

Course Syllabus

Course Title: Vehicle and Machinery Technician

Course Duration: 40 hours

Program: Firefighting Program

Course Prerequisites:

Vehicle and Machinery Operations

Required for National Certification (ProBoard):

Rope Rescue Operations – Level I

Course Description: This course is the advanced course offered after taking Vehicle/Machinery Operations and meets the guidelines of NFPA 1006. The 40 hours is spent mostly with hands-on training using semi-trucks, (large/heavy vehicles), buses, automobiles and various types of machinery. Each student will receive hands on training in stabilization devices, creating additional openings in vehicles for proper patient removal, extrication processes with vehicles and machinery on their side and upside down, practicing on disentanglement of victims in equipment, plus establishing landing zones all the while using the Incident Command System. This class is designed for those who respond to large/heavy vehicle accidents. Upon successful completion of this class, the student will have an increased level of technical knowledge regarding large/heavy vehicles, automobiles in positions other than on their wheels and construction and industrial machinery.

Course Requirements and/or Recommendations: These can be divided into three categories: those completed prior to arriving in class (Pre-Course Work), those completed during class, such as homework assignments and quizzes (Course Work), and requirements completed after class but prior to receiving a certificate of completion. (Post-Course Work)

Pre-Course Work – None

Course Work – Attend and participate in 100% of the course

Post-Course Work – None

Required Textbook:

Principles of Vehicle Extrication, Fourth Edition, IFSTA, Fire Protection Publications, 2017

The student will need to acquire the textbook prior to the start of class.

Course Policies:

Attendance Policy: IFSI requires students to attend (100%) or make up all course content that leads to certification. Students are expected to attend on time and to remain in class for the duration of the course. Students **MUST COMPLETE** all portions of a certification course, both classroom and practical, to be eligible to receive their certification.

If a student misses any portion of class with an accumulated absence of 20% or less of scheduled class time, it will be the student's responsibility to arrange the make-up of the missed course content with the instructor(s) or program manager. The student must make up the specific course content that s/he missed, not just the hours. Make-ups are limited to 20% of scheduled class time. Make-ups must be documented on the class roster. If a student's absence is greater than 20% refer to "True Emergencies" section of the IFSI Examination Policy.

Safety Policy: Students shall understand and follow all instructions pertaining to operational safety, as stated by instructors or as written in course materials. Instructors and students shall be mindful of safety at all times. Conduct judged to be unsafe shall be grounds for dismissal from the course.

Academic Integrity Policy: IFSI has the responsibility for maintaining academic integrity so as to protect the quality of the education provided through its courses, and to protect those who depend upon our integrity. It is the responsibility of the student to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions. Any violation of the code of conduct is grounds for immediate dismissal from the course.

Grading Policy: Decisions regarding certificates of course completion shall be made solely by the lead instructor of the course. All grading of exams shall be conducted by the Curriculum/Testing Office. All grading of practical exercises shall be based upon the standards set by the regulatory agency referenced in the course material and IFSI.

Retesting: If a student fails to pass an exam, retesting takes place on set dates at regional sites across the state. More information is provided in the course completion e-mail and on the IFSI website.

American Disabilities Act: As guaranteed in the Vocational Rehabilitation Act and in the American Disabilities Act, if any student needs special accommodations, they are to notify their instructor and provide documentation as soon as possible so arrangements can be made to provide for the student's needs. If arrangements cannot be made at the class site, the student will test at an alternative time and place where the special accommodations can be made.

Evaluation Strategy: Students will be evaluated with an end of course exam and performance evaluation checklists.

Course Content:

Module: 1

Title: Orientation

Terminal Learning Objective:

At the conclusion of this module, the student will explain the purpose of vehicle machinery rescue at the technician level.

Module: 2

Title: Risk Management

Terminal Learning Objective:

At the conclusion of this module, the student will explain the risk management process.

Module: 3

Title: Tools and Equipment

Terminal Learning Objective:

At the conclusion of this module, the student will identify different types of rescue tools, their use and limitations.

