

Columbia Cascade Trail Skills College Course Descriptions

Cascade Locks, OR

[100 Level Courses](#)

[200 Level Courses](#)

[300 Level Courses](#)

[400 Level Courses](#)

The course list below includes a complete list of courses, each year we are able to offer a smaller subset of this list with the aim of offering the core classes at every event and a selection of special classes too. For those interested in learning more about cross-cut or chainsaw work, the following introductory courses will be offered at TSC as they are pre-requisites for certification classes:

198/199 First Aid and CPR

103 Basic Saw Crew Training

104 Intro to Chainsaw for Prospective Sawyers

*297 Chainsaw Practicum**

**Participants must have current First Aid & CPR certifications*

100 Level

100 level courses are designed for those with little or no previous trailwork experience. They can also be useful refresher classes for experienced volunteers and an opportunity for experienced volunteers to develop their leadership skills by participating in the class as an assistant instructor.

Introduction Track for Beginners –(½ Day Saturday afternoon and a full Day Sunday)

This condensed course offering combines content from 100, 101 and 102 (below) and is taught through a combination of lecture, demonstration and hands on practice. It is oriented for people who have never done trail work before, but is also suitable for experienced volunteers who would like to refresh their skills or learn more about the theory behind trail maintenance standards. Students remain in the same cohort through the weekend providing an opportunity to form a team as they assess their trail and address the variety of trail issues presented.

100. Intro to Trail Maintenance

This introductory sampler class is for people new to trail work who want an overview. One quarter of the class covers “how trails work,” i.e. basic trail design concepts; one quarter covers trail work safety protocols; one quarter covers hands-on brushing and hand-saw clearing; and one quarter covers hands-on drainage cleaning. This sampler class does not prepare students to work independently. Instead, students will understand a range of trail work tasks and have a good idea of what they want to do under a crew leader, or what class they want to take next.

101. Brushing and Scouting: Opening the Trail

Intended for those new to trail work who want to learn how to cut brush and small logs to help clear a trail to proper specifications. After discussion of general safety protocols, students learn about safe and effective use of hand saws and loppers. This class also includes how to complete an early-season trail survey to identify and report major problems, especially blown down logs -- their numbers, locations, and sizes.

102. Tread and Drainage: Protecting Trails from Erosion

The effects of water and gravity constantly threaten our trails and thus we must learn how best to deflect them. This course begins with basics of hillside hydrology and how trails work when they shed water properly. Includes introduction of “trail eyes” for recognizing tread erosion patterns. Hands-on practice removing slough and berm, and effective cleaning and maintenance of existing water_bars and drain dips.

103. Basic Saw Crew Training

Are you interested in helping certified sawyers to clear trails, but don't have much experience working with or around saws? Regardless if you aim to become a certified sawyer yourself, learning to be a saw crew member is an important place to start and takes know-how to do safely. This class provides field experience with crosscut saws & axes, but most of the principles are also applicable to chainsaws. Therefore, this class is the place to start, no matter what trail clearing tools you expect to use in the future. The session begins with an introduction to crosscut saws and axes of various types, and how they work. It then covers their safe and effective use, including a review of trail clearing specifications, safety equipment, the forces of

tension and bind, and the practice of situational awareness. This class is an introduction; it does NOT provide saw certification, which is required for those who wish to be lead sawyers.

104. Intro to Chainsaw for Prospective Sawyers

Intended for students who have already taken Saw Crew Training (103) and are interested in an orientation specifically to chainsaws, in preparation for a chainsaw certification class. The class will not use chainsaws in the field, but it will cover things you need to know if you've never handled a chainsaw before, including how they work and why they are potentially dangerous. Also included is a review of specialized safety equipment & clothing needed, and how to start saws safely. If time allows, we will disassemble a saw to clean and sharpen it.

107. Hand Tool Field Maintenance

We rely on hand tools to lop branches, dig drain dips, remove slough and berm, construct waterbars and check steps, and much more. As a result hand tools receive a great deal of wear and tear. Learn about the most common tool problems that are encountered during trail work and how to address them in the field including dull blades and loose heads. This is designed to be a 4-hour class.

198/199 First Aid and CPR

This course is for anyone with limited or no medical training who needs a course completion card in first aid, CPR and AED use to meet job, regulatory or other requirements. Upon completion of this course, students receive an American Heart Association Heartsaver First Aid CPR AED Course Completion Card that is valid for two years. During the course, an AHA Instructor conducts video-based lessons and works with students to complete their first aid, CPR and AED skills practice and testing. This class also covers the basics of how to assess and respond to emergencies and injuries such as bleeding, strains, sprains, dislocations, fractures, heat and cold illness, bites, stings and other sudden illness. (Note: This is NOT a Wilderness First Aid (WFA) Certification course, those are typically 16 hours over two days and cost around \$200)

200 Level

These courses build upon the 100 level classes and assume that the participant has taken the beginner classes or has the equivalent previous experience.

