

# MISSION TRAILS REGIONAL OCCUPATIONAL PROGRAM

1. COURSE TITLE:     Animal Care Services
2. CBEDS TITLE:     Animal Science
3. CBEDS NUMBER:   4020
4. JOB TITLES:       Animal Hospital Clerk  
                          Animal Shelter Clerk  
                          Salesperson, Pets and Pet Supplies  
                          Animal Treatment Investigator  
                          Dog Catcher  
                          Animal Breeder  
                          Livestock Farm worker  
                          Pet Shop Attendant  
                          Livestock Yard attendant  
                          Stable Attendant  
                          Dog Groomer  
                          Dog Bather  
                          Horse Trainer
5. COURSE DESCRIPTION:     The course is designed to provide students with the skills and scientific knowledge required for entry level jobs in the animal services industry. Students will study both small and large animal production and care.
6. HOURS:                 720
7. PREREQUISITES:
8. REVISION DATE:         November 2004
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		
		CL	CC	CP
		CL = Classroom CC = Comm. Class. CP = Co-op Ed.		
<b>Instruction will include:</b>	<b>Student will be able to:</b>			
1. Students become familiar with the correct and safe use of livestock facilities, restraint equipment, and tools necessary for animal housing and care.	1. Name and demonstrate the use of a tool to restrain a horse, steer, pig, sheep and small animals. 2. Discuss the purposes of proper handling and restraint as it relates to the safety of the handler and livestock. 3. Demonstrate the proper use of a squeeze shoot. 4. Demonstrate the proper technique for restraining an injured dog or cat.	50		
2. Students develop an advanced understanding of the principles involved in animal nutrition and feeds.	1. Identify three common roughages and four concentrates available in your area. Discuss which feeds have the highest nitrogen, energy, protein, calcium and phosphorous. 2. Identify the major feed additives on the market, explain how each affects production, and review regulations for their use. 3. Explain how hormones are used as growth regulators 4. Develop a low cost feed ration for one species of livestock, at maintenance, growth, and lactation using concentrates and roughages from your local area. Include the cost of the ration. 5. List vitamins and amino acids not synthesized by each species of livestock and identify feeds high in these specific nutrients. 6. List ten common nutritional diseases caused by vitamin and/or mineral deficiencies or toxicity. Explain the treatment and prevention of these diseases. 7. Develop an awareness of the importance of a constant feeding regime and list possible metabolic disease problems due to sudden changes in feed (e.g. founder, bloat).	75		

	8. Define “creep feeding” and explain why it is important in animal nutrition. 9. Feed and maintain an animal through a full production cycle.			
3. Students learn to structure, function, and maintain of the major organ systems of an animal (e.g., nervous, circulatory, skeletal, muscular, respiratory, reproductive, excretory, endocrine, and digestive), their interrelationships and role in maintaining homeostasis.	1. Draw and label the digestive systems of a ruminant, cecum fermenter (horse, rabbit), monogastric and an avian system. Compare and contrast the digestive systems. 2. Demonstrate an understanding of the structure and function of the digestive system by tracing the pathways of food through the four types of livestock digestive systems, with emphasis on function of organs in the digestive process. 3. Briefly explain the process of respiration, utilizing a diagram of the lungs. 4. Describe the function of the endocrine system, the location of the glands, and list hormones affecting growth and reproduction. 5. Draw a label the reproductive system of a cow and bull and describe the function of each part in the process of reproduction.	135		
4. Students understand the main principles of livestock breeding and Mendel’s genetics, and the importance of heritability in a breeding program.	1. Briefly define the chromosome theory of inheritance. 2. Draw and describe the difference between oogenesis and spermatogenesis. 3. Review the following Basic Core terms: phenotype, genotype, allele, homozygous, heterozygous, variation, and mutation. 4. Work out heritability percentages on common traits of livestock using dominant and recessive alleles. 5. Diagram a dihybrid cross (e.g. using two heterozygous gene pairs, determine the genotypes of the offspring on a grid). 6. give an advantage and a disadvantage of the following breeding systems and give a situation when each could be used: inbreeding, line-breeding, close-breeding, out-crossing and crossbreeding. 7. Define hybrid using the cross between a horse and donkey as an example. Explain the genetics that makes the offspring sterile. 8. Describe factors that influence the sex of an offspring. 9. Define “prepotency” and “nicking” as it relates to genetics and name famous sires that possessed these characteristics. 10. Describe a surgical and non surgical method of embryo transfer and explain the impact embryo transfer has on industry animal genetics.	150		

