### Alabama Course of Study – Animal Science

<table>
<thead>
<tr>
<th>Importance of Animal Industry</th>
</tr>
</thead>
</table>
| **1.** Discuss the history of domestication of animals.  
Example: more reliable source of food and clothing | SE: 12  
TM: 15-16 |
| **2.** Classify large animal and poultry breeds into biological categories. |  
• Kingdom | SE: 28-32, 692-693  
TM: 17-18 |
|  
• Phylum | SE: 28, 692-693  
TM: 17-18 |
|  
• Class | SE: 28, 692-693  
TM: 17-18 |
|  
• Order | SE: 28, 692-693  
TM: 17-18 |
|  
• Family | SE: 28, 692-693  
TM: 17-18 |
|  
• Genus | SE: 28, 692-693  
TM: 17-18 |
|  
• Species | SE: 28, 692-693  
TM: 17-18 |
| **3.** Explain benefits of livestock production. |  
• Conversion of low value carbohydrates to high value protein  
Example: grazing of marginal grasses to produce meat protein for human consumption | SE: 67-68  
TM: 21-22 |
|  
• Use of marginal land | SE: 71-72, 210  
TM: 21-22 |
| **4.** Identify important factors associated with animal production. |  
• Employment | SE: 631-632  
TM: 71-73 |
|  
• Recreation | SE: 5, 526-533, 552-553  
TM: 60, 62 |
|  
• Food production | SE: 4-5, 7-8, 224, 242, 244, 273, 277  
TM: 33, 36 |
|  
• Fibers and leather | SE: 9, 274  
TM: 39 |
|  
• Drug production | SE: 10, 584-585  
TM: 65-67 |
|  
• Tissue/organ production and research | SE: 584-585  
TM: 65-67 |

**SE** = Student Edition  
**TM** = Teacher’s Manual
|-----------------------------------------|--------------------------------------------------------------------------------|
| • Record keeping                        | SE: 624, 637  
|                                          | TM: 73 |
| • Consumer education                    | SE: 7, 10, 24, 614-615, 680-682  
|                                          | TM: 74-76 |
| • Community relations                   | SE: 17-20, 684-685  
|                                          | TM: 15 |

5. Compare job characteristics in various career opportunities in the animal industry.

| • Nature of work                         | SE: 30, 67, 101, 117, 224, 257, 284, 315, 640-649  
|                                          | TM: 71-73 |
| • Compensation and benefits              | SE: 631, 646  
|                                          | TM: 72 |
| • Qualifications for employment          | SE: 30, 67, 101, 117, 224, 257, 284, 315, 640-649  
|                                          | TM: 71-73 |

Breed Identification and Characteristics

6. Identify important economic breeds of beef, swine, equine, goats, sheep, and specialty animals.

SE: 212-221, 244-247, 278-282, 404-408, 456-461, 483-484  
TM: 33-42, 49, 35, 55

7. Identify origins and history of major large animal breeds.
Example: Limousine–originated in France and genetically modified to produce lean meat

SE: 212-221, 240, 278-280, 311-313  
TM: 34, 37, 42, 53, 55

8. Discuss important natural and bioengineered characteristics in major large animal breeds of livestock and poultry.
Examples: muscle mass, frame size, trimness

SE: 211-212, 243-244, 340  
TM: 55, 37, 42-43

Safety

9. Describe safety techniques used in working with livestock.
Examples: transporting, handling

SE: 649-652  
TM: 71-73

10. Assess national, state, and local regulations regarding important aspects of the livestock industry.
Examples: laws and regulations dealing with imports, vaccination, disposal, quarantine

SE: 19-20, 266-267, 315-316  
TM: 17, 36

11. Evaluate environmental factors affecting livestock operations.

• Soil

SE: 672-675  
TM: 74-76

• Water

SE: 16, 89, 541-543  
TM: 24

• Air quality

SE: 89, 357-358  
TM: 24

SE = Student Edition     TM = Teacher’s Manual
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Climate</td>
<td>SE: 87-90, 325-327</td>
</tr>
<tr>
<td></td>
<td>TM: 24, 43</td>
</tr>
<tr>
<td>• Predation</td>
<td>SE: 569, 575, 577</td>
</tr>
<tr>
<td></td>
<td>TM: 64</td>
</tr>
<tr>
<td>• Harmful plants</td>
<td>SE: 98-99</td>
</tr>
<tr>
<td></td>
<td>TM: 22</td>
</tr>
</tbody>
</table>

**Facilities**

12. Evaluate facility components used to manage livestock efficiently. Examples: farrowing crates, HVAC systems, flooring materials, loading facilities  
   SE: 230-231, 262-266, 293-295  
   TM: 33-35, 38, 41-43

   SE: 345-347, 350-352, 356-359  
   TM: 44-46

**Nutrition**

14. Compare animal digestive systems.  
   • Non-ruminant  
     SE: 44-46, 67  
     TM: 17, 19  
   • Ruminant  
     SE: 44-46, 67-68  
     TM: 17, 19  
   • Crops in birds  
     SE: 44-47  
     TM: 19

15. Evaluate the importance of proper nutrition for various animals. Examples: weight gain, body maintenance, eggshell quality  
   SE: 68-70  
   TM: 19-22

16. Identify nutrient classes that affect the health of livestock. Examples: vitamins, minerals, proteins, fats, carbohydrates, roughages, concentrates, feed additives, hormone implants  
   TM: 19-22, 41, 43

17. Evaluate the nutritional value of corn, soybeans, oats, and hay. Examples: protein, fiber  
   SE: 77-78, 257  
   TM: 21-22

