# AORSI Instructor Guide

**Course Title:** Navigation & Route Planning (NAV)

**Duration:** 6 Hours (includes 2-hour field exercise)

**Audience:** Off-road operators, expedition leaders, and instructors

## Course Overview

This course provides skills in safe route planning, terrain assessment, and navigation using both digital and analog tools. Students learn to prepare for varying conditions and anticipate hazards. Navigation is a critical competency, as even the most capable vehicles and drivers can be compromised by poor route selection or disorientation. The course combines technical knowledge with practical exercises for effective learning.

## Learning Objectives (Instructor Notes)

- Use GPS, maps, and compass for off-road navigation. (Tip: Demonstrate digital vs analog tools).

- Assess routes based on vehicle type and terrain conditions. (Tip: Present multiple route options).

- Identify and mitigate environmental and safety risks. (Tip: Use hazard-based case studies).

- Develop emergency backup plans for navigation failures. (Tip: Include group rally drills).

## Module 1: Navigation Tools – GPS, Apps, Maps, Compass (1.5 hours)

- Teach use of GPS devices, apps, maps, and compass with redundancy planning.

- Course Design Suggestion: Navigation drill comparing GPS vs compass/map.

- Exercise: Plot 5-mile route on map and input into GPS.

- Reflection: Why is redundancy in navigation critical?

## Module 2: Route Selection & Terrain Suitability (1.5 hours)

- Teach terrain factors: slope, soil, obstacles, seasonal conditions.

- Course Design Suggestion: Route planning for mixed vehicle groups.

- Exercise: Compare short steep route vs long gradual one.

- Reflection: Why plan for least capable vehicle?

## Module 3: Hazard Identification & Risk Management (1.5 hours)

- Teach flash floods, washouts, avalanches, wildlife hazards.
- Course Design Suggestion: Group hazard identification scenarios.
- Exercise: Build hazard matrix for desert flash flood risks.
- Reflection: How does hazard anticipation improve safety?

## Module 4: Contingency Planning & Group Safety (1.5 hours)

- Teach backup routes, rally points, supplies, communication protocols.
- Course Design Suggestion: Role-play GPS failure mid-route.
- Exercise: Draft contingency plan for landslide scenario.
- Reflection: Why is group discipline essential during contingencies?

## Final Assessment

Task: Field navigation exercise using both GPS and map/compass. Students also submit written route plans with hazard identification and contingency measures. Sample exam questions:

- Why must operators be proficient in both digital and analog navigation methods?

- How does vehicle capability influence route selection?

- What are three hazards that must be considered in off-road navigation planning?

- What elements should be included in a contingency navigation plan?

- How can strong group communication improve navigation safety?

## Instructor Preparation Checklist

- Prepare GPS units, maps, and compasses for drills.

- Set up sample routes for route planning exercises.

- Develop hazard identification scenarios by region.

- Plan group contingency role-play activities.

## Suggested Timing

- Introduction – 15 min

- Module 1 – 90 min

- Module 2 – 90 min

- Module 3 – 90 min

- Module 4 – 90 min

- Final Assessment – 45 min

- Wrap-up & Questions – 15 min