

Course Syllabus
CIV 150 Surveying I
CIV 151 Surveying I Lab

Instructor: Kevin D. Franklin, PLS
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Class Location: B 107

Class Time: Monday / Wednesday 1:00 – 3:45

Office Location: tbd Office Hours: By appointment

Required Text: *Elementary Surveying, An Introduction to Geomatics*, Ghilani & Wolf, 14th ed.

Required Materials: A basic (TI-30 recommended) calculator with trigonometric functions, surveyor's field book (or notebook), engineers scale, weather-appropriate clothing and closed-toe shoes for fieldwork. It is helpful, but not required, that you bring laptop computers or tablets to class.

Course Description: This course introduces student to the proper use and care of surveying equipment and the fundamentals of making linear and angular measurements. Equipment will include tapes, transits, theodolites, levels and total stations. The culmination of the theory and lab activities will be the performance and computation of a survey traverse. Students will prepare lab reports to summarize and document findings.

Note on Weather: The laboratory sessions are generally held outside. Therefore, lab and lecture sessions may be swapped as needed to take advantage of good weather and avoid being outside in bad weather. Therefore, it is expected that you will be prepared to work outside on any given day. Cold weather or light rain will not prevent us from being in the field.

Attendance: Attendance is critical to successful completion of the course. If you need to miss a class, you must notify the instructor in advance. Unexcused late homework, quizzes, or exams will not be accepted. Given the complex nature of the lab activities, there is no practical opportunity for a make-up.

Grading: The lecture course (CIV 150, 3 credits) has a separate grade from the lab (CIV 151, 1.5 credits).

The student's final CIV 150 grade will be based on three equally-weighted variables:

- 1) Weekly assignments will come from the textbook. Additional reading, research, and exercises will also be required.
- 2) Quizzes will be held throughout the semester on a regular basis to assess ongoing learning.
- 3) Exams There will be 3 mid-term exams.

The student's final CIV 151 grade will be based on the lab activities as follows:

- 1) Field Book (25%) – A surveyor must maintain a neat, well-documented field book. Students will receive instruction concerning field book methods and entries. Over time, the use of

electronic data collectors has automated portions of the documentation process but has not fully replaced traditional survey field books.

- 2) Lab Reports (50%) – Labs will be conducted on a weekly basis. Some labs will encompass more than one lab session. Upon completion of a lab activity, a report is due within 1 week.
- 3) Survey Traverse (25%) – In the closing weeks of the course, students will utilize the data collected during several lab sessions to prepare a Traverse Report. The format will be the same as for the other lab reports and will build upon the skills and computations learned throughout the course.

Lab Policies: If cell phones must be brought to lab, they shall be off and out of sight. No texting is permitted. Students must have a calculator separate from their cell phone. Language and behavior that is disrespectful or disruptive to others is unacceptable. Students should refer to the Student Handbook for additional important school policies.

Academic Integrity – Data compiled in the lab as well as results may be generated by a group of students working as a “field crew”. However, individual lab reports shall be the responsibility of each individual student. Using the work of others without giving proper credit for assignments (plagiarism), or academic dishonesty (as defined by the Student Handbook) is unacceptable. After evaluation of the infraction(s) in a manner consistent with the Student Handbook, a grade of “0” may be assigned.

Digication Statement – All students are required to maintain a learning portfolio in Digication that uses the Three Rivers Community College Template.

Course Schedule* –

*see weather note above

<i>Monday, January 25</i>	<i>Wednesday, January 27</i>
Course Overview, GIS, Safety	Taping and Pacing
<i>Monday, February 1</i>	<i>Wednesday, February 3</i>
Units, Significant Digits, Field Notes	Equipment and Setups
<i>Monday, February 8</i>	<i>Wednesday, February 10</i>
Accuracy, Precision, Error Theory	Intro to Total Stations
<i>Monday, February 15</i>	<i>Wednesday, February 17</i>
Angles, Distances, Pythagorean Theorum	Total Station Measurements
<i>Monday, February 22</i>	<i>Wednesday, February 24</i>
Exam 1	SIN, COS, and TAN Laws in Real Life
<i>Monday, February 29</i>	<i>Wednesday, February 7</i>

Points, Coordinates, COGO	Differential Leveling
<i>Monday, March 7</i>	<i>Wednesday, March 2</i>
Direct Problem, Inverse Problem	Three-Wire Leveling
<i>Monday, March 14</i>	<i>Wednesday, March 9</i>
Leveling Theory, Emergency Management	Trig Heighting, Remote Elevations
<i>Monday, March 21</i>	<i>Wednesday, March 23</i>
Spring Break - no classes	Spring Break - no classes
<i>Monday, March 28</i>	<i>Wednesday, March 30</i>
Leveling Procedures, Computations	Establish Control Points & Benchmarks
<i>Monday, April 4</i>	<i>Wednesday, April 6</i>
Exam 2	Traverse Computations (theoretical traverse)
<i>Monday, April 11</i>	<i>Wednesday, April 13</i>
Control Point Networks	Field Traverse 1
<i>Monday, April 18</i>	<i>Wednesday, April 20</i>
Horizontal and Vertical Angle Collimation	Field Traverse 2
<i>Monday, April 25</i>	<i>Wednesday, April 27</i>
Angle Balancing, Compass Rule	Field Traverse 3
<i>Monday, May 2</i>	<i>Wednesday, May 4</i>
Probability & Statistics, Least Squares	Traverse Computations (field traverse)
<i>Monday, May 9</i>	<i>Wednesday, May 11</i>
Cartography, Navigation, Review	tbd
<i>Monday, May 16</i>	
Exam 3	