

ARC 240 SITE PLANNING

COURSE DESCRIPTION:

Prerequisites: ARC 111

Corequisites: None

This course introduces the principles of site planning, grading plans, and earthwork calculations. Topics include site analysis, site work, site utilities, cut and fill, soil erosion control, and other related topics. Upon completion, students should be able to prepare site development plans and details as well as perform cut and fill calculations. Course Hours Per Week: Class, 2. Lab, 2. Semester Hours Credit, 3.

LEARNING OUTCOMES:

A student who successfully completes this course should be able to:

- a. Read and interpret topographic maps and site plans.
- b. Understand site plan graphic symbols.
- c. Prepare basic grading plans.
- d. Generate an exaggerated section.
- e. Perform basic earthwork calculations.

OUTLINE OF INSTRUCTION:

- I. Introduction to site topography and contour manipulation
 - A. The history of site planning
 - B. DLG (grading formula)
- II. Site topographic representation
 - A. Contour lines
 - B. Contour signatures and adjustment
 - C. Spot elevations
 - D. Transects
 - E. Sections
 - F. Site plan abbreviations
- III. Interpolation
 - A. Grading by fill
 - B. Exaggerated sections

- IV. Grading
 - A. Contour adjustment by cut
 - B. Contour adjustment by fill
 - C. Contour adjustment by cut and fill
 - D. Site plan abbreviations

- V. Angles of repose
 - A. Common slopes
 - B. Grading circulation routes:
Walkways and roads
Circulation routes
(Cross pitch and crown)

- VI. Grading roads
 - A. Grading roads with curbs
 - B. Grading roads with curbs and ditches
 - C. Grading roads with shoulder slopes and ditches

- VII. Drainage methods
 - A. Runoff comparisons of hardscape versus softscape (Impermeable Vs. Permeable materials)
 - B. Grading and swales
 - C. Storm water calculations
 - 1) Definitions

- VIII. Site planning considerations and site analysis
 - A. Analyzing and compiling site data
 - B. Generating maps and graphic displays to depict site analysis conclusions

- IX. Utilities
 - A. Introduction to principles in utility layout
 - B. Coordination of utilities with municipal systems
 - C. Interpretation of street profiles with exaggerated vertical scale
 - D. Saving trees
 - E. Retaining walls

- X. Zoning and Municipal Regulations
 - A. Zoning principles and terminology
 - B. Municipal site planning standards
 - C. Handicap and ADA access requirements

- XI. Deed Maps
 - A. Terminology
 - B. Deed map boundaries
 - C. Drawing maps from boundary descriptions
 - 1) Metes and bounds
 - 2) Compute closure
 - 3) Compute area
 - 4) Bearings
 - D. Introduction to the Global Positioning System (GPS)

- XII. Environmental Concerns
 - A. How site development impacts the local environment
 - B. How site development impacts the ecology
 - C. Land stewardship activities which radically alter the landscape. (Good Vs bad)
 - D. Introduction to government interest & regulation into site uses and design

- XIII. Landscaping
 - A. Factors influencing plant selection and placement
 - B. Introduction to how plant material is integrated into the site plan

- XIV. Geotechnical
 - A. Introduction to basic soil terminology
 - B. The role of the geotechnical engineer

- XV. Soil erosion control plans
 - A. Storm water control plans and terminology
 - 1) Storm water pipe sizes
 - 2) Grading plans

REQUIRED TEXTBOOKS AND MATERIALS:

Textbooks to be selected by instructor.

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 686-3652 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.