



# ASCI 111: BEEF CATTLE SCIENCE

---

**Proposer:****Name:**

Russell McKeith

**Email:**

russellm@cos.edu

**Effective Term:**

Fall 2020

**Credit Status:**

Credit - Degree Applicable

**Subject:**

ASCI - Animal Science

**Course Number:**

111

**Catalog Title**

Beef Cattle Science

**Catalog Description**

Study of the principles and practices of purebred and commercial beef cattle production; emphasis on the importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing and record keeping to ensure scientifically-based management decisions and consumer product acceptance as applied to beef cattle.

**Method of Instruction:**

Laboratory  
Lecture and/or Discussion

**Course Units/Hours:****Course Units Minimum:**

3

**Lecture Hours Minimum (week)**

3

**Lab Hours Minimum (week)**

1

**Activity Hours Minimum (week)**

0

**Total Contact Hours Minimum (semester)**

70

**Total Outside Hours Minimum (semester)**

105

**Total Student Learning Minimum Hours (semester)**

175

**Repeatability:**

No

**Open Entry/Exit:**

No

**Field Trips:**

Not Required

**Grade Mode:**

Standard Letter

**TOP Code:**

010200 - \* Animal Science

**SAM Code:**

C - Clearly Occupational

**Course Content****Methods of Assessment:**

Essay quizzes or exams

Oral presentations

Problem solving assignments or activities

Problem solving quizzes or exams

Short answer quizzes or exams

Skill demonstrations

Written essays or extended papers

**Course Topics:**

Course Topics	
1	The Beef Cattle Industry a) Origin and importance of beef cattle b) Breeds of cattle
2	Issues and Regulations in the Beef Cattle Industry a) Animal/welfare issues b) Quality assurance program c) Environmental issues
3	Beef Cattle Nutrition a) Digestion and utilization of feed b) Nutrient requirements for beef cattle c) Rations for beef cattle d) Range management
4	Beef Cattle Genetics a) Principles of beef cattle genetics b) Percentage of heritability of beef traits c) Economically important beef traits
5	Beef Cattle Facilities and Safety Practices a) Buildings and equipment b) Cattle handling and safety practices
6	Systems of Production a) Purebred enterprise b) Cow/calf operations c) Stocker operations d) Feedlot operations
7	Establishing the Beef Herd a) Selecting the breed and breeding system b) Selecting the foundation stock c) Types and conformation d) Pedigrees Performance data
8	Marketing Beef Cattle a) Marketing purebred and commercial cattle b) USDA yield and quality grading c) Beef cattle production cycles

- 9 Herd Health  
 a) Common diseases of cattle  
 b) Control of parasites  
 c) Poisonous plants that affect cattle

**Course Objectives:**

Course Objectives	
1	Review basic genetic principles as they apply to animal selection, breeding programs, and genetic defects.
2	Outline a health management program, including common vaccinations and parasite control measures for a typical commercial cow-calf operation.
3	Provide an overview of the beef industry, its history and economic significance.
4	Understand the importance of identification and record-keeping.
5	Judge and rank classes of breeding cattle using both visual conformation and performance data.
6	Research current industry information (production and consumption data, etc.).
7	Discuss current trends/challenges/issues affecting the beef industry including the beef quality assurance program.
8	Outline the nutritional benefits of beef to humans.
9	Describe the significance of the beef industry and how cattle are marketed.
10	Understand basic nutritional management for cattle.
11	Develop a herd management calendar for a typical commercial cow-calf operation.
12	Explain the damaging effects of improper handling techniques and undue stress on cattle.
13	List the benefits of good cattle handling facilities and proper handling techniques.
14	Discuss the various aspects of cattle behavior.
15	Identify common beef breeds and list their economic benefits.

**Course Outcomes:**

Course Outcomes	
1	Upon completion of this course all students will be able to explain and list all function of the ruminant digestive system.
2	Upon completion of this course students will be able to explain and demonstrate basic breeding, selection practices for beef cattle.
3	Upon completion of this course students will be able to list, explain, and demonstrate basic management practices for beef cattle production.

