

Description MDOT Technical Training Courses – Local Agencies

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Bridge Construction/Rehabilitation/Paint Inspection Course and Structural Steel Bolting/Welding Training (*Certification- 5 Years*)

The Bridge Deck Construction Inspection portion of this course is intended to educate field staff on the proper inspection techniques and best practices associated with bridge deck construction. Topics include: Overview of Structures and Terminology, Inspection Forms, BOHIM's and Construction Advisories, Construction Manual, Section 706 of Standard Specifications, Pour Sequencing, Haunch Grades, Beam Erection and Reinforcing Steel, Concrete Pours and Cure Requirements, Common Mistakes and Troubleshooting. The Bridge Construction/Rehabilitation Construction portion of this course educates field staff on major aspects of bridge construction and rehabilitation. It is intended to improve comprehension of basic terminology, best practices, and interpretation of MDOT's Standard Specifications related to bridge rehabilitation. Topics include: Bridge Scoping, Standard Specifications, Foundation and Substructure best practices, Construction Advisories and BOHIM's, Substructure Patching, Beam Repair (Concrete, Steel, Pin and Hanger), Deck Patching, Deep and Shallow Overlays, Epoxy Overlays, Expansion Joints, Deck Removal, Pressure Relief Joints, Pour Sequences and Setting Haunch Grades.

The Bridge Paint portion of the course is designed to prepare attendees for the inspection of bridge painting projects. It covers corrosion, paint systems, paint equipment, surface preparation, field cleaning and coating, inspection procedures and equipment, documentation and reports, environmental regulations concerning removal of lead paint, and specifications for bridge cleaning and coating.

Additionally, the course will now include Structural Steel Bolting and Structural Steel Welding providing basic definitions and concepts, materials and specifications, and procedures for these connections. The intent of these portions of the course is to assist engineers and technicians to design, install, and inspect bolted and welded connections to meet current specifications.

Computerized Office Technician (*Certification - 4 Years*)

This course is intended for those who require instruction in the principles of record keeping and documentation for Construction projects. Passing this course will fulfill the requirements for office technician training needed for the engineer certification program as outlined in the Construction Manual.

Required Manual and Equipment: The MDOT 2020 Spec book, a laptop with laptop power cord, and a calculator will be required for use.

Computerized Office Technician-Recertification (*Recertification - 4 Years*)

This course is intended for those who need to renew their Computerized Office Technician certification. Individuals who attend this course will take the exam only. (There will be a Microsoft PowerPoint Review prior to the exam.)

Requirement: Must have previously passed the Computerized Office Technician course.

Required Equipment: A laptop with laptop power cord and a calculator will be required for use.

Concrete Paving Inspection (Certificate of Attendance)

This course is designed to give technicians and engineers the competency to provide quality inspections for concrete pavements on the job site. This course covers Concrete Paving, Concrete Pavement Restoration, Contractor Quality Control for Concrete, Quality Assurance (Acceptance) for Concrete, Concrete Mix Designs (Job Mix Formula), Learning how to read a concrete batch ticket (mix proportions - cement, aggregates, water, and admixtures), Concrete Pavement Joint Layout, and MDOT Standard Plans and Specifications.

This course is strongly encouraged for Technicians inspecting Concrete Paving and Concrete Pavement Restoration Projects, and for Quality Control and Quality Assurance Concrete Testing Technicians.

Density Training (Certification)

This four-day course is designed for technicians and their supervisors who have responsibility for the density control on soil subgrade and aggregate bases. This introduces the theory of compaction on various materials, and provides training using MDOT density control tests, procedures and documentation.

The technician training is a three-day class followed by the certification test on the fourth day. This is designed to give candidates the skills and knowledge necessary to pass the Density Control Technician Test. The is composed of both classroom and laboratory instruction. Students can expect homework assignments.

