

**SYLLABUS/COURSE OUTLINE**

**DIVISION:** Business and Engineering Technology

**CURRICULA IN WHICH COURSE IS TAUGHT:** Drafting and Design

**COURSE NUMBER AND TITLE:** CIV 171 Surveying 1

**CREDIT HOURS:** 3 **HOURS/WK LEC:** 2 **HOURS/WK LAB:** 3 **LEC/LAB COMB:** 5

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**I. CATALOG DESCRIPTION:**

- II.** Introduces surveying equipment, procedures and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations and introduction to topography.

**III. RELATIONSHIP OF THIS COURSE TO CURRICULUM OBJECTIVES:**

- Teaches students to perform ordinary land and construction surveys using modern surveying equipment.
- Create quality plats using a CAD system.
- Apply this knowledge to solve real world surveying situations.

**IV. REQUIRED BACKGROUND/PREREQUISITES:**

The student must have mastered the skills acquired in mth 115 or equivalent.

**V. COURSE CONTENT:**

- History of and purpose for surveying
- Types of surveys
- Measurements-methods, accuracy and precision, corrections
- Care of equipment
- Field notes
- Leveling
- Earth's curvature and atmospheric refraction
- Contour maps and topography
- Profiles and cross sections
- Angles and directions
- Bearings and azimuths
- Meridians and parallels-longitude and latitude
- The compass and magnetic declination

- Practial astronomy
- Setting up and using transits and theodolites
- Closing the horizon
- Angle distance relationships
- Traversing
- Methods of calculating area and acreage
- Latitude and departures
- Benchmarks
- Electron distance measurement and prisms
- The Universal Transverse Mercator grid
- GPS/GIS systems

**V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE**

\_\_\_X\_\_\_ Communications                      \_\_\_\_\_ Cultural and Social Understanding  
 \_\_\_X\_\_\_ Critical Thinking                      \_\_\_X\_\_\_ Quantitative Reasoning  
 \_\_\_\_\_ Personal Development                      \_\_\_\_\_ Scientific Reasoning  
 \_\_\_X\_\_\_ Information Literacy

**VI. LEARNER OUTCOMES**

**VII. EVALUATION**

<b>Learner outcome</b> <ul style="list-style-type: none"> <li>• Understand different types of surveys and their uses.</li> </ul>	<b>Evaluation method</b> Lab exercises
<b>Learner outcome</b> <ul style="list-style-type: none"> <li>• Understand and utilize the basic procedures used by surveyors in the field.</li> </ul>	<b>Evaluation method</b> Lab exercises In class assignments Written test
<b>Learner outcome</b> <ul style="list-style-type: none"> <li>• Understand and utilize a variety of surveying instruments used to gather field data.</li> </ul>	<b>Evaluation method</b> Lab exercises In class assignments
<b>Learner outcome</b> <ul style="list-style-type: none"> <li>• Perform the appropriate calculations for different types of surveys.</li> </ul>	<b>Evaluation method</b> Lab exercises In class assignments Written test

<b>Learner outcome</b> <ul style="list-style-type: none"> <li>• Determine elevations at specific locations.</li> <li>•</li> </ul>	<b>Evaluation method</b> Lab exercises In class assignments Written test
<b>Learner outcome</b> <ul style="list-style-type: none"> <li>• Locate north using a wide variety of methods.</li> </ul>	<b>Evaluation method</b> Lab exercises In class assignments Written test
<b>Learner outcome</b> <ul style="list-style-type: none"> <li>• Develop and print plats in a CAD program using field data gathered by the student.</li> </ul>	<b>Evaluation method</b> Lab exercises In class assignments Written test

## **COURSE OUTLINE    CIV 171 SURVEYING I**

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**SEMESTER:** Spring 2014

**INSTRUCTOR:** Robert Huffman

**OFFICE NO:** Wyatt 209 (office is in the classroom)

**OFFICE HOURS:** Tues & Thurs 1:00-4:30 Fri 1:30-4:00

**TELEPHONE:** 434-797-8548

**E-mail:**     [rhuffman@dcc.vccs.edu](mailto:rhuffman@dcc.vccs.edu)

**TEXTBOOK:** Surveying, Jack C. McCormack ISBN # 0 471-23758 2 other necessary materials: Each student must bring a notebook and calculator to each class. The calculator must be capable of performing trigonometric functions, and it is highly recommended that the calculator have the ability to convert degrees, minutes and seconds to decimal degrees. I recommend a TI 36X calculator.

**ATTENDANCE REQUIREMENTS:**

Regular attendance is necessary for successful completion of this course. Absences will be considered if a student is between final grades. **Quizzes given at the beginning of class cannot be made up if the student is absent or tardy.**

If a student misses a lab, he/she may use data from a group member to complete the lab but since the student failed to participate in the lab experience, 15 points will be deducted from the lab grade. This may only be done 2 times during the semester. All other labs will have to be made up by gathering the data personally.

