Level 4: Whitewater Rafting - Paddle

(Sample Skills Course)

Course Overview: The **Whitewater Rafting - Paddle** course is for individuals interested in learning the skills required to efficiently paddle a raft on rivers with class I-III rapids. This course includes advanced river reading, safety considerations, and paddling techniques. In addition, the skills required to captain, or guide, a paddle raft in class I-III rapids will be introduced. This course is appropriate for properly outfitted rafts.

Essential Eligibility Criteria (EEC):
ACA courses are open to all individuals who acknowledge the ability to perform the following essential eligibility criteria.

1. Breathe independently (i.e., not require medical devices to sustain breathing)
2. Independently maintain sealed airway passages while underwater
3. Independently hold head upright without neck/head support
4. Manage personal care independently or with the assistance of a companion
5. Manage personal mobility independently or with a reasonable amount of assistance
6. Follow instructions and effectively communicate independently or with the assistance of a companion
7. Independently turn from face-down to face-up and remain floating face up while wearing a properly fitted life jacket*
8. Get on / off or in/out of a paddlecraft independently or with a reasonable amount of assistance*
9. Independently get out and from under a capsized paddlecraft*
10. Remount or reenter the paddlecraft following deep water capsize independently or with a reasonable amount of assistance*
11. Maintain a safe body position while attempting skills, activities, and rescues listed in the appropriate Course Outline, and have the ability to recognize and identify to others when such efforts would be unsafe given your personal situation*

** To participate in adaptive programs, participants must acknowledge only the first six EEC listed above. Entry-level adaptive programs will involve teaching and practicing EEC #7-11.*

Course Duration: Two days (16 hours) or more based on instructor's discretion.

Course Location / Venue: Rivers rated class I to III

Course Prerequisites: None

Instructors: ACA Level 4 Whitewater Rafting - Paddle Instructor (Or higher)

Class Ratio: 6 students : 1 instructor; with an additional instructor or qualified assistant the ratio can be 12 : 2

Level 4: Whitewater Rafting - Paddle

(Sample Skills Course)

Succeeding courses:
Level 4: Whitewater Rafting - Paddle Skills Assessment
Level 4: Whitewater Rafting – Paddle Instructor Certification Workshop
Level 5: Advanced Whitewater Rafting - PaddleSkills Course

The following is a general summary of course content for the **Level 4: Whitewater Rafting - Paddle** course. The amount of content covered and the sequence of instruction should be adjusted to best fit the participant's needs, class location, and time available.

Course Introduction

Course Learning Objectives -

While navigating class I-III rapids in a paddle raft the participant will learn to:

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

Introduction, Expectations, & Logistics

Learning Objective - Students should have a basic understanding of the ACA and its policies, how & where the course is being conducted, and student behavior.

- Welcome, introductions, paperwork
- Student & instructor course expectations and limitations
- Course itinerary & site logistics
- Review waiver, assumption of risk, challenge by choice, medical disclosure
- About the ACA
- PFD policy (always wear on the water)
- Appropriate personal behavior
- No alcohol/substance abuse
- Proper etiquette on & off the water
- Respect private property
- Practice Leave No Trace ethics

The Paddling Environment

Learning Objective - Students should understand the current Paddling Environment for the duration of the course.

- 4 W's: Wind, Waves, Weather, Water
- River classifications of the venue of the course

Personal Preparation

Learning Objective - Students should understand their level of what is expected of them for the duration of the course.

Check-in with students on the following:

- Personal self-evaluation - *Mental and Physical*
- Whitewater comfort & confidence
- Whitewater swimming ability
- Fitness, conditioning, and warm-up
- Boat handling experience

- Safety and rescue considerations
    - Personal equipment (reviewed by the instructor)

Getting to the River

Learning Objective - 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
    - Sourcing local beta (river sections, flows, weather, etc…)
    - Local regulations
    - Shuttle logistics
- Transporting a raft
    - Loading & unloading: racks, trailers: straps, rope, webbing
    - Carries: overhead, underhand
    - Lifting
    - Stacking
- Knots: figure 8 or bowline, trucker's hitch, daisy chain.

Equipment

Learning Objective - Students should understand the equipment (both personal and group equipment) needed for paddle rafting, its use, and care.

- Personal
    - PFD - types, materials, fit
    - Helmets - Proper fit, always buckled when on your head
    - Clothing & shoes
    - knife, whistle, flip line, etc…
- Safety equipment
    - Spare paddle
    - Throw Bag - Proper use and risks
- Group equipment
    - Sweep kit - First aid kit, repair kit, pump, spare PFD, pin kit, etc…
    - Paddles

Raft

Learning Objective - Students should understand basic raft care and proper rigging to reduce entrapment hazards.

- Raft
    - Proper inflation
    - Care of equipment
- Outfitting
    - Bow & Stern Lines
    - Perimeter Lines
    - How to rig: spare paddle, other equipment (safety kit, cooler, etc…)
    - Flip recovery systems - Flip lines, belly band, bottom floor handles, etc… (May or may not require extra rigging.)
    - System to get back in boat efficiently - Thwart handles, cross thwart strap, perimeter line, etc… (May or may not require extra rigging.)

Level 4: Whitewater Rafting - Paddle

(Sample Skills Course)

Crew Preparation

Learning Objective - Students should understand the importance of safety talks, as well as the paddle captain's (guide's) responsibility for the safety and performance of the paddle crew.

Safety Talks

- Responsibility of the paddle captain (guide) for the safety of the crew
  - What to cover
  - When to give one
  - How to give one

Paddle Talk

- Responsibility of the paddle captain (guide) for the performance of the crew
- Paddler placement & foot position
- Paddle Talks
  - What to cover
  - When to give one
  - How to give one
- Concepts of Paddling

River Running Strategy

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

- River etiquette
  - Efficiency & courtesy during launching & landing
  - Courtesy on the water
  - Communicating with other groups
  - Use of good judgment
  - River stewardship
- Scouting
  - Know what rapids you want to scout
  - WORMS (Water, Obstacles, Route, Markers, Safety)
- River Leadership
  - Communication with whole group
  - River Signals (hand, paddle, whistle)
  - Lead / Sweep
  - Group Dynamics

River Features & Hydrology

Learning Objective - Students should understand the basic hydrology of rivers and be able to identify the different types of features within a river.

- Currents
- Eddies
- Eddie Lines
- Waves
- Holes
- Pillows
- River bends

River Hazards

Learning Objective - Students should understand and be able to identify river hazards.

- Rocks
- Strainers
- Bridges
- Undercut rocks / sieves / ice
- Dams / flow diversion structures
- Ledges / waterfalls
- Features that can flip rafts
- Debris - Rebar, concrete, metal scraps, etc...

Paddle Factors
Learning Objective - Students should understand the fundamentals needed for strokes and maneuvers including stroke timing, parts of the paddle, paddle shaft angle, and blade placement in the water.

- 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 affects boat movement:
  - Vertical paddle shaft with blade next to raft gives more momentum with minimal turning
  - More of a 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 (ie: placing paddle blade in back side of a wave or in an eddy behind a rock.)

Body Mechanics
Learning Objective - 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 & 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, twist, and reach
  - Hinge- Forward & back lean, hinging 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

- Minimize shoulder problems

- Maintaining the "paddler's box" with correct body positioning and paddle 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 Objective - Students should understand and be able to demonstrate how to maneuver their raft using proper paddle strokes and paddle commands.

Paddle Strokes *Learning Objective - Students should understand and be able to demonstrate the different paddle strokes used to maneuver a raft.*

- Crew Strokes (primarily momentum)
  - Forward
  - Back
- Guide Strokes (primarily angle)
  - Draw
  - Pry
  - Sweep
  - Rudder
  - Rafting "J" Stroke (momentum stroke)

Crew Commands

Learning Objective - Students should understand and be able to demonstrate the different commands used to captain a paddle raft.

Crew commands can vary, the main thing is to communicate what your commands are with your crew and be consistent with your commands.

- Commands for:
  - Moving forward and backward
  - Turning left and right
  - Stopping
- Other commands such as high-side and get down
-

Maneuvers (calm water)

Learning Objective - Students should understand and be able to demonstrate on flat water the types of basic maneuvers that a paddle raft can make.

- Left Turn
- Right Turn
- Forward: Paddle in a straight line
- Reverse: reasonably straight line backward
- Stopping raft from a good speed
- Spin: Pivot the raft - left & right, stop the spin

Maneuvers (moving water – up to class III)

Learning Objective - Students should understand and be able to demonstrate on moving water the types of dynamic maneuvers that a paddle raft can make.

- Setting and holding angles
- Ferries: front, back
- Eddy Turns
- Peel Outs
- Spin: Pivot the raft - left & right, stop the spin

Level 4: Whitewater Rafting - Paddle

(Sample Skills Course)

Boat Factors

Learning Objectives - Students should be able to understand how a raft design and crew load affects the boat's maneuverability.

Speed, glide, and tracking is 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 - 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 - i.e. Larger tubes have more flotation.
    - Diminished tubes vs regular tubes - i.e. Diminished tubes punch waves
    - Kick/ rocker - i.e. Affects surf ability
    - Type of material - i.e. PVC is more rigid than Hypalon
    - Width - i.e. Affects stability
    - Floor-type, construction, and height from water - i.e. Affects tracking

Playboating a Paddle Raft

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

Playboating - Playboating can be a great way to learn but increases the chances of swimming. Make sure your crew is comfortable with playing and swimming and make sure your venue is safe. (i.e. no downstream hazards)

- Downstream safety
- Communication - With crew and other boaters

Making non-essential maneuvers - Make class III & IV moves in class I & II whitewater *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 & rocks for maneuvers and momentum control
- Attainment (moving upstream)

Surfing

Learning Objectives - Students should understand factors affecting river features that can be surfed, demonstrate how to choose an appropriate feature and 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, 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 & 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
  - Front surf
    - Bow upstream
    - Use rudder strokes to maintain the upstream angle
  - Side surf - Highsiding to prevent flipping
- Paddler placement during surf - Shifting paddler weight
  - Towards feature to engage the surf
  - Away from feature to raise bow & prevent "submarining" and getting raft on plane
  - Shifting upper body weight toward the stern – "Laying back" makes for good wave planing
- Techniques for escaping feature
  - Work your way to the side (does one side flush more than the other?)
  - Grab downstream water with big static draw stroke
  - Consider throw bag from shore (if you are "getting surfed")
- Swim and Safety Considerations when surfing
  - Set downstream safety
  - "Get Down" Position to maintain surf or stay in the boat

R2 (Raft With 2 Paddlers)

Learning Objectives - Students should understand the difference between paddling a raft with just two people as opposed to as a paddle guide with a crew.

Sitting in an R2

- Paddler placement
  - Side by Side
  - Off-set
- Leg/foot placement
  - Straddling a thwart
  - In between thwarts

Commands - (Communication is key! Discuss who, if anyone, is going to be giving commands.)

- One person in charge & giving commands.
- Taking turns giving commands (ie: switching off rapids)
- Neither paddler is in charge and both simply communicate what line to take

Paddle Strokes

- Paddlers do not necessarily paddle in unison
- Both paddlers use both angle and momentum strokes
- Draw strokes can move small boats sideways or change the angle

Level 4: Whitewater Rafting - Paddle

(Sample Skills Course)

Safety & Rescue

Learning Objectives - Students should understand how to handle common emergency situations on the river.

Rescue Philosophy

- Rescue Priorities: People first, boats & gear second
- Responsibility - Group over an individual, rescuer over a victim
- Fast & simple to slow & complex

Environmental Concerns

- Cold Water Shock and Hypothermia
- Hyperthermia

Dealing with a swiftwater situation (swimmers, flipped or broached boat, etc…)

- Swimming in current - defensive & aggressive
- 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

Raft Repair

Learning Objectives - Students should understand how to perform basic raft repair

- Raft repair kit
  - Appropriate glue & patch material for different rafts
  - temporary “river fix” patch material (ie: tear aid)
- Cuts and perforations
- D-rings
- Valves

Conclusion & Wrap Up

Learning Objectives - Students should understand the importance of continuing education and practice. Instructor should debrief the course and hand out any pertinent material.

- Group debrief / Individual feedback
- Course limitations
- Importance of First Aid & CPR
- Importance of additional instruction, practice, experience
- Importance of an appropriate level of safety & rescue training
- Life sport / Paddling options
- Local paddling groups / Clubs
- Handouts / Reference materials
- ACA Membership forms
- Course evaluation
- Participation cards

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(Sample Skills Course)