

A course developed by ...



RANGELANDS AUSTRALIA

ANIMAL NUTRITION AND BEHAVIOUR

Postgraduate Course – ANIM7017

Available Semester 2
(Subject to minimum numbers)

OVERVIEW

The approach taken in this course enables students to blend good theoretical knowledge with practical application to better manage animals, improve production and ensure sustainable use of the rangelands.

This course provides an overview of the critical aspects of livestock management in Australia's rangelands. It deals primarily with aspects of extensive production of beef cattle, wool and meat sheep and goats, with some coverage of the behaviour and management of animals harvested from the rangelands (eg. feral and native animals). The course also explores nutritional factors relating to market demand and welfare issues with respect to feeding, care, handling and transport of animals. Global trends in livestock production are also considered. The course will provide a framework on which to build an understanding of animal behaviour, nutrition and husbandry that will lead to an increase in productivity and profitability of animal-based enterprises in the rangelands, but not at the expense of the resource base.

The course covers aspects of animal production from extensive grazing to back-grounding, in both good times and in drought, and provides students with the opportunity to focus on the day-to-day issues associated with animal nutrition and behaviour, and to identify and apply management strategies to achieve a sustainable production system.

Note: Students undertaking this course will need to have access to a grazing property where they can:

- i) develop a nutrition management strategy for an enterprise, and*
- ii) observe the behaviour of domestic and native or feral animals, deduce the implications for sustainability, and develop strategies to optimise economic benefits and minimise the negative impacts of the animals.*

LEARNING OBJECTIVES

On completion of this course you will be able to:

- Understand the role and importance of animal nutrition especially as it relates to all aspects of animal production in the rangelands
- Be aware of current trends, theories and advances in the fields of: a) animal nutrition in extensive areas and in back-grounding, and b) in the foraging behaviour of livestock and feral animals that provide animal-based products from the rangelands.
- Be able to monitor grazing animal nutrition and read animal condition to 'balance nutrition planes for production' and support decision making for supplementary feeding and drought animal management
- Be able to critically evaluate current practices, and through reflection, generate ideas, make decisions and adapt to our changing environment in order to optimise livestock productivity and profit
- Be able to source, use and evaluate relevant information including 'best practice' and advances in knowledge in addressing nutritional limitations to production and in meeting market specifications

- Identify and define the needs of different markets and the impact this has on management decisions relating to nutrition and production
- Use an understanding of the foraging behaviour of animals to assess: i) the complementary or competitive effects of grazers and browsers, and ii) total grazing pressure and to manipulate grazing distribution
- Use an understanding of animal behaviour to predict seasonal patterns of use of the landscape and animal impact, herd/flock movement, and/or assessment of risks in emerging drought situations
- Understand and interpret animal behaviour in order to increase safety and efficiency and to minimise stress when handling and moving stock in different grazing systems (ie. continuous vs cell grazing)
- Be aware of the importance of animal welfare issues as they relate to nutrition and production and the need to address these as part of decision making processes
- Develop an understanding of the global trends and issues impacting on livestock production and the implications these have for management in the short, medium and long term
- Demonstrate skills in communication (ie. verbal, report writing, etc), on-line learning, data gathering, information acquisition and management, critical thinking, etc

COURSE STRUCTURE

Course modules include:

- Rumen function and manipulation
- Nutritional requirements of grazing animals
- Nutritional requirements of browsing and grazing animals
- Nutrition management for grazing animals
- Minerals and Vitamins – deficiencies and toxicities in animal production
- Market demand and nutritional requirements
- Behavioural characteristics of domestic animals that are important for production and management
- Behaviour of feral and native animals and their impact on production
- Welfare – implications for feeding, care, handling and transport of animals
- Global concerns associated with animal production

LEARNING FACILITATOR

To be advised.

REQUIRED TEXT BOOKS

There are no textbooks required for this course. However students will be required to buy a copy of the QDPI&F Prime Notes CD which is available at a specially discounted price of \$9.95 for students participating in this course. Students are supplied with a book of readings that includes essential materials required for the completion of learning activities and assessment items.

ASSESSMENT

There are no 'examinations', just three assessment items for this course.

Assessment 1: Online discussion and problem solving activities – 30%

Throughout the course you will be required to complete a number of learning activities online. This will involve participating in discussion topics and completing problem solving activities.

Assessment 2: Case study of a nutritional management strategy for a chosen enterprise – 35%

Students will develop a nutrition management strategy for a described extensive livestock enterprise and provide scientific and economic justification for the recommended strategy (maximum 3,000 words)

Assessment 3: Case Study observation on behaviour and management strategies – 35%

This case study requires you to complete a series of observations, read the study materials and the required reading, and complete the learning activities to develop an understanding of the feeding behaviour of both livestock and native species on a commercial enterprise of your choice. This will include strategies for better managing the animals and improving production. The case study will include writing a comprehensive report (maximum 2,500 words plus supplementary materials).

BACKGROUND TO THIS COURSE

The need for this course was identified by a national survey of education and skills needs for success in the rangelands. The course was developed by Rangelands Australia, and provides the first rangeland-specific collation of information on animal nutrition and behaviour. The structure, content and resources used in this course were influenced by experienced pastoralists, private consultants, and advisors &/or researchers from the West Australian Department of Agriculture, Queensland Department of Primary Industries & Fisheries, CSIRO Sustainable Ecosystems, University of New England and the University of Queensland.

A draft of the course was reviewed by livestock producers from the rangelands, as well as QDPI&F and WA Agriculture advisors and CSIRO and University of Queensland researchers.

This course was delivered for the first time in Semester 2, 2005.

REVIEWERS' COMMENTS

External reviewers have provided the following general comments on a draft of this course:

- *"As a cattle breeder in the Rangelands this course is very informative. The material presented will provide valuable learning"* Organic beef producer and consultant, near Miles Q
- *"Good focus on important production issues; very practical"* CSIRO scientist, Brisbane Q
- *"Very, very good course"* Beef producer, near Roma Q

COURSE EVALUATIONS

Students completing this course in 2005-06 were asked to evaluate the perceived relevance, practicality and quality of the course and its delivery (on 1-5 scale, with 1=strongly disagree and 5=strongly agree). The following average ratings were received:

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| • Clear and relevant learning objectives | 4.7/5.0 |
| • Satisfied with the course content | 4.7/5.0 |
| • Satisfied with the amount of contact with the Learning Facilitator | 4.5/5.0 |
| • The Learning Facilitator provided useful guidance and support | 4.7/5.0 |

- I gained new skills and knowledge 5.0/5.0
- Learning and assessment activities challenged me to think 5.0/5.0
- Course is well structured and components well integrated 4.7/5.0
- Course is relevant to my workplace/business 5.0/5.0
- Course is relevant to my future in the rangelands 4.7/5.0
- This course has met my needs 4.7/5.0
- Overall, I'm satisfied with this course 4.5/5.0

Students have also provided the following comments on this course:

- "Good course"
- "Course is very practical. It is hands-on oriented and students address realistic issues".