607-174
Land Surveying - Data Processing

2 Cr
Fall - 2008

Course Description
This course is designed to supplement the regular land surveying class with the advanced data processing skills required by full time surveyors.

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Office Hours: Posted outside CATI 201
# Tentative Class Calendar – Subject to change

<table>
<thead>
<tr>
<th>WK</th>
<th>Date</th>
<th>Material Covered</th>
<th>ASSIGNMENT(S) DUE</th>
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<tbody>
<tr>
<td>1</td>
<td>EDIT</td>
<td>Introduction</td>
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<td>2</td>
<td></td>
<td>Traverse Computations Ch. 10, and review of 3-wire level lab.</td>
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<td>3</td>
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<td>Cont. of traverse computations.</td>
<td>3- wire leveling lab</td>
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<td>4</td>
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<td>Coordinate Geometry in Surveying, Ch 11</td>
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<td>5</td>
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<td>Cont. of coor. Geometry</td>
<td>Adjustment of the Level Loop lab</td>
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<td>6</td>
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<td>Area Calculations, Ch. 12</td>
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<td>7</td>
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<td>Area cont.</td>
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<tr>
<td>8</td>
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<td>Datums, plans, and Survey Control, Ch. 19</td>
<td>Remote Elevation Determination by Law of Sines lab.</td>
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<td>9</td>
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<td>Datums cont.</td>
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<tr>
<td>10</td>
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<td>Datums cont.</td>
<td>Compass Rule Adjustment of Traverse in course 607-174 lab. (Using Excel only.)</td>
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<tr>
<td>11</td>
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<td>The State Plane Coordinate System, Ch. 20</td>
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<td>12</td>
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<td>State Plane cont.</td>
<td>State Plane Coordinates- translation from relative ground system to SP lab.</td>
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<td>13</td>
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<td>State Plane cont.</td>
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<td>Review</td>
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## Class Competencies

1. Identify errors in measurements.
2. Identify errors in taping.
3. Balance a level loop.
4. Identify differential leveling techniques.
5. Compute angular Balance a traverse.
6. Demonstrate proficiency in Calculating in coordinate geometry.
7. Identify sources of error in boundary surveys.
8. Demonstrate proficiency in determining precision of measurements, and calculating error of the mean.
9. Use the compass role to adjust traverse coordinates with the aid of Excel only.
10. Rotate the bearings of a traverse.
11. Calculate area by coordinates.
12. Analyze the different horizontal and vertical datums and the relationship between the datums.
13. Conduct a three-wire leveling loop, and distribute error via distance of benchmarks along the loop.
14. Determine the area a traverse by the coordinate method.
15. Determine the area of any closed figure.
16. Use the Sine law and trigonometric leveling to determine two water storage tower elevations from only field horizontal and vertical angle measurements.
17. Calculate corrections for curvature and refraction.
18. Demonstrate proficiency in using state plane coordinates and converting from ground to grid coordinates.
Textbook & Required Equipment


Class Delivery and Procedures

1. (edit per instructor preferences)
2. This course is being delivered via the NODAL Distance Delivery method, a multi-engineered delivery method utilizing accelerated/brain-based learning techniques. There will be traditional lecture/lab presentations and information delivered and evaluated through various multimedia formats including, but not limited to, VoIP, Camtasia, BlackBoard, and the internet.
3. Internet access is required.
4. Extensive work outside of class is required.
5. Group discussion and class participation is required. The objective is to stir interaction, expand views, and develop a broader understanding of the subject material. In the process, focus will be given to developing the student’s communication skills.
6. Homework Format for turned in work
   a. Cover Page
      i. Engineering Tech Wing Logo
      ii. Class name
      iii. Student name
      iv. Homework ID
      v. Date
      vi. Description
   b. All 2d work shall be printed to scale.
   c. All 3d work should be printed to fit the page.
   d. All hand written work shall be in block lettering.
   e. All homework shall be submitted via pdf format in Blackboard, unless otherwise required by the instructor. It is the responsibility of the student to scan or produce the homework in a pdf format.
7. All preps and homework shall be completed and submitted prior to the start of the respective classes when due. Any prep quizzes associated with a given prep are also to be finished prior to the start of class. When class begins, the prep quizzes due that day will no longer be available.

Course Grading

- Breakdown (edit per instructor)
  o 100% - Class Participation
  o 100% - Final
  o 100% - Projects

- Final Grade Percentages
  o A 90%-100%
  o B 80%-89.99%
  o C 70%-79.99%
  o D 60%-69.99%
Class Rules and Regulations
1. Students shall conduct themselves in a professional way that is respectful to everyone. This includes being present in the classroom before the start of class.
2. Communication, including written, verbal and email, shall be conducted in a professional matter.
3. Students shall not interrupt class in any way with cell phones, pagers, music players, laptops and other devices. Such devices shall be tuned off. Students are not permitted to work on assignments during lectures or presentations.
4. Class attendance is mandatory and part of your participation grade. If you are going to be absent from class you must call or email the instructor before the start of the scheduled class time to be considered excused. It is the students responsibility to obtain from fellow students any notes, information, assignments, and anything else provided during the missed class(es).
5. Late work will not be accepted (projects, homework, quizzes, in-class assignments). Major exams (mid-terms, finals) will be available for three business days following the original exam date for make-up. After three business days, the grade will be marked as a 0.
6. Plagiarism in any way shape or form is not acceptable and will not be tolerated.

Special Needs
If you have any special educational needs or concerns, please contact your classroom instructor or the Special Needs Instructor:

CATI
Peggy Jude judep@gtc.edu or 619-6500
Linda Mahoney mahoney1@gtc.edu or 619-6500
Leslie Utech (Deaf/Hard of Hearing Services) utechl@gtc.edu or 564-2564 Voice / 564.2206 TTY

Elkhorn
Pat Harkness harknessp@gtc.edu or 741-8348
Sue Stokes-Nelson stokes-nelsons@gtc.edu or 741-8420
Alyson EU Sanchez (Deaf/Hard of Hearing Services) sancheza@gtc.edu or 741-8492 TTY/VP

Blackhawk
608•757•7796 – ask for a special needs counselor.
- A wide range of support services and accommodations are available, including academic and technical program adaptations, which can help you to reach your goals.
- Included among the services offered are assistance developing educational plans and various physical equipment that can assist in the learning process

Student Handbook
If you have any questions regarding potential disputes and the dispute resolution process, please consult the student handbook for details.

Class Core Abilities
Gateway believes students need both technical knowledge and skills and core abilities in order to succeed in a career and in life. The following nine core abilities are the general attitudes and skills promoted and assessed in all Gateway programs; those followed by an asterisk are promoted and assessed in this course:
  a. Act responsibly
  b. Communicate clearly and effectively
  c. Demonstrate essential computer skills
  d. Demonstrate essential mathematical skills
  e. Develop job-seeking skills
  f. Respect self and others as members of a diverse society
  g. Think critically and creatively
  h. Work cooperatively
  i. Value learning