AGEN 135  
Construction Surveying  
Fall 2017  

First Examination Study Guide  
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- Define surveying.  
- List and discuss the three main reasons for surveying.  
- Discuss the difference between geodetic and plane surveying, and reasons why each is used today.  
- Discuss the importance of proper field notes and list four of the several points to remember about field notes.  
- List and discuss three of the five basic requirements of good field notes.  
- List a type of information best discussed by each: tabulation, description, and diagrams.  
- Discuss the reasons for listing the date, weather instrument, and party information in good field notes, and why notes should be original and without erasures.  
- Know the English and metric units for various surveying measurements and how to convert amongst units (standard conversions will be provided during the exam).  
- List and give an example for each of the five types of surveying measurements.  
- Discuss the differences between blunders or mistakes, systematic errors, and random errors, and discuss a source of each.  
- Know the difference between precision and accuracy.  
- Describe the reasons for significant digits and apply the theory to problems.  
- Be able to apply rounding rules to problems (as discussed in class).  
- Know that distances in plane surveying are assumed to be horizontal distances.  
- List the standard methods for measuring distances and the expected accuracy of each.  
- List an application for pacing, taping, and EDM.  
- List the purpose of each taping accessory and explain when it is used.  
- List the jobs of the head and the rear tapepersons.  
- List and discuss the procedure for proper distance measuring with a steel tape.  
- Discuss “breaking tape” and other methods of measuring distances on steep slopes.  
- List five of the nine common sources of taping errors and list how to minimize them.  
- Know how to calculate areas using rectangles, circles (including circular sectors), and triangles.
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CONSTRUCTION SURVEYING

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First Examination
Equations Sheet

1 ch = 100 links = 66 ft = 4 rods
1° = 60'; 1' = 60"; 1° = 3600"
1 yd = 3 ft
1 m = 3.2808 ft
1 mi = 5280 ft = 1.609 km
1 ac = 43,560 ft²
1 ft = 12 in

\[ A = \sqrt{s \cdot (s-a) \cdot (s-b) \cdot (s-c)} \]

\[ s = \frac{a + b + c}{2} \]

\[ A = \frac{a \cdot b \cdot (\sin \alpha)}{2} \]

\[ A = \pi \cdot r^2 \cdot \frac{\alpha}{360°} \]

\[ A = a \cdot b \]