Instructor: Binod Tiwari, Ph.D.  
Email: btiwari@fullerton.edu  
Beena Ajmera  
Email: beenaajmera@csu.fullerton.edu  
Office: E-419  
Class Meeting: W 13:00 – 15:45  
Phone: (657) 278-3968  
Class Room: E-011/E-45  
Fax: (657) 278-3916  
Units: 1

Co-requisite  
EGCE 214  
Students registered for this course should register for co-requisite course too. During the semester, the department will verify the co-requisite requirements. If any student has completed the co-requisite course at another school and it is transferable, please submit appropriate documents to the department secretary. Otherwise, their name will be deleted from the class list at any time during the semester.

Text Book  
- *Engineering Survey Field-book*

Reference Materials  
- *Handouts, website URLs, visuals, and other materials* will be provided during class or posted on Blackboard.  
- *Surveying with Construction Applications* by Barry F. Kavanagh, Pearson (2007)  

Office Hours  
*Monday 11:00 – 13:00  Tuesday 13:00 – 15:00*  
As long as the office door is open, please feel free to walk in and consult. However, phone and email appointments are encouraged.

Course Description  
Field practice for measurement of distance, difference of elevation, and horizontal and vertical angles using tapes, EDM, automatic levels, theodolites, total stations, and Global Positioning System (GPS)

Course Learning Objectives  
This course will provide the students with sufficient guidance and resources to learn the fundamentals of surveying and their application in the real world problems. Upon completion of this course, students will be able to:  
- Understand the uses and operations of engineering measuring instruments such as tape, EDM, total station, and GPS.  
- Draw longitudinal and cross sections using distance and elevation information.  
- Compute area using traverse data.  
- Prepare topographical maps.  
- Set highway curves.  
- Increase the presentation skill and prepare a professional map using the survey information.
Understand the basic operations of GPS.

**Topics Covered**
- Taping and Distance Measurement
- Leveling
- Horizontal Angle and Distance Using Theodolite
- Use of Total Station
- Traversing
- Topographic Surveying with total station and GPS

**Program Educational Objectives**
The educational objectives of the program are as follows:

A) Technical Growth: Graduates will be successful in modern engineering practice, integrate into the local and global work force, and contribute to the economy of California and nation.

**Assessment of Student’s Learning**
The effect of this course on student’s learning ability will be assessed according to the following criteria:
- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to communicate effectively.
- An ability to use techniques, skills, and modern engineering tools necessary for engineering practice.

**Laboratory Reports and Other Assignments**
Students are required to submit a report of the lab works conducted in each week. Report is due at the beginning of the class in the following week. There will be no credit for the late submission, unless accompanied with a university approved excuse. Lab reports should be prepared according to the report format and guideline provided by the instructor. Quality of presentation, technical writing quality, summary and conclusion, and technical information presented in the report are the major factors for the evaluation of the report. Writing and sketches should be neat. Students are required to make a PowerPoint presentation of one of the assigned projects in a group. Members of a group will be assigned in the beginning of the lab works.

**Scheduled Exams**
There will only be the final exam for this course. The final exam will be comprehensive and will include the contents covered in the entire class.

**Grading Policy**
The final letter grade will be computed using the following criteria:
- Lab Reports 40%
- Class Participation and Lab Safety 20%
- Project Report and Presentation (May 12, 2010) 20%
- Final Exam (May 17, 2010; 14:30 -16:20) 20%

**Letter Grades**
- A⁺ (> 97%)
- A (93 – 96.9%)
- A´ (90 – 92.9 %)
- B⁺ (87 – 89.9%)
- B (83 – 86.9%)
- B´ (80 – 82.9 %)
- C⁺ (77 – 79.9%)
- C (73 – 76.9%)
- C´ (70 – 72.9 %)
- D⁺ (67 – 69.9%)
- D (63 – 66.9%)
- D´ (60 – 62.9%)
- F (< 60%)
Honor Code

- “California State University, Fullerton's Honor Code” explained in UPS 300.021 applies to all works performed in this class including homework, quizzes, and examinations. Students should strictly follow those codes.
- This is a professional course. A learning environment will be created in each class for motivated students; therefore professional conduct is expected of all participants. Professional conduct extends to use of cell phones, personal computers, iPods and PDAs during lecture. Students violating such professional conducts are subject to expulsion from the class.
- Students should strictly follow the safety regulations mentioned by the instructor. Students violating the safety regulation will not be allowed to conduct the lab on that particular day and will be counted as absent.

