



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

Class Syllabus

Class Information

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

Instructor Contact Information

| | |
|----------------------|--|
| Lead Instructor | Eric Fazekas |
| Office Phone | (919) 329-4094 |
| Assistant Instructor | Josh Law |
| Office Phone | (919) 329-4123 |
| Email Address | concretedesigns@ncdot.gov |

Class Pre-Requisites

NCDOT Concrete Batch Certification (active certification not required)

Class Description

This three-day advanced course provides the training necessary to become certified as an NCDOT Concrete Mix Design Technician. This certification permits individuals to design and submit concrete mix designs for use on NCDOT projects. Students will learn about concrete material basics, aggregate sieve analysis, weight - volume relationships, the ACI absolute volume concrete mix design method, how to calculate ACI 5% variations, designing concrete mixes to meet NCDOT Standard Specifications, and about the concrete mix design submittal and approval process. Training is conducted entirely in a classroom setting where mathematical formulas and calculations are used extensively.

Class Registration Fee

Registration fee 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 the 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 at class)
- ✓ Calculator (non-mobile communication device), pen, pencil, highlighter, notepad (not provided)

Suggested Course Materials (not provided)

- ✓ *NCDOT Standard Specifications for Roads and Structures* (current version)
- ✓ Concrete Batch Technician Study Guide
- ✓ Concrete Field Technician Study Guide

Assignments and Tentative Class Schedule

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

- Day 1 - Sections I through VIII
- Day 2 - Sections IX through XII
- Day 3 - Review and certification exam

Grading Policy

The student must attend class and pass the written exam. Successful course completion requires a grade of 80% or higher on each part of the exam. Part 1 of the exam is multiple choice and open book while part 2 of the exam is a free response, 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.