Instructor Information:
Instructor(s): Mark Rehwaldt
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Office(s): EN 1054 South Door
Office Hours: TBA

Course Information:
Delivered and scheduled through the Outreach Credit Program

Prerequisites:
CE 2070 or LS 2010

Course Description:
Advanced topics in surveying computations and procedures, including traverse error analysis, topographic surveying, mapping, astronomical observations, coordinate geometry applications, introduction to geodesy, and state plane coordinates.

Disability statement:
If you have a physical, learning, sensory or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with, and provide documentation of your disability to University Disability Support Services (UDSS) in SEO, room 330 Knight Hall.

Objectives/Outcomes/Standards:
The objective of this class is to take some of the mystery out of the calculations taking place in data collectors and software used by the surveying industry. Hopefully the student will get a feel for some of the calculations being performed, be able to recognize good vs. not good data from their equipment or software and become less dependent on the data collector or software being used. Direction from a solar or a Polaris observation will be introduced to enable the student to check direction obtained from other methods if necessary.

Text(s) and Readings:
Elementary Surveying, An Introduction to Geomatics, Gilani and Wolf, Pearson/Prentice Hall, 13th Addition.

Course Requirements/Assignments:
The course consists of 20 units. Each unit consists of a video lecture, a homework assignment, and weekly access to the instructor via a teleconference call where the students can discuss any questions or concerns they have.

Grading Standards:
The final grade will be composed of Homework - 100 points, Midterm Exercise - 100 points, final exercise - 75 points, a proctored final exam – 75 points, for a total of 350 points. Grading will be based on A = 100% - 90%, B = 89% - 80%, C = 79% - 70%, D = 69% to 60%, F > 60%.
Attendance/Participation Policy:
Attendance and class participation is not mandatory, but it is highly encouraged. I reserve the right to be grouchy if a question was answered during a teleconference you did not participate in and then you ask the same question at a later time.

Academic Honesty:
The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated [from the UW General Bulletin]. Teachers and students should report suspected violations of standards of academic honesty to the instructor, department head, or dean. Other University regulations can be found at: http://uwadmnweb.uwyo.edu/legal/universityregulations.htm

Course Outline:
Topics:
- Theory of errors in observations & propagation of errors
- Balancing EDM errors with angular errors
- Locating blunders or errors in traverses
- Mapping surveys
- Coordinate Geometry
- Solar & Polaris Observations
- Two dimensional coordinate transformations
- Shifting vertical data bases
- Area
- Meridian convergence & spherical excess
- Public Land Survey System – Mean weighted bearings and Indexing
- Reducing distances to the ellipsoid and then to grid

The instructor may make changes to the syllabus as the course proceeds. If necessary, these changes will be announced in class. Substantive changes made to the syllabus shall be communicated in writing to the students.