



S.1.2 S.1.2. Application of the theories to real problems in the field.

Master of Science in Animal Science

S.1. The curriculum provides for the development of the following professional competencies

- MS Animal Science New Curriculum

UNIVERSITY OF SOUTHERN MINDANAO Kabacan, Cotabato		MASTER OF SCIENCE IN ANIMAL SCIENCE Curriculum E conformed with CMO No. 15 s. 2019 Effective SY _____		
Course No.	Descriptive Title	Lec	Lab	Units
A. CORE COURSES				
MCAGri 01	Methods of Agricultural Research	2	3	3
MFAS 02	Animal Nutrition	2	3	3
MFAS 03	Animal Breeding and Physiology	2	3	3
MFAS 04	Animal Production	2	3	3
*Students will select 2 Animal Science core courses in Courses in addition to MCAGri 601				
Major Courses				
1. Animal Breeding and Physiology				
MMAS 01	Advanced Animal Breeding	2	3	3
MMAS 02	Advanced Animal Reproductive Physiology	2	3	3
MMAS 03	Animal Endocrinology	2	3	3
MMAS 04	Methods in Animal Climatology and Behavior	2	3	3
2. Animal Nutrition				
MMAS 05	Advanced Ruminant Nutrition	2	3	3
MMAS 06	Advanced Monogastric Nutrition	2	3	3
MMAS 07	Recent Advances in Animal Nutrition	2	3	3
MMAS 08	Applied Animal Nutrition	2	3	3
3. Animal Production and Management				
MMAS 09	Advanced Poultry Production and Management	2	3	3
MMAS 10	Advanced Swine Production and Management	2	3	3
MMAS 11	Advanced Large Ruminant Production and Management	2	3	3
MMAS 12	Advanced Small Ruminant Production and Management	2	3	3
MMAS 12	Advanced Dairy Production and Management	2	3	3
B. Allied Major Courses				
MMAS 14	Advanced Feedlot Production and Management	2	3	3
MMAS 15	Advanced Pasture, Fodder Crop Production, Management and Utilization	2	3	3
C. Electives				
MEAS 01	Animal Waste Management and Utilization	2	3	3
MEAS 02	Animal Diseases and Parasitology	2	3	3
MEAS 03	Meat Selection and Grading	2	3	3
* Students need to take all the major courses he/she selected. Moreover, if the student needs one subject to complete the required units of major courses the student may take it from the other allied major courses.				
D. Special Topics				
MSpAS 01	Special Topics	3	0	3
E. Master's Thesis				
MTAS 01	Thesis Writing 1			3
MTAS 02	Thesis Writing 2			3
SUMMARY*				
A. Core/Foundation Courses		6 units		
B. Major Courses		15 units		
C. Elective Courses		6 units		
D. Special Topics		3 units		
E. Comprehensive Exam		---		
F. Master's Thesis		6 units		
Total		36 units		
* Other requirements for graduation				
<ul style="list-style-type: none"> Publication in a refereed journal or juried creative work 				

