

# MISSION TRAILS REGIONAL OCCUPATIONAL PROGRAM

1. COURSE TITLE: Natural Resources
2. CBEDS TITLE: Forestry, Natural Resources, and Rural Recreation
3. CBEDS NUMBER: 4060
4. JOB TITLES:
  - Park Naturalist
  - Forest Ecologist
  - Forester
  - Forest Recreations
  - Forest Worker
  - Forest Ranger
  - Recreation-Facility Attendant
  - Zoo Keeper
  - Wildlife Agent Regional
  - Game Protector
  - Fish and Game Warden
  - Wildlife Control Agent
  - Park Worker
  - Animal Keeper
  - Animal Caretaker
  - Game Farm Worker
  - Aquarist
  - Aquarium Tank Attendant
5. COURSE DESCRIPTION: This course prepares individuals for enrollment in advanced vocational and technical education programs and includes occupational and basic technical information and laboratory experience directly related to current practices in the area of natural resources and environmental sciences. Forestry management, ecology, energy conservation, recycling, wildlife, rural recreation, camping and California local, state and national parks are studied and visited. The purpose of the program is to

assist students in making occupational and educational choices. Individuals are provided with information and basic skills in careers and occupations related to entry-level employment in state and local parks and outdoor recreation facilities among other possibilities.

6. HOURS: 180

7. PREREQUISITES:

8. REVISION DATE: January 2010

9. CDE RECERTIFICATION:

## 9 COURSE OUTLINE:

### a) CONTENT AREA SKILLS

i) EXPECTED STUDENT OUTCOMES

ii) HOURS OF INSTRUCTION

## COURSE OUTLINE

CONTENT AREA SKILLS	EXPECTED STUDENT OUTCOMES	HOURS		
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<b>Instruction will include:</b>	<b>Student will be able to:</b>			
1. On the job learning experiences	1. Sustain employment in a natural resources related occupation.	10		
2. Discussion of the interdependence of all aspects of the environment necessary for the development of sound resource management practices.	1. Define ecology, environmental conservation, preservation, and exploitation. 2. Describe a biotic succession. Discuss the use of an environmental impact statement.	15		
3. Importance of water management, pollution, and rangeland resources of the U.S. and California including recognition of the finite amounts of non-renewal resources in California.	1. Identify the major uses of water in California and the major watersheds as well as the major water distribution systems. 2. List three specific solutions to water pollution problems. 3. Define the basic terms relating to rangeland resources and describe three methods of rangeland improvement. 4. List four problems of shifting from a rural to an urban environment.	15		
4. Explore the historical and regional perspective of forest industry and forest policy in California and the U.S.	1. Identify the seven major forest areas in the U.S. and those in California and list the major marketable species in those areas.	15		
5. Understand forest planting physiology methods through knowledge of the plant's parts and function plus requirements for growth, reproduction and protection.	1. List five external parts of a tree and describe the function of each. 2. Outline the five common terms associated with forest physiology. 3. Identify the difference between simple and compound leaves.	45		
6. Explore the system identifying forest trees, their environment and how they affect their environment and surroundings.	1. Define the word dendrology 2. Differentiate between the two main groups of trees angiosperms and gymnosperms. 3. Identify twenty trees native to California, important to forestry management 4. List growth requirements and ecological relationship of ten species of trees.	35		

7. Understand the species of forest plants which provide feed and cover for livestock and wildlife, and also watershed protection, recreational value and domestic use.	1. Define the difference between shrubs and trees. 2. Define the terms graze, browse, chaparral and palatable.	20		
8. Recognize the basic principles of fire chemistry, its make-up and factors associated with fire behavior.	1. Identify the components needed for fire and how it burns. 2. Explain how a wild-land fire spreads and the heat transfer in a forest fire. 3. Identify the five types of winds affecting wild-land fires.	25		
		180		