Module: 4

Title: Stabilization Systems

Terminal Learning Objective:

At the conclusion of this module, the student will identify the purpose of cribbing, stabilization devices and buttress systems.

Module: 5

Title: Buses

Terminal Learning Objective:

At the conclusion of this module, the student will explain how to manage a bus incident.

Module: 6

Title: Load factors

Terminal Learning Objective:

At the conclusion of this module, the student will explain how load factors affect an incident.

Module: 7

Title: Helicopter Landing Zones

Terminal Learning Objective:

At the conclusion of this module, the student will explain the purpose of helicopter landing zones.

Module: 8

Title: Machinery

Terminal Learning Objective:

At the conclusion of this module, the student will identify components and safety concerns for various types of machinery.

Module: 9

Title: Heavy Trucks

Terminal Learning Objective:

At the conclusion of this module, the student will explain how to manage a heavy truck incident.

Reference List:

Carbusters, Instructor Guide, 3rd Edition (2002)

Gordon Graham on Risk Management , Graham Research Consultants, retrieved from <http://www.youtube.com/watch?v=Og9Usv82CdU>, 2012

NFPA 1006, Standard for Rescue Technician Professional Qualifications, Chapters 5, 10, 19, 2013 Edition

NFPA 1670, Standard on Operations and Training for Technical Search and Rescue Incidents, 2009 Edition

Northeast Regional Ag Engineering Service, Farm Accident Rescue, (1986)

Principles of Vehicle Extrication, Fourth Edition, IFSTA, Fire Protection Publications, 2017

Rural Rescue & Emergency Care – Jones & Bartlett Pub. (800-716-7264)

Vehicle Extrication, Levels I and II: Principles and Practice, David A. Sweet, Jones & Bartlett, 2012

Vehicle Rescue and Extrication, 2nd Ed., Ronald E. Moore, Mosby Jems, 2003

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Course Schedule

DAY ONE

<u>Event</u>	<u>Duration</u>
Module 1: Orientation	15 minutes
Module 2: Risk Management	30 minutes
Module 3: Tools and Equipment	45 minutes
Module 4: Stabilization Systems	1 hour
Module 5: Buses	1 hour
Module 6: Load Factors	1 hour 30 minutes
Lunch	
Module 7: Helicopter Landing Zones	1 hour
Module 8: Machinery	2 hours
Module 9: Heavy Trucks	1 hour 30 minutes

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DAY TWO

<u>Event</u>	<u>Duration</u>
Drill 1.1 Bus Orientation - Stabilization	30 minutes
Drill 1.2 Bus Windshield Removal	30 minutes
Drill 1.3 Front Door Removal	30 minutes
Drill 1.4 Bus Emergency Rear Exit Door	30 minutes
Drill 1.5 Seat Removal	1 hour
Drill 1.6 Bus Wall Opening	1 hour
Lunch	
Drill 2.1 Vehicle on Side	1 hour
Drill 2.2 Vehicle on Roof	1 hour 30 minutes
Drill 2.3 Vehicle on vehicle or object	1 hour 30 minutes

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DAY THREE

<u>Event</u>	<u>Duration</u>
Repetition of Drills 2.1 – 2.3	2 hours 30 minutes
Drill 3.1 Helicopter landing zone	30 minutes
Drill 3.2 Auger and PTO shaft	30 minutes
Drill 3.3 Tractor on victim	30 minutes
Lunch	
Drill 3.4 Cutting torches	1 hour 30 minutes
Repetitions of Drills 3.1 – 3.4	2 hours

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DAY FOUR

Event

Duration

Drill 4.1 Truck Orientation - Stabilization	2 hours
Drill 4.2 Building platforms	30 minutes
Drill 4.3 Truck windshield removal	45 minutes
Lunch	
Drill 4.4 Truck door removal	45 minutes
Drill 4.5 Side or rear entry into semi-cab	45 minutes
Drill 4.6 Tow truck	1 hour
Final Practical Preparation	1 hour

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DAY FIVE

<u>Event</u>	<u>Duration</u>
Final IFSI Written Exam	2 hours
Lunch	
Final Practical	4 hours
Clean up & Tool Maintenance	2 hours