01.0 **Status and Future of the Horse Industry**
The student will be able to:

<table>
<thead>
<tr>
<th>02.01</th>
<th>Identify the countries or areas with the most horses, donkeys and mules</th>
</tr>
</thead>
<tbody>
<tr>
<td>02.02</td>
<td>Compare the population of horses, donkeys and mules in the United States to that in the world.</td>
</tr>
<tr>
<td>02.04</td>
<td>Describe the rise and fall of the horse population in the United States</td>
</tr>
<tr>
<td>02.05</td>
<td>Compare the total worldwide population of horses, donkeys and mules</td>
</tr>
<tr>
<td>02.06</td>
<td>Project changes in the horse population in the United States</td>
</tr>
<tr>
<td>02.07</td>
<td>Identify the top 10 horse-producing states</td>
</tr>
<tr>
<td>02.08</td>
<td>Name the four general areas of equine research and give two specific research projects in each</td>
</tr>
<tr>
<td>02.09</td>
<td>Identify activities and organizations associated with the U.S. horse industry</td>
</tr>
<tr>
<td>02.10</td>
<td>Discuss the future of the U.S. horse industry</td>
</tr>
</tbody>
</table>

01.0 **History and Development of the Horse**
The student will be able to:

<table>
<thead>
<tr>
<th>01.01</th>
<th>Name the major evolutionary horse-like animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.02</td>
<td>Identify the position of the horse in the zoological science</td>
</tr>
<tr>
<td>01.03</td>
<td>Describe how humans eventually changed the way they used the horse</td>
</tr>
<tr>
<td>01.04</td>
<td>Give the scientific name for the horse and three of its close relatives</td>
</tr>
<tr>
<td>01.05</td>
<td>List the four evolutionary trends exhibited by horse fossils</td>
</tr>
<tr>
<td>01.06</td>
<td>Identify the Roman’s influence on the use of the horse</td>
</tr>
<tr>
<td>01.07</td>
<td>Describe the effect of the Middle Ages and the Renaissance on the use of horses</td>
</tr>
<tr>
<td>01.08</td>
<td>Name three horses in mythology or legend</td>
</tr>
<tr>
<td>01.09</td>
<td>Name three famous horses of the films</td>
</tr>
<tr>
<td>01.10</td>
<td>Describe the use of decline of horses in agriculture in the United States</td>
</tr>
<tr>
<td>01.11</td>
<td>Discuss how racing started in the United States</td>
</tr>
<tr>
<td>01.12</td>
<td>Identify the factors that changed the use of horses in the twentieth century</td>
</tr>
<tr>
<td>01.13</td>
<td>Name four Geological time periods (epochs) used to discuss the evolution of horses</td>
</tr>
</tbody>
</table>
03.0 Breeds, Types and Classes of Horses
The student will be able to:
0123
03.01 Describe how horse breeds started with the foundation stallions
03.02 Understand the concept of breeds, types and classifications
03.03 Describe the common height measurements for horses
03.04 Define the terms warmblood, coldblood and hack
03.05 Name the 10 common breeds of light horses and their origin
03.06 Name five common breeds of draft horses and their origin
03.07 Name five common breeds of ponies and their origin
03.08 List five color breeds of horses
03.09 Name five lesser-known breeds of horses or ponies and their origin
03.10 Explain the origin of feral horses
03.11 Describe how mules are produced
03.12 Identify the common breeds of donkeys
03.13 List 10 uses for horses
03.14 Describe some of the uses for miniature donkeys and horses
03.15 List six uses for mules

04.0 Cells, Tissue, and Organs
The student will be able to:
0123
04.01 Explain the importance of cells and their function to the horse
04.02 Identify the parts and organelles of animal cells
04.03 List and describe the functions of each of the major types of specialized animal cells
04.04 List the cell organelles and the functions of each part
04.05 Describe how specialized cells are organized to form a tissue type
04.06 List and describe the six types of specialized animal tissues and their individual functions
04.07 Describe the difference between meiosis and mitosis
04.08 Describe blood and its function

