

## **IMSA Course Description**

### **Traffic Signal Inspector Level 1**

**General Description:** The IMSA Traffic Signal Inspector Level I Certification Program is designed to ensure public safety by helping individuals to understand fundamental concepts associated with the inspection for construction of traffic signal installations. Traffic Signals are a key element in our transportation system and the proper operation of these signals is of paramount importance in maintaining reasonable levels of mobility.

**Purpose:** Knowledgeable traffic signal inspection is required to ensure that proper/specified construction practices are followed during signal installation resulting in signals that operate as intended. Knowledgeable inspection is also a key element in limiting the liability exposure of governmental agencies associated with malfunctioning traffic signals.

**Target Audience:** Traffic Signal Inspector Level I Certification is recommended for all individuals involved in the inspection of traffic signal construction. It is also a valuable course for contractor personnel, since it provides an inspector's viewpoint of traffic signal construction.

**Course Specifics:** Topics covered in the Traffic Signal Inspector Level I Certification Course Manual include:

- Introduction to Traffic Signal Inspector
- Inspection of Underground Facilities
- Inspection of Traffic Signal Supports
- Inspection of Overhead Equipment
- Inspection of the Vehicular and Pedestrian Detection Systems
- Inspection of the Controller Assembly
- Safety Requirements
- Final Acceptance and Turn-On

**FDOT Memorandum 14-13 (FHWA Approved 6/27/13) States IMSA Traffic Signal Inspection Level 1 will be required in Scope of Services**

**Pre-requisites:** Presently none. A background in Maintenance of Traffic is helpful.

## **Traffic Signals Technician Level 1:**

**General Description:** The Traffic Signal Level 1 program is based on the concept of relating fundamentals of traffic signal design; traffic signal installation, maintenance and limited troubleshooting. This is the entry course for Traffic Signal Technicians and discusses the basic procedures of how and why to install signalized intersections. It covers the process of installation required for an entry level student up to a one year technician. The program covers the fundamentals used today and sets the direction the technician may follow in the future.

**Special Note: The procedures of specific state and local agencies may vary from those presented in this program. It is highly recommended that each participant become familiar with the practices of their own applicable agency which has jurisdiction over his or her area of operation.**

**Purpose:** The program is designed to enhance public safety by helping individuals to review fundamental concepts associated with traffic signal design, construction, and operation. Following the course guidelines help promote safe, efficient signalized intersections.

**Target Audience:** For individuals responsible for the maintenance, construction, and operations of traffic signals and related equipment. This certification program would also aid those responsible for the planning and design of traffic signals, such as traffic engineers and traffic technicians.

**Course Specifics:** The program includes an introduction to traffic signals; signal indications and signal-related signing; planning for traffic signals; designing traffic signals; vehicle detection; traffic signal supports; installing traffic signals; construction procedures; installing traffic signals; construction equipment; preventive maintenance, basic signal timing concepts; traffic signal phasing; dealing with the public.

**Pre-requisites:** Intermediate Maintenance of Traffic (Workzone). In Florida, FDOT Approved courses are accepted. Outside of FL; IMSA Work Zone Traffic Control Safety Certification is required.

**Note: Effective 2010, Level 2 Certifications are specific to Bench, Field, Construction, & Design/Engineering. The Sunshine Safety Council is currently offering the Field and Bench Courses**

### **Traffic Signal Field Technician Level 2**

**General Description:** The Traffic Signal Level 2 Certification indicates the holder has a well-rounded background in traffic signal technology from coursework and experience.

**Purpose:** The Level 2 Field certification indicates the technician has additional training on traffic signal control system troubleshooting, on-site repairs, and maintenance methods and equipment.

**Target Audience:** The certification holder is prepared to make a substantial contribution in the maintenance and repair of signalized intersections, whether employed by a private firm or a public agency.

**Course Specifics:** Areas of training include worksite safety, maintenance of traffic, traffic signal system equipment standards and operation, installation inspection, troubleshooting, equipment repair, replacement and programming, test equipment, signal phasing and timing, detection, system communications, preventive maintenance, and documentation.

