Course Syllabus
Geomatics I – Spatial Analysis w/ lab
ENV K163

Instructor: Kevin D. Franklin, MS, PLS
Email: kfranklin@trcc.commnet.edu
Class Location: B116 / B107
Class Time: 2:30 – 4:36
Office Hours: By appointment

Registrar's Course Description:
This course will provide students with the fundamentals of the discipline of Geomatics, an amalgamation of the sciences of geography, measurement, and mapping. Coursework will include exercises utilizing geographic information systems (GIS) software, global navigation satellite systems (GNSS, commonly GPS) mobile units, and more traditional measurement surveying tools. Students will be introduced to the concept of three-dimensional modeling, and learn to develop simple and complex spatial models for multifaceted environmental processes and relationships.

Required Materials:

- No textbook for this class. Readings will be distributed on an ad hoc basis.
- You are encouraged (but not required) to download an academic version of Carlson Survey to your personal device for a period of 1 year for $100
- Basic calculator (Texas Instruments TI-30Xa highly recommended ≈ $9)
- Bound field book (spiral notebook is fine)
- Basic drafting tools (pencil, compass, scale or ruler)
- Portable digital storage device
- Weather-appropriate clothing and footwear for outdoor labs

Grading:

- 3 midterm exams, 13.33% each
- Assignments, 60% total

Attendance:
Attendance is mandatory. If you need to miss a class, you are still responsible for the lab and lecture content and the assignments. Given the twice-per-week meeting schedule, missing multiple (3 or more) class sessions is incompatible with successful completion of the course.

Schedule: Please see the tentative lab schedule which follows. Note that the lab schedule is subject to change to accommodate field activities, weather conditions, and other unforeseen events.

Late Work: Late work is not accepted without prior approval from the instructor. Students are expected to immediately contact the instructor if they cannot attend an exam or will not be able to turn in an assignment on time to avoid getting a "0" for that assignment.

Academic Integrity: Students will be responsible for submitting all assignments and completing all exams independently. Using the work of others without giving proper credit (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.

Lab Policies: Cell phones and other electronic devices must be kept off and out of sight. No texting is permitted. Students are expected to 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.

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.

Digication Statement: All students are required to maintain a learning portfolio in Digication that uses the Three Rivers Template. Through this electronic tool, students can see their own growth in college-wide learning. The student can keep and continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select random works to improve the college experience for all. No names will be attached to the assessment work; it will remain **private and anonymous** for college improvement purposes. The instructor will indicate recommended Digication assignments.

BOARD OF REGENTS FOR HIGHTER EDUCATION AND CONNECTICUT STATE COLLEGES AND UNIVERSITIES POLICY REGARDING SEXUAL MISCONDUCT REPORTING, SUPPORT SERVICES AND PROCESSES POLICY: Statement of Policy for Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus: "The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence."

UNITED STATES DEPARTMENT OF EDUCATION AND OFFICE OF CIVIL RIGHTS TITLE IX STATEMENT OF POLICY: "Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in education programs and activities in federally funded schools at all levels. If any part of a school district or college receives any Federal funds for any purpose, all of the operations of the district or college are covered by Title IX.

Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students (as well as other persons) at recipient institutions are protected by Title IX – regardless of their sex, sexual orientation, gender identity, part-or full-time status, disability, race, or national origin-in all aspects of a recipient's educational programs and activities."

If any student experiences sexual misconduct or harassment, and/or racial or ethnic discrimination on Three Rivers Community College Campus, or fears for their safety from a threat while on campus, please contact Edward A. Derr, the Diversity Officer and Title IX Coordinator:

Edward A. Derr
Title IX Coordinator and Diversity Officer
Admissions Welcome Center * Office A116
574 New London Turnpike, Norwich CT 06360
860.215.9255 * EDerr@trcc.commnet.edu

Tentative Schedule (lab schedule is subject to change to accommodate field activities, weather conditions, and other unforeseen events)**:**

Tuesday, August 27	What is Geomatics, course goals and outcomes, review syllabus and key terminology
Thursday, August 29	Establishment of pace length, pacing lab, sketch maps
Tuesday, September 3	Accuracy, precision, number systems and coordinate systems
Thursday, September 5	Distances: review of critical units, conversion factors, taping lab
Tuesday, September 10	Angles: review of critical units, conversion factors, introduction to total stations
Thursday, September 12	Total station lab #1: Law of cosines exercise (missing line measurement)
Tuesday, September 17	Introduction to global navigation satellite systems (commonly, GPS)
Thursday, September 19	GPS lab #1: How accurate is a smartphone?, NGS tools for coordinate conversions
Tuesday, September 24	Fieldbooks, notes, sketches, control points and benchmarks
Thursday, September 26	Exam 1, Total station lab #2: Mapping sideshots
Tuesday, October 1	Total station lab #2
Thursday, October 3	Intro to COGO: the "Direct Problem" and the "Indirect Problem", spreadsheet applications for data reduction
Tuesday, October 8	GPS lab #2: Real-Time Networks
Thursday, October 10	Adjustments of field data, Least Squares concept
Tuesday, October 15	Total station lab #3: Control point networks (traversing)
Thursday, October 17	Leveling aka Heighting
Tuesday, October 22	Reading Day - college open, classes not in session
Thursday, October 24	Differential Leveling lab #1
Tuesday, October 29	Lab data reduction, spreadsheet applications
Thursday, October 31	Differential Leveling lab #2
Tuesday, November 5	Exam 2, Environmental and property boundaries
Thursday, November 7	Online boundary research, use of geographic information systems (GIS)
Tuesday, November 12	Boundary lab
Thursday, November 14	Introduction to global navigation satellite systems (commonly, GPS) Exam 2
Tuesday, November 19	GIS lab
Thursday, November 21	Remote Sensing
Tuesday, November 26	Remote Sensing Lab
Thursday, November 28	Thanksgiving Recess - classes not in session
Tuesday, December 3	Remote Sensing Lab #2
Thursday, December 5	Datums, Reference Frames and Coordinate Systems
Tuesday, December 10	Elevation Transfer Lab (stormwater system modeling)
Thursday, December 12	Geomatics jobs, professional licensure, Exam 3