18. Balance rations for the needs of various animals.  
   SE: 76-81  
   TM: 20-22

**Genetics**

19. Describe basic functions of deoxyribonucleic acid (DNA) in the transmission of genetic characteristics.  
   SE: 147-149  
   TM: 28-29

20. Explain the process of genetic inheritance in livestock reproduction.  
   SE: 143-149  
   TM: 28-29

SE = Student Edition  
TM = Teacher’s Manual
<table>
<thead>
<tr>
<th><strong>Alabama Course of Study – Animal Science</strong></th>
<th><strong>Introduction to Livestock and Companion Animals, Revised 3rd Edition © 2009</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disease and Parasite Control, Prevention, and Treatment</strong></td>
<td></td>
</tr>
</tbody>
</table>
Examples: parasite control, vaccination, sanitation | SE: 100-109  
TM: 22-24 |
| 22. Categorize symptoms of important animal diseases for diagnostic purposes.  
Example: Blackleg symptoms—lameness, swollen muscles, severe depression, high fever | SE: 95-100  
TM: 22-24 |
| 23. Compare common drugs used to treat diseases.  
Examples: antibiotics, dewormers, applications, side affects | SE: 105-106  
TM: 22-24 |
| **Selection** |  |
| 24. Explain the concept of natural selection. | SE: 143, 553  
TM: 63 |
| 25. Explain how selective breeding has influenced the development of animals. | SE: 115-117  
TM: 25 |
| 26. Compare factors used in the selection of market animals and breeding animals.  
Examples: structure, trimness, muscle, breed characteristics, size, scale | SE: 232, 277-278  
TM: 34, 39, 41 |
| 27. Identify anatomical features of swine, beef, poultry, horses, sheep, and poultry.  
Example: poultry—comb, wattle, breast, wing primaries and secondaries, thigh | SE: 36-39, 276, 308, 350  
TM: 17-19 |
| **Reproduction/Breeding** |  |
| 28. Describe the structure and function of male and female reproductive systems in a variety of animals. | SE: 117-123  
TM: 25-27 |
| 29. Discuss the benefits of artificial insemination.  
Examples: use of high quality blood lines, lower cost | SE: 130-134  
TM: 25-27 |
| 30. Assess the use of biotechnology in animal reproduction and genetics.  
Examples: cloning, gene splicing, genetic engineering, bovine somatotropin (BST), porcine somatotropin (PST), embryo transfer | SE: 142-143, 151-154  
TM: 28-29 |
| **Management and Care** |  |
| 31. Describe activities necessary in producing and caring for animals.  
• Selection | SE: 210-212, 242-244, 283, 314-319  
TM: 40, 42-43 |
|  • Breeding | SE: 115, 252, 408-412, 463, 490-491, 507  
TM: 25 |
### Alabama Course of Study – Animal Science

<table>
<thead>
<tr>
<th>Topic</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeding</td>
<td>SE: 222-224, 256-258, 287-289, 321-325&lt;br&gt;TM: 36, 40, 43</td>
</tr>
<tr>
<td>Care</td>
<td>SE: 251-256, 297, 321-327&lt;br&gt;TM: 36-38, 41-43</td>
</tr>
<tr>
<td>Marketing</td>
<td>SE: 6-7, 266-267&lt;br&gt;TM: 15</td>
</tr>
</tbody>
</table>

### Animal Rights Versus Animal Welfare

<table>
<thead>
<tr>
<th>Question</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>32. Compare the concept of animal rights with animal welfare.</td>
<td>SE: 17-20&lt;br&gt;TM: 15-17</td>
</tr>
<tr>
<td>34. Evaluate issues regarding human use of animals for food, pleasure, and experimentation.</td>
<td>SE: 584-585, 590-594, 675-683&lt;br&gt;TM: 74-76</td>
</tr>
<tr>
<td>35. Analyze practices used in the production of animals. Examples: castration, tail docking, beak trimming, confinement, dehorning, branding, marking</td>
<td>SE: 195-199&lt;br&gt;TM: 30-32</td>
</tr>
</tbody>
</table>

### Global Marketing

<table>
<thead>
<tr>
<th>Question</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>36. Analyze the Law of Supply and Demand.</td>
<td>SE: 6, 10-12, 614-615&lt;br&gt;TM: 16</td>
</tr>
<tr>
<td>37. Analyze the impact of world economic, cultural, and political issues on the marketing of animal products. Examples: yen compared to dollar, opposition to genetically modified foods</td>
<td>SE: 10, 680-682&lt;br&gt;TM: 74-76</td>
</tr>
</tbody>
</table>

### Specialty Animals and Animal Products

<table>
<thead>
<tr>
<th>Question</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>38. Identify economically important specialty animals and animal products. Examples: alligators; cashmere goats; quail; ratites; pheasants; specialty meats, cheeses, animal products</td>
<td>SE: 501-546, 567-580&lt;br&gt;TM: 58-60, 64-65</td>
</tr>
<tr>
<td><strong>Care and feeding</strong></td>
<td>SE: 503-504, 508, 510, 517-518, 544&lt;br&gt;TM: 58-62</td>
</tr>
<tr>
<td><strong>Housing and environment</strong></td>
<td>SE: 461, 504, 506, 508-509, 510-511, 518, 533-539&lt;br&gt;TM: 58-64</td>
</tr>
<tr>
<td><strong>Marketing and sales</strong></td>
<td>SE: 499, 527, 615-618&lt;br&gt;TM: 69-70</td>
</tr>
</tbody>
</table>


SE = Student Edition  TM = Teacher’s Manual