**Special Note: The procedures of specific state and local agencies may vary from those presented in this program. It is highly recommended that each participant become familiar with the practices of their own applicable agency which has jurisdiction over his or her area of operation.**

**Prerequisites:** IMSA Work Zone Traffic Control Safety Certification or approved equivalent (In FL, FDOT Approved Courses are accepted); IMSA Level 1 Traffic Signal Technician Certification; Two (2) years' experience in the Traffic Signal Field

### **Traffic Signal Senior Field Technician Level 3**

What does it cover?

The 100 question exam associated with the certification has been prepared to test the candidate on a wide range of topics relating to field expertise and general knowledge of the applied traffic signal technologies in the field.

The following list contains reference materials that the potential IMSA Traffic Signal Senior Field Technician Level 3 must be familiar with:

- NEMA Standards (TS1 and TS2)
- 170/2070 Standards
- Various Traffic Detection Methods (Acoustic, Microwave, Radar, Loops, etc.) Setup & Configuration Manuals
- Video Detection Manufacturers Setup Manuals
- Lightning Protection Devices
- FHWA and ITE Vehicle Detection Manuals
- Data Communications Methods (Copper, Fiber Optic, Wireless, etc.)
- U.S. M.U.T.C.D. – 2009 Version
- Signal Head Types (Incandescent, L.E.D., Programmable, etc.) specifications and installation methods
- IMSA Wire and Cable Specifications
- ITE – Traffic Engineering Manual current edition
- ITE – Traffic Control Devices Handbook current edition
- Traffic Signal Preemption Devices – Various Manufacturers Operation and Setup Manuals
- Understanding of Basic Electronics and Electrical
- U.S. – National Electrical Code and/or Canadian Electrical Code

**Prerequisites:** Five Years' Experience in Traffic Signal Field; IMSA Traffic Signal Field Technician Level 2 Certification

## **Signs & Pavement Markings Level 1:**

**General Description:** This two-day seminar will address the basic principles behind sign and pavement marking. Level 1 review material has been derived from the MUTCD. It covers applications of regulatory signs, warning signs, guide signs, tourist oriented directional signs, markings and markers, traffic control in school areas, bicycle traffic control devices, safety and temporary traffic control, installation of signs and markings, and emergency management signing. The remaining material which will be reviewed in class has been derived from the following publications: FHWA's Standard Highway Signs, FHWA's Standard Alphabets for Highway Signs and Pavement Markings, TRB's NCHRP Synthesis 157 Maintenance Management of Street and Highway Signs, and ITE's Traffic Engineering Handbook.

**Special Note:** The procedures of specific state and local agencies may vary from those presented in this program. It is highly recommended that each participant become familiar with the practices of their own applicable agency which has jurisdiction over his or her area of operation.

**Purpose:** To encourage individuals to learn the basic principles of sign fabrication, their installation and proper placement of markings for safe traffic movement in urban and rural areas.

**Target Audience:** This certification program is designed for transportation professionals responsible for the planning, design, layout, installation, and maintenance of traffic signs and roadway markings.

**Course Specifics:** The course material has largely been derived from the Manual on Uniform Traffic Control Devices (MUTCD). You will also review: general principles; regulatory signs; guide signs; pavement markings, object markers, school zones, railroad crossings; and bicycle routes.

**Pre-requisite:** IMSA Work Zone Traffic Control Safety Certification or approved equivalent (In FL, FDOT Approved Courses are accepted); one (1) year experience working with signs and markings

## **Sign Technician Level 2**

**General Description:** This two-day seminar has been prepared to build upon the fundamental understanding the student gained during the Sign & Marking Level 1 program.

**Special Note:** The procedures of specific state and local agencies may vary from those presented in this program. It is highly recommended that each participant become familiar with the practices of their own applicable agency which has jurisdiction over his or her area of operation.

**Purpose:** With this Level 2 program, the student will garner greater insight and a more nuanced understanding of sign design, installation, and maintenance.

**Target Audience:** This program is important for the sign technician to further his or her understanding of the criteria for the application of signs in accordance with the MUTCD and other references.

**Course Specifics:** The student will learn when and where these traffic control devices are installed, how to properly manufacture, install and maintain them, and why it is important to take even greater care with the increased responsibility that comes with Level 2 certification.

