

# Animal Science (2014)

Adopted 2014

## Livestock Safety

- a. Discuss the dangers involved in working with animals. AS.06.01.01.A

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- b. Outline safety procedures for working with animals by species. AS.06.01.01.B

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- a. Explain the implications of animal welfare and animal rights for animal agriculture. AS.06.01.02.A

## Animal Genetics and Selection

- a. Identify basic characteristics of animal cells, tissues, organs and body systems. AS.02.02.01.A

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- a. Diagram a typical animal cell and identify the organelles. AS.02.02.02.A

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- a. Describe the basic functions of animal cells in growth and reproduction. AS.02.02.03.A

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- b. Detail the processes of meiosis and mitosis in animal growth, development, health and reproduction. AS.02.02.03.B

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- a. Explain genetic inheritance in agricultural animals. AS.05.03.01.A

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- b. Explain the advantages of using genetically superior animals in the production of animals and animal products. AS.05.03.01.B

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- a. Explain the use of quantitative breeding values (e.g. EPDs) in the selection of genetically superior breeding stock. AS.05.03.03.A

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- b. Compare and contrast quantitative breeding value differences between genetically superior animals and animals of average genetic value. AS.05.03.03.B

## Nutrition, Feeds and Additives

- a. Compare and contrast common types of feedstuffs and the roles they play in the diets of animals. AS.04.01.01.A

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- a. Explain the importance of a balanced ration for animals. AS.04.01.02.A

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- b. Appraise the adequacy of feed rations using data from the analysis of feed stuffs, animal requirements and performance. AS.04.01.02.B

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- a. Explain the purpose and benefits of feed additives and growth promotants in animal production. AS.04.02.01.A

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**b. Discuss how feed additives and growth promotants are administered and the precautions that should be taken.** [AS.04.02.01.B](#)

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**Reproductive Anatomy and Fertility**

**a. Explain the male and female reproductive organs of the major animal species.** [AS.05.01.01.A](#)

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**b. Describe the functions of major organs in the male and female reproductive systems.** [AS.05.01.01.B](#)

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**a. Explain how age, size, life cycle, maturity level and health status affect the reproductive efficiency of male and female animals.** [AS.05.02.01.A](#)

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**a. Discuss the importance of efficient and economic reproduction in animals.** [AS.05.02.02.A](#)

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**a. Define natural and artificial breeding methods.** [AS.05.03.02.A](#)

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**b. Explain the processes of natural and artificial breeding methods.** [AS.05.03.02.B](#)

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**a. Explain the advantages of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.** [AS.05.03.04.A](#)

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**b. Explain the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.** [AS.05.03.04.B](#)

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**a. Discuss the uses and advantages and disadvantages of natural breeding and artificial insemination.** [AS.05.03.05.A](#)

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**b. Explain the materials, methods and processes of artificial insemination.** [AS.05.03.05.B](#)

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**a. Explain the functions of hormones in animals.** [BS.03.02.01.A](#)

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**Breeding Management**

**a. Define natural and artificial breeding methods.** [AS.05.03.02.A](#)

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**b. Explain the processes of natural and artificial breeding methods.** [AS.05.03.02.B](#)

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**a. Explain the use of quantitative breeding values (e.g. EPDs) in the selection of genetically superior breeding stock.** [AS.05.03.03.A](#)

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**a. Explain the advantages of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.** [AS.05.03.04.A](#)

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**b. Explain the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.** [AS.05.03.04.B](#)

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**a. Discuss the uses and advantages and disadvantages of natural breeding and artificial insemination.** AS.05.03.05.A

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**b. Explain the materials, methods and processes of artificial insemination.** AS.05.03.05.B

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## Parturition and Newborn Care

**a. Describe the functions of the animal body systems and system components.** AS.02.02.06.A

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**a. Explain the clinical significance of common consideration in veterinary treatments, such as aseptic techniques.** AS.03.01.04.A

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**a. Explain methods of determining animal health and disorders.** AS.03.01.01.A

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**a. Explain the functions of hormones in animals.** BS.03.02.01.A

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## Livestock Health Fundamentals

**a. Explain methods of determining animal health and disorders.** AS.03.01.01.A

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**b. Perform simple health-check evaluations on animals.** AS.03.01.01.B

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**a. Explain the implications of animal welfare and animal rights for animal agriculture.** AS.06.01.02.A

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**a. Identify facilities needed to house and produce each animal species safely and efficiently.** AS.07.01.02.A

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**b. Explain how modern equipment and handling facilities enhance the safe and economic production of animals.** AS.07.01.02.B

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## Livestock Diseases and Parasites

**a. Identify common diseases, parasites and physiological disorders that affect animals.** AS.03.01.02.A

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**b. Diagnose illnesses and disorders of animal based on symptoms and problems caused by diseases, parasites and physiological disorders.** AS.03.01.02.B

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**a. Explain characteristics of causative agents and vectors of diseases and disorders in animals.** AS.03.01.03.A

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**a. Identify and describe zoonotic diseases.** AS.03.01.05.A

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## Vaccinations and Medications

**b. Evaluate preventative measures for controlling and limiting the spread of diseases, parasites and disorders among animals.** AS.03.01.03.B

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## Livestock Management Practices

**a. Explain the clinical significance of common consideration in veterinary treatments, such as aseptic techniques.**

- dehorning
- docking
- castration
- hoof trimming

AS.03.01.04.A

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- a. Describe how animal identification systems can track an animal's location, nutrition requirements, production progress and changes in health.** [AS.06.02.02.A](#)
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**Market Grades and Classes**

- a. Identify quality and yield grades of food products.** [FPP.04.01.01.A](#)
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- b. Discuss factors that affect quality and yield grades of food products.** [FPP.04.01.01.B](#)
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**Livestock Marketing**

- a. Name and explain the impact of external economic factors on an AFNR business.** [ABS.05.01.02.A](#)
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- b. Recognize how changes in prices of inputs and/or outputs influence the financial statements of an AFNR business.** [ABS.05.01.02.B](#)
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- a. Investigate the meaning and methods of marketing in AFNR as related to agricultural commodities, products and services ant to agricultural goods in domestic and international markets.** [ABS.06.01.01.A](#)
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- a. Described functions in agricultural marketing.** [ABS.06.01.02.A](#)
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