## 9 COURSE OUTLINE:

### b) CAREER PERFORMANCE STANDARDS

#### i) EXPECTED STUDENT OUTCOMES

#### ii) HOURS OF INSTRUCTION

## COURSE OUTLINE

CAREER PERFORMANCE STANDARDS	EXPECTED STUDENT OUTCOMES	HOURS
<b>Instruction will include:</b>	<b>Student will be able to:</b>	
<p><b>1. Personal Skills</b></p> <ul style="list-style-type: none"> <li>▪ Classroom policies &amp; procedures</li> <li>▪ Ethics               <ul style="list-style-type: none"> <li>→ Work</li> <li>→ Business</li> </ul> </li> <li>▪ Sexual harassment laws</li> <li>▪ Personal skills, including positive attitude, self-confident, honesty, perseverance &amp; self-discipline</li> <li>▪ Professional appearance</li> <li>▪ Time management</li> <li>▪ Lifelong learning</li> </ul>	<p><b>1. Understand how personal skill development, including positive attitude, honesty, self-confidence, time management, &amp; other positive traits affect employability.</b></p> <ul style="list-style-type: none"> <li>▪ Demonstrate and understand classroom policies &amp; procedures</li> <li>▪ Define work and business ethics &amp; demonstrate the importance of ethical standards &amp; social responsibilities in the business environment.</li> <li>▪ Discuss the laws applicable to sexual harassment &amp; discuss tactics for handling harassment situations.</li> <li>▪ Demonstrate personal skills in class and/or business environment:               <ul style="list-style-type: none"> <li>→ Positive attitude</li> <li>→ Self-confidence</li> <li>→ Honesty</li> <li>→ Perseverance</li> <li>→ Self-discipline</li> </ul> </li> <li>▪ Demonstrate and model personal hygiene and acceptable professional attire</li> <li>▪ Prioritize tasks and meet deadlines</li> <li>▪ Explain the importance of lifelong learning</li> </ul>	<p><b>Integrated in content area skills</b></p>

CAREER PERFORMANCE STANDARDS	EXPECTED STUDENT OUTCOMES	HOURS
<b>Instruction will include:</b>	<b>Student will be able to:</b>	
<p><b>2. Interpersonal Skills</b></p> <ul style="list-style-type: none"> <li>▪ Group dynamics</li> <li>▪ Conflict resolution and negotiation</li> <li>▪ Team work</li> <li>▪ Etiquette across gender and cultural groups</li> </ul>	<p><b>2. Understand principles of effective interpersonal skills, including group dynamics, conflict resolution, and negotiation.</b></p> <ul style="list-style-type: none"> <li>▪ Identify and explain the key concepts of group dynamics</li> <li>▪ Discuss and demonstrate the dynamics of conflict resolution and negotiation, and their importance within the business environment</li> <li>▪ Demonstrate effective teamwork, share responsibilities, accept supervision and assume leadership roles</li> <li>▪ Demonstrate cooperative working relationships and proper etiquette across gender and cultural groups</li> </ul>	<p><b>Integrated in content area skills</b></p>
<p><b>3. Thinking and Problem-Solving Skills</b></p> <ul style="list-style-type: none"> <li>▪ Critical and creative thinking skills</li> <li>▪ Logical reasoning and problem-solving skills</li> <li>▪ Numerical estimation, measurement, and calculation</li> <li>▪ Identify, locate, and organize needed information and propose, evaluate, and select alternative solutions</li> </ul>	<p><b>3. Understand the importance of critical thinking and problem-solving skills in the workplace.</b></p> <ul style="list-style-type: none"> <li>▪ Apply critical and creative thinking skills in a work environment and implement a plan of improvement as needed</li> <li>▪ Demonstrate logical reasoning and problem solving skills in a work environment</li> <li>▪ Apply numerical estimation, measurement and calculation skills to business applications including the following: <ul style="list-style-type: none"> <li>→ Whole number math</li> <li>→ Decimals &amp; fractions</li> <li>→ Counting &amp; monetary functions</li> <li>→ Use of tables &amp; graphs</li> </ul> </li> <li>▪ Recognize problem situations; identify, locate and organize needed information, and propose, evaluate and select from alternate solutions</li> </ul>	<p><b>Integrated in content area skills</b></p>