Drop Policy

The Spring 2010 Schedule contains the University Regulations and Deadlines for dropping this course. Students should note that the department stamp and/or department chair’s signature is also required in addition to instructor’s signature to drop the course.

Students With Special Needs

Students who need adaptations or accommodations because of a disability (e.g. learning, attention deficit disorder, psychological, physical, etc.), or have emergency medical information to share with the instructor, or need special arrangements in case the building must be evacuated, are requested to make an appointment to discuss their needs with the instructor during the first week of classes.
<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Topic/s</th>
<th>Section in Textbook</th>
<th>Due Report*</th>
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<tbody>
<tr>
<td>1</td>
<td>January 27</td>
<td>Course Introduction</td>
<td>Handout</td>
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<td>2</td>
<td>February 3</td>
<td>Field Reconnaissance</td>
<td>Handout</td>
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<td>3</td>
<td>10 March</td>
<td>Distance Measurement with Tape, M. Wheel and Pacing</td>
<td>3</td>
<td>Report #1</td>
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<td>4</td>
<td>17 March</td>
<td>Differential Leveling</td>
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<td>Report #2</td>
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<td>5</td>
<td>24 March</td>
<td>Differential Leveling</td>
<td>2</td>
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<td>6</td>
<td>March 3</td>
<td>Angle Measurement with Theodolite and Total Station</td>
<td>4/7</td>
<td>Report #3</td>
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<tr>
<td>7</td>
<td>10 March</td>
<td>Traverse Surveying</td>
<td>4/7</td>
<td>Report #4</td>
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<td>17 March</td>
<td>GPS Survey</td>
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<td>24 March</td>
<td>Topographic Surveying with total station</td>
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<td>Report #6</td>
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<td>10</td>
<td>March 29 – April 4</td>
<td>Spring Recess</td>
<td>No Class</td>
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<td>11</td>
<td>April 7</td>
<td>Topographic Surveying with total station</td>
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<td>Report #7</td>
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<td>12</td>
<td>14 April</td>
<td>Topographic Surveying with total station</td>
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<td>Report #8</td>
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<td>13</td>
<td>21 April</td>
<td>Topographic Surveying with GPS</td>
<td>9</td>
<td>Report #9</td>
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<tr>
<td>14</td>
<td>28 April</td>
<td>Practice on GIS Software</td>
<td>10 &amp; Handout</td>
<td>Report #10</td>
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<tr>
<td>15</td>
<td>May 5</td>
<td>Preparation of Topographic Map with Hand and GIS</td>
<td>10 &amp; Handout</td>
<td></td>
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<tr>
<td>16</td>
<td>May 12</td>
<td><strong>PROJECT PRESENTATION and Final Exam Review</strong></td>
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**May 17 (14:30 – 16:20)**  
Final Exam
Emergency Procedures Notice to Students

The safety of all students attending California State University Fullerton is of paramount importance. During an emergency it is necessary for students to have a basic understanding of their personnel responsibilities and the University’s emergency response procedures. In the event of an emergency please adhere to the following guidelines

Before an emergency occurs-

1. Know the safe evacuation routes for your specific building and floor.
2. Know the evacuation assembly areas for your building.

When an emergency occurs-

1. Keep calm and do not run or panic. Your best chance of emerging from an emergency is with a clear head.
2. Evacuation is not always the safest course of action. If directed to evacuate, take all of your belongings and proceed safely to the nearest evacuation route.
3. Do not leave the area, remember that faculty and other staff members need to be able to account for your whereabouts.
4. Do not re-enter building until informed it is safe by a building marshal or other campus authority.
5. If directed to evacuate the campus please follow the evacuation routes established by either parking or police officers.

After an emergency occurs-

1. If an emergency disrupts normal campus operations or causes the University to close for a prolonged period of time (more than three days), students are expected to complete the course assignments listed on the syllabus as soon as it is reasonably possible to do so.
2. Students can determine the University's operational status by checking the University's web site at http://www.fullerton.edu, calling the University's hotline number at 657-278-0911, or tuning into area radio and television stations. Students should assume that classes will be held unless they hear or read an official closure announcement.

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**EMERGENCY CALLS**

**DIAL 9-1-1**
All campus phones and cell phones on campus reach the University Police Department

Non-emergency line: (657) 278-2515

24-hour recorded emergency information line:
(657) 278-0911
(657) 278-4444