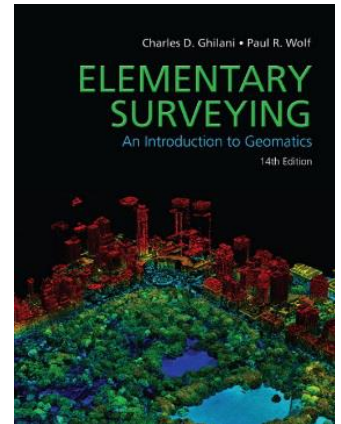


**SUR 3103C - Geomatics
Course Syllabus
Fall 2017**

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Office hours: 7th period Monday, Wednesday, Friday
(other times by appointment)

TEXT Elementary Surveying – An Introduction to Geomatics,
Ghilani and Wolf 14th Edition, Pearson Education, 2015



COURSE OVERVIEW: This course primarily covers plane surveying techniques, including measurement of angles, distances, and elevation differences. Also covered are the related techniques of data reduction for these fundamental measurements, the Global Positioning System, Topographic mapping, Earth-based coordinate systems, Boundary surveys, and Horizontal curves.

COURSE OBJECTIVES:

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

Student 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

GRADING Final grades for the course will be assigned based on the following point system

ITEM	POINTS
Quizzes: 4 quizzes @ 30 points each	120
Homework	50
Trigonometry Review	10
Station descriptions	10
Field Work Grade: 6 grades @ 25 each	150
Lab attendance: 12 sessions @ 5 each	60
Traverse Adjustment	30
GPS exercise	20
CAD exercise	20
Topographic Mapping Project	60
Field Book: note keeping grade*	20
Comprehensive Final Exam	150
TOTAL POSSIBLE POINTS	700

* each student is required to take field notes for at least one session

Final class grades will be curved, but will be roughly based on 90=A, 80=B, 70=C, 60=D. Plus (+) and minus (-) will be included as appropriate. For an explanation of the UF letter grade scale, see: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

FINAL EXAM The final exam for the course will be held at 10:00AM – Noon on Wednesday, December 13, 2017. The final exam is cumulative, covering the entire semester's topics. **Be sure to plan accordingly because there will be no provision for an early exam.**

QUIZZES During the term, certain labs will start with a quiz. The quiz will cover the subject material of the lectures corresponding to the following list. The quiz may also cover the reading assignment associated with that lecture. There is no provision for making up a missed quiz. Exceptions will be made only for extreme circumstances.

Quiz 1 – Lectures 1-6

Quiz 2 – Lectures 7-11

Quiz 3 – Lectures 12-19

Quiz 4 – Lectures 20-26

To get full credit for computational problems on 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.

ATTENDANCE Attendance of all labs is mandatory. Absence will result in zeros for the attendance and field work grade for that day. Excuses will rarely be accepted, and if so, at the sole discretion of the instructor. Your lab partners are counting on you!

LAB EQUIPMENT Most of the equipment you will use is expensive (particularly the total stations). Handle with extreme care!!

Academic Honesty

In 1995 the UF student body enacted an honor code (see link below) and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students.

<https://www.dso.ufl.edu/scer/process/student-conduct-honor-code>

Preamble: In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. Student and faculty support are crucial to the success of the Honor Code. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code.

The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code.

On all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

Student Responsibility. Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean, Student Honor Council or Student Conduct and Conflict Resolution in the Dean of Students Office.

Faculty Responsibility. Faculty members have a duty to promote honest behavior and to avoid practices and environments that foster cheating in their classes. Teachers should encourage students to bring negative conditions or incidents of dishonesty to their attention. In their own work, teachers should practice the same high standards they expect from their students.

Administration Responsibility. As highly visible members of our academic community, administrators should be ever vigilant to promote academic honesty and conduct their lives in an ethically exemplary manner.

(Source: 2011-2012 Undergraduate Catalog)

Homework submissions for this course may not be copied in part or in whole. While students are allowed to discuss concepts from the assignments with other students, all work must be independently produced.

This policy, along with the principles of the Student Honor Code, will be vigorously upheld at all times in this course.

SUR 3103C - 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 procedures and computations. Read: Chap 5 (all).
- Lec 6: Distance measurement - taping. Read: Chap 6, sec. 1-13
- Lec 7: Taping corrections. Read: Chap 6, sec. 14-16
- Lec 8: Electronic distance measurement. Read: Chap 6, sec. 17-25.
- Lec 9: Angles, Azimuths, and Bearings. Read: Chap 7, sec. 1-9.
- Lec 10: Compass readings. Total Stations. Read: Chap 7, sec. 10-16; Read Chap 8, sec. 1-6.
- Lec 11: Horizontal and vertical angle measurement. Read: Chap 8: sec. 7-22
- 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: United States Public Land Survey System (continued)
- Lec 29: Horizontal curves. Read: Chap 24: sec 1-4.

SUR 3103C – Lab activities

- Lab 1 Introduction and station descriptions
- Lab 1.5 Missed Lab Week due to Hurricane Irma
- 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) **QUIZ 2**
- Lab 6 (Extra week for angle measurement - DELETED)
- Lab 7 Traverse adjustment
- Lab 8 GPS exercise
- Lab 9 CAD exercise **QUIZ 3**
- Lab 10 Planimetric mapping (Field work grade)
- Lab 11 Contour mapping (Field work grade)
- Lab 12 Map drafting **QUIZ 4**

Fall 2017

Monday	Tuesday	Wednesday	Thursday	Friday
8/21	8/22 Lec. 1	8/23	8/24 Lec. 2	8/25
8/28 Lab 1	8/29 Lec. 3 Lab 1	8/30	8/31 Lec. 4	9/1
9/4 Labor Day	9/5 Lec. 5 No Lab	9/6	9/7 Lec. 6	9/8
9/11 Lab 1.5 - Irma	9/12 Lec. - cancelled Lab 1.5 - Irma	9/13	9/14 Lec. 7	9/15
9/18 Lab 2	9/19 Lec. 8 Lab 2	9/20	9/21 Lec. 9	9/22
9/25 Lab 3 Q1	9/26 Lec. 10 Lab 3 Q1	9/27	9/28 Lec. 11	9/29
10/2 Lab 4	10/3 Lec. 12 Lab 4	10/4	10/5 Lec. 13	10/6 Homecoming
10/9 Lab 5 Q2	10/10 Lec. 14 Lab 5 Q2	10/11	10/12 Lec. 15	10/13
10/16 Lab 7	10/17 Lec. 16 Lab 7	10/18	10/19 Lec. 17/18	10/20
10/23 No Lab	10/24 Lec. 19 No Lab	10/25	10/26 Lec. 20	10/27
10/30 Lab 8 Q3	10/31 Lec. 21 Lab 8 Q3	11/1	11/2 No Lecture	11/3
11/6 Lab 9	11/7 Lec. 22 Lab 9	11/8	11/9 Lec. 23	11/10 Veteran's Day Holiday
11/13 Lab 10	11/14 Lec. 24 Lab 10	11/15	11/16 Lec. 25	11/17
11/20 Lab 11	11/21 Lec. 26 Lab 11	11/22 Thanksgiving Holiday	11/23 Thanksgiving Day	11/24 Thanksgiving Holiday
11/27 Lab 12 Q4	11/28 Lec. 27 Lab 12 Q4	11/29	11/30 Lec. 28	12/1
12/4 No Lab	12/5 Lec. 29 No Lab	12/6	12/7 Reading Day	12/8 Reading Day
12/11	12/12	12/13 Final Exam 10:00am-noon	12/14	12/15