DESCRIPTION

Concepts, principles, and applications of forest informatics, remote sensing, and global/local positioning, emphasizing applications in forest resource management are introduced. Topics include: geospatial data sources and data collection, data structures and quality, map projections, and remote sensing, Global Positioning System (GPS), spatial and tabular data analyses, cartographic modeling and layout. Computer and field laboratory exercises provide practical experiences that complement the lectures.

INSTRUCTOR	Office	Phone	Email
Justin Harris	Plant City, PEPC Bldg, Rm 111	813.757.2183	justin98@ufl.edu

Lecture Time/Location: Tuesday & Thursday period 7 (1:55 – 2:45 PM): Reed Lab Rm 302 & **via Polycom**

Lab Time/Location: To be determined by the Student and his/her Mentor

Office Hours (Harris): Wed. (2:00 – 4:00 PM) & Thurs. (3:00 – 4:00 PM) or as needed by appointment
Via phone, email, or Adobe Connect

Website: <https://lss.at.ufl.edu> (e-Learning in **Canvas**)

COURSE OBJECTIVES

At the conclusion of this course, students must demonstrate knowledge and ability in the following:

- Significant figures
- Accuracy and precision; systematic and random errors
- Measurement of accurate horizontal distances, and horizontal and vertical angles
- Computation of horizontal coordinates by traverse adjustment
- Making vertical measurements by differential leveling
- Computation of elevations by level loop adjustment
- Bearing and azimuth calculation
- Computation of area of a parcel of land
- Production of a large-scale topographic map

Students should have gained general (introductory) knowledge in:

- Coordinate systems and Datums
- The Global Positioning System
- Boundary Surveys
- The US public land survey
- Horizontal circular curves

SURVEY MENTOR AND EQUIPMENT

Due to the distance format of this course, each student is required to have access to a local survey mentor and survey equipment. (Please see the UF Geomatics Mentor Form.) The survey mentor should be able to assist with labs, proctor quizzes/exams, and demonstrate how to use survey equipment. A licensed surveyor is required. Students working in a survey office may use someone within the office. Also, students can inquire with local survey businesses or city, county, state or federal entities for a survey mentor. These entities may include water management districts, Army Corps of Engineers, or city/county government services (survey departments). Students need to have their mentor complete the Geomatics Mentor Form. If a survey mentor cannot be found and the UF Geomatics Mentor Form completed, please contact the instructor immediately.

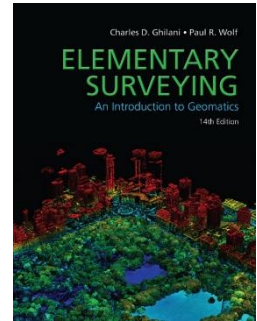
COURSE RESOURCES

REQUIRED TEXTBOOK

Ghilani, C. D. and P. R. Wolf. *Elementary surveying – An introduction to geomatics*. 14th ed. Upper Saddle River: Pearson Education, 2014. ISBN-13: 978-0-13-375888-7

ADDITIONAL MATERIALS

- A headset & microphone are highly recommended for use with Adobe Connect¹. A web link to Adobe Connect meetings will be provided through the e-Learning course site.



¹Adobe Connect is a software program used to conduct virtual meetings. See “[Using Adobe Connect](#)” section in this syllabus.

GRADING

Graded Item	Description	Points
Trigonometry Review	Assignment worksheet	18
Homework	5 assignments from the textbook @ 15 points each	75
Quizzes	4 quizzes @ 30 points each	120
Station Descriptions	Lab 1	12
Lab Grade: Field Work	Labs 2, 3, 4, 5/6*, 7, 10, and 11: Student demonstrates their understanding of the labs. 7 @ 30 points each	210
Lab Attendance	12 sessions @ 5 points each	60
GPS Exercise	Lab 8	20
CAD Exercise	Lab 9	15
Topographic Mapping Project	Lab 12	60
Field Book	Note keeping grade – turn in scanned copies of field book pages	20
Comprehensive Final Exam		150
Total Possible Points		760

*Lab 5/6 is one lab with extra time to complete.

