Colorado Outdoor Recreational Leadership Course Scope and Sequence

Course Name	**Bike Tech II**	**Course Details** **Course = 0.50 Carnegie Unit Credit**	Level 2 course in the Outdoor Recreational Leadership Pathway. This course fits into the bike tech/mountain biking strand. Prerequisite: Bike Tech I
Course Description			
Note:	This is a suggested scope and sequence for the course content. The content will work with any textbook or instructional resource. If locally adapted, make sure all essential knowledge and skills are covered.		
SCED Identification #		Schedule calculation based on 60% of a semester instructional time. Scope and sequence allows for additional time for guest speakers, student presentations, field trips, remediation, or other content topics.	

All courses taught in an approved CTE program must include Essential Skills embedded into the course content. The Essential Skills Framework for this course can be found at **https://www.cde.state.co.us/standardsandinstruction/essentialskills**

Unit Number, Title and Brief Description	CTE or Academic Standard Alignment	Competency / Performance Indicator	Outcome / Measurement	CTSO Integration
Unit 1: Intro to Level II - Overview & Expectations	1.1 Course Introduction, expectations and course objectives 1.2 Students research and report on careers related to bicycle 1.3 Work- based learning: formulating individual learning plans.			
Unit 2: Review of Level I	2.1 Safety - workplace, employee, and customer 2.2 Shop terminology, tools and their application 2.3 Administration of procedures using work documents/order 2.4 Hands on bicycle assembly 2.5 Retail business basics			

Unit 3: Retail business management	3.1 Business planning	A. Seasonal business plan/overview B. Mark up & margin C. Financials - profit/loss and balance sheet D. Overhead and business operations		
	3.2 Management	A. Employee relationships B. OSHA, risk management in the industry		
	3.3 Customer Service	A. Professionalism B. Ethics in business		
	3.4 Daily operations	A. Front of the store B. Inventory and replenishment C. service department		
	3.5 Inventory	A. Stock levels B. Inventory and open to buy C. Product cycles and availability		
	3.6 Ordering - receiving	A. Systems B. analysis		
	3.7 Merchandising of products and services	A. Product placement in the store B. Service execution		
	3.8 Marketing	A. Customer Interaction B. Social Media C. Web Presence D. Event Organization and execution		
	3.9 Liability - Safety			
	3.10 Work Readiness Skills	A. Hands on practice of job interviews B. Personal public profile		
Unit 4: POS Systems (Point of Sale)	4.1 Why POS systems are valuable to business and analysis			
	4.2 Computer skills	A. Work with all parts of the system B. Proficiency in enter customer, a sale, a repair-tag		

	4.3 Inventory class room - beginning - middle- end year 4.4 Entering orders - receiving orders - warranty process 4.5 Analytics: Customers, sales, repairs, inventory 4.6 Customer outreach through POS system			
Unit 5: Service writing and service department procedures	5.1 Service departments efficiency's 5.2 Service department set up and systems 5.3 Service writing			
Unit 6: Wheels	6.1 Demonstrate skills necessary to remove and replace both front & rear wheels 6.2 Develop an understanding of principles of spokes in wheel construction/terminology 6.3 Demonstrate an understanding of spoke adjustment, truing and tension 6.4 Demonstrate ability to lace, tension & true a 3 cross wheel 6.5 Demonstrate ability to identify & remove/replace various tires and tubes 6.6 Identify the differences in hub design/function			

	6.7 Demonstrate front and rear hub strip down, service, reassembly on convention & cartridge bearing hubs			
Unit 7: Brake Systems	7.1 Identify braking systems 7.2 Identification of different types of brake levers 7.3 Display an understanding of brake cable and hose systems. 7.4 Demonstrate adjusting brakes to safety standards 7.5 Adjust all controls to proper level of sensitivity 7.6 Hydraulic brake safety: PPE, identifying fluids, dealing with hazards correctly 7.7 Theory of hydraulic brakes 7.8 Hands on servicing of hydraulic breaks.			
Unit 8: Gear systems	8.1 Theory of gears 8.2 Identifying parts of the gear system on a conventional MTB-vocabulary 8.3 Hands on skill - fitting a gear cable, fitting gear housing, adjusting limit screws, indexing gears for both the front and rear derailleurs			
Unit 9: Suspension Systems	9.1 Theory & identification of types of linkage systems 9.2 Skill test - rider set up			

