Applied Hydraulics for Hydropower Generation  
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Final Examination Study Guide

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About 50% of the questions on the final exam will be from the following topics (the remaining 50% will focus on questions from material included on the 1st and 2nd hourly exams):

• Understand how angles are measured in the field
• Find horizontal angles when given a list of data from a repeating theodolite
• Know how vertical angles and measured and referenced (horizontal, zenith, and nadir)
• Know why, when, and how deflection angles are measured
• Understand how to apply trigonometric functions in the right angle triangle
• Define trigonometric leveling and when it is used
• Understand the steps involved in trigonometric leveling
• Know the terms hi, HI, RR, S, H, and V
• Know how to solve problems involving trigonometric leveling
• Understand the use of EDM and total stations
• Understand the difference among electronic theodolites and total stations
• Understand the use of EDM instruments with reflectorless technology
• Know how to work with open traverses
• Understand the methods for measuring angles or directions in traverse surveys
• Define the difference between true and magnetic north
• Understand magnetic declination and how it changes
• Establish a direction of a line if given an azimuth
• Compute the azimuths for lines in an open traverse given pertinent horizontal angles and the direction of one of the lines

Note: The final for AGEN 151 will be scheduled during the finals week. It will be a 90-minute, comprehensive closed-book exam with three sections: multiple choice, true/false, and problems.