**Pre-requisite:** IMSA Work Zone Traffic Control Safety Certification or approved equivalent (In FL, FDOT Approved Courses are accepted); IMSA Signs & Markings Level 1 certification; one (1) year of road or traffic operations experience.

## **Pavement Markings Technician Level 2**

**General Description:** This two-day seminar has been prepared to build upon the fundamental understanding the student gained during the Sign & Pavement Marking Level 1 program.

**Purpose:** This Level 2 program will allow the student to garner greater insight and a more advanced understanding of pavement marking materials, installation, and maintenance.

**Target Audience:** This certification program is important for the pavement marking technician to further his or her understanding of the criteria for the application of a myriad of pavement markings and pavement marking materials in accordance with the MUTCD and other references.

**Course Specifics:** The student will learn when and where these traffic control devices are installed, how to properly install and maintain them, and why it is important to take even greater care with the increased responsibility that comes with Level 2 certification.

**Prerequisite:** IMSA Work Zone Traffic Control Safety Certification or approved equivalent (In FL, FDOT Approved Courses are accepted); IMSA Signs & Markings Level 1 certification; one (1) year of road or traffic operations experience.

### **Sign Technician Level 3 OR Pavement Markings Technician Level 3:**

**General Description:** Level 3 certification is the highest level of certification for Sign Technician OR Pavement Markings Technician personnel. The course is a review session and question/answer followed by the exam. There is no course manual.

**Special Note: The procedures of specific state and local agencies may vary from those presented in this program. It is highly recommended that each participant become familiar with the practices of their own applicable agency which has jurisdiction over his or her area of operation.**

**Purpose:** To attain the highest level of certification in the Sign Technician OR Pavement Markings Technician operation field. The Level 3 certification gives the Specialist a profound sense of accomplishment as the energy and effort it takes to achieve this goal is exceptional.

**Pre-requisite:** IMSA Work Zone Traffic Control Safety Certification or approved equivalent (In FL, FDOT Approved Courses are accepted); IMSA Signs & Pavement Markings Technician Level 1 and applicable Level 2 certification; five (5) years of verifiable road/traffic operations experience.



## **Roadway Lighting Technician Level 1**

**General Description:** This two-day Roadway Lighting Level 1 Certification seminar for qualified personnel is designed to aid individuals in understanding fundamental aspects of Roadway Lighting.

**Target Audience:** Individuals who are involved with design, installation, and maintenance projects related to roadway and street lighting will benefit by taking this seminar. This seminar covers various aspects to help ensure the safety of motorist and workers regarding the quality roadway lighting system.

**Purpose:** The review material will address Electrical Safety and Codes; Basic Electricity and Laws, and Basic Construction and Maintenance.

### **Course Specifics:**

- Develop a good working knowledge of electrical safety and safe equipment operation
- Electric laws and electrical codes
- Introduce basic maintenance and construction concepts for roadway lighting, including basic roadway components
- Provide an introduction to roadway lighting and the necessary basics to help the participant's readiness for the examination which follows

**Prerequisite:** IMSA Work Zone Traffic Control Safety Certification or approved equivalent (In FL, FDOT Approved Courses are accepted)

## **Roadway Lighting Technician Level 2**

**General Description:** This seminar covers various aspects to help ensure the safety of motorist and workers regarding the quality roadway lighting system

**Purpose:** The goal of these seminars is to provide and enhance the knowledge of personnel responsible for handling various aspects of roadway lighting projects for a safe and effective lighting system.

**Target Audience:** Individuals who are involved with design, installation, and maintenance projects related to roadway and street lighting will benefit by taking this seminar.

**Course Specifics:** In this two-day seminar you will review safety and qualifications, lamp and luminaire components, electrical, poles and high mast components, basic lighting design fundamentals, lighting applications, maintenance of lighting systems, and testing, investigation, and troubleshooting lighting systems

**Prerequisites:** IMSA Work Zone Traffic Control Safety Certification or approved equivalent (In FL, FDOT Approved Courses are accepted); Roadway Lighting Technician Level 1 certification; five (1) years of verifiable road/traffic operations experience.