GRADING SCHEME

The final course grade is calculated by dividing the cumulative points received by the total possible points. The instructor reserves the right to make modifications to the grading scheme as necessary. Final course are based on the + and – grading scale encouraged by UF. Final grades may be curved. For more information about the grading system, please visit:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Corresponding Course Score	95-100	90-94	85-89	80-84	75-79	70-74	65-69	60-64	55-59	50-54	45-49	0-44
Grade Points	4	3.67	3.33	3	2.67	2.33	2	1.67	1.33	1	0.67	0

HOMEWORKS, QUIZZES, AND LABS

All homeworks and the “office” portion of labs are to be completed individually. Office work includes calculations, computer drafting, and any similar activities not performed in the field. Any student found duplicating another student’s work (past or present) will automatically receive a zero grade for

the assignment. If current students are involved, all involved students, those giving and receiving, shall receive a zero grade for the assignment. For additional information, please see the Academic Honesty Policy section of this syllabus.

On the day of the quiz/exam, the instructor will email the quiz/exam to the mentor/proctor. The mentor/proctor will then administer the quiz/exam. Please see the schedule for quiz/exam dates. There is no provision for making up a missed quiz or the final exam. If you have a conflict, please notify the instructor prior to the quiz/exam. Leniency in rescheduling a quiz is dependent upon advanced notification and reason.

To get full credit for computational problems on homework, quizzes, and the final exam, students must show intermediate work. Programmable calculators may be used, however the student must demonstrate an understanding of the solution by showing the intermediate steps. All quizzes and the final exam are closed notes and book. . Once the quiz/exam has been completed, the mentor/proctor will scan and email it to the instructor. A suitable scanner should be accessible for scanning the quizzes/exam. If a scanner is not readily available, please notify the instructor as soon as possible.

Quizzes will cover the subject material of the lectures and associated reading assignments corresponding to the following list:

Quiz 1 – Lectures 1-5
Quiz 2 – Lectures 6-11

Quiz 3 – Lectures 12-17
Quiz 4 – Lectures 18-25

DUE DATES AND LATE POLICY

Assignments are due based on the schedule. Any work turned in after the given deadlines will not be accepted except for extenuating circumstances. For extenuating circumstances, a student’s late assignments may be considered only when the student prepares, in writing: 1) a standalone, professional report (MSWord document or pdf, not an email) documenting what is being turned in late, 2) the reason(s) for why the work is late, 3) any future preventative methods for not being late, and 4) any other details pertinent to the situation. If the four items above are not complete, the report and late work will not be considered. Any late reports must be submitted, in person or via email to the instructor of record, within one week of the original due date of the late work.

FINAL EXAM

The final exam for the course is scheduled for December 18th. The final exam is cumulative, covering the topics from the entire semester.

USING ADOBE CONNECT SOFTWARE

Office hour meetings and appointments will be conducted using **Adobe Connect** web conferencing software. The software is accessed by clicking a link posted by the instructor through e-Learning. The instructor will schedule the sessions and post the link to you earlier in the semester. Students can click on the link for office hour sessions and scheduled appointments.

The following [link](#) explains how to participate in Adobe Connect meetings/sessions. Adobe Connect only requires an internet connection, a web browser, and Adobe Flash Player version 10.1 or higher. Adobe Connect supports nearly any operating system including Windows, Macintosh, Linux and Solaris, as well as the most widely used browsers including Internet Explorer, Firefox, Safari, and Chrome. A headset with a microphone is needed to communicate with the instructors and the students attending the session.

ACADEMIC HONESTY POLICY

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

SOFTWARE USE

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

ADDITIONAL GAINESVILLE CAMPUS RESOURCES

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university’s counseling resources. The Counseling and Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance. The Counseling and Wellness Center is located at 3190 Radio Road (across from Bledsoe Drive).

