MANHATTAN COLLEGE - SCHOOL OF ENGINEERING
DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

CIVL 201/04 – Introduction to Civil Engineering: Fall 2006

Course Syllabus

Prof. Anirban De, Ph.D., P.E.
Office: Room 309-I, Leo Eng. Bldg.
Phone: 718-862-7175
Fax: 718-862-8035
E-mail: anirban.de@manhattan.edu

Office Hours:
Monday, Wednesday and Friday:
10:10 am to 12:10 pm
Monday: 5 to 6 pm
or, by prior appointment via e-mail

Required Text

Surveying Principles and Applications by Barry F. Kavanagh, Seventh Ed., 2006
Understanding Construction Drawings by Mark W. Huth, Fourth Ed., 2005

Course Goals

1. Introduce students to the basic concepts of surveying
2. Illustrate the role of surveying in professional civil engineering practice
3. Introduce students to engineering drawings and blueprints and illustrate their interpretation
4. Introduce students to two types of civil engineering professional work products (calculations and drawings)

Course Outcomes

At the conclusion of the course, the student should:

1. Calculate horizontal and vertical distances, based on survey data
2. Prepare differential leveling survey notes
3. Calculate bearings and azimuths
4. Calculate latitudes and departures
5. Calculate end area volumes based on cross sections
6. Have a basic understanding of GIS, GPS, and satellite and airborne imagery
7. Recognize standard engineering drawing conventions and symbols
8. Have a basic understanding of elevations and engineering cross sections
9. Calculate quantities based on given engineering drawings
10. Prepare bid items and estimate quantities based on engineering drawings

Student Performance Assessment

Final grade will be based as follows:

- 10% of final grade will be based on homework assignments
- 20% of final grade will be based on project assignments
- 20% of final grade will be based on Examination #1
- 20% of final grade will be based on Examination #2
- 30% of final grade will be based on the comprehensive Final Examination

Notes:

1. A missed homework/project/exam will get a zero grade, thereby reducing the average

2. Homework/Project submitted after the due date will not receive any credit, except under exceptional circumstances (please see under Important Notes on page 4).

3. All homeworks and projects must be submitted. If a homework/project is not submitted by the last class of the semester, the student will automatically fail the course (i.e., receive F grade).

The final grades in the course shall be determined as follows:

Final Score	**Grade**
Above 90.0	A
87.0 to 90.0	A-
83.0 to 87.0	B+
80.0 to 83.0	B
77.0 to 80.0	B-
73.0 to 77.0	C+
70.0 to 73.0	C
60.0 to 70.0	D
Below 60.0	F

Tentative Course Schedule (subject to change)

Week	Topic	Textbook Reading
1	Introduction, Basics of Surveying - Random & systematic errors - Accuracy & precision - Stations	Chapter 1
1	Distance Measurement - Types of measurements and errors	Chapter 2
2	Leveling - Differential leveling - Curvature & refraction - Calculations for profile field notes - Assignment: Leveling calculations spreadsheet	Chapter 3
3	Leveling field work (one period – split group)	Chapter 3
3-4	Angles & directions - Horizontal angles - Bearing & azimuths	Chapter 4
5	**Examination # 1**	
5	Theodolite (one period – class demonstration)	Chapter 5
5-6	Traverse survey and computation - Open traverse - Closed traverse - Latitudes & departures	Chapter 6
7	Traverse field work (one period – split group) Four-point traverse project assignment	Chapter 6
7-8	Topographic surveying & mapping - Scales - Symbols - Contours and topographic surveys - Cross section and end area volumes - Area computation	Chapter 8
9	GIS Contour survey GPS Satellite imagery Airborne imagery	Chapters 9-13
9-10	Highway curves - Horizontal curves - Vertical curves	Chapter 14
10	Construction survey Land survey	Chapters 15-16
10	**Examination # 2**	
11-13	Reading drawings	
14	Quantities estimation	
15	Bid preparation	
Final Exam Period	**Examination # 3**	

Important Notes

1. Students with Disabilities: If a student has a documented disability (or disabilities) that requires special accommodation(s), the student needs to provide acceptable documentation of that disability (or disabilities) to the Specialized Resource Center in Miguel Hall, Room 300 – not to the faculty in charge of the course. The Specialized Resource Center will then contact the faculty in charge of the course with appropriate instructions to accommodate the student's needs.
2. The Manhattan College "Blackboard" will be utilized for this course. Students are responsible for all information posted on this system. Students are expected to bring any problem associated with "Blackboard" for this course to the instructor's attention.
3. Students are responsible for keeping their e-mail addresses on "Blackboard" current at all times. Communication from the Instructor will be sent only to the e-mail address on record on the "Blackboard".
4. All material handed out in class by the instructor will be part of course material and student will be responsible for studying them in addition to the prescribed text books.
5. Homeworks/projects must be done on 8 ½" × 11" engineering calculation paper, in a manner consistent with professional engineering calculation in practice. Project organization, neatness, and overall professional presentation will be taken into account during grading.
6. Due dates for homeworks/projects will be announced at the time the assignments are given. Late work will not receive credit, except in the case of a written, excused absence, validated by the Dean of Engineering's office.
7. If a homework/project is not submitted by the last class of the semester, the student will automatically fail the course (i.e., receive F grade).
8. All examination work must be done on 8 ½" × 11" engineering calculation papers furnished by the student. Makeup examinations will not be given and a grade of zero will be given in the case of a missed examination, except in the case of an excused absence for medical reasons or other extenuating circumstance, to be evaluated on a case by case basis.
9. Use of cellular telephone will not be allowed in the classroom.
10. All Manhattan College policies and procedures as stated in various catalogs, manuals, handbooks, etc. which are available to students shall be enforced in this course.