

## VALLEY ROP COURSE OUTLINE

<b>COURSE TITLE:</b>	<b>Veterinary Science 2</b>	
<b>VALLRY ROP #:</b>	AG-4020-Vet2	
<b>CDE #:</b>	3018	
<b>CBEDS TITLE:</b>	Animal Science	
<b>CBEDS #:</b>	4020	
<b>CTE SECTOR:</b>	Agriculture and Natural Resources	
<b>CTE PATHWAY:</b>	Animal Science	
<b>JOB TITLES:</b>	Veterinarian	29-1131.00
	Veterinarian Assistant	31-9096.00
	Veterinary Technician	29-2056.00
	Animal Breeder	45-2021.00
	Farm Workers, Farm and Ranch Animals	45-2093.00

### **COURSE DESCRIPTION:**

The Veterinary Science II class offers a more advanced general orientation in the many areas of animal science. It will provide information, activities and skills in the areas of scientific method, mammalian production and reproduction, health care, anatomy, physiology, nutrition, genetics and production management. Emphasis is placed on large animals that are most important to human culture as we know it today.

Additional emphasis will be placed on industry practices to include record keeping, public relations and communications.

<b>DATE APPROVED:</b>	August 2006
<b>REVISED DATE(S):</b>	December 2008 / March 2009/Oct 2009
<b>HOURS:</b>	180 hours per year
<b>CREDITS:</b>	10 credits per year
<b>PREREQUISITES:</b>	Veterinary Science I
<b>GRADE LEVEL:</b>	11-12
<b>ARTICULATION(S):</b>	None

<b>TEXTBOOKS:</b>	<i>Biology: The Web of Life</i> , Nancy Walker and Francesca Mollura, Prentice-Hall Co. <i>Introduction to Veterinary Science</i> , James B. Lawhead, Delmar Learning, 2005. <i>Modern Livestock and Poultry Production</i> , James Gillespie, Delmar Learning, 7 <sup>th</sup> Edition <i>An Illustrated Guide to Veterinary Medical Terminology</i> , Janet Amundson Romich, Delmar Learning
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*Activity Guide for Animal Production & Management*,  
R. Kirby Barrick, McGraw-Hill Book Co.  
*Handbook of Livestock Management*, Richard Battaglia,  
Prentice Hall  
*Medical Nursing for Animal Health Technicians*,  
Paul W. Pratt, American Veterinary Publications, Inc.  
*Delmar's Veterinary Technician Dictionary*, Ray V.  
Herren and Janet Amundson Romich, Delmar Learning  
*Veterinary Office Practices*, Robert Kehn, Delmar Learning

## **COURSE COMPETENCIES:**

Upon completion of this course, the student will:

- The student will be able to demonstrate knowledge of the correct and safe use of livestock facilities, restraint equipment and tools necessary for animal housing and care.
- The students will be able to demonstrate knowledge of the principles involved in animal nutrition and feeds.
- The students will be able to demonstrate knowledge of the structure, function and maintenance of the major organ systems of the animal.
- The students will demonstrate knowledge of the principles of livestock breeding and Mendelian genetics and the importance of heritability in a breeding program.
- The students will demonstrate knowledge of specific health problems related to horses, cattle, sheep and swine and the identification, treatment and prevention of these problems.
- The students will identify the major internal and external livestock pests, their life cycles and their control.
- The student will demonstrate an understanding of the basic principles of care, raising, breeding, selection and marketing of large animals.
- The student will demonstrate knowledge of correct pasture and rangeland management practices for animal health, pasture production and maintaining the balance of living things within the ecosystem.
- The students will be exposed to educational and industry opportunities as it relates to the field of study in this course.
- Students will be prepared academically and technically for:
  - Four year college
  - Technical training
  - Employment

**INSTRUCTIONAL METHODS:**

- Lecture
- Discussion
- Demonstration
- Group and Individual Research Projects through use of technology
- Content Based Exams
- Field Trips
- Guest Speakers
- Hands on Application through Lab Procedures

**EVALUATION METHODS:**

Assessment opportunities, which allow continuous evaluation of students' progress, will be embedded throughout the course and should be a learning experience. All students will be expected to achieve mastery of all topics; often, demonstrations of mastery will occur in a public forum. Students will be expected to demonstrate knowledge and skill competencies in a variety of ways.

