Michigan State University / Highway Traffic Safety Programs

2020 ACCIDENT INVESTIGATION/ ACCIDENT RECONSTRUCTION COURSE CALENDAR

AI-1: INITIAL INVESTIGATION

JANUARY 27 - 31 2020 @OCC// AUBURN HILLS
FEBRUARY 24-28, 2020 @ MSU// OKEMOS
March 16 – 20, 2020 //Holland PD
APRIL 6 - 10, 2020 @SCC// LIVONIA
SEPTEMBER 28 – OCTOBER 2, 2020 @ MSU// OKEMOS

AI-2 FOLLOW-UP INVESTIGATION

FEBRUARY 17-21, 2020 @OCC//AUBURN HILLS
MARCH 30 – APRIL 3, 2020 @MSU //OKEMOS
April 20 - 24, 2020 //Holland PD
MAY 11 – 15, 2020 @SCC// LIVONIA
OCTOBER 7-11, 2020 @MSU//OKEMOS
NOVEMBER 2 – 6, 2020 @MCC//CLINTON TWP

AI-3 ACCIDENT PHOTOGRAPHY

MARCH 23-24, 2020 @OCC//AUBIRN HILLS
MAY 4 -5, 2020 @ MSU//OKEMOS
June 1 – 2, 2020 // Holland PD
June 15 – 16, 2020 @ SCC // Livonia
December 7 - 8, 2020 @MCC//Clinton Twp
DECEMBER 14-15, 2020 @ MSU//OKEMOS

AI-4 INVESTIGATIVE PROTOCOLS

MARCH 25, 2020 @OCC//AUBURN HILLS
MAY 6, 2020 @ MSU//OKEMOS
June 3, 2020 //Holland PD
June 15 – 16, 2020 @ SCC // Livonia
December 9, 2020 @MCC//Clinton Twp
DECEMBER 16, 2020 @ MSU//OKEMOS

AI-5 TIRE DYNAMICS AND EXAMINATION

MARCH 26, 2020 @OCC //AUBURN HILLS
MAY 7, 2020 @ MSU//OKEMOS
June 4, 2020 //Holland PD
June 18, 2020 @ SCC // Livonia
December 10, 2020 @MCC//Clinton Twp
DECEMBER 17, 2020 @ MSU//OKEMOS

Pre-Requisites for Classes

AI-2 Must Have AI-1   AI-9   Must Have AI 1-2-7-8
AI-3-6 None   AI-11 & 12 Must Have AI-1&2
AI-7 Must Have AI-1 & 2
AI-8 Must Have AI-1-2-7

1006

AI-6 LAMP EXAMINATION

MARCH 27, 2020 @OCC //AUBURN HILLS
MAY 8, 2020 @ MSU//OKEMOS
June 5, 2020 //Holland PD
June 19, 2020 @ SCC // Livonia
December 11, 2020 @MCC//Clinton Twp
DECEMBER 18, 2020 @ MSU//OKEMOS

AI-7 COMMERCIAL VEHICLE ACCIDENT INVESTIGATION

June 1 - 5, 2020 @ MSU//Okemos
June 8 – 12, 2020 @MCC//Clinton Twp
June 22 – 26, 2020 @ OCC//Auburn Hills
October 5 - 9, 2020 @ SCC// Livonia

AI-8 MOTORCYCLE ACCIDENT INVESTIGATION

April 20 – 22, 2020 @ OCC// Auburn Hills
April 27 – 29, 2020 @MCC//Clinton Twp
June 22 -24, 2020, @ MSU// Okemos

AI-9 ACCIDENT RECONSTRUCTION

APRIL 6 - 17, 2020 @ MSU//OKEMOS
September 28 - October 9, 2020 @OCC// Auburn Hills
November 30 - December 9, 2020 @ MSU // Okemos

AI-11 NIGHT VISIBILITY

November 2 - 3, 2020 @OCC//Auburn Hills
NOVEMBER 9 - 10, 2020 @MSU// OKEMOS

AI-12 PEDESTRIAN ACCIDENTS

November 4 – 6, 2020 @OCC//Auburn Hills
NOVEMBER 11 - 13, 2020, 2020 @MSU// OKEMOS

AI-13 ADVANCED ACCIDENT RECONSTRUCTION

JANUARY 13-17, 2020 WEST SHORE C C// LUDINGTON
AUGUST 24 – 28, 2020 @ MSU//OKEMOS

AI-14 CRUSH MEASUREMENTS

May 11 - 12, 2020 @ MSU // Okemos
June 29 – 30, 2020 @OCC//Auburn Hills
August 31 – September 1, 2020 MCC// Clinton Twp

~ All Courses 302 Funding Approved ~
CHECK HTSP WEBSITE FOR CURRENT SCHEDULE,
CLASS UPDATES, NEWS & MORE!
www.msu-htsp.org