- MS Animal Science Old Curriculum

AS601	Methods of Agricultural Research
AS602	Animal Nutrition – Composition, functions and metabolism of various nutrients, nutritive requirements for maintenance, growth, reproduction, lactation and other body functions of farm animals.
AS603	Animal Breeding – Genetics and statistical bases of animal improvement; topics in reproduction, breeding systems and selection, breeding plans for maximum rate of improvement.
AS604	Animal Physiology – General animal physiology with emphasis in circulation, respiration, digestion, metabolism, renal function, endocrinology and nervous system.
AS605	Animal Climatology – The mechanics of thermo-regulation and animal adaptations, thermal stress; the problems associated with the improvement of livestock production in tropical climate.
AS 606	Advance Animal Breeding – Population genetics, estimation and interpretation of genetic parameters in experimental population, selection I Index theory and application, breeding plans for maximum rate of improvement.
AS 607	Artificial Breeding of Farm Animals – Techniques in the artificial breeding of farm animals.
AS 608	Animal Reproductive Physiology – Comparative physiology of reproduction in higher forms of animals; factors involved in fertility; genetic and environmental variations in fertility mechanics.
AS 609	Animal Endocrinology – Anatomy and functional interrelationships of the endocrine glands on vertebrates.
AS 610	Animal Behavior – Deals with domestic animal behavior; its causes and implications for animal care and management.
AS 611	Advanced Ruminant Nutrition
AS 612	Advanced Monogastric Nutrition
AS 613	Recent Techniques in Animal Nutrition
AS 614	Applied Animal Nutrition – Deals with the more applied aspects of feeding and nutrition of ruminant and non-ruminant animals; includes the feedstuffs used by the different species of animals; methods of preparation, processing, formulation and feeding of animals.
AS 615	Advanced Poultry Production and Management – Modern practices and new concepts in commercial swine production.
AS 616	Advanced Swine Production and Management – Modern practices and new concepts in commercial swine production.
AS 617	Advanced Large Ruminant Production and Management – Recent advances in feeding, breeding, classification and other management practices in beef and carabeef production.
AS 618	Advanced Small Ruminant Production and Management –Commercial production of livestock with emphasis on goat (dairy/chevon) and sheep; feeding and management practices on the range and in confinement.
AS 619	Advanced Dairy Production and Management – Recent advances in feedlot operation, feeding and management, marketing of feeder and slaughter stocks.
AS 620	Advanced Feedlot Production and Management – Recent advances in feedlot operation, feeding and management, marketing of feeder and slaughter stocks.
AS 621	Pasture, Fodder Crop Production and Management – Basic principles and practices in the production and utilization of pasture and fodder crops, including natural grasslands, and conservation of forage crops.
AS 622	Advanced Pasture, Food Crop Utilization – Advances in pasture management, nutritional value of forage crops. Classification of pasture grasses and legumes; qualities of forage crops and utilization.
AS 623	Meat Selection and Grading – Advanced techniques in slaughtering and dressing livestock and poultry; meat selection, grading, abattoir management, meat refrigeration, hygienic practices and quality control.
AS 624	Animal Diseases – Advances in the diagnosis, prevention and control of common bacterial, viral, mycotic and metabolic diseases with emphasis in the recognized and emerging diseases of livestock and poultry.
AS 625	Animal Parasitology – Biology and control of parasite commonly affecting farm animals in the Philippines.
AS 690a	Special Problem in Animal Science
AS 690b	Special Topics in Animal Science
AS 699	Graduate Seminar – Recent advances in livestock and poultry production. Breakthrough in animal research related to breeding, nutrition, animal health, processing and handling animal products, thesis outlines and manuscript reporting.
AS 700	Master's Thesis



UNIVERSITY OF SOUTHERN MINDANAO
Kabacan, Cotabato



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SUMMARY*	
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Total	36 units

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S.1.2. Application of the theories to real problems in the field.

- Sample of syllabus in Advanced Poultry Production and Management course aligned with the new curriculum of MS Animal Science. The application of theories to the real problem were highlighted.

