**Sample Course Outline**

Animal Production Systems

ATAR Year 11

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# Sample course outline

# Animal Production Systems – ATAR Year 11

## Unit 1 and Unit 2

#### Semester 1

| **Week** | **Key teaching points** |
| --- | --- |
| 1 | Introduction to APS ATAR Year 11, course outline, assessment outlinesSustainable production* complying with industry codes of practice

Produce for purpose* identify legal requirements of owning livestock
 |
| 2–4 | Economics, finance and markets* quantity and value of domestic animal production
* assess resources used in enterprises
* marketing options for animal products
* factors affecting supply and demand
* interpretation of supply and demand information for a product

Produce for purpose* implement a calendar of operations for a selected enterprise
 |
| 5–7 | Animal structure and function* reproductive processes, including conception, pregnancy, birth, lactation
* breeding cycles in selected livestock

Produce for purpose* select animals to meet market requirements
* manage animals to optimise profitability
* assess quality of produce against market specifications
* identify quality assurance programs for selected animal production systems, including their purpose and major features
* identify transport and storage and requirements for animal products
 |
| 8–12 | Animal structure and function* processes of gastric digestion
* microbial digestion in herbivores

Animal nutrition* feed rations for maintenance, growth and reproduction
* feed on offer (FOO), stocking rates, and dry sheep equivalent (DSE)
* feed intake and feed conversion ratios
 |
| 13–14 | Economics, finance and markets* preparation of budgets for an enterprise and identification of items likely to impact on profit
* applying the law of the minimum to animal production
 |
| 15 | Semester 1 revision |
| 16 | Semester 1 examination  |

#### Semester 2

| **Week** | **Key teaching points** |
| --- | --- |
| 1–3 | Animal health * impact of pests and diseases on production systems
* life cycles of selected external and internal pests and diseases
* assess pest and disease risk
* biosecurity measures to reduce risk from pests and diseases
* factors influencing pest and disease control programs
* immune system, including antibody, antigen, immunity, antitoxin, passive and active immunity
* use of vaccination programs to promote immunity
* monitoring pests and diseases in a production system
* pest and disease management options, including integrated pest management (IPM)
* factors affecting the selection of pesticides, including withholding periods
 |
| 4–5 | Investigating animal production* develop hypotheses to test, based on prior information
* design and conduct an investigation considering aspects of experimental design, including variables and controls
* analyse and interpret data, including calculating means
* present data using appropriate methods
* draw conclusions based on experimental data and validate from other sources
 |
| 6–8 | Breeding and improvement* aims of breeding and selection, including profitability and meeting market requirements
* sources of genetic variation
* selection criteria, including subjective and objective characteristics
* genetic terms, including
* gametes
* chromosomes
* genes
* alleles
* dominant
* recessive
* genotype
* phenotype
* predict outcomes of crosses using punnett squares
* interactions between genotype and environment (GxE)
* breeding systems, including inbreeding, line breeding, and crossbreeding
* management of natural breeding programs
 |
| 9–10 | Systems ecology * impact of animal production systems on natural ecosystems, including
* the effects on soils
* water quality
* atmospheric and soil pollution
* loss of biodiversity
* effects of pesticides on the environment
 |
|  | * benefits to animal production systems of ecosystem components, including
* clean water
* plant pollination
* nutrient cycling
* pest and disease management
 |
| 11–13 | Sustainable production* maintaining and improving the quality of soil and water
* stewardship of natural and farming resources, including technologies
* identify risks to sustainable production
* review the sustainability of current management practices
* Government legislation related to a selected enterprise
 |
| 14–15 | Revision of whole year |
| 16 | Semester 2 examination  |