The following strategies, which include both formal and informal assessment techniques will include, but are not limited to:

- Quizzes
- Unit Exams
- Semester Exams
- Homework
- Class Discussion
- Special Assignments and Projects
- Specialty Project
- Lab Exercises
- Demonstration
- Portfolio and Interactive Notebook

## **COURSE OUTLINE:**

<b>Instructional Units</b>	<b>Estimated Hours</b>
<b>Orientation and Guidance</b>	<b>2</b>
<ul style="list-style-type: none"><li>• Course Objectives</li><li>• Grading, Tests, and Classroom Procedures</li><li>• Animals in Society</li></ul>	
<b>Safety – Personal</b>	<b>4</b>
<ul style="list-style-type: none"><li>• Classroom</li><li>• Laboratory</li></ul>	
<b>Livestock Facilities, Equipment and Restraints</b>	<b>5</b>
<b>Animal Nutrition and Feeds</b>	<b>25</b>
<ul style="list-style-type: none"><li>• Feed identification and nutrient evaluation</li><li>• Feed additives</li><li>• Hormones</li><li>• Developing rations</li><li>• Nutritional diseases</li><li>• Feeding requirements</li></ul>	
<b>Animal Systems</b>	<b>30</b>
<ul style="list-style-type: none"><li>• Digestive</li><li>• Respiratory</li><li>• Endocrine</li><li>• Reproductive</li><li>• Urinary</li><li>• Skeletal<ul style="list-style-type: none"><li>○ Circulatory</li><li>○ Muscular</li></ul></li></ul>	
<b>Livestock Breeding</b>	<b>28</b>
<ul style="list-style-type: none"><li>• Review<ul style="list-style-type: none"><li>○ Sperm and egg production</li><li>○ Dominant and recessive genes</li></ul></li><li>• Selection and heritability</li><li>• Embryo transfer</li><li>• Artificial insemination</li><li>• Estrous cycles/breeding</li><li>• Gestation and parturition</li><li>• Environment and care of producing animals</li><li>• Feeding reproduction animals</li><li>• Crossbreeding/Inbreeding</li></ul>	
<b>Animal Parasites, Pests and Diseases</b>	<b>29</b>
<ul style="list-style-type: none"><li>• Infectious and non infectious diseases</li><li>• Cause of disease</li><li>• Disease fighting agents/procedures</li><li>• Health practices</li></ul>	

- Common internal/external parasites

**Large Animal Production** **20**

- Production practices
- Animal behavior
- Marketing livestock

**Livestock and Carcass Evaluation** **5**

- Selection and Judging
- Harvest Practices
- USDA Standards and Grading

**Career Exploration** **17**

- Importance of work
- Large animal careers
- Trends in careers
- Resumes
- Higher education applications
- Employment applications
- Letters of introduction
- Interview practices

**Interpersonal Leadership Development** **15**

- Record keeping
- FFA leadership development
- Communication
- Critical thinking

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**Total Hours** **180 Total hours**

## **Standards Integrated:**

### **1. Weekly Laboratory Activities Reports**

Students will complete a series of labs and reports on a weekly basis that correspond with the units being taught. The labs will include dissections, sample tests, and examine structures and tissues

Foundation Standards (FS) M 8.0- S 1.a, 1.c, 1.d, 1.f, 1.m- CR 2.3, 2.2, 2.7- CW 1.5- CWO 1.1, 1.2 –T 4.1, 4.6- PS-PT 5.1, 5.3-HS 6.2, 6.3, 6.4, 6.5, 6.6- RF 7.1, 7.2

Pathway Standard(PS) D1.3, D1.4, D2.2, D2.3, D2.4, D3.1, D4.1,D4.2,D4.3,D4.5, D5.4, D5.5, D6.1, D6.2, D6.3, D6.4, D6.5, D6.6, D9.3, D9.4, D10.1, D10.2, D11.1, D11.2, D11.3, D11.5, D12.3, D12.6

### **2. Student Veterinary Science Presentation**

Students will create a multimedia presentation an animal health issue. Students will create a power point and do a demonstration on their topic area.