**Assignments:**

Assignment Type:	Details
Reading	Read Chapter 9: Health from the textbook Beef Cattle Production Systems for next class.
Lab	<p>Lab #1: Preg-Checking and Bangs Vaccinating heifer calves</p> <p>1) How did the vet preg-check the calves today? Did he use any technologies to help him detect pregnancies? (5 points)</p> <p>2) How many cows and heifers did he preg-check today? How many were believed to be bred AI vs. Natural? What is the time frame the calves will be do? (5 points)</p> <p>3) How many heifers were Bangs vaccinated today? Why do we Bangs vaccinate heifer calves? Where did he give the vaccination and what identifying mark did the calf get to show that it has been vaccinated? (5 points)</p> <p>4) How was the bull calf castrated today? What are the different methods to castrate calves? (5 points)</p>

Homework

ASCI 111: Beef Cattle Science  
Beef Breed PowerPoint  
30 Points

- Create 4-7 slides (5-minute presentation) about your beef breed you picked in class. The list of everyone's breed is below
  - o Brief history of breed
  - o Characteristics
  - o Important Facts
  - o Any other pertinent information
  - o When was the breed developed
  - o Is there a breed association and if so where is it located
- Proper grammar, use of pictures and layout of slides will be included in your grade.
- Make sure you use proper citations when appropriate

Writing

ASCI 111: Beef Cattle Science Final Assignment  
50 Points

I want you to thoroughly explain your answer, and utilize the information/knowledge you have gained throughout this semester. There is really no right or wrong answer to this scenario based question, but I want to see how well you can apply the information from this semester into a real-life application/scenario. Also, there is no set length to your answer, but I want you to thoroughly explain yourself (I want you to at least have a 2 pages written, double spaced utilizing 12 point Times New Roman font). If you have any questions or concerns regarding this exam question, please do not hesitate to contact me.

Scenario

Russell McKeith has just recently moved to Nashville because he has had aspirations his entire life to sing at the 'Grand Ole Opry'. He really loves country music, and is a marginal singer at best. Regardless of what his family told him, he decided to sell all of his possessions except for his Martin guitar and harmonica. One day he only had two dollars left to his name because he hadn't acquired too many gigs at Tootsies or any of the other Broadway Street venues. Therefore, he decided to buy a lottery ticket at the local convenience store because the Tennessee Mega Millions lottery was up to 150 million dollars. Later on, Russell found out that he had won the \$150 million dollars and now aspires to build a beef operation as a hobby and tax break benefits. Mr. McKeith wants to have this beef operation built in Tulare county California because he just recently moved there to teach at College of the Sequoias.

As his consultant, you need to help him design an operation incorporating two of the following segments of the beef industry (seedstock, cow/calf, stocker, feedlot, or small packer/processor). Additionally, I would like you to incorporate at least two different breeds of cattle. These breeds can be of British, Continental, Zebu, or American, but no more than one breed can be picked from each biological type. Please give me a brief description of your breeds and why you are utilizing these breed. If you are going to implement a crossbreeding program you need to tell me what system you will be using and why. Moreover, you need to design an adequate facility for this operation from the ground up. Additionally, you need to develop a breeding program (NS, AI, ET), nutritional (what types of feedstuffs throughout the year), and animal health program (vaccination program and when and where will vaccines be given anatomically to your beef herd. Also, what is going to be your replacement heifer rate, as well as ideal number of beef animals to run in your operation?

Textbooks or other support materials

Resource Type:	Details
Books	Beef Cattle Production Systems A. D. Herring. CABI. 2014. 9781845937959.
Books	Beef Production and Management Decisions. Field and Hagan. Prentice Hall 6th edition. 2018. 9780134602691.

Transferable to CSU

Yes - Approved

Transferable to CSU Justification

Approved for C-ID AG-AS 108L (GK)

CSU General Education

Transferable to CSU



**This course will also be proposed for UC transfer.**

No

**Other Degree Attributes**

Degree Applicable

Not a Basic Skills Course

**Additional Attachment**

3:20:2018 COS Animal Science Advisory Committee Meeting Minutes.docx

2017-2018 COS Animal Science Advisory Members.docx

3:20:2018 COS Animal Science Advisory Committee Meeting Agenda.docx

**Banner Title:**

Beef Cattle Science

**Curriculum Committee Approval Date:**

04/30/2019

**Academic Senate Approval Date:**

05/08/2019

**District Governing Board Approval Date:**

05/13/2019

**Course Control Number:**

CCC000261713