05.0 Biomechanics of Movement
The student will be able to:
0123
05.01 Describe muscle contraction
05.02 Describe the nervous control of muscle contraction
05.03 List four functional groups of muscles
05.04 Explain why the heat generated by muscular contraction affects performance
05.05 Contrast aerobic to anaerobic metabolism during muscular contraction
05.06 Name three types of muscle fibers and identify their function
05.07 Name three extensor and three flexor muscles on the hind and front leg
05.08 Describe the two phases of a stride
05.09 Name three factors of a gait that determine a horse’s speed
05.10 Define height, directness, spring, regularity, and balance as they relate to gaits
05.11 Describe the walk, trot, gallop, rack, and canter
05.12 Explain the role of conformation in the movement or performance of a horse
05.13 List and describe six common defects in a horse’s way of going
05.14 Describe how the center of gravity may affect the movement of a horse

06.0 Functional Anatomy
The student will be able to:
0123
06.01 List the nine systems of animals and the major organs that make up each system
06.02 Explain the functions of the skeletal, muscular, digestive, urinary, respiratory, circulatory, nervous, reproductive, and endocrine systems
06.03 Identify the components of the skeletal, muscular, digestive, urinary, respiratory, circulatory, nervous, reproductive, and endocrine systems
06.04 List the five divisions of the vertebral column
06.05 Name the bones in the foreleg and hind leg
06.06 Describe three types of joints
06.07 Identify three types of muscles and their locations in the body
06.08 Trace the circulation of blood through the body
06.09 Identify the endocrine glands and the hormones they secrete
07.0  **Unsoundness**  
The student will be able to:

0123

07.01 Distinguish between a blemish and an unsoundness
07.02 Describe the common treatment for many of the problems that could develop into an unsoundness
07.03 Name four common unsoundnesses associated with the head
07.04 List five common unsoundnesses or blemishes that can be found on the body
07.05 Describe two types of unsound lungs
07.06 Name and describe 10 unsoundnesses or blemishes of the front or hind leg
07.07 Differentiate between a sprain and a fracture
07.08 Name two types of sprains and two types of fractures
07.09 Identify four conditions that predispose a horse to developing unsoundnesses
07.10 Name and describe six stable vices affecting usefulness
07.11 Describe how to methodically examine a horse for soundness

08.0  **Selecting and Judging Horses**  
The student will be able to:

0123

08.01 Describe 10 factors to consider when selecting a horse to purchase
08.02 Explain how expected use influences the selection of a horse
08.03 Discuss why the age and sex of a horse are important considerations in selecting a horse
08.04 Describe costs associated with owning a horse after the initial purchase
08.05 Discuss why conformation is a more important consideration than breed when selecting a horse
08.06 List five steps in judging a horse
08.07 Name the views used and traits looked for in judging the conformation of a horse
08.08 Describe 10 qualities of a good judge
08.09 Identify typical markings for the face and legs of horses
08.10 List the terms used to describe common body colors of horses
08.11 Discuss why the proper selection of a horse is so important

09.0  **Determining Age, Height and Weight of Horses**  
The student will be able to:

0123

09.01 List the names used for different age groups of horses from birth to 3 years
09.02 Discuss the importance of knowing the age of a horse
09.03 Name four changes in teeth that are indicators of different ages
09.04 Diagram a tooth to show the parts that change during the aging process
09.05 Describe the changes horses’ teeth exhibit during their lifetime
09.06 List the temporary and permanent teeth of the horse and their approximate time of eruption
09.07 List four abnormal tooth conditions
09.08 Give four reasons that knowing the height and weight of a horse is important
09.09 Tell how to determine the height of a horse in hands and inches
09.10 Calculate the weight of a horse from the measurement of the heart girth and body length

10.0  **Genetics**  
The student will be able to:

0123

10.01 Define a gene, an allele, a chromosome and DNA
10.02 Discuss genome sequencing and its value
10.03 Explain the difference between phenotypic and genotypic expression
10.04 Explain how mules are produced
10.05 Discuss basic inheritance
10.06 Distinguish between single and multiple-gene inheritance
10.07 Distinguish among recessive dominance, co-dominance and partial dominance
10.08 Describe how DNA codes for proteins that make up the body and function in the body
10.09 Compare qualitative traits to quantitative traits
10.10 Discuss the relationship between genetics and the environment
10.11 Explain how genetics determines coat color
10.12 Name five genetic diseases or abnormalities
### 11.0 Reproduction and Breeding
The student will be able to:

- **11.01** Discuss breeding periods
- **11.02** List and discuss the major parts of the female reproductive tract
- **11.03** List and discuss the major parts of the male reproductive tract
- **11.04** Describe reproductive hormones during the estrous cycle
- **11.05** Recognize fertility problems
- **11.06** Explain gestation and parturition in horses
- **11.07** Discuss and demonstrate methods of artificial insemination and heat detection
- **11.08** Explain embryo transfer
- **11.09** Describe the management of the mare and stallion before, during and after the breeding season.
- **11.10** Describe the management of the mare, including care at parturition, nursing to weaning and growing to maturity

### 12.0 Digestion and Nutrition
The student will be able to:

- **12.01** List six categories of nutrients
- **12.02** Define terms association with energy
- **12.03** List the sources of energy nutrients
- **12.04** Describe the function of energy nutrients
- **12.05** Describe the symptoms of energy nutrient deficiencies
- **12.06** Describe the energy needs of horses for milk production, pregnancy and work
- **12.07** List the most important compound sugars
- **12.08** Describe the digestion of fiber
- **12.09** Explain the function of protein
- **12.10** Describe digestible protein
- **12.11** Explain essential amino acids
- **12.12** Identify at what stages of the horse’s life protein requirements are the greatest
- **12.13** Describe the functions of minerals in horses’ nutrition
- **12.14** Describe the deficiency symptoms caused by lack of minerals in the ration
- **12.15** List the macro- minerals needed by horses

### 13.0 Feeds and Feeding Horses
The student will be able to:

- **13.01** Identify and describe sources of hay
- **13.02** List and describe sources of concentrates
- **13.03** Describe how to feed roughages and concentrates
- **13.04** Name and describe sources of protein
- **13.05** Explain how horses are fed according to their activity level
- **13.06** Make feeding recommendations or management suggestions
- **13.07** Describe some typical rations for horses are different stages and activity levels
- **13.08** Calculate the nutrient level of a mixed feed using a feed composition table
- **13.09** Discuss how to feed minerals
- **13.10** Describe the addition of vitamins to a ration

### 14.0 Health Management
The student will be able to:

- **14.01** Define terms associated with disease conditions
- **14.02** Discuss disease resistance and immunity
- **14.03** Define terms associated with the severity of a disease or condition
- **14.04** Describe immunization
- **14.05** Discuss how a vaccination program relates to immunity
- **14.06** List signs of disease
- **14.07** Discuss common diseases caused by viruses
- **14.08** Discuss common diseases caused by bacteria
- **14.09** List five noninfectious diseases
- **14.10** Identify three zoonotic diseases of horses
- **14.11** Describe the signs of good health in a horse
- **14.12** List four digestive diseases
- **14.13** List five respiratory diseases
- **14.14** Discuss laminitis and colic
- **14.15** Relate body condition to health
15.0 Parasite Control
The student will be able to:

15.01 Describe the life cycle of a typical internal parasite with an intermediate host
15.02 Describe the symptoms of a parasite-infected horse
15.03 List management techniques that help prevent parasite infections
15.04 Give the scientific names for five common parasites
15.05 Name the general categories of chemicals used to treat horses with parasites
15.06 Describe the life cycle and damage caused by strongyles and ascarids
15.07 Identifying flying insects that are carriers of disease
15.08 List the parts of the digestive system that internal parasites may affect
15.09 Distinguish the different effects of mites, ticks, chiggers and lice
15.10 Discuss why young horses are more severely affected by parasites than older horses are
15.11 Discuss the six sanitation and management practices used for reducing or controlling parasites
15.12 Explain how a horse is checked for parasites
15.13 List outward appearances of parasites on horses

16.0 Common Management Practices
The student will be able to:

16.01 Recognize stress in horses
16.02 Describe methods of marking and identifying horses
16.03 Discuss procedures for the neonatal foal
16.04 List methods of fly control
16.05 Describe common fly problems and the habits of several species
16.06 Explain the best management practices for pastures and forages
16.07 Describe wound types and their proper management
16.08 Discuss the management considerations when weaning a foal
16.09 Explain the importance of records to the management of horses