Foundation Standards- S 1.m –CR 2.1, 2.2, 2.6, 2.8, 2.1 CW- 1.2, 1.3, 2.6-CWO 1.1, 1.2 –LS 1.7, 2.2, 2.4 –T 4.6 –PS-CT 5.3,

Pathway Standards-D6.1, D6.2, D6.3, D6.4, D6.5, D6.6, D8.1, D8.2,D8.3, D9.1, D9.2, D9.3, D9.4

### **3. Veterinary Science Terminology**

Students will learn veterinary medical terminology through each unit taught. They will have quizzes and tests on the terms.

Foundation Standards CWO 1.1, 1.2

Pathway Standards- D2.2, D2.4, D3.1, D4.1, D4.2, D5.1, D6.1, D6.3, D6.4, D10.1, D10.2, D11.1, D11.2, D11.3, D11.4

### **4. Animal Physical Examinations**

Students will perform in depth bi-weekly-monthly physical exams on different types of animals. They will perform regular tests and use equipment and tools used in the Veterinary Industry.

Foundation Standards CWO 1.1, 1.2, -T 4.6- PS-CT 5.1, 5.3 HS 6.2, 6.4, 6.5, 6.6-RF 7.1, -LT 9.1, 9.6

Pathway Standards- D1.3, D1.4,

### **5. Community Classroom**

Students will be required to spend 10 hours volunteering their time in an animal science/ veterinary science career area. They will learn aspects of that business as well as conduct interviews with employees and staff members. The students will write a multimedia paper on their findings.

Foundation Standards- CR 2.1, -CW 2.5, 2.6-CWO 1.1, 1.2 –LS 2.2, 2.4- CPM 3.1,3.2, 3.3,3.4,3.5,3.6 –T 4.6 –PS-CT 5.3 HS 6.1, 6.2, 6.3, 6.4, 6.5 6.6 – RF 7.1, 7.2, 7.5- ER 8.2, 8.3 –LT 9.1, 9.3, 9.4

Pathway Standards- D1.1, D1.2, D1.3, D1.4, D10.1, D10.2, D11.1, D11.2, D11.3, D11.4

### **6. Supervised Agricultural Experience Program**

Students enrolled in Veterinary Science II program will be required to have an ongoing SAE throughout the year. Students will be required to keep a California Agricultural Record Book.

Foundation Standards- TKS 10.1, 10.2, 10.3, 10.4 –LT 9.1, 9.2

Pathway Standards- Any standard in the Animal Science Pathway depending on the student's SAE

## **CAREER PREPARATION STANDARDS:**

- A. PERSONAL SKILLS** - Students will understand how personal skill development affects their employability. This skill includes positive attitudes, self-confidence, honesty, responsibility, initiative, self-discipline, personal hygiene, time management, and the capacity for lifelong learning.
1. Demonstrate an understanding of classroom policies and procedures.
  2. Discuss importance of the following personal skills in the business environment:
    - a. positive attitude
    - b. self-confidence
    - c. honesty
    - d. perseverance
    - e. self-management/work ethic
    - f. pride in product/work
    - g. dependability
  3. Identify acceptable work attire.
  4. Establish goals for self-improvement and further education/training.
  5. Prioritize tasks and meet deadlines.
  6. Understand the importance of initiative and leadership.
  7. Understand the importance of lifelong learning in a world of constantly changing technology.
- B. INTERPERSONAL SKILLS** - Students will understand key concepts on group dynamics, conflict resolution, and negotiation. This skill includes the ability to work cooperatively, accept supervision, assume leadership roles, and show respect for others. This standard includes an understanding of sexual harassment laws and an appreciation of cultural diversity in the workplace.
1. Identify and discuss behaviors of an effective team.
  2. Explain the central importance of mutual respect in the workplace relations.
  3. Discuss and demonstrate strategies for conflict resolution and negotiation, and explain their importance within the business environment.
  4. Understand laws that apply to sexual harassment in the workplace, and identify tactics for handling harassment situations.
  5. Work cooperatively, share responsibilities, accept supervision and assume leadership roles.
  6. Demonstrate cooperative working relationships and proper etiquette across gender and cultural groups.
- C. THINKING AND PROBLEM-SOLVING SKILLS** - Students will exhibit critical and creative thinking skills, logical reasoning, and problem-solving. These skills include applying basic skills in order to calculate, estimate, measure; identify, locate, and organize information/data; interpret and follow directions from manuals, labels, and other sources; analyze and evaluate information and solutions.
1. Recognize the importance of good academic skills and implement a plan for self-improvement as needed.
  2. Read, write, and give directions.
  3. Exhibit critical and creative thinking skills and logical reasoning skills, and employ these skills for problem solving.
    - a. Work as a team member in solving problems.
    - b. Diagnose the problem, its urgency, and its causes.
    - c. Identify alternatives and their consequences.
    - d. Explore possible solutions.
    - e. Compare/contrast the advantages and disadvantages of alternatives.
    - f. Determine appropriate action(s).
    - g. Implement action(s).
    - h. Evaluate results of action(s) taken.

