EGR 286
ENGINEERING SURVEYING II

Course Description
This course covers land surveying and boundary laws, public land surveys, topographic mapping, horizontal and vertical curves, lot calculations, and engineering astronomy.
3 Cr (3 Iec/pres, 0 lab, 0 other)

Course Focus
This course is further discussion of the fundamentals of plane surveying. The course covers a variety of surveying techniques and surveying uses in civil engineering and construction.

Text and References
Published: 2008

Course Goals
The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives.

1. Discuss types of mapping surveys
2. Understand survey control
3. Read contour lines
4. Produce contour lines
5. Understand TIN automated contour production
6. Review GPS science
7. Discuss GPS error correction schemes
8. Design GPS observation session
9. Discuss least squares principals
10. Review weighting in least squares
11. Plan building stakeout
12. Calculate invert elevations on piping
13. Compute trench cuts
14. Describe horizontal highway alignment
15. Compute horizontal curve parameters
16. Generate horizontal curve stake points
17. Place horizontal curve through a point
18. Locate spiral curve stations
19. Relate highway vertical alignment
20. Generate vertical curve stake points  
21. Place vertical curve through a point  
22. Compute vertical curve high/low point  
23. Estimate earthwork area by cross section method  
24. Measure earthwork volume by end area  
25. Compute slope intercepts  
26. Discuss earthwork distribution analysis  
27. Compute limit of economic haul  
28. Analyze mass haul diagram  
29. Discuss photogrammetric survey methods  
30. Measure ground distance from aerial photo  
31. Compute heights/elevation by relief displacement  
32. Plan photogrammetric survey  
33. Discuss stereoscopic parallax  
34. Compute ground coordinates from parallax  
35. Find ground elevations from parallax  
36. Discuss astronomic observation terminology  
37. Understand parameters of celestial body apparent movement  
38. Compute refraction errors in astronomic observations  
39. Discuss parallax errors in astronomic observations  
40. Find universal time  
41. Discuss local hour angle calculations  
42. Compute azimuth from solar observation  

**Student Contributions**  
Each student will spend approximately 2.5-5 hours per week preparing for class and completing assignments weekly and will be in class on time.  
Each week students will complete and turn in assignments as specified. In addition, quizzes are to be completed as assigned. Students will also complete a final exam to demonstrate their knowledge of the material. All cell phones and pagers must be silenced during class.  

**Course Evaluation**  
The grade scale is as follows:  
90 – 100 = A  
80 – 89 = B  
70 – 79 = C  
60 – 69 = D  
Below 60 = F  

Course grades will be determined from the following weighting scheme:  

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance/Notebook Review/Homework completion</td>
<td>20%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>60%</td>
</tr>
<tr>
<td>Final</td>
<td>20%</td>
</tr>
</tbody>
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**Course Schedule**  
The class meets for 2.75 lecture/presentation hours per week. Course content will be taught in the order that the content goals are presented in the syllabus.
ADA Statement
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

Academic Misconduct
There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the TCL Student Handbook, the Division Office, and the Learning Resources Center.

Attendance
The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

- Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.

- Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.

- Reinstatement requires the signature of the division dean.

In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student's responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.

When a student exceeds the allowed absences; the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance or under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.

A copy of TCL’s STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

Hazardous Weather
In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLHV 101.1, WSOK 1230 AM, WAEV 97.3, WTOC TV, WTGS TV, WJWJ TV, and WSAV TV. Students,
faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp

**Emergency Text Message Alert**

Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on “emergency Text Alert at TCL” and fill out the form or go to www.tcl.edu/textalert.asp