Students missing tests must take the makeup test within 2 class meetings of the original test date. Students taking makeup tests will not get credit for bonus questions and will not get the advantage of a grade curve.

**ADMINISTRATIVE WITHDRAWAL:** Students missing 25% or more of the total time allocated for classes and/or labs may be administratively withdrawn from the course upon recommendation of the instructor. Students who are administratively withdrawn prior to the completion of 60% of the classes and/or labs will be issued a grade of "W". After that point, students who are administratively withdrawn will be issued a grade of "F" and no financial aid checks will be issued.

**CONDUCT:**

The use of any tobacco products in the classroom is prohibited.

**Course Grade Procedures:**

Lab Reports	45 %
Tests	20%
Classwork/Homework	20%
Final Exam	15%

Letter grades will be determined as follows:

A - 92% -100%

B - 84% - 91%

C - 76% - 83%

D - 68% - 75%

F - 0 % - 67%

**PROCEDURES FOR OUTDOOR LABS:**

- ❑ All lab reports are to be computer generated or neatly hand lettered on 8 1/2 x 11 smooth-edged sheets, clearly identified in the upper left corner of the first sheet. Multiple sheets must be stapled together. Submitted drawings should not be folded.
- ❑ Please inform me if you have any relevant allergies or disabilities that may affect you're hiking in the fields and woods or traversing uneven ground.
- ❑ Lab activities are normally conducted outside so students should come to each class prepared to handle chilly weather. We will be outside as much as possible.
- ❑ Students should possess the ability to solve basic algebraic and trigonometric problems using computers and/or hand-held calculators

**Cell Phones** – Cell phones are not to ring during class lectures but are permitted during outdoor lab time. During lectures, set them to vibrate if possible or turn them off until the lecture is finished. If your phone rings during a lecture, you may leave the class to answer it but do not stand at the door and talk. Students who answer phone calls or texts during tests will not be permitted to continue the exam.

**Students with Special Needs:**

- ✓ If you are a student with special medical needs, please inform me as to how I can best assist you. All information will be considered confidential.
- ✓ If you are a student who needs special ADA-related accommodations, please inform the DCC ADA Coordinator at 804-797-8572. All information will be considered confidential.

## PLAGIARISM AND ACADEMIC DISHONESTY

Students will be expected to maintain complete honesty and integrity in their academic work in this class. Acts of academic dishonesty, such as cheating, plagiarism, or inappropriately using the work of others to satisfy course requirements, will not be tolerated and may result in failure of the affected assignments and/or failure of this class.

## TUTORING

DCC offers free tutoring to all students. If you experience any difficulty with this course, please immediately contact Letitia Lunsford in the Tutoring Center (797-6432) located in the Learning Assistance Center. Ms. Lunsford will help you schedule your tutoring sessions. To get the greatest benefit from tutoring, you should go as soon as you start experiencing difficulty and go on a regular basis.

### Dates to Remember

Calendar

Spring 2014

Spring Session, 2014	Dates	Times
<b>Advising/Registration by Appointment for Spring 2014</b>	January 2-3; 6-10	<b>8 a.m. - 4:30 p.m.</b>
<b>Registration, Payment of Tuition &amp; Add/Drops</b>	January 2-3; 6-10	
Faculty Planning and Preparation Days	January 2-3; 6-10	
<b>Classes Begin</b>		
<b>NOTE: Not all classes start on this date or this week. Check your schedule for the correct dates to determine when your classes will start.</b>	January 13	
Late Registration	January 13-17	
Last Day for New Registration	January 17	
Holiday (College Closed)	January 20	
*Swaps/Drops only	January 21-22	
<i>*Swaps cannot be processed without the approval of the instructor.</i>		
<b>Last Day to Withdraw with Full Tuition Refund</b>	January 28	
<b>NOTE: Classes of shorter duration may have different deadlines. Contact the Admissions Office at 434.797.8467 for more information.</b>		
Mid Term Grades Posted	March 3--7	
Spring Break	March 10--14	
<b>Last Day to Withdraw w/o Mitigating Circumstances (W grade issued)</b>	March 21	

<i><b>NOTE: Classes of shorter duration may have different deadlines. Contact the Admissions Office at 434.797.8467 for more information.</b></i>		
Advising by Appointment/ Registration for Summer Semester 2014	April 1--29	
Institutional Effectiveness Day	April 9	
Classes End	May 5	
Exams	May 6 - 9; 12	
Faculty Planning and Preparation Days	May 13--16	
Graduation	May 16	