

Revised Spring 2015

# **CIV 171**

## **Construction Management and Estimating**

### **COURSE OUTLINE**

**Prerequisites: MTH 115**

#### **Course Description:**

Introduces surveying equipment, procedures and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations and introduction to topography. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**Semester Credits: 3 Lecture Hours: 2 Lab/Recitation Hours: 3**

VIRGINIA WESTERN COMMUNITY COLLEGE  
PO Box 14007  
Roanoke, VA 24038  
(540)-857-7273



**Course Outcomes**

**At the completion of this course, the student should be able to:**

- Understand basic instruments of surveying
- Use basic instruments of surveying
- Analyze field data
- Prepare topographic maps

VIRGINIA WESTERN COMMUNITY COLLEGE  
PO Box 14007  
Roanoke, VA 24038  
(540)-857-7273



# **CIV 171 Surveying I**

Required Materials:

Textbook:

Elementary Surveying w/access code 13<sup>th</sup> ed. Author: Ghilani – Pearson ISBN: 9780132554343

Other Required Materials:

Calculator

Access to Excel (or other spreadsheet software)

VIRGINIA WESTERN COMMUNITY COLLEGE  
PO Box 14007  
Roanoke, VA 24038  
(540)-857-7273



# CIV 171

## Surveying I

Topical Description:

<b>Week</b>	<b>Topic</b>
1	Introduction, Units, Significant Figures, and Field Notes
2	Theory of Errors in Observations
3	Leveling – Theory, Methods, and Equipment
4	Leveling – Field Procedures and Computations
5	Distance Measurement
6	Angles, Azimuths, and Bearings
7	Station Instruments and Angle Observations
8	Traversing
9	Traverse Computations
10	Coordinate Geometry in Surveying Computations
11	Area
12	Satellite Systems – Introduction and Principles
13	Satellite Systems – Static Surveys
14	Satellite Systems – Kinematic Surveys
15	Mapping and Surveys
16	Final Exam

### Notes to Instructors

1. All instructors teaching this course will use the same textbook.
2. Course content within this course may be covered at the instructor's discretion but with all topics being understood.
3. This course and its grades will be structured around a minimum of a midterm exam, final exam, and homework.

VIRGINIA WESTERN COMMUNITY COLLEGE  
PO Box 14007  
Roanoke, VA 24038  
(540)-857-7273



4. At the end of the semester, all instructors will give the outcome assessment as it relates to the final exam to the program head at the same time they prepare their student final grades.
5. The final exam will include only the material covered after the midterm exam.

VIRGINIA WESTERN COMMUNITY COLLEGE  
PO Box 14007  
Roanoke, VA 24038  
(540)-857-7273

