Three Rivers Community College

Survey I – CIV K 150
Syllabus

Fall 2012
Instructor; Donald W. Gerwick, P.E., L.S.

Class Location – B 107;
Times: Wednesday (Lecture) 5:00 pm – 7:45

Office: 205W – 205.5
Office Hours: M, 4:00- 4:45, T 4:00 – 5:30; W 4:00 – 4:45
Additional Days and Times by Appointment are Available

Text; **Elementary Surveying, An Introduction to Geomatics**, 13th edition
Charles Ghilani & Paul R. Wolf

Email dgerwick@trcc.commnet.edu or don@gerwickmereen.com

This course introduces the student to the proper use and care of surveying equipment used in making linear and angular measurements, including tapes, transits, theodolites, levels and total stations. This leads to the development of the basic principles of traversing as it relates to boundary surveying. Course outcomes will include the ability for students to use levels for differential leveling, and using a Total Station for measuring distances and angles of a traverse, as well as trigonometric leveling. Students will be able to complete mathematical calculations for traverse closures and adjustment as well as mathematical calculations for leveling.

Required for Course, text listed above and a basic calculator with trigonometric functions. Survey Field Book for Labs, engineering scale. Homework is outlined below; the instructor reserves the right to assign additional or alternate problems.

Chap. 1 – Introduction and overview of Surveying/Geomatics. Additional material will be covered in lecture to give a slightly more in depth review of surveying history than covered in the text.

Chap. 6 – Sections 6.1 through 6.13

Chap. 2 – Units, Significant Figures and Field Notes – All sections

Homework Chap 2 :   2.1 - 2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.10
Use the "long hand" method of converting the angles of 2.16 a. to decimals degrees. And 2.17, 2.19

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Chap. 3 – Theory of Errors in Observations – Sections 3.1 through 3.10

Homework Chap. 3 –   3.1 – 3.4

Quiz 1- Chap. 1 – 3; All lecture material and all noted sections of your text.

Chap. 4 - Leveling –Theory, Methods, and Equipment – Sections 4.1 through 4.5; Brief overview of remaining sections

HW Chap. 4 – 4.4, 4.5, 4.8, 4.12, 4.18, 4.29, 4.30

Chap. 5 – Leveling – Field Procedures and Computation – All sections

HW Chap. 5 – 5.1, 5.2, 5.6, 5.9, 5.12, 5.23, 5.35

Quiz 2 – Chap. 4 & 5 all lecture material and all noted sections of your text.

Chap. 8 - Total Station Instruments; Angle Measurements – Sections 8.1 to 8.5

HW Chap. 8 – Neatly, sketch and identify all elements of a Total Station, requires 2 views;

Chap. 6 – Distance Measurement – All remaining sections

HW Chap. 6 – 6.5, 6.6, 6.25, 6.31, 6.32, 6.35

Chap. 7 – Angles, Azimuths and Bearings – Sections 12.1 to 12.12 and 7.15 & 17.16

HW Chap. 7 - 7.3, 7.6, 7.8, 7.10, 7.13, 7.16, 7.30, 7.33

Chap. 8 - Total Station Instruments; Angle Measurements – Sections; 8.7 to 8.14 with brief discussion of other selected sections in lecture

HW Chap. 8 – 8.4, 8.9, 8.12, 8.21

Paper - Describe how the role of Surveying over the last 300 years in the U.S., the role it has played in the development of the country and what it's role will be into the 21st century. Due date to be assigned.

Quiz 3 – Chap. 6, 7, & 8 all lecture material and all noted sections of your text.

Chap. 9 - Traversing – All sections

HW Chap 9 – 9.2, 9.3, 9.9, 9.11, 9.15,

Chap. 10 - Traverse Computations – All sections

HW Chap 10 – Group 1; 10.1, 10.2, 10.6
 Group 2; 10.7, 10.8,
 Group 3; 10.25, 10.28, 10.29

Chap. 11 - Coordinate Geometry in Surveying Calculations – 11.1 to 11.5

HW Chap 11 – 11.1, 11.5, 11.7, 11.9

Quiz 4 - Chap. 9, 10 & 11, All lecture material and all noted sections of your text.

Chap. 12 - Area – 12.1 – 12.7; 12.9 – 12.11

HW Chap. 12 – 12.1, 12.3, 12.5, 12.8*, 12.11*,
   * Students will be given coordinate values for these problems, 12.11 should be solved
   by DMD Method

Chap. 23 – Construction Surveys – All Sections

HW Chap. 23 – 23.2, 23.8, 23.10, 23.15, 23.17, 23.27

Chap. 13 - GPS- the Global Positioning System – Introduction and Principles of
Operation – 13.1 – 13.3; 13.5-13.8, 13.10 – 3.11

HW Chap 13 – 13.1, 13.3, 13.4, 13.7, 13.8, 13.34, 13.37

Final Quiz   Chap 12, 13, & 23 All lecture material and all noted sections of your text.

Final Grade – The students final grade will be based on the weighted average of 5
quizzes (and 1 paper) taken during the semester which will account for 85% of your
grade. Assigned homework and class participation will make up the remaining 10 and 5%
respectively.

Home Work (HW) – Home work assigned on a Wednesday will be due on the
following Wednesday unless otherwise modified in class; Homework will be turned in at
the beginning of class. Students must SHOW ALL WORK FOR MATH RELATED
PROBLEMS. HW will be graded and returned at the following class. Home work will
receive a grade of 0, 1, 2, 3, or 4. As homework is a learning process grading will be
based largely on effort, with correct answers counting only as a secondary measure.

None turned in = 0
Minimal Attempt = 1
Moderate Attempt and Poor Results = 2
Moderate Attempt and Fair results = 3
Good Attempt and Largely Correct results = 4

Late home works, unless otherwise excused will be marked at 25% off (drop of one
numeric grade).

Quizzes – Students will allowed one side of one 8 1/2 x 11 sheet of paper for formulas and conversion factors only (no definitions or other written notes).

Students must have their **calculators, cell phones will not be allowed** as a substitute; failure to bring a calculator may result in lost points as many questions will be impossible to answer without one. Quizzes will be based on lecture material and all assigned sections of the text, and homework.

Quizzes will be assigned a value by the instructor; quiz grades will be the number of points earned on the quiz divided by the total value of the quiz.

Class Attendance is expected, although, while students will not be penalized for non-attendance they will be responsible for material covered in their absence. It will be the student's responsibility to determine what assignments that may have been missed.

Class Room Policies - Cell phones brought to class shall be off and out of site (no texting). Language and behavior that is disrespectful or disruptive to others is unacceptable; Students should refer to their Student Handbook for examples of such behavior as well additional school policies.

Academic Integrity – Unless indicated by specific assignments, or by the instructor for group projects, all work for assignments shall be that of the individual student. Cheating on quizzes or using the work of others without proper credit (plagiarism) for assignments, or other forms of academic dishonesty, as defined by the Student Handbook, is unacceptable. If, after evaluation of the potential infraction(s), consistent with the Student Handbook, a grade of "0" for the assignment may be assigned.

Disabilities – If you have a visible or hidden disability that may require classroom or test taking modifications you are encouraged to contact Student Services for assessment.