2020 AI CALENDAR

A1-17 ACCIDENT AVOIDANCE

FEBRUARY 10-12, 2020 @ MSU//OKEMOS

AI-18 MOTORCYCLE ACCIDENT RECONSTRUCTION

April 27 - 29, 2020 @ MSU// Okemos

AI-20 ENERGY APPLICATIONS IN ACCIDENT RECONSTRUCTION

June 15 – 19, 2020 @MSU//Okemos

AI– 24 SCHOOL BUS CRASH INVESTIGATION

JULY 27 - 31, 2020 @ MSU//OKEMOS

PRACTICAL APPLICATION OF THE EDR FOR ACCIDENT RECONSTRUCTION

February 17-20, 2020 @MSU//Okemos, Michigan
September 21- 24, 2020 @MSU//Okemos, Michigan

AUTONOMOUS VEHICE INVESTIGATION

September 14-15, 2020 @ MSU//Okemos, Michigan

REC-TEC

OCTOBER 26 – 28, 2020 @MSU// OKEMOS

** NEWS//ANNOUNCEMENTS **

Accident Investigation 4
Investigative Protocols and Techniques

A one-day course covering investigative protocols and mechanical understanding of vehicle defects, modification, failure, and how they may be related as a "contributing factor" to the accident.

****

MSU HTSP uses Expert AutoStats , Expert Vin Decoder and StifCalcs in their training programs. For additional information please contact Daniel Vomhof at dv3@4n6xprt.com or 800 266 9778

Dr. Daniel G. Lee PhD leed@egr.msu.edu

Tim Howery howery@voyager.net

Ted Foster tfoster@msu.edu

MICHIGAN STATE UNIVERSITY
Highway Traffic Safety Programs

Michigan State University / Highway Traffic Safety Programs

Accident Investigation 1 -- Initial Investigations
A five-day course to train officers to recognize and record all pertinent physical evidence at serious accident scenes. Sketching, measuring, basic photography, roadway and vehicle evaluation, and basic speed determinations are taught.

Accident Investigation 2 -- Follow-up Investigations
A sequel five-day course to AI-1 covering such follow-up functions as preparing scale drawings, mathematical calculations via formulas/equations, reaction distances, and case studies.

Accident Investigation 3 -- Accident Photography Including An Intro To Grid
A two-day offering that teaches officers how to take useful and comprehensive traffic accident photographs. Major topics are basic camera familiarization, daytime photography, nighttime (flash) photography and existing light photography.   Also included is an introduction to Photogrammetry.

Accident Investigation 4 – Investigative Protocols and Techniques
 A one-day course covering investigative protocols and mechanical understanding of vehicle defects, modification, failure, and how they may be related as a "contributing factor" to the accident.

Accident Investigation 5 -- Tire Dynamics and Examination
This one-day course helps the investigation officer to determine whether tire failure contributed to the accident and, if so, whether the failure took place before, during, or after the collision. It also covers the role of tires in vehicle handling.

Accident Investigation 6 -- Lamp Examination
A one-day seminar to assist investigators to determine whether vehicle lamps were "on" or "off" at the time of impact. Also, covers the proper procedure for removing and storing damaged vehicle lamps.

Accident Investigation 7 -- Commercial Vehicle Accident Investigation
A special seminar covering those aspects of truck and bus accidents that differ from ordinary passenger-car crash dynamics. This course is five days long and covers such topics as weight shift, truck braking systems, heavy vehicle components, variable drag factors, truck inspection and testing, and commercial driver license (CDL) laws.

Accident Investigation 8 -- Motorcycle Accident Investigation
A three-day course focusing on the technical aspects of investigating traffic accidents involving motorcycles, mopeds and bicycles.

Accident Investigation 9 -- Accident Reconstruction
A ten-day seminar covering various aspects of scientific traffic accident reconstruction such as acceleration, time-distance studies and the determination of vehicle speeds via kinetic energy and conservation of linear momentum.

Accident Investigation 9 - UPDATE
A more in depth look at the three major subject areas in the original two week AI-9 course will be covered in this two day AI-9 Update course. The three specific areas to be covered include momentum, kinetic energy, and time distance-speed analysis.

Accident Investigation 10 - Occupant Kinematics
A five day seminar covering seat belt use, child restraint systems, basic injury patterns of vehicle occupants, dynamics of occupants in collision and G-forces in occupant kinematics.