17.0 Shoeing and Hoof Care
The student will be able to:

17.01 Describe the internal and external parts of the hoof
17.02 Explain the three main functions of the hoof wall
17.03 Explain why the condition of the frog of the horse’s foot is a good indication of the health of the horse
17.04 Discuss how corrective shoeing can help toed-in and toed-out horses
17.05 List steps involved in picking up a horse’s foot
17.06 Explain the importance of inspecting feet daily
17.07 List five tools used in caring for a horse’s foot
17.08 Describe how to shoe a horse
17.09 Discuss why it is important to start foot care early in a horse’s life
17.10 Describe why trimming should be done carefully
17.11 Explain how the weight of the horse is carried on the foot/hoof
17.12 Name common problems of the feet
17.13 Describe trimming and how trimming can correct minor problems

18.0 Buildings and Equipment
The student will be able to:

18.01 Recommend an environment for horses that addresses welfare, safety, labor and cost
18.02 List the planning stages of construction
18.03 Identify space requirements for the horse facility
18.04 Discuss the importance of ventilation in a building housing for horses
18.05 Name materials commonly used for stall floors
18.06 Describe requirements for a horse stall
18.07 Provide guidelines for the selection of feed and water facilities
18.08 Discuss reasons for fencing horses and how to select the right fence
18.09 Name four types of fences
19.0 Horse Behavior and Training
The student will be able to:
0 1 2 3
19.01 Name and describe 10 behavioral categories
19.02 Discuss the role of reinforcement in training
19.03 Describe imprinting
19.04 Describe the horse’s sense of vision, touch, smell and hearing
19.05 Identify how to read the emotions of a horse
19.06 Discuss how the gregarious nature of horses can influence their training
19.07 Describe the role of the sense of touch in training
19.08 Characterize longeing and its uses
19.09 Describe the role of aerobic and anaerobic fitness in training horses
19.10 Discuss how a horse is taught during training

20.0 Equitation
The student will be able to:
0 1 2 3
20.01 Name three styles of saddles and describe their uses
20.02 Indicate the four criteria for selecting a saddle
20.03 Describe the anatomical points on a horse that must be checked when considering a saddle
20.04 Discuss the results of a poorly fitted saddle
20.05 Discuss the effect the rider’s being forward or sitting back in the saddle has on the performance of the horse
20.06 Describe the process of saddling and bridleing a horse
20.07 Identify guidelines for proper dress around horses, especially for Western riding
20.08 List the steps for proper mounting of a horse
20.09 Name three types of equitation competition
20.10 Give the rules of safe riding
20.11 Describe how to load and haul a horse and how to check the safety of a trailer
20.12 Name three types of halter material
20.13 Describe the process of haltering and adjusting a halter
20.14 Indicate three safe ways of tying a horse

21.0 Business Aspects
The student will be able to:
0 1 2 3
21.01 Identify terms related to horse industry business management with their correct definitions
21.02 List reasons for keeping records
21.03 Distinguish between basic kinds of records
21.04 List guidelines for building and maintaining a good credit standing
21.05 List factors that a lender looks for in a borrower
21.06 List factors that a borrower looks for in a lender
21.07 Identify indicators of good loan repayment ability
21.08 List the essential components of all budgets
21.09 List six types of credit
21.10 Define related management terms
21.11 Describe functions in the management process
21.12 Identify management considerations in planning an equine business
21.13 Explain important skills of managers
21.14 Describe the importance of records and reports
21.15 Explain important human relations skills
21.16 List three types of insurance needed in equine businesses
21.17 Describe the elements of a good boarding contract

22.0 Career Opportunities
The student will be able to:
0 1 2 3
22.01 List the basic skills and knowledge needed for successful employment and job advancement
22.02 Describe the thinking skills needed for the workplace of today
22.03 Identify the traits of an entrepreneur
22.04 Identify primary, support, show, and rodeo careers in the horse industry
22.05 Describe how to obtain education and experience needed to enter the horse industry
22.06 List six general competencies needed in the workplace
22.07 Describe five ways to identify potential jobs
22.08 List eight guidelines for choosing a job
22.09 List 10 guidelines for filling out an application form
22.10 Describe a letter of inquiry or application
22.11 Identify the role of electronic and social media in finding and obtaining a job
22.12 Describe 10 reasons an interview may fail
22.13 List 10 soft (intangible) skills important in the workplace
22.14 Describe occupational safety from the employer’s perspective and from the employee’s perspective