- D. **COMMUNICATION SKILLS** - Students will understand principles of effective communication. This standard includes effective oral and written communication, listening skills, following and giving directions, requesting and giving information, asking questions.
1. Use communication concepts in application of skills, techniques, and operations.
    - a. Prepare written material.
    - b. Analyze written material.
  2. Understand and implement written instructions, from technical manuals, written communications, and reference books.
  3. Present a positive image through verbal and nonverbal communication, and understand the power of body language in communication.
  4. Demonstrate active listening through oral and written feedback.
  5. Give and receive feedback.
  6. Demonstrate assertive communications (both oral and written).
  7. Demonstrate proper etiquette in workplace communications, including an awareness of requisites for international communications (languages, customs, time zones, currency and exchange rates).
  8. Demonstrate writing/editing skills as follows:
    - a. Write, proofread, and edit work.
    - b. Use correct grammar, punctuation, capitalization, vocabulary, and spelling.
    - c. Select and use appropriate forms of technology for communication.
  9. Exhibit a proficiency in the use of reference books.
  10. Research, compose, and orally present information for a variety of business situations utilizing appropriate technology.
- E. **OCCUPATIONAL SAFETY** - Students will understand occupational safety issues, including the avoidance of physical hazards in the work environment. This includes the safe operation of equipment, proper handling of hazardous materials, appropriate attire and safety accessories, avoidance of physical injuries, interpretation of warning and hazard signs and terminology, and following and understanding safety-related directions.
1. Discuss and implement good safety practices, including the following (if applicable to course):
    - a. personal
    - b. lab
    - c. fire
    - d. electrical
    - e. equipment
    - f. tools
    - g. interpretation of Material Safety Data Sheets (MSDSs)
    - h. Environmental Protection Agency (EPA)
    - i. Occupational Safety and Health Administration (OSHA)
    - j. American Red Cross Standards (ARC)
    - k. Networking Safety Standards
  2. Apply sound ergonomic principles in organizing one's work space.
- F. **EMPLOYMENT LITERACY** - Students will understand career paths and strategies for obtaining employment within their chosen field. This includes traditional job preparation skills, such as resumes, application forms, cover letters, sources of employment information, and interviewing skills, but also includes an overview of the industry and an understanding of labor market trends.
1. Explore career opportunities and projected trends; investigate required education, training and experience; and develop an individual education plan.
  2. Identify steps for setting goals and writing personal goals and objectives.
  3. Examine aptitudes related to career options; relate personal characteristics and interests to educational and occupational opportunities.
  4. Develop a career portfolio, including the following documents:

- a. job application
  - b. resume(s)
  - c. appropriate cover and follow-up correspondence
5. Identify and demonstrate effective interviewing techniques.
- G. **TECHNOLOGY LITERACY** - Students will understand and adapt to changing technology by identifying, learning, and applying new skills to improve job performance. Students should understand the role of technology in their chosen field and should be able to use all appropriate technology. Students should also feel confident in their ability to learn new technology by generalizing from what they know, adapting skills to new situations, and identifying and using sources of information and of further learning.
1. Demonstrate the ability to use personal computers for loading and retrieving data, information gathering, measurements, and writing.
  2. Identify the characteristics and explain the importance of adapting to changes, being flexible, and evaluating goals when working in the industry.
  3. Understand the importance of lifelong learning in adapting to changing technology.
- H. **IMPORTANCE OF ETHICS** – Students will understand proper ethics in the workplace.
1. Discuss social and ethical responsibilities in the industry.
  2. Demonstrate ethical choices in workplace situations.