



**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
MATERIALS AND TESTS UNIT  
STRUCTURAL MATERIALS LABORATORY**



## **Class Syllabus**

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### **Class Information**

Class Title	NCDOT Concrete Mix Design Certification
Location	Raleigh and Field Locations
Dates	Early Spring and Early Fall (classes may be added as needed)
Time	8:30 AM - 5:00 PM

### **Instructor Contact Information**

Lead Instructor	Benard Chola
Office Phone	919 329-4122
Assistant Instructor	Chip Lichtenwalner
Office Phone	919 329-4094
Email Address	<a href="mailto:Concretedesigns@ncdot.gov">Concretedesigns@ncdot.gov</a>

### **Class Pre-Requisites**

NCDOT Concrete Batch Certification

### **Class Description**

This three day advanced school instructs an in-depth, step-by-step procedure to produce the following: ACI concrete mix designs, design variations, weight – volume relationships, aggregate gradation, NCDOT concrete mix design specifications, and the concrete mix design submittal and approval process. Additional subjects include: admixtures and their uses in concrete, use of Portland cement, use of fly ash in concrete, and placing and curing of concrete. Training is conducted entirely in a classroom setting where mathematical formulas and calculations are used extensively.

### **Class Registration Fee**

The cost for this class is \$150.00 per student.

## **Student Learning Objectives/Outcomes**

- Understand the ACI absolute volume method of concrete mix design
- Know how to design concrete mixes using NCDOT Specifications and/or Provisions
- Be able to adjust mixes using 5% ACI Variation
- Understand concrete mix design submittal and approval process for NCDOT
- Know how to correctly complete NCDOT mix design forms
- Understand the NCDOT mix design numbering system

## **Required Textbooks and Materials**

Concrete Mix Design Technician Study Guide (Provided for you)

Calculator(non-mobile device), Pen, Pencil, Highlighter, Notepad

## **Suggested Course Materials**

Current NCDOT Standard Specifications for Roads and Structures

Concrete Batch Technician Study Guide

Concrete Field Technician Study Guide

## **Assignments & Tentative Class Schedule**

Quizzes and homework will be given out during the first two days of class.

Monday        Sections I through VIII

Tuesday       Sections IX through XII

Wednesday    Review and Certification Exam

## **Grading Policy**

The student must attend class and pass the written exam. The grade is either pass or fail and the minimum passing grade is 80%. The exam contains two parts; part 1 is a multiple choice and open book test for concept problems, and part 2 is a non-multiple choice and closed book test for calculation problems.

## **Class Policies**

Class attendance is mandatory. An attendance roster will be passed out during the class. Students are expected to conduct themselves in a professional manner (Respectful of instructor and other students in class). No cell phones or other electronic devices are allowed during the examination.