	<ol style="list-style-type: none"> <li>11. List important factors to consider in a bull fertility test.</li> <li>12. Explain the process of artificial insemination and its genetic impact on livestock.</li> <li>13. List three ways of detecting estrus in livestock. Explain why this is important in a breeding program and list equipment used to detect heat.</li> <li>14. List the three stages of parturition, when each stage starts and ends, proper fetus presentation, and possible problems that may occur during delivery.</li> <li>15. Follow the development of a prenatal calf from fertilization to birth using slides.</li> <li>16. Compare and contrast the estrus cycles of the mare, cow, sow, ewe, and doe. Include the seasons of the year they cycle.</li> <li>17. Memorize the gestation length of the horse, cow sow, ewe, and doe.</li> <li>18. Identify the problems with freemartins in bovine genetics.</li> <li>19. Identify the different methods of breeding livestock.</li> <li>20. Describe the proper environment for the female during gestation and parturition.</li> <li>21. Describe the proper maintenance and care of male breeding stock.</li> <li>22. Identify the recommended breeding age for each species and the potential amount of service for male breeding animals.</li> <li>23. Develop a feeding regime for a dam through gestation, parturition, and lactation.</li> <li>24. Perform the appropriate husbandry practices when handling newborn animals.</li> <li>25. Visually identify cross-breeds of commercial livestock and explain the advantages of the cross.</li> </ol>			
<p>5. Students develop an in-depth understanding of specific health problems related to cattle, sheep, swine, horses, poultry, small animals and rabbits, and the identification, treatment, and prevention of these problems.</p>	<ol style="list-style-type: none"> <li>1. Describe the differences between vaccines, immune blood serum, and bacterins and explain how each is used to fight disease.</li> <li>2. Identify five categories of pathogens and list the major classes of each.</li> <li>3. List major infectious diseases for each species of livestock in California. Describe the symptoms, treatment, prevention, and economic significance of each.</li> <li>4. Identify four noninfectious causes of disease and a possible prevention of each. Give a disease example from each area for three of large animal species.</li> </ol>	60		

	<ol style="list-style-type: none"> <li>5. List three important infectious diseases common to mammals and include the symptoms, treatment and control of each.</li> <li>6. Take the body temperature of four livestock species. Compare the readings with the normal temperatures of each species. Discuss factors that may increase or decrease an animal's temperature (i.e. age, time of day, ovulation, disease).</li> <li>7. List five common antibiotics and discuss the advantages and disadvantages of each and the type of infection they could be used to treat.</li> <li>8. Demonstrate proper methods of subcutaneous and intramuscular injection on livestock.</li> <li>9. Calculate the correct dosage of medication from the instructions on the label for livestock of various weights.</li> </ol>			
<p>6. Students learn the major livestock and small animal pests, their lifecycles, and control.</p>	<ol style="list-style-type: none"> <li>1. Draw the lifecycle of an internal parasite that is species specific for each of the following: horse, swine, cattle, sheep, poultry, and rabbits. Show in the lifecycle where each can best be controlled.</li> <li>2. Draw the lifecycle of five common external parasites. List all possible hosts and ways to control each parasite.</li> <li>3. Develop a one-year worming and vaccination schedule for a student owned animal related SOEP.</li> <li>4. Explain the role of pasture rotation in parasite control.</li> <li>5. Describe production problems associated with the housefly, blowfly, botfly and horsefly and give two ways these can be controlled.</li> <li>6. Define drenching and demonstrate methods on livestock species.</li> <li>7. List the internal and external parasites that affect dogs, cats, and other small animals. Be able to describe proper treatment for each.</li> </ol>	50		
<p>7. Students demonstrate an understanding of the basic principles of care, raising, breeding, selection, and selling of large animals.</p>	<ol style="list-style-type: none"> <li>1. Review six large animal species and list the common breeds of each (i.e. beef, dairy cattle, horses, sheep, swine and goats).</li> <li>2. Calculate rate of gain and compare it to pounds and cost of feed per day of each species.</li> <li>3. Demonstrate proper feeding, handling, and management of each of the species studied.</li> <li>4. Identify external anatomical parts of each species studied.</li> <li>5. Demonstrate proper grooming and showing techniques for at least two large animal species of commercial importance in California.</li> </ol>	60		

	<ol style="list-style-type: none"> <li>6. Identify animal behavioral patterns that will make animals easier to handle (i.e. herding instinct in sheep).</li> <li>7. List and discuss different markets available for sale of livestock.</li> </ol>			
8. Students understand the basic concepts in the care, raising, breeding, selection, and selling of small animals.	<ol style="list-style-type: none"> <li>1. Identify the six species of small animals of importance to agriculture (including research). List common breeds within each species.</li> <li>2. Understand the relationship of small animals to agriculture and related industries.</li> <li>3. Engage in selling small animals to two occupational areas in the small animal field. List the advantages and disadvantages of each of The occupational areas.</li> </ol>	50		
9. Students understand the importance of correct pasture and rangeland management practices for animal health, erosion control, pasture production, and maintaining the balance of living things within an ecosystem.	<ol style="list-style-type: none"> <li>1. Collect, press and label ten common pasture plants.</li> <li>2. Collect and identify ten weeds and brush common to pastures and discuss control methods of each.</li> <li>3. Identify five plants poisonous to livestock.</li> <li>4. Compare and contrast good summer and winter rangeland.</li> <li>5. Collect and label four suitable legumes and discuss factors to consider in their selection for rangeland foliage.</li> <li>6. Describe different grazing systems and ways to prevent overgrazing.</li> <li>7. Calculate, from information provided, the carrying capacity of an acreage of rangeland for a species of livestock.</li> <li>8. List three ways in which overgrazing or poor rangeland management can negatively affect the environment.</li> <li>9. Define terms common to pasture and rangeland management.</li> </ol>	60		
10. Students gain a basic knowledge of animal waste management and the importance of disposing of waste inexpensively with the least impact on the environment.	<ol style="list-style-type: none"> <li>1. Identify the three main types of agricultural wastes.</li> <li>2. Describe two ways to recycle manure where it can be utilize by livestock.</li> </ol>	30		
		720		

## 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.**