Instructor Information:
Instructor(s): Mark Rehwaldt, P.E./L.S.
Phone(s): (307) 766-1700 office
(307) 761-1814 cell
Office(s): EN 1054, South Door
E-mail(s): mrehwald@uwyo.edu
Office Hours: 9:00–10:30 am Tu & Th

Prerequisites: CE 2070 Engineering Surveying and a working knowledge of spread sheets or the consent of the instructor.

Note: some of the calculations are repetitive. I have found that students with the ability to solve the repetitive calculations with a spreadsheet tend to do better. The calculations can be accomplished with a scientific calculator, but they are tedious.

Course Description:
Laying out of super elevation and circular, parabolic, and spiral curves; the difference between highway and railway horizontal curve geometry; offsets to spiral curves as boundaries; area and volumes of earthwork.

Disability Statement:
If you have a physical, learning, 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, (307) 766-6189, TTY: (307)766-3073.

Objectives/Outcomes/Standards:
The student will become familiar with the formulas, theory, and calculations associated with circular (reverse and compound), parabolic and spiral curves, super elevation, area (end area) and volume. The students perform the calculations by hand using a scientific calculator, or spread sheet macros or calculator programs they have written themselves. The intent is that the student will be able to perform all calculations and not be dependent on “software”.

Text(s) and Readings:
Elementary Surveying, An Introduction to Geomatics, Gilani and Wolf, Pearson/Prentice Hall, 13th Addition.
The text is recommended, but not required.

Course Requirements/Assignments:
The course consists of 16 units. Each unit consists of a video lecture, a homework assignment, and a teleconference call where the students can discuss any questions or concerns with the instructor.

Grading Standards:
The final grade will be composed of Homework - 100 points, Midterm Exercise - 100 points, Final Exercise 75 points and Final Exam - 75 points for a total of 350 points. Grading will be based on A = 100% - 95%, B = 95% - 90%, C = 90% - 77%, D = 77% to 68%, F > 68%. Please note that the grades in the grade book will NOT be properly weighted. I will calculate your grade as follows;
Final Score = {(Homework points / 1.6) + Midterm score + Final Exercise Score + Final Exam Score} / 3.5
Please note that I do NOT round up.
I reserve the right to dock late homework. I do not have a formal policy on deductions for late homework, but the later it is, the more I tend to deduct. For this class, on time is within a week of the due date. Late is two to three weeks after the due date. I seriously deduct points when homework one is turned in after the due date for the midterm exam.

When reviewing your grades in the course platform grade book, please calculate the homework points as I have described above. The grades in the course platform grade book are NOT properly weighted, they are NOT your final grade.

**Attendance/Participation Policy:**
Attendance and class participation is not mandatory, but it is highly encouraged. I will have the teleconferences recorded and you may listen to them on YouTube. I will take roll at every teleconference. The Registrar requires that I report the last time a student has attended the class if the student earns a final grade of a “D” or “F”. The attendance records are only for the purpose of correctly reporting the last date of attendance to the Registrar if required.

**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://uwadminweb.uwyo.edu/legal/universityregulations.htm

**Course Outline:**
Topics:
- Circular curves, arc definition – determination of coordinates of the curve from the radius point and point of curvature
- Circular curves, chord definition – determination of coordinates of the curve from the radius point, the point of curvature and moving up on the station
- Compound and reverse circular curves, arc and chord definition
- Spiral curves
- Combining spiral curves
- Superelevation
- Calculation of area (end area)
- Volume calculations

**Teleconference Dates:**
January 14, 21, 28
February 4, 11, 18, 25
March 4, 11, 25
April 1, 8, 15, 22, 29
Homework:

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The date of the proctored Final Exam will be determined during the first teleconference. I would prefer the week of April 14 – 18, 2014.

1. I understand that most of you are working and that work and family will be competing for your time along with the homework. If you can stay caught up with the homework it will work out best for all of us. The homework is due on Monday. I have tried to give you two weekends per assignment with the exception of Unit One. I will not accept work that is more than 5 weeks late. All homework, exercises, and the final exam must be turned in no later than Noon, December 18, 2012. It is my policy to not grant incompletes, students don't complete the work.

2. Homework is to scanned and submitted as an attachment to an email sent to mdrclass1@yahoo.com. Please briefly state what you are sending me. I will send a reply email after I have printed your homework. Do not mix questions with homework submittals. A student sent a mid-term exercise and a question, I answered the question, but did not see the mid-term. I generally only check this address to download homework. If you don't have access to a scanner, please make a copy of your homework and send it via U.S. Mail to: Mark Rehwaldt, P.O. Box 893, Laramie, Wyoming 82073-0893. I will return homework on eCompanion in the drop box.

3. If you have questions which come up, please email them to me at mprehwald@uwyo.edu or call me at either (307) 766-1700 office or (307) 761-1814. I will check that email at least once per day Monday through Friday. If you run into something during the weekend my cell number is (307) 761-1814, PLEASE CALL. I may not have class materials handy, but I will do the best I can.
4. There will be some serious number crunching. For each problem I will require two sets of numbers to be crunched by hand and the rest can be done on a spreadsheet. Check that your hand work matches the spread sheet. You must write the computer code or the spreadsheet macro yourself, i.e. your work. Solutions from a commercial survey package are not acceptable. Please print out the spread sheet, scan it, and attach it to your homework.

5. I will return homework to you in the course platform. I will return On-Campus homework both in the drop box and in the “to be picked up basket” near in my office. It is your responsibility to check the grades and the returned home work in the eCompanion gradebook. If a homework is missing or a grade is incorrectly entered, please let me know.

6. The final exam will be a proctored exam.

Teleconference Policies:

1. Please eliminate background noises at your site, office, or home. These noises are disruptive to the class.
2. To comment please state your name before you comment. Questions and comments are welcome.
3. Land lines are preferred. Cell phones work, but the lost connection rate tends to be higher.

The instructor may make changes to the syllabus as the course proceeds if necessary, these changes will be announced in class.