



SAMPLE COURSE OUTLINE

ANIMAL PRODUCTION SYSTEMS ATAR YEAR 12

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Sample course outline

Animal Production Systems – ATAR Year 12

Unit 3 and Unit 4

Semester 1

Week	Syllabus content
1	<p>Introduction to APS ATAR Year 12, course outline, assessment outlines, school assessment policy</p> <p>Economics, finance and markets</p> <ul style="list-style-type: none"> importance of the global economy to Australian animal production, including major markets and competitors
2–4	<p>Economics, finance and markets</p> <ul style="list-style-type: none"> comparative advantage of Australian producers in the international market maintaining Australian global competitiveness protection strategies for Australian markets, including quarantine and tariffs <p>Animal Health</p> <ul style="list-style-type: none"> management strategies for pest and disease outbreak on a local, national and international level
5–8	<p>Animal structure and function</p> <ul style="list-style-type: none"> endocrine systems and the role in natural breeding behaviour and reproduction manipulation of breeding, including natural and artificial techniques <p>Breeding and improvement</p> <ul style="list-style-type: none"> breeding technologies, including artificial insemination (AI), embryo transfer, cloning, genetically modified organisms (GMO) heritability and breed performance criteria, including estimated breeding values (EBV) mapping heritability of traits using pedigrees assess progress towards breeding goals impact of breeding technologies and related ethical issues <p>Produce for Purpose</p> <ul style="list-style-type: none"> evaluate new technologies to optimise production
9–11	<p>Animal health</p> <ul style="list-style-type: none"> economic principles of pest and disease control, including thresholds and economic injury levels of pests the relationship between modes of action of pesticides to their effectiveness and to resistance risk the development of pesticide resistance avoiding and managing pesticide resistance comparing the effectiveness of different pest control methods
12–14	<p>Economics, finance and markets</p> <ul style="list-style-type: none"> use budgets and gross margins to compare profitability of management decisions use market information to plan production and marketing use financial records to guide decision making altering production systems in response to consumer trends <p>Produce for purpose</p> <ul style="list-style-type: none"> the effect of product variations on financial return propose adaptations to production systems to improve efficiency or to meet changed circumstances evaluate on-farm practices to meet quality assurance criteria
15	Semester 1 revision
16	Semester 1 examination

Semester 2

Week	Syllabus content
1	Feedback and review of student performance in Semester 1 examination
2–4	<p>Animal nutrition</p> <ul style="list-style-type: none"> • function of feed additives and growth promotants to optimise growth response to feed rations • management of nutritional requirements to achieve market specifications • formulation of feed rations for optimal production, including least cost rations and Pearson squares • legal requirements of feeding livestock <p>Animal structure and function</p> <ul style="list-style-type: none"> • digestion of carbohydrates, proteins and fats in gastric and microbial systems • metabolism of digestive products • energy and protein utilisation
5–8	<p>Investigating animal production</p> <ul style="list-style-type: none"> • develop hypotheses to test, based on prior information • design and conduct an investigation considering aspects of experimental design, including variables, controls, randomisation and replication • analyse and interpret data, including the use of standard deviation and standard error • present data using appropriate methods • draw conclusions based on experimental data and validate from other sources • evaluate experimental design, including possible bias and experimental error and propose areas for future investigations <p>Produce for purpose</p> <ul style="list-style-type: none"> • evaluate new technologies to optimise production • identify variations in product quality and quantity and causes, including breed, weather, nutrition, handling and transport
9	<p>Systems ecology</p> <ul style="list-style-type: none"> • climate change and possible impacts on production systems <p>Sustainable production</p> <ul style="list-style-type: none"> • responding to impacts of climate change on production systems
10–13	<p>Systems ecology</p> <ul style="list-style-type: none"> • comparison of natural, agricultural and urban ecosystems, including the energy flow and recycling of matter • conservation of biodiversity and natural ecosystems <p>Sustainable production</p> <ul style="list-style-type: none"> • intergenerational equity as ensuring that the wellbeing of future generations (social, economic and environmental factors) are not compromised by the activities of the current generations • managing the conflicting demands of social, environmental and economic factors, also known as the 'triple bottom line' • planning for sustainability: balancing short-term needs with long-term improvement of resources • establishing short- and long-term enterprise goals • optimising production through new technologies • assessment and management of risk, including probabilities, consequences, avoidance and mitigation • duty of care in the workplace
14–15	Semester 2 revision
16	Semester 2 examination