- **For Emergencies: Dial 9-1-1**
- *UF Counseling and Wellness Center*, 3190 Radio Road, (352)392-1575, www.counseling.ufl.edu
- *Career Resource Center*, First Floor J. Wayne Reitz Union, (352) 392-1601, www.crc.ufl.edu
- *Crisis and Emergency Resource Center (CERC)*, Fourth Floor of Peabody Hall, (352) 392-1575 (ask for the CERC receptionist), <http://www.counseling.ufl.edu/cwc/cerc-crisis-and-emergency-services>
- *University Police Department*, Building 51, Museum Road. (352) 392-1111, <http://www.police.ufl.edu>

ONLINE COURSE EVALUATIONS

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

INSTRUCTOR EXPECTATIONS

EMAIL ETIQUETTE

Prepare emails as you would in a professional setting. The level of your communication is a direct reflection of your professionalism. To start, emails should have an appropriate subject, I prefer “SUR3103 – Subject of email.” Explain the purpose of the message using proper capitalization and punctuation. No text messages please. You can use Canvas or my ufl.edu address when sending me emails.

When emails are prepared correctly, I can normally respond within 1-2 business days and sometimes even on weekends. Please try to avoid last minute emails, as I might not be able to respond to you before the deadline of an assignment, quiz, or exam.

SUR 3103C SCHEDULE OF TOPICS – LECTURE SYLLABUS AND READING ASSIGNMENTS:

- Lec 1: Course Introduction. Written field notes. Read: Chap 1 (all), Chap 2, sec 6-11.
- Lec 2: Units and significant figures. Chap 2, sec 1-5.
- Lec 3: Theory of errors in observations. Chap 3: Read sec. 1-8, Browse sec. 9-21.
- Lec 4: Intro to Leveling. Read: Chap 4 (all).
- Lec 5: Leveling field procedures and computations. Read: Chap 5 (all).
- Lec 6: Distance measurement - taping. Read: Chap 6, sec. 1-14.
- Lec 7: Electronic distance measurement. Read: Chap 6, sec. 17-25.
- Lec 8: Angles, Azimuths, and Bearings. Read: Chap 7, sec. 1-9.
- Lec 9: Compass readings. Total Stations. Read: Chap 7, sec. 10-16; Read Chap 8, sec. 1-6.
- Lec 10: Horizontal and vertical angle measurement. Read: Chap 8: sec. 7-22
- Lec 11: Example problems using angles, azimuths, bearings, and compass readings.
- Lec 12: Traversing. Read: Chap 9 (all).
- Lec 13: Traverse computations. Read: Chap 10, sec. 1-6.
- Lec 14-15: Traverse adjustment. Read: Chap 10: sec. 7-17.
- Lec 16: Area: coordinate and DMD methods. Read: Chap 12 (all).
- Lec 17-18: The Global Positioning System (GPS) Intro and Principles. Read: Chap 13 (all).
- Lec 19: GPS operations. Read: Chap 14, sec. 1-2; Browse: Chap 14 sec. 3-7. Browse Chap 15.
- Lec 20: Data collectors. Read Chap 2, sec. 12-15.
- Lec 21: Mapping surveys. Read Chap 17, sec. 1-10, 12-13.
- Lec 22: Interpreting and drawing contours. (Review 17.5-17.8, 17.9.2).
- Lec 23: Mapping and AutoCAD intro. Read Chap 18 (all).
- Lec 24: Control surveys and Geodetic datums. Read: Chap 19 sec. 1-12, Browse sec. 13-14.
- Lec 25: State plane coordinates. Read: Chap 20 sec. 1-5, 8-8.1, 9-11; Browse rest of chapter.
- Lec 26: Boundary surveys. Read: Chap 21 (all).
- Lec 27: United States Public Land Survey System. Read: Chap 22 (all).
- Lec 28: Horizontal curves. Read: Chap 24: sec 1-4.
- Lec 29: Review and example problems.

SUR 3103C – LAB ACTIVITIES:

Lab 1 Introduction and Station Descriptions

Lab 2 Leveling (Field work grade)

Lab 3 Distances – Taping and Pacing (Field work grade) **QUIZ 1**

Lab 4 Distances – EDM (Total Station) (Field work grade)

Lab 5 Angle Measurement (Field work grade)

Lab 6 (Finish Angle Measurement) **QUIZ 2**

Lab 7 Traverse Adjustment

Lab 8 GPS Exercise

Lab 9 CAD Exercise **QUIZ 3**

Lab 10 Planimetric Mapping

Lab 11 Contour Mapping

Lab 12 Map Drafting **QUIZ 4**