UNIVERSITY OF SOUTHERN MINDANAO							
Course Number	AS 615	Course Title	Advanced Poultry Production and Management	Rev. No.	3	Page of	9
Intended Learning Outcomes (ILO)		Time Frame (Week)	Course Content (Topics)	Teaching & Learning Activities (TLA)	Learning Materials	Assessment Tasks (AT)	Suggested Readings
1.1. Evaluate the status of the poultry industry in the Philippines. 1.2. Differentiate the poultry industry in the national and international arena 1.3. Discuss basic and advanced practices and technologies in poultry production and management	CO1	1-8	I. Introduction and Status of Poultry Industry II. Poultry Industry in the Philippines and Globally III. Basic and advanced practices and technologies in poultry production and management	Online-Offline Lecture with discussion	Online Research Book Reading Group Discussion Oral Presentation	Online Educational Resources Books in Small Ruminant Production Oral Presentation Written Report	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16]
Midterm Examinations							
2.1. Conceptualize a <u>short term</u> research in poultry production and management 2.2. Set up short term research (STR) 2.3. Conduct STR 2.4. Analyze data gathered 2.5. Interpret data analyzed 2.6. Discuss results of the study 2.7. Oral presentation of the results of the study 2.8. Produce a research paper	CO2	10-15	IV. Guidelines in Conducting Research in Advanced Poultry Production and Management 1. Good Animal Husbandry Practices (GAHP) in Poultry Production 2. Animal Welfare Act (R.A. 8485) 3. Guidelines in Conducting Researches in Advanced Poultry Production and Management 4. Set up STR on Advanced Poultry Production and Management 5. Conduct STR on Advanced Poultry Production and Management 6. Data Analysis on Advanced Poultry Production and Management 7. Research Output Writing on Advanced Poultry Production and Management	Online-Offline Lecture with discussion	Reading of USM Research Manual Scientific Journal Reading Writing the <u>Short term</u> Research Oral Presentation	Online Educational Resources USM Research and Development Guide Book 2015 Oral Presentation Short term research (hard and e-copy)	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16]
2.1. Research scientific papers in advanced poultry production and management 2.2. Evaluate identified scientific paper 2.3. Produce reaction paper on evaluated identified scientific paper on advanced poultry production and management	CO3	16-17	V. Research Topics in Advanced Poultry Production and Management 1. Production and Management 3. Nutrition 4. Health and Biosecurity 5. Product Development and Processing 5. Farm Waste Management	Presentation Group Discussion	Online Research Journal Reading Oral Presentation Written reaction/review paper	Online Educational Resources Compilation of Research Papers Reaction Paper	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17]
All ILOs covered in the Course		18	Evaluation of all Tasks and Requirements				

UNIVERSITY OF SOUTHERN MINDANAO							
Course Number	AS 617	Course Title	Advanced Large Ruminant Production and Management	Rev. No.	1	Page of	8
Intended Learning Outcomes (ILO)		Time Frame (Week)	Course Content (Topics)	Teaching & Learning Activities (TLA)	Learning Materials	Assessment Tasks (AT)	Suggested Readings
1.1. Evaluate the status of the large ruminant industry in the Philippines. 1.2. Differentiate the large ruminant industry in the national and international arena 1.3. Discuss basic and advanced practices and technologies in large ruminant production and management	CO1	1-4	I. Introduction and Status of Large Ruminant Industry II. Large Ruminant Industry in the Philippines and Globally III. Basic and advanced practices and technologies in large ruminant production and management	Online-Offline Lecture with discussion	Online Research Book Reading Group Discussion Oral Presentation	Online Educational Resources Books in Small Ruminant Production Oral Presentation Written Report	[1] [2] [3]
2.1. Conceptualize a <u>short term</u> research in large ruminant production and management 2.2. Set up short term research (STR) 2.3. Conduct STR 2.4. Analyze data gathered 2.5. Interpret data analyzed 2.6. Discuss results of the study 2.7. Oral presentation of the results of the study 2.8. Produce a research paper	CO2	10-14	IV. Guidelines in Conducting Research in Advanced Large Ruminant Production and Management 1. Good Animal Husbandry Practices (GAHP) in Large Ruminant Production 2. Animal Welfare Act (R.A. 8485) 3. Guidelines in Conducting Researches in Large Ruminant Production and Management	Online-Offline Lecture with discussion	Reading of USM Research Manual Scientific Journal Reading Writing the <u>Short term</u> Research Oral Presentation	Online Educational Resources USM Research and Development Guide Book 2015 Oral Presentation Short term research (hard and e-copy)	[1] [2] [3]



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Course Number	AS 617	Course Title	Advanced Large Ruminant Production and Management	Rev. No.	1	Page 6 of 8

			4. Set up STR on Advanced Large Ruminant Production and Management 5. Conduct STR on Advanced Large Ruminant Production and Management 6. Data Analysis on Advanced Large Ruminant Production and Management • 7. Research Output Writing on Advanced Large Ruminant Production and Management					
3.1 Research scientific papers in advanced large ruminant production and management 3.2 Evaluate identified scientific paper 3.3 Produce reaction paper on evaluated identified scientific paper on advanced large ruminant