TO REGISTER FOR ANY CLASSES SCHEDULED FOR EITHER: THE MSU//OKEMOS, OR HOLLAND LOCATIONS –
CALL 517-355-3270 OR EMAIL htsp@msu.edu
TO REGISTER AT ANY OTHER LOCATIONS, PLEASE CALL:
SCHOOLCRAFT (SCC) - CALL: 734-462-4316 // OAKLAND (OCC) - CALL: 248-232-4220 // MACOMB (MCC) – CALL: 586-498-4050

Accident Investigation 11 -- Vision, Night Visibility & Lighting Requirements

A two-day course on vision, night visibility factors, and lighting requirements. It is will assist officers with determining whether a driver could have and should have seen an object in sufficient time to avoid striking it. Since a night visibility field exercise is included, Day 1 starts in the afternoon.

Accident Investigation 12 -- Pedestrian Accidents

A three-day course that deals with factors unique to pedestrian collisions. Includes determining impact points through vehicle evaluation and estimation of impact speeds based upon pedestrian movement and vehicle damage characteristics. A session with a forensic pathologist regarding pedestrian injury patterns is included.

Accident Investigation 13 -- Advanced Traffic Accident Reconstruction

A five-day course that focuses on vector sum analysis, determination of Delta V's, principal direction of force (PDOF's), and special momentum problems.

Accident Investigation 14 -- Crush Measurements

A two-day course explaining the importance of precise vehicle damage information. Actual demonstration and participation in how to take measurements and develop profiles of accident involved vehicles. The measurements can then be used with computer reconstruction software (see Accident Investigation 15 series) to determine speed changes from damage.

Accident Investigation 17 -- Accident Avoidance

A three-day course for AI-9 grads. This course will assist the investigator in determining whether a traffic accident was avoidable if appropriate accident avoidance maneuvers were undertaken by the driver of an automobile, motorcycle, or commercial vehicle. The major topics that will be covered in this course are: lane change and swerve formulas; maximum speed to stop at point of impact; maximum speed a vehicle can travel and miss a vehicle that travels across its path; view obstructions (right angle and other than right angle); safe following distance; constant velocity; passing time to avoid a head-on crash while passing; braking or steering avoidance; and passing with changing velocity.

Accident Investigation 18 -- Motorcycle Accident Reconstruction & Research

A three-day course that focuses on motorcycle accident avoidance capabilities; use of linear and angular momentum in motorcycle accidents; motorcycle RPM analysis; crush analysis; and motorcyclist ejection speeds as a result of impact. The course will include case studies to apply the concepts to real accidents.

Accident Investigation 19 -- Crash Data Retrieval (CDR) System Training

A two-day course covering both the retrieval and interpretation of a vehicle's air bag module-stored pre-crash and crash data. This data is obtainable now from most late-model GM cars and will be from Ford vehicles. The data is downloaded to a laptop computer for further analysis. This course is being offered as a joint effort through the MSU Highway Traffic Safety Programs, Collision Safety Institute, General Motors, and Vetronix Corporation.

Accident Investigation 20 -- Energy Applications in Accident Reconstruction

A five-day advanced course for AI-9 and AI-13 graduates. The course focuses on using kinetic energy analysis to solve for speeds from crush. Calculating EBS (Equivalent Barrier Speeds) and using A, B, and G stiffness coefficients are included. The determination of co-linear speeds in head-on, rear-end, and oblique angle crashes using energy and momentum is a major subject.

Michigan State University / Highway Traffic Safety Programs

AI-24 B – School Bus Accident Reconstruction

This five-day seminar covers various scientific and engineering traffic crash reconstruction principles related to school buses. The crash investigator will become familiar with school bus speed determinations via kinetic energy, momentum, force balance, and delta V's. Extensive braking, turning and acceleration testing/research will be conducted, in addition to discussion of physical configuration, terminology, and operating systems associated with school buses. Investigator must be an AI-9 graduate or equivalent to participate.

AI-25 – Forensic Mapping (Total Station)

This course aims to provide basic-level instruction for agencies with an electronic total station and data collector who wish to update or go beyond their current knowledge in using the system. Daily "reality"-type exercises will be used to demonstrate the everyday usefulness of the system, and will be geared toward both beginning and experienced users. Also included will be instruction on getting the total station, data collector, and software functioning efficiently prior to actual forensic mapping.
Other topics will include incident management skills; precise documenting of both "short-lived" and "long-term" evidence; downloading data collector information from both traffic and crime scenes into diagramming software; troubleshooting techniques; and courtroom demeanor as it relates to testimony about the forensic mapping process.

PRACTICAL APPLICATION OF THE EDR FOR ACCIDENT RECONSTRUCTION
[NOTE: This is an Advanced EDR / Reconstruction Course]

This is a 4-day class that will cover trigonometry for police officers as it relates to the EDR download. The laws of sines and cosines will be discussed, and students will utilize these concepts in order to determine speeds at impacts, Delta Vs and PDOFs on practice problems and then on actual case studies. Must be an AI-9 Graduate as well as have previously taken a Basic EDR Course.