Course Topics include:

- Testing frequency and locations on site
- MDOT Specifications concerning current Density Testing and Inspection requirements
- Relevant test procedures such as Speedy Moisture Tester, Troxler 3440, Michigan One-Point Cone Test, One-Point T-99 Test, and Michigan Modified T-180 Test
- Documentation requirements

Link to the MDOT-FSU Course Description: [Ferris Construction Institute - School of Built Environment - College of Engineering Technology](#)

Geotechnical Construction Inspection (Certificate of Attendance)

This two-day course is designed to provide inspectors with practical knowledge and standard industry practices for the inspection of geotechnical construction, such as:

- Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS)
- Deep foundations, including Drilled Shaft, and Piling
- Retained Earth, includes Part Width Construction, Cofferdams, MSE Walls, and Soldier Pile Walls
- Light Weight Fills
- Counter scour Measures

The target audience for this course includes engineers and technicians who will be responsible for inspecting geotechnical projects during construction.

Required Equipment: A straightedge and calculator will be required for use.

Hot Mix Asphalt Paving (HMA) Operations (Certification - 5 Years)

This four-day course is designed to provide a basic and uniform understanding of the inspection and evaluation of HMA Paving Operations. Attention is given to providing participants with an introduction to the basic principles of pavement construction and quality control. Information will be provided to help ensure a better riding surface and a reduction in maintenance costs.

Who Should Attend

The course is open to individuals from both the private and public sectors who perform regular inspections and evaluations of bituminous paving, and for those who expect to become street inspectors in the bituminous paving industry.

Application Requirements

Basic math skills in the use of fractions, decimals, ratios, and percentages are required.

Examination

A written examination will be given the last day of class to evaluate the level of learning achieved by the participant.

This is designed to give candidates the skills and knowledge necessary to inspect a HMA Paving Operation in the field. Topics include:

- Paving equipment
- Base preparation
- Traffic control
- Paving operations
- Rolling operations
- Surface treatments
- Special bituminous
- Construction field testing

Link to the MDOT-FSU Course Description: [Ferris Construction Institute - School of Built Environment - College of Engineering Technology](#)

Hot Mix Asphalt Paving Operations – Recertification (Certification - 5 Years)

Anyone that has previously completed the HMA Paving Operations will be allowed to register and complete the HMA Paving Operations recertification training.

MDOT HMA (Bituminous) Paving or Michigan HMA (Bituminous) Paving Operations certification is a requirement for the prequalification category of **Construction Inspection: HMA Pavement**. No extensions will be allowed beyond the certification dates noted.

Link to the MDOT-FSU Course Description: [Ferris Construction Institute - School of Built Environment - College of Engineering Technology](#)

MDOT Superpave Asphalt Mix Designers Certification Training (Certificate of Achievement)

This certification training includes superpave defined, aggregate and asphalt issues, mixture selection, volumetric requirements, specification review thru-out, submittal process, asphalt plant particulars, successful initial production lot (IPL), and percent within limits (PWL). Attendees must pass an exam at the end of the course to receive a certificate.

Prevailing Wage Training (Certificate of Attendance)

This course is intended to enhance knowledge of the current Prevailing Wage Procedures by reviewing wage decisions, wage rate interviews, and certified payrolls. This includes prevailing wage components, contract documentation, wage decisions, wage rate interviews, overtime, certified payroll, and truck drivers. (Note: This course is open to consultants and contractors at no cost).

Structural Steel Bolting Workshop (Certificate of Attendance)

This course is designed to cover basic definitions and concepts, materials and specifications, and procedures for bolted connections in structural steel and anchor bolt connections. The course covers general considerations for bolting, installation preparation, installation techniques, inspection procedures, and test methods. The intent of the course is to assist engineers and technicians to design, install, and inspect bolted connections to meet current specifications.

Structural Steel Welding Workshop (Certificate of Attendance)

This course is designed to cover basic definitions and concepts, materials and specifications, and procedures for welded connections in structural steel. The course is broken into the following sessions: introduction to welding, welded connections, general weld-related issues, welding practices and inspection, and two welding demonstrations. The intent of the course is to assist engineers and technicians to design, install, and inspect welded connections to meet current specifications.