CAREER PERFORMANCE STANDARDS	EXPECTED STUDENT OUTCOMES	HOURS
<b>Instruction will include:</b>	<b>Student will be able to:</b>	
<p><b>4. Communication Skills</b></p> <ul style="list-style-type: none"> <li>▪ Written communications</li> <li>▪ Verbal and Nonverbal communications</li> <li>▪ Active and effective listening</li> <li>▪ Proper etiquette in business communications</li> <li>▪ Writing and editing skills</li> <li>▪ Use of reference material and handbooks</li> <li>▪ Oral presentations</li> </ul>	<p><b>4. Understand principles of effective communication.</b></p> <ul style="list-style-type: none"> <li>▪ Read and implement written instructions, technical manuals, written communication, and reference books</li> <li>▪ Present a positive image of verbal and nonverbal communication through use of appropriate methods</li> <li>▪ Demonstrate active and effective listening skills through verbal, nonverbal and written feedback</li> <li>▪ Demonstrate proper etiquette in business communications, including an awareness of requisite for international communications (languages, customs, and time zones)</li> <li>▪ Demonstrate the following writing and editing skills: <ul style="list-style-type: none"> <li>→ Use correct grammar, punctuation, capitalization, vocabulary and spelling</li> <li>→ Write, proofread and edit</li> <li>→ Select and use appropriate forms of communication</li> </ul> </li> <li>▪ Exhibit a proficiency in the use of reference materials such as dictionary, thesaurus, telephone directory, almanac, zip code directory, and office handbooks</li> </ul>	<p><b>Integrated in content area skills</b></p>
<p><b>5. Occupational Safety</b></p> <ul style="list-style-type: none"> <li>▪ Good safety practices</li> </ul>	<p><b>5. Understand occupational safety issues, including avoidance of physical hazards</b></p> <ul style="list-style-type: none"> <li>▪ Model and implement good safety practices including: <ul style="list-style-type: none"> <li>→ Avoidance and reporting of physical hazards in the work environment</li> <li>→ Safe operation of equipment</li> <li>→ Proper handling of hazardous materials</li> </ul> </li> </ul>	<p><b>Integrated in content area skills</b></p>

CAREER PERFORMANCE STANDARDS	EXPECTED STUDENT OUTCOMES	HOURS
<b>Instruction will include:</b>	<b>Student will be able to:</b>	
<p><b>6. Employment Literacy</b></p> <ul style="list-style-type: none"> <li>▪ Expand awareness of career opportunities</li> <li>▪ Set employment goals and objectives</li> <li>▪ Aptitudes, personal characteristics and interests</li> <li>▪ Develop portfolio to C-TAP standards</li> <li>▪ Develop interviewing techniques</li> </ul>	<p><b>6. Understand career paths and strategies for obtaining employment.</b></p> <ul style="list-style-type: none"> <li>▪ Explore career opportunities and develop a career plan</li> <li>▪ Identify steps for setting goals and writing personal goals and objectives</li> <li>▪ Examine aptitudes related to career options; relate personal characteristics and interests to educational and occupational opportunities</li> <li>▪ Develop a portfolio to include the following: <ul style="list-style-type: none"> <li>→ Letter of Introduction</li> <li>→ Cover letter</li> <li>→ Resume</li> <li>→ Thank you letter</li> <li>→ Job application</li> <li>→ Licenses, Certificates and Awards</li> <li>→ Transcripts</li> <li>→ Letters of Recommendation</li> <li>→ Work Samples</li> </ul> </li> </ul>	<p><b>Integrated in content area skills</b></p>
<p><b>7. Technology Literacy</b></p> <ul style="list-style-type: none"> <li>▪ Apply Industry specific technology</li> <li>▪ Use Industry specific software</li> <li>▪ Demonstrate Keyboarding</li> <li>▪ Accessing information</li> <li>▪ Lifelong enhancement of technology skills</li> </ul>	<p><b>7. Understand and adapt to changing technology.</b></p> <ul style="list-style-type: none"> <li>▪ Identify and demonstrate use of appropriate technology</li> <li>▪ Identify and use industry specific software</li> <li>▪ Demonstrate proficiency in alphanumeric keyboarding</li> <li>▪ Input and retrieve information</li> <li>▪ Understand the importance of lifelong learning in adapting to changing technology</li> </ul>	<p><b>Integrated in content area skills</b></p>



## **10. ADDITIONAL RECOMMENDED /OPTIONAL ITEMS**

- a. ARTICULATION:**
  
- b. VOCATIONAL CREDIT:**
  
- c. ACADEMIC CREDIT: 10 high school credits per year.**
  
- d. INSTRUCTIONAL STRATEGIES: Demonstrations, Lab, Written assignments, Written tests and quizzes.**
  
- e. INSTRUCTIONAL MATERIALS: Student textbook:**
  
- f. CERTIFICATES: Students will receive a Mission Trails ROP course certificate listing their job skill proficiencies.**