



Australian Wool Education Trust

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APPLICATION FOR ACCESS TO SHEEP AND WOOL EDUCATION MODULES

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Expected Use: _____

I acknowledge that I have read, understood and agree to comply with the Terms and Conditions for Access to the Sheep and Wool Education Modules.

The documents I require are indicated in the appended table(s).

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Australian Wool Education Trust

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7. Reservations

7.1 AWET reserves the right to change these terms at any time and solely at its discretion.



Table 1

WOOL BIOLOGY AND METROLOGY

- 1 Skin Structure and Function
- 2 Structure and Composition of Wool
- 3 Follicle Kinetics
- 4 Genetic Engineering
- 5 Background to Wool Metrology
- 6 Measurement Principles
- 7 Sampling Techniques
- 8 Yield
- 9 Fibre Diameter
- 10 Staple Length, Staple Strength and Position of Break
- 11 Wool Colour Measurement
- 12 Contamination
- 13 Fibre Curvature, Crimp Frequency, Resistance to Compression and Bulk
- 14 Wool Style
- 15 Use of Measurement
- 16 Fibre Diameter Measurement of Slivers and Tops
- 17 Future Development in Wool Metrology
- 18 Overview

Table 2

WOOL MARKETING AND CLIP PREPARATION

- 1 Introduction
- 2 Clip Preparation Research
- 3 On Farm Fibre Measurement
- 4 Shearing
- 5 Wool Classing
- 6 Type and Style
- 7 Classing Systems
- 8 Participants in the Wool Marketing Chain
- 9 Selling Systems
- 10 Price Risk Management
- 11 Developments in Wool Marketing
- 12 Wool Growing as a Business
- 13 Wool Price Determination: Macroeconomic and External Linkages
- 14 Marketing Principles
- 15 Global View of the Apparel Market
- 16 Wool Supply Overview
- 17 Demand for Australian Wool
- 18 The Markets for Australian Wool
- 19 Product Promotion
- 20 Value and Use of Wool
- 21 Overview



Table 3

WOOL PROCESSING

1	Overview of Early Stage Processing
2	Overview of Wool Yarn Manufacture
3	An Overview of Wool Scouring
4	Aqueous Scouring and Detergents
5	Control and Instrumentation
6	Scoured Wool Quality and Testing
7	Wool Scouring Systems
8	Carbonising
9	Principles of Wool Carding
10	Drafting and Gilling of Fibrous Assemblies
11	Wool Combing
12	Spinning
13	Fundamentals of Yarn Technology
14	Ring Spinning Systems
15	Advanced Ring Spinning
16	Latest Developments in Spinning and Non-wovens
17	Preparation for Textile Weaving
18	Weaving Technologies and Structures
19	Principles of Yarn Requirements for Knitting
20	Formation and Properties of Knitted Structures
21	Fibre and Yarns for Carpets
22	Wool Carpet Manufacture
23	Overview of Non-wovens Manufacturing
24	Principles of Wool Fabric Finishing
25	Wet Finishing of Wool Fabrics
26	Dry Finishing of Wool Fabrics
27	Dyeing Principles and Dyes for Wool Fabrics
28	Effect of Fibre Properties on Processing Performance – greasy wool to top
29	Effect of Fibre Properties on Processing Performance – top to yarn

Table 4

SHEEP PRODUCTION

1	Profile of the Australian Sheep Industry
2	Fleece Weight and its Component Traits
3	Fibre Diameter, Staple Strength, Style, Handle and Curvature
4	Wool Colour and Fleece Rot
5	Contamination - Dark and Medullated Fibres and Vegetable Matter
6	Lamb and Mutton Markets
7	Sheep Health
8	Managing Weaners and Breeding Ewes
9	Managing - Finishing
10	Husbandry Calendars, Precision Sheep Management and Benchmarking
11	Genetics of Fleece Weight and Fibre Diameter
12	Genetics of Staple Strength, Style and Skin-based Selection
13	Genetics of Disease Resistance
14	Genetics of Bodyweight and Reproduction
15	Genetics of Growth and Carcase Specifications
16	Grazing Management
17	Lamb and Wool Production from Perennial and Annual Pastures
18	Sheep Production in Semi-arid Rangelands
19	Sheep Production in Mediterranean Environments
20	Dry Year Management and Supplementary Feeding
21	Diet Selection and Feeding Behaviour
22	Mineral Nutrition



Table 5

APPLIED ANIMAL NUTRITION

M1 The Theory and Practice of Animal Nutrition

- 1 What are the Major Nutrients
- 2 Digestible and Metabolisable Energy
- 3 Energy Requirements of Livestock
- 4 The Interactions between Energy and Protein
- 5 Supplying Protein for Ruminants
- 6 From Feed Components to Milk, Meat and Wool

M2 Animal Feeds - Matching Feeds With Needs

- 7 Formulating Diets - Introduction
- 8 Assessing the Nutritive Value of Feeds - Physical Characteristics
- 9 Assessing the Nutritive Value of Feeds - Bioassay
- 10 Predicting Nutrient Digestibilities
- 11 Nutritive Values of Individual Ingredients
- 12 Understanding Nutrient Requirements and Diet Formulation
- 13 Practical Considerations when Manufacturing and Selecting Feeds

M3 Grain Feeding

- 14 Digestion of Grain
- 15 Characteristics of Grain that Influence Starch Digestion
- 16 Methods of Processing Grain
- 17 Grain Storage, Exogenous Enzymes and Germination
- 18 Chemical and Physical Treatment of Roughages to Improve Digestibility
- 19 Hormonal Growth Promotants and Nutritional Requirements
- 20 Growth Promotants for Pigs and Poultry
- 21 Acidosis and its Control in Ruminants

M4 Nutrition Management for Grazing Animals

- 22 Rumen Function and Protein Supply to the Host Animal
- 23 Factors Influencing the Voluntary Intake of Food
- 24 Diet Selection
- 25 Principles of Supplementary Feeding in Grazing Systems
- 26 Supplementary Feeding for Wool Growth and Reproduction
- 27 Supplementation of Ruminants - Dry Pasture
- 28 Ketosis and Urea Poisoning
- 29 Precision Nutrition for Grazing Sheep



Table 6

GENETIC EVALUATION AND BREEDING PROGRAM DESIGN

- 1 Introduction to Animal Breeding Programs
- 2 Principles of Estimation of Breeding Values
- 3 Selection Index Theory: Relatives
- 4 The Use of Linear Models
- 5 Best Linear Unbiased Prediction
- 6 Multiple Trait Genetic Evaluation
- 7 Estimation of Genetic Parameters
- 8 Molecular Markers
- 9 Genetic and Physical Maps
- 10 Detection of QTL
- 11 Marker Assisted Selection
- 12 Gene Discovery
- 13 Breeding Objectives
- 14 Multiple Trait Selection
- 15 Breeding Program Design Principles
- 16 Designs to Exploit Reproductive Technology
- 17 Balancing Selection and Inbreeding
- 19 Breed Utilisation and Crossbreeding
- 20 Mate Selection – Total Genetic Resource Management
- 21 Breeding Practices in the Merino Industry
- 22 Practical Breeding Program Issues – Beef Industry
- 23 Summary

Table 7

COMMERCIAL MANAGEMENT OF SHEEP ENTERPRISES

- 1 Farm Management Methods
- 2 Economics of Sheep Production
- 3 Benchmarking Sheep Performance
- 4 Use of Discounted Cash Flow Analysis in the Sheep Enterprise
- 5 Wool Marketing in Australia
- 6 Overview of the Sheepmeat Marketing Supply Chain
- 7 Analysing Mixed Enterprises
- 8 Managing Risk in Sheep Production
- 9 Economic Sustainability
- 10 Finance and Taxation Issues
- 11 Legal Issues and Regulations
- 12 Economics of Disease Control: The Case of Ovine Johne's Disease
- 13 The Sheep Production Sector in the Australian Economy
- 14 Implementing Drought Policy
- 15 Economic Policy Issues and their Implications for Australian Sheep and Wool Producers
- 16 Current Economic Research Issues in the Sheep Industry



Table 8

SUSTAINABLE LAND MANAGEMENT

- 1 Introduction to Sustainability
- 2 Introduction to Ecology
- 3 Economic Sustainability
- 4 Social Sustainability
- 5 Sustainability in Context
- 6 Soil Sustainability
- 7 Water Sustainability
- 8 Plant Sustainability
- 9 Remnant Vegetation
- 10 Animal Sustainability
- 11 Sustainable Biophysical Systems
- 12 Natural Resource Policy
- 13 Catchment Management
- 14 Property Planning
- 15 Measure/Monitor/Benchmark
- 16 Triple Bottom Line Approaches and Timescale
- 17 Managing Grazing Systems Sustainably
- 18 Case Study A - Northern Tablelands of New South Wales
- 19 Case Study B - Southern Western Australia
- 20 Case Study C - Northern Wheat/Sheep Belt
- 21 Case Study D - Southern Wheat/Sheep Belt
- 22 Case Study E - Rangelands
- 23 Contemporary Global Issues and Future Directions for Australian Agriculture
- 24 Overview

Table 9

SHEEPMEAT PRODUCTION AND MARKETING

- 1 The Australian Sheepmeat Industry
- 2 Key Markets for Australian Sheepmeat
- 3 Nutrition of Meat Sheep
- 4 Growth
- 5 Sheep Health in Meat Production Enterprises
- 6 Sheep Genetics Australia (SGA)
- 7 Optimising Paternal Genetics – Theory and Practice
- 8 Optimising Maternal Genetics
- 9 Management - Breeding
- 10 Managing Ewes through Pregnancy and Lambing
- 11 Weaning and Joining Management
- 12 Management - Finishing
- 13 Lean Meat Yield
- 14 Pre Slaughter Management
- 15 On Farm Quality Assurance for Sheepmeat
- 16 Lamb or Sheep Feedlotting
- 17 Selecting a Target Market and Meeting Specifications for Sheepmeat
- 18 Live Assessment of Lambs and Sheep for Sale
- 19 Dual Purpose Sheep Enterprises
- 20 Key Profit Drivers for Sheepmeat Enterprises
- 21 Sheepmeat Marketing Methods
- 22 Live Sheep Export
- 23 Innovation for Sheepmeat Producers
- 24 Lamb and Sheep Skins
- 25 Greenvale – Case Study
- 26 Limestone Coast Lamb - Case Study



Table 10

MEAT TECHNOLOGY

1	Origins of the Meat Industry
2	World Meat Consumption and Trade, Australian Markets and the Australian Meat Industry
3	Muscle Structure, Contraction and Energy Metabolism
4	Connective Tissue
5	Muscle Type
6	Early Post-Mortem Biochemical Events Muscle Type
7	Muscle Bone and Fat in the Body
8	The Musculature of the Body
9	Fat Partitioning and Distribution
10	The Biochemistry of Fat
11	Animal Welfare, Ritual Slaughter and Slaughter Floor Operations
12	Chilling, Freezing and Boning
13	Measurement of Carcase Characteristics
14	Sensory Measurement of Meat Quality
15	Objective Analysis of Tenderness
16	Water Holding Capacity
17	Marbling
18	Meat Flavour
19	On-Farm Factors Affecting Meat Quality - Beef
20	On-Farm Quality Assurance for Sheepmeat
21	Lairage - Beef, Sheep and Pigs
22	Processing Technology I
23	Processing Technology II
24	Ageing Vacuum-Packing and Storage
25	The Effect of Cooking on Palatability
26	Specifications and Grading Schemes for Beef: Japan, USA, Korea and Australia
27	Setting Grade Standards and the Carcase Pathways Scheme
28	The MSA Cuts-Based Grading Scheme
29	Sheepmeat Grading Systems MSA for Lamb and Sheep
30	Meat Inspection
31	Game Meats I
32	Game Meats II
33	Hazard Analysis of Critical Control Points (HACCP)