Level 2: Essentials of Rafting - Paddle Skills Course

Skills Course Overview

This course is designed as a short 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.

If you're a student who would like a resource to prepare for this course, ACA is pleased to provide a free online paddling safety course, here. A certificate of completion is included!

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

The course duration should be adjusted to best fit the needs and goals of the participants. Up to 1 day (8 hours).

Course Location / Accessible Venues

Moving water on rivers up to and 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 Instructor Candidates : 1 Instructor Trainer; with an additional qualified assistant, the ratio can be 12 : 2. The maximum number of instructor candidates permitted is 12.

Instructor

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

Succeeding Courses

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

Complementary Courses

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

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

- 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

Personal Preparation & Getting Started

- Describe and follow safe boating practices (behavior, substance abuse, on water and land etiquette, Leave No Trace ethics)
- Review elements of a float plan (who, what, when, where, filing practices)
- Discuss current weather conditions, forecasts, and other environmental hazards (wind, water, weather, waves)
- Discuss importance of developing good judgment, group responsibility, management, and dynamics
- Warm up to reduce injury
- Evaluate individual's swimming ability, water comfort, and confidence prior to beginning the trip
- Review paddling terminology and care of gear (to be reviewed by the instructor):
    - Raft: types, parts, materials, proper inflation
        - Terminology and nomenclature
        - Bow and stern Lines
        - Flip lines
        - Chicken/life lines
    - Paddle: parts, materials, sizing, hand position
        - How to hold the paddle in correct orientation and grip for effective paddling
    - Other outfitting concerns
        - How to rig: frame, spare paddle, other equipment such as safety kit, cooler, etc.
        - Flip recovery systems: belly band, bottom floor handles, etc.
        - System to get back in boat efficiently: handle, perimeter line, etc.
    - Life jacket: types, materials, fit
    - Helmet types and use
- Review of additional personal and group gear, including, but not limited to:
    - Environmental supplies (food, water, appropriate clothing, sunscreen, etc.)

    - Navigational and signaling tools (maps, charts, whistle, etc.)
    - Safety and rescue tools
    - Repair kit
    - First aid kit (appropriate to training)
- Review securing boat for transport on car or trailer using proper tie downs, straps, or knots
    - Knots: Figure-8, bowline, truckers hitch, and 2 half hitches
- Review proper techniques to safely lift, carry, and stack the boat on shore
- Prepare boat for departure: stowing gear securely and ensuring it is balanced
- Appropriately use communication (paddle, hand, and whistle) signals

Paddle Factors

- Efficient paddle stroke (CPR): moving the boat is the objective, as opposed to moving the paddle 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 paddler’s hip
    - Recovery
        - Feathering to minimize wave and/or wind action against the blade
        - Consider in-water recoveries
    - Paddle shaft angle impacts boat movement
        - Vertical paddle shaft with blade next to raft gives more momentum with minimal turning
        - Horizontal paddle shaft with blade far from raft gives maximum turning effect

        - Vary power, blade angle, shaft angle, and distance from pivot point for fine control
    - Stroke timing and blade placement based on hydrology (i.e., placing paddle blade in the backside of a wave or in an eddy behind a rock)

Body Mechanics

- 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 paddle, 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
- Maintaining the “paddler's box” with correct body positioning and paddle placement

Boat Factors

Speed, glide, and tracking are affected by boat type and construction, load, paddle team, and paddle captain position

- The pivot point of the boat changes with load, balance, and team position
- Weight distribution of passengers and gear

    - Frontloading
    - Aft loading
    - Center loading
    - Distributing different sized paddlers
    - Distributing paddlers of different strength
- 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

Paddling Efficiently and Comfortably in Flatwater

- Boat stability (trim, posture, rocking, balance, etc.)
- Efficient and effective paddle placement for intended maneuver
- Safe and effective body usage: bio-mechanics (body, linkage, and rotation)
    - Avoidance of positions that contribute to shoulder injury
- Parts of strokes: CPR (catch, power, recovery), static and dynamic
- Positions in the raft: stern, right, left, and center
- Foot positions in the raft
- Movement in the raft: high side, down

Flatwater Strokes

- Forward
- Back

- Draw
- Pry
- Rudder

Flatwater Maneuvers

- Launching and landing: low dock or bank to enter and exit safely
    - Three points of contact, keep weight low, etc.
- Propel the boat forward in a straight line 15-20 boat lengths
- Stop the boat within two boat lengths
- Move the boat backwards in a reasonably straight line 3-4 boat lengths
- Propel the boat in a figure of 8 course around markers 3-4 boat lengths apart
- Turn the boat left and right while maintaining forward motion 90° to the right and left
- Spin: pivot the raft - left, right, and stop spin

River Hydrology Features and Associated Risks

- Currents, tongues
- Rocks (upstream and downstream Vs)
- Ledges and low head dams (horizon lines)
- Pins and entrapment
- Strainers/sieves
- Bends
- Undercut rocks or ice
- Dams/flow diversion structures and pipelines
- Pillows

In addition:

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

- Consideration for how each feature impacts a full loaded raft

Moving Water Maneuvers in Venue

- Ferries
- Eddy turns
- Peel-outs
- Spin: pivot the raft - left, right, and stop spin

Safety and Rescue

- Principles of Rescue
    - Use of safe rescue strategies such as T-RETHROG (Talk, Reach, Throw, Row, Go) including throwable buoyancy aids and throw bag use
    - Rescue Priorities: people, boat, paddles, gear
    - Responsibilities of the group, rescuer, swimmers
    - Appropriate use of rescue and safety gear
        - Bailer, pump, sling, lights, carabiners, anchor systems, etc.
        - Rescue equipment: unique safety considerations while rescue equipment is under load of heavy boat
    - Emergency procedures
    - Raft repair:
        - Raft repair kit
        - Cuts and perforations
        - D-rings
        - Valves
- River running strategies
    - River classifications (understanding of Class I - VI)
    - Scouting on shore and by boat

    - Portaging and lining
    - Group organization on the river
- Self care and care of other group members
    - Importance of fueling, hydration, clothing/insulation, and sun protection
    - Cold shock, hypothermia, and hyperthermia: prevention and treatment

Boat Based Rescues

- Calmly exit the boat after a controlled capsize, using proper body position and contact with the craft and paddle
- Self rescue: swim 20 feet (6 meters) to shore in moving water using defensive and offensive techniques
- Strategies and techniques for boat recovery including bumping, bulldozing, towing, and swimming a boat to shore
- Boat flips: self, assisted (considerations: load, flip safety, and shore-based flips for heavy boats)
    - Loaded boat vs empty boat
    - Mid-river channel vs eddy
- Swimmer tow options
- Self and assisted swimmer re-entry techniques
- Unresponsive paddler rescue
- Throw rope use
- Entrapments (stabilization line)
- Basic wading
- Pinned boat rescues (arm strong, rope/vector, simple mechanical advantage, anchor systems, etc.)
- Emptying water from the boat (on shore, bailers, pumps, etc.)

Responsibilities of Paddle Captain

- Distribution of paddlers
- Group communication and cohesion
- Commands
- Boat loading and trim
- Reading the river
- Ability to effectively maneuver raft
- Accountable for rescues and emergency management

Conclusion and Wrap Up

- 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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https://americancanoe.org

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.