	9.3 Forks: theory, identification, performance comparisons 9.4 Additional sub-modules for servicing will be depend on access to teaching materials/demo bikes/demo forks/tools/consumables 9.5 Skill test: suspension fork servicing.			
Unit 10: Steering and rider interface	10.1 Identification of headset parts: thread less, threaded 10.2 Identification of different headset sizes 10.3 Skill test: installation and adjustment of various headset types 10.4 Demonstrate knowledge of various types of stems, handlebars, saddles, seatposts - compatibility & installation 10.5 Skill test: installing handlebar ribbon 10.6 Skill test: dropper style seatposts - installation & set up 10.7 Skill test: Bike fitting & ergonomics/comfort			
Unit 11: E-bike Advanced Maintenance				
Unit 12: Engineering and product design				
Unit 12: Work-based learnign	12.1 Complete a WBL participation agreement - training, agreement/training plan			

	12.2 1 hour session of work based learning per week 12.3 Students submit weekly time card & journal entry to document the WBL 12.4 Mid-term report/presentation 12.5 Final report/presentation on WBL 12.6 Student should also receive an evaluation of their job performance from the participating employer/sponsor of their WBL			
Unit 13: Entrepreneurship				
Unit 14: College and career readiness	14.1 Discussion and research on what “college and career readiness” implies 14.2 Identify principles of effective interpersonal skills 14.3 Career portfolio submission/presentation detailing learning and skill achievements in Bike Tech 14.4 Level 2 Final exam 14.5 Awarding certificates			

Academic Standards Alignment

Colorado CTE courses are required to integrate academic and essential skills into course content. The following academic standards have been identified as aligned to this course and should be integrated throughout instruction.

CO CTE Academic Standards Resources (Rubrics, integration strategies, etc)
CDE Colorado Academic Standards Online (Online standards lookup tool)

Standard 1: Oral Expression and Listening

- Prepared Graduate 1: Collaborate effectively as group members or leaders who listen actively and respectfully; pose thoughtful questions, acknowledge the ideas of others; and contribute ideas to further the group's attainment of an objective.
    - Students collaborate with customers, employers, coworkers, and peers through customer service activities, event organization, work-based learning experiences, job interviews, and workplace training.
- Prepared Graduate 2: Deliver effective oral presentations for varied audiences and varied purposes.
    - Students participate in job interviews and deliver mid-term, final, and career portfolio presentations related to their work-based learning experiences and professional skill development.

Standard 2: Reading for All Purposes

- Prepared Graduate 4: Read a wide range of informational texts to build knowledge and to better understand the human experience.
    - Students interpret work orders, business plans, financial statements, inventory systems, technical manuals, bicycle component specifications, safety standards, and workplace documentation to develop technical and business knowledge.
- Prepared Graduate 5: Understand how language functions in different contexts, command a variety of word-learning strategies to assist comprehension, and make effective choices for meaning or style when writing and speaking.
    - Students develop and apply specialized vocabulary related to bicycle repair, business management, customer service, point-of-sale systems, suspension systems, e-bike maintenance, engineering, and workplace communication.

Standard 3: Writing and Composition

- Prepared Graduate 7: Craft informational/explanatory texts using techniques specific to the genre.
    - Students create business plans, work orders, repair documentation, inventory records, training plans, time cards, journals, reports, and career portfolios that communicate technical and professional information.
- Prepared Graduate 9: Demonstrate mastery of their own writing process with clear, coherent, and error-free polished products.
    - Students maintain work-based learning journals, submit reports and time cards, develop career portfolios, and document technical and professional competencies acquired throughout the course.

Standard 4: Research Inquiry and Design

- Prepared Graduate 10: Gather information from a variety of sources; analyze and evaluate its quality and relevance; and use it ethically to answer complex questions.
    - Students research bicycle-related careers, analyze business operations and financial data, evaluate bicycle technologies and engineering concepts, investigate workplace practices, and explore college and career pathways within the bicycle industry.

***Note**: Mathematics and Science standards will be added in the future. Visit the Colorado Academic Standards page for the most current version.*