AORSI-400-EM Workbook

Overview

This course focuses on the use of off-road vehicles in emergency and fire response, including specialized modifications, operating protocols, and inter-agency coordination. Students will gain hands-on knowledge in adapting off-road vehicles for rescue and firefighting operations, while understanding the broader framework of emergency management systems.

Learning Objectives

- Recognize the role of off-road vehicles in fire and disaster response.
- Operate within emergency response protocols and ICS (Incident Command System).
- Identify vehicle modifications suited for fire/emergency roles.
- Coordinate with fire and rescue personnel safely.

Module 1: Off-Road Vehicles in Firefighting & Emergency Response

Off-road vehicles are often the first to reach fire lines, disaster areas, and remote accident sites where standard fire engines or ambulances cannot travel. Their maneuverability and adaptability make them critical tools for initial response, medical evacuation, and supply transport. Instructors developing a course in this module should emphasize the various scenarios where off-road vehicles play a role, such as wildfire suppression, flood rescues, and post-disaster debris access.

Course Design Suggestion: Use real-world examples (e.g., wildfires in California, flood responses in the Midwest) to illustrate how off-road vehicles were deployed. Incorporate tabletop simulations where students role-play dispatchers and responders to better understand deployment decisions.

Exercise: Draft a flowchart showing when and how an off-road vehicle might be dispatched in different emergency types.

Reflection Question: What are the advantages and limitations of using off-road vehicles in emergency response compared to traditional vehicles?

Module 2: Specialized Modifications & Equipment

For off-road vehicles to be effective in emergency and fire response, they often require modifications such as skid units (with water pumps and tanks), emergency lighting, radios, protective equipment storage, and reinforced suspension. Each modification supports a specific function, whether it be firefighting, patient transport, or equipment hauling. Instructors should focus on both required and optional modifications, as well as budget considerations for small agencies.

Course Design Suggestion: Create a lab activity where students design a modified off-road vehicle using diagrams, labeling each component for its role in emergencies. Invite local fire departments to demonstrate their modified units to show real-life applications.

Exercise: List five modifications that would improve a standard ATV/UTV for use in wildfire suppression. Explain why each is critical.

Reflection Question: How should agencies decide which modifications to prioritize when budgets are limited?

Module 3: Incident Command & Communications Protocols

The Incident Command System (ICS) ensures that emergency response is organized, efficient, and safe. Off-road operators must understand their place within this system to avoid duplication of efforts or unsafe actions. Communication protocols—including radio frequencies, plain language use, and reporting chains—are vital to coordination during high-pressure incidents. Course developers should emphasize drills and scenario training to reinforce protocols.

Course Design Suggestion: Incorporate a classroom simulation where students practice reporting to an Incident Commander, relaying updates over radio, and receiving task assignments. Add field exercises where miscommunication could create consequences, allowing students to learn by experience.

Exercise: Write a sample radio log entry for a team reporting a fireline breach while operating in the ICS structure.

Reflection Question: Why is strict adherence to communication protocols vital in emergency scenarios?

Module 4: Safety & Coordination with Agencies

Safety is paramount when off-road vehicles are deployed in hazardous environments. Operators must coordinate with fire, rescue, and law enforcement agencies to avoid conflicts and ensure efficient use of resources. Instructors should highlight joint training exercises, PPE requirements, risk assessments, and liability considerations. Coordination is not just operational—it is also political, requiring agreements on resource use, jurisdiction, and responsibilities.

Course Design Suggestion: Include multi-agency tabletop exercises that simulate wildfire suppression, where off-road operators coordinate with multiple responders. Assign roles to students (fire crew, EMS, law enforcement, off-road support) to practice integrated responses.

Exercise: Develop a checklist of safety protocols for off-road operators working alongside fire crews.

Reflection Question: How does inter-agency coordination reduce risks and improve outcomes during emergency operations?

Final Assessment

Task: Participate in a scenario-based simulation where a wildfire threatens a rural community. Students must plan and execute the deployment of off-road vehicles, coordinate with other agencies, and operate under ICS protocols. After the simulation, submit a written exam addressing the following questions:

1. What roles can off-road vehicles serve in wildfire suppression?

2. Which vehicle modifications are most essential for patient transport?

3. How does the ICS improve safety and coordination in emergencies?

4. Why are communication protocols particularly important in multi-agency operations?

5. What joint training strategies can improve collaboration with fire and rescue agencies?

Duration: 8 hours (with field drills)