Level 2: Essentials of Rafting - Oar Skills Course

Skills Course Overview

This course is designed as a program emphasizing safety, enjoyment, and skill development. The skills and knowledge gained through this course can set the stage for a lifetime of exploration, adventures, a healthy lifestyle, appreciation of water and the natural world, lasting memories with family and friends, and a rewarding experience for all - we paddle because it is fun.

The **Essentials of Rafting - Oar** course is for individuals interested in learning the skills required to efficiently row a raft on rivers with class I rapids. This course includes advanced river reading, safety considerations, and rowing techniques. This course is appropriate for properly outfitted rafts.

Skills Course Prerequisites

- Acknowledgment of personal compliance with the ACA Essential Eligibility Criteria (EEC)
- No prior paddling experience or training is required to participate in this course

Course Duration

2 days (16 hours) or more.

Course Location / Accessible Venues

Moving water on rivers including class I sections. *A rapid class includes rapids at the lower and upper ends of the difficulty range, designated "-" and "+" respectively.*

Course Size

6 Participants : 1 Instructor; with an additional qualified assistant, the ratio can be 12 : 2.

For additional details, see SEIC Policy Manual Chapter 6.

Instructor

This course may be offered by Level 2: Essentials of Rafting - Oar (or higher) ACA Instructors, Instructor Trainers, or Instructor Trainer Educators.

Succeeding Courses

- Level 2: Essentials of Rafting - Oar Assessment, Guide Certification, or Instructor Certification Course
- Level 3: Rafting - Oar Skills, Assessment, Guide Certification, or Instructor Certification Course

Complementary Courses

- Level 2: Essentials of Rafting - Paddle Skills, Assessment, or Certification Course
- Level 3: Rafting - Paddle Skills, Assessment, or Certification Course

Course Learning Objectives

While navigating in this course venue, the participant will learn to:

- Identify whitewater features and hazards
- Become familiar with oar rafting equipment and the river environment
- Maneuver an oar raft
- Row using safe and effective techniques
- Use basic safety and rescues skills

Course Outline

The sequence of this course should be adjusted to best fit the participant’s needs, class location, time allowance, and craft being used.

Introduction, Logistics, and Expectations

Learning objectives - students should have a basic understanding of the ACA and its policies, how and where this course is being conducted, and acceptable student behavior.

- Welcome! We're so glad that you've chosen to further your paddling experience and education by attending this course! Let's review a few highlights about the ACA
- Let's talk about the course itinerary, expectations, and limitations
- Lay of the land (and water): the logistics of this venue
- Review liability waiver, assumption of risk, challenge by choice, and medical disclosure
- Life jacket policy: always wear while on the water
- Describe and follow safe boating practices (behavior, substance abuse, on water and land etiquette, respecting private property, and Leave No Trace ethics)

The Paddling Environment

Learning objectives - students should understand the paddling environment and the venue for the duration of the course.

- Discuss current weather conditions, forecasts, and other environmental factors (water, weather, wind, waves)
- River classifications

Personal Preparation

Learning objectives - students should understand what is expected of them during this course. Check in with students about the following:

- Personal self-evaluation - *mental and physical*
- Whitewater comfort and confidence
- Whitewater swimming ability
- Fitness, conditioning, and warm-up to reduce injury
- Boat handling experience
- Safety and rescue considerations

- Personal equipment (reviewed by the instructor)

Getting to the River

Learning objectives - students should understand the logistics of a rafting trip prior to arriving at the put-in.

- Trip Planning – 6P's: Prior Proper Planning Prevents Poor Performance
  - Review elements of a float plan (who, what, when, where, filing practices)
  - Sourcing local beta such as river sections, flows, weather, etc. (i.e., online groups, guidebooks, websites, apps, businesses, gauges, etc.)
  - Local rules, regulations, and permitting requirements
  - Shuttle logistics
- Transporting a raft
  - Loading and unloading from racks and trailers using straps, rope, webbing
  - Carries: overhead and underhand
  - Lifting
  - Stacking
- Knots: figure 8, bowline, trucker's hitch, and daisy chain

Equipment

Learning objectives - students should understand the equipment (both personal and group equipment) needed for rafting, including appropriate use, maintenance, and care.

- Personal equipment
  - Life jackets - types, materials, fit
  - Helmets - proper fit, always buckled when on your head
  - Clothing and shoes
  - River knife, whistle, flip line, etc.
  - Environmental supplies - food, water, spare clothing, sunscreen, etc.
- Safety equipment

    - Spare oar
    - Throw bag - proper use, storage, and risks
- Group equipment
    - Sweep kit - first aid kit, repair kit, pump, spare life jacket, pin kit, etc.

Raft

Learning objectives - students should understand care and maintenance for raft and gear longevity, and proper rigging concepts to reduce entrapment hazards.

- Raft: types, parts, and materials
    - Terminology and nomenclature
    - Proper inflation
    - Bow and stern lines
    - Perimeter lines
    - Flip recovery systems (flip lines, belly band, bottom floor handles, etc., which may or may not require extra rigging)
    - System to get back in boat efficiently (thwart handles, cross thwart strap, perimeter line, etc., which may or may not require extra rigging)
- Frame and Oars
    - Oars - types, length, setup
    - Oarlocks - types, setup
    - Frame - types, setup, proper fit

Passenger Preparation

Learning objectives - students should understand the importance of safety talks, as well as the oarsman's responsibility for the safety of passengers on their raft.

Safety Talks - responsibility of the oarsman for the safety of the passengers

- What to cover during a safety talk
- When to give a safety talk

- How to give a safety talk

River Running Strategy

Learning objectives - students should understand the concepts of river etiquette and strategies for having a fun and safe day on the water.

- River etiquette
  - Efficiency and courtesy during launching and landing
  - Courtesy on the water
  - Communicating with other groups
  - Use of good judgment
  - River stewardship
- River leadership
  - Communication with all people and crafts in your group/pod
  - Appropriately use communication/river signals (paddle, hand, and whistle)
  - Lead / sweep
  - Group dynamics
- Scouting
  - A thorough trip plan includes knowing which rapids you want/need to scout
  - Land based scouting using a clear method, such as:
    - FORMS (Flow, Obstacles, Route, Maneuvers, Safety)
    - WORMS (Water, Obstacles, Route, Markers, Safety)
    - Top down / bottom up

River Features and Hydrology

Learning objectives - students should understand basic river features and hydrology and

- Currents
- Bends

- Eddies
- Eddy lines
- Waves/holes
- Upstream and downstream Vs
- Tongues
- Pillows
- Rocks

In addition:

- How each of the above changes with river levels
- How each of the above impacts a boat and why

River Hazards

Learning objectives - students should be able to identify river hazards.

- Ledges and low head dams (horizon lines)
- Strainers/sieves
- Undercut rocks or ice
- Manmade hazards:
  - Debris such as rebar, concrete, metal scraps, etc.
  - Bridges
  - Bridge pilings
  - Pipelines

Rowing Factors

Learning objectives - students should understand the fundamentals needed for effective strokes and maneuvers including stroke timing and blade placement in the water.

- How to hold oars in correct orientation and grip for effective rowing
- Efficient stroke (CPR): moving the boat is the objective, as opposed to moving the oar through the water

- Catch: clean entry with minimal splash
- Power
  - Maintain consistent pressure on blade face throughout the power phase of stroke
  - Minimize the length of stroke; stroke loses efficacy after passing 45 degrees off the oar tower
- Recovery
  - If rowing with free oars: feathering to minimize wave and/or wind action against the blade
- Awareness and management of downstream oar when floating sideways, as downstream oar can hit the river bottom (especially on low volume rivers)
- Shipping oars properly (not pulling in)
- Stroke timing and blade placement based on hydrology (i.e., placing oar blade in the backside of a wave or in an eddy behind a rock)

Body Mechanics

Learning objectives - students should understand and be able to demonstrate posture that promotes efficient paddling and places the least amount of stress on the body to avoid injury.

- Position of Power
  - Sitting in a central, upright position
  - Maintaining good posture
  - Utilizing hinge, twist, and reach
  - Locking in the lower body to transfer power from water to oar, through the body, and into the raft
- Three ranges of motion
  - Hinge: forward and back lean, bending at the waist
  - Twist

        - Torso rotation to use large muscle groups improves reach and keeps shoulders safe
        - Posture enhances twist, balance, and comfort
    - Reach
        - Proper torso rotation increases forward reach
        - Solid foot lock is required to reach out over the water with upper body
- Minimizing risk of shoulder injury
    - Maintaining the “paddler's box” with correct body positioning and oar placement
    - Using torso rotation and reach to efficiently turn the boat and transfer power while keeping shoulders safe
    - Value of warmup and stretching

Boat Handling

Learning objectives - students should understand and be able to demonstrate successful maneuvering of their raft using proper rowing techniques.

Rowing Strokes

Learning objective - students should understand and be able to demonstrate the different oar strokes to maneuver a raft.

- Forward/ Pushing
- Back/ Pulling
- Single oar / both oars
- Opposing / two oar turn (push and pull)

Calm Water Maneuvers

Learning objectives - students should understand and be able to demonstrate basic raft maneuvers on flat water.

- Left turn
- Right turn
- Forward: row in a straight line

- Reverse: reasonably straight line backward
- Stopping raft from a good speed
- Spin: pivot the raft - left and right, stop the spin

Moving Water Maneuvers

Learning objectives - students should understand and be able to demonstrate dynamic raft maneuvers in course venue.

- Setting and holding angles
- Ferries: front, back
- Eddy turns
- Peel outs
- Spin: pivot the raft - left and right, stop the spin

Boat Factors

Learning objectives - students should be able to understand how raft design and load affects the boat's maneuverability.

- Speed, glide, and tracking is affected by boat type and construction, load, and oarsman position
- The pivot point of the boat changes with load, balance, and oarsman position
- Oarsman position
  - Center mount
  - Stern mount
  - Front mount
- Weight distribution of passengers and gear
  - Frontloading
  - Aft loading
  - Center loading
- Raft design and construction affect the performance of the boat

Differences to consider:

- Tube diameter: larger tubes have more flotation
- Diminished tubes vs regular tubes: diminished tubes punch waves
- Kick/rocker: impacts surf ability
- Type of material: PVC is more rigid than Hypalon
- Width: impacts stability
- Floor-type, construction, and height from water impacts tracking

Playboating with a Raft

Learning objectives - students should understand the benefits and consequences of making non-essential maneuvers for the sake of fun and practice.

- Playboating - a great way to learn but increases the chances of swimming. Make sure passengers are comfortable with playing and swimming and make sure your venue is safe (i.e., no downstream hazards)
    - Downstream safety
    - Communication with passengers and other boaters
- Making non-essential maneuvers - practicing higher consequence moves in lower consequence water leads to increased confidence and ability
    - Catch challenging eddies
    - Practice challenging ferries
    - Make extra moves
    - Make challenging maneuvers instead of just going straight down an easy rapid
    - Use features like waves, holes and rocks for maneuvers and momentum control
    - Attainment (moving upstream)

Surfing

Learning objectives - students should understand river features that can be surfed, demonstrate how to choose an appropriate feature, and how to surf a raft.

Surfing Hydrology - holes and waves

- Assessing if a hole can be surfed or will trap a boat (get surfed)
    - Size and shape of the hole, and the variability of shape within the hole
    - The angle of “glassy” water going into the hole
    - Height of pour-over vs tube height
- Assessing if a wave can be surfed
    - Types of waves for surfing - unstable vs stable waves (i.e., an unstable wave might crest and fall often)
    - Size of wave
    - The angle of “glassy” water going into wave

Hole and wave surfing maneuvers

- How to approach the river feature
    - From above
    - From eddy
- Maintaining proper boat angle during the surf - use light oar “dips” to correct or maintain an angle
    - Front surf
        - Bow upstream
    - Side surf
        - Highsiding to prevent flipping
        - Shifting body weight to maintain surf
    - Back surf
        - Bow downstream
        - Good for catarafts
- Techniques for escaping feature
    - Work your way to the side (does one side flush more than the other?)

    - Grab downstream water with one or both oars
    - Consider throw bag from shore (if you are “getting surfed”)
- Swim and safety considerations when surfing
    - Set downstream safety

Safety and Rescue

Learning objectives - students should understand the handling of common emergency situations on the river.

- Principles of rescue
    - Rescue priorities: people first, boat, oars, and gear second
        - Group over individuals, rescuer over swimmer
    - Fast and simple to slow and complex
- Environmental factors
    - Importance of fueling, hydration, clothing/insulation, and sun protection
    - Recognition and prevention of cold shock, hypothermia, and hyperthermia
- Dealing with a rescue situation (swimmers, flipped or broached boat, etc.)
    - Swimming in current - defensive and aggressive swimming techniques
    - Preventing foot entrapment
    - Re-entry into the boat
        - Self
        - Assisted
    - Bulldoze a boat to shore
    - Swimming a boat to shore
    - Throw rope use and practice
    - Boat pin (strong arm, rope/vector)
    - Boat flip and recovery
        - Loaded boat vs empty boat

        - Mid river channel vs eddy

Raft Repair

Learning objectives - students should understand how to perform basic raft repair.

- Raft repair kit
    - Appropriate glue and patch material for different rafts
    - Temporary “river fix” patch material (i.e., tear aid)
    - Frame tool
    - Spare oar locks and towers / pins and clips
- Cuts and perforations
- D-rings
- Valves

Conclusion and Wrap Up

Learning objectives - students should understand the importance of continuing education and practice. The instructor should debrief the course and hand out any pertinent materials.

- This has been a great class! Let’s talk through what we’ve learned with a group debrief and/or individual feedback
- Course limitations: there is always more to learn, and the skills and concepts we discussed require more practice and experience
- First aid and CPR training is a very valuable tool and could make the difference between a “near miss” and an emergency requiring outside rescue / first responders
- Paddling is a lifetime sport - there are local organizations, clubs, events, competitions, and classes through which you can continue your learning and build community. Get connected!
- Handouts and reference materials (if applicable)

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This curriculum is managed by the ACA Rafting Committee. To connect with the leadership of this committee, please view the SEIC Committee rosters on the ACA website.