200. Basic Trail Design

For curious trail workers who want to understand why so many trails are in bad shape because of poor design, and how better layout makes trails more sustainable. Introduction to different trail design standards appropriate for different kinds of trails. This class is for anybody interested in these topics but students with some trail building and maintenance experience will benefit the most. This is a lecture based class with a half-day in the field to practice measuring slope angles and identifying potential locations for re-routes.

201. Drainage Design and Drain Dips

Intended for someone who has taken 102 (Intro to Tread & Drainage) and/or has experience doing drainage work. Learn how to design and locate effective drainage structures. After a comprehensive explanation of hillside hydrology and how trails work when they shed water properly, this class shows students how to design and construct long, rolling drain dips as a way of reducing erosion on existing trails.

203. Waterbars and Checks: Drainage Remediation

Intended for someone who has taken 201 (Drainage Design & Drain Dips) and/or has considerable experience doing drainage work. Where earthen rolling drain dips are not feasible, drainage features are sometimes armored using rock or log. Learn contemporary techniques to build water bars and checks with both rock and log. The class will include a review of outdated techniques, and how to convert “old school” waterbars to a more effective design.

204. Cooking and Camping with the Crew

For students aiming to help pull off multi-day trips in the backcountry or frontcountry. Whether your group will be large or small, this course provides helpful tips on nutrition, food planning, and shopping, setting up a field kitchen, what to bring, and tips for cooking with trail crews. It also covers best practices for food storage and sanitation at camp. No prior experience is necessary, although familiarity with typical trail work parties and basic kitchen equipment will be helpful.

205. Tread Re-Construction

This course goes beyond a triage approach (203 Waterbars and Checks), because reconstruction indicates a more thorough restoration of damaged tread to ideal specifications. Review hillside hydrology and how trails should work. Practice systematic slough & berm removal. Learn to reconstruct tread after gullyng, tread creep, nasty roots, and uprooted trees. (Prerequisite: 201 and 203, or equivalent experience. This class is a prerequisite for 206 New Trail Construction.)

206. New Trail Construction

Building reroutes, re-alignments or entirely new trails is as fun and rewarding as it is challenging. This class is intended for experienced students. The class will cover site specific design and layout, phases of trail construction and crew management, taught in a mixture of lecture and hands-on construction.

207. Trail Decommissioning and Wildland Restoration

Learn how to put a campsite and section of trail to bed so that it returns to nature without erosion. Some call this the “Zen and the Art of Wilderness Gardening”, or “trail magic” because, if properly done, the old scars disappear, replaced by a perfectly restored landscape. Includes transplanting, seed collection, and rock placements. There are no prerequisites for this class, though students should have interest in working with plants and be willing to get dirty. Patience and a good eye for design help.

208. Trail Sign Installation & Inventory

Understand trail sign specifications and learn how to install signs correctly. Learn to record sign inventory records in conjunction with land managers. Some graduates of this class may carry out sign inventories for agencies; all will be much more sign savvy. There are no prerequisites for this course, though students must be seasoned hikers experienced with map reading, have some experience with basic tools, be detail-oriented with clear handwriting, and be comfortable learning to use digital devices.

297. Chainsaw Practicum

This class is designed to allow volunteers who would like to earn a certification to use chainsaws the opportunity to work with an instructor to ensure they have the basic foundation skills necessary to enroll in a sawyer certification class. Participants must have current First Aid & CPR certifications in order to participate in the Chainsaw Practicum.

300 Level

300 level classes are for those interested in gaining the technical skills and leadership abilities to safely lead crews in the backcountry. Participants must have completed pre-requisite classes or have sufficient experience to demonstrate proficiency in treadwork and brushing. Volunteer leaders and assistant leaders have priority in registering for these classes.

300. Rock Retaining Walls: Basic Rock Work

Learn fundamentals of rock construction. Includes a strong emphasis on effective and safe use of rock bars, the critical tool for all rock work. We'll tackle basic rock placement techniques for retaining walls to last the ages, but also spend time on an often underappreciated skill: locating suitable rocks and safely transporting them to the work site.

304. Crew Leadership: Managing Volunteers

For students with prior trail work experience interested in learning about crew dynamics, leadership and risk management. This class is suitable for leaders, aspiring leaders as well as those simply curious about how successful crews function. Not a construction techniques class; this is about effective leadership. Students will have classroom and field work in the following topics: Work Day Responsibilities; Risk Assessment and Safety; Tool Safety & Tool Talks; Leadership & Team Building; Practical Experience Leading Trail Crews.

302. Drainage Crossings: Water Crossings and Seeps

Because bridges are time consuming and expensive, whenever possible it is better to build simpler structures that are more durable. Learn to build and maintain two to three of the following: fords, stepping stones, culverts, French drains, armored swales, step down drains. If you enjoy working in water, this is the course for you!

306. Working with Packers and Pack Stock

Multi-day projects in the backcountry may seem like an overwhelming burden because of all the food, tools, and gear needed—that is—unless we have the assistance of pack animals.

Thankfully, the PCTA has many talented packer friends willing to help. This course, taught by a packer, is meant to take any intimidation out of planning a trip that's going to be pack-supported, especially for those not experienced with equine. Students will learn safety around the stock, and some horseman lingo. They will learn what essential pieces of information need to be discussed with the packer in advance. This course won't make students into packers, but, they will gain a general understanding of the key principles of packing and balancing panniers, coolers, tools, and other trail crew gear.

398: Special Topics: Working with Mechanical Advantage

Elbow grease and brute force will only get you so far, sometimes you need to work smarter and not harder. This class is an introduction to some devices use for applying mechanical advantage to lift or move a load, be it a large boulder, log, or buckets of gravel down a zip line. Starting with the rock bar to rotate and position a boulder, the class progressing through an introduction to Rope pullers, Grip Hoists and high lines.

398: Special Topics: Emergency Scenarios

Although trail crews may spend days learning hands-on to perfect their trail shaping, brushing and saw skills during the course of a season, how often do we practice for a medical or trauma related emergency? This class covers the fundamentals of how to respond to any emergency you might encounter on a trail work party including the basics of an incident command structure and use of communication technology such as Forest Service radios and GPS enabled emergency beacons. Although Wilderness First Aid experience is useful, it is not the focus of this course, rather we will spend class time practicing using the skills you have to work as a team within an incident command framework to build the neural pathways you'll need to communicate quickly and effectively in an emergency.

398: Special Topics: Turnpikes

Turnpikes are raised trail beds constructed of curb logs or rocks that raise the tread above the surrounding terrain and are typically filled with a durable soil type (often imported to a boggy area from somewhere else). This class covers the basics of turnpike construction and may be taught through the construction of a mock up structure model, refurbishing an existing turnpike, or if chance provides the opportunity, the construction of a new turnpike.

398: Special Topics: Bridge Construction

This class covers the basics of building a bridge including foundational concepts and tools needed to measure, level and square up a wood structure. Prior experience with construction isn't required, so people new to the topic will feel comfortable and those who have some experience may be enlisted to help teach. Although we don't always have an actual bridge to build we'll take advantage of every opportunity to use models, existing bridges and mock up exercise to give hands on training.

398. Special Topics: Gabions

Gabions get their name from the Italian word gabbione, meaning "big cage." They are used as retaining structures where it isn't practical to use large rocks or wood. Rather, smaller aggregate materials are retained in some sort of cage; typically they are build of some type of

wire filled with rocks. This class combines lecture with field work to instruct students on the types of situations where gabions are appropriate and the fundamentals of building one.

398. Special Topics: Crew Leader Forum

This offering is a pilot project to experiment with a peer-to-peer learning model where people who have at least one experience as assistant crew leader up to many years of experience as crew leader can come together to discuss the different challenges faced while leading crews. We see this as a unique opportunity for leaders from different non-profit groups to learn from one another and hopefully come away with new strategies to incorporate into their trail work events. Prior to the forum, participants will be asked to submit topics for discussion. The teaching method will involve discussion in a classroom setting, but we also plan to stretch our legs on a trail and may include some role-play or other “active” learning activities.

400 Level

Classes at this level are designed to build leader’s skill set by bringing together experienced crew leaders to learn from one another. The courses will focus on the most unique and challenging aspects of front country and backcountry trail work.

400. Crew Leadership: Project Management

Determine the optimal fixes for various problems on a trail. Learn the steps for estimating time and materials, and setting up a work project. Learn about trail triage: how to prioritize and what techniques to use when total trail reconstruction to ideal specs is not an option. Understand environmental concerns and policies that may impact projects. Learn what to look for when scouting a trail and how/when to schedule work.