Course Outline

SURV 243

Minor Engineering IV – Storm Water Management

3 Semester Hours

2 Lecture Hours

2 Lab Hours

The Community College of Baltimore County

Description

Minor Engineering IV – Storm Water Management
Introduces the principles, specifications and requirements for the design of structures used to control storm waters in the State of Maryland. Using the State of Maryland Storm Water Management Manual, the student will design structures, compute stresses and water flow and determine specifications for existing structures.
3 credits: 2 lecture hours and 2 laboratory hours per week.
Prerequisite: SURV 241 or permission of the program coordinator. Not offered every semester; see the course Credit Class Schedule for scheduling information.

Overall Course Objectives

Upon completion of this course the student will be able to:

1. discuss the history and practices of Stormwater management practices in the state of Maryland.
2. determine Unified Stormwater Sizing Criteria
3. determine performance criteria for Urban Best Management Practices (BMP) design
4. use the Maryland Stormwater Design Manual to determine BMP Selection
5. use the Maryland Stormwater Design Manual to determine landscaping guides for Stormwater BMP's
6. determine construction specifications for ponds, supplemental ponds, wetlands, infiltration practices bioretention, sand filters and open channels

Major Topics

I. Introduction to Stormwater Management and the Maryland Stormwater Design Manual
II. Unified Stormwater Sizing Criteria
III. Performance Criteria for Urban Best Management Practices (BMP) Design
IV. Guide to BMP Selection and Location in the State of Maryland
V. Stormwater Credits for Innovative Site Planning
VI. Landscaping Guidance for Stormwater BMP's
VII. Construction Specifications
    A. NRCS-MD Code No 378 Pond Standards/Specifications
    B. Supplemental Pond and Wetland Stormwater Specifications
    C. Construction Specifications for Infiltration Practices
    D. Construction Specifications for Bioretention, Sand Filters, and Open Channels
VIII. Design Examples
    A. Pond Design
    B. Sand Filter Design
    C. Infiltration Trench Design
    D. Dry Swale Design
    E. Bioretention Design

IX. Design Tools

Course Requirements

Grading/exams: Grading Procedures will be determined by the individual faculty member but will include the following:

1. Quizzes, tests, exams: Individual instructors will notify students of procedures, but as a minimum, two tests or weekly quizzes will be required.
2. Comprehensive Midterm Exam: The course will require a comprehensive Midterm Exam.
3. Comprehensive Final Exam: The course will require a comprehensive final exam.
4. Homework assignments: Individual instructors will notify students of procedures, but as a minimum one graded assignment will be given.

Other Course Information

This course is a core course in Surveying Degree and Certificate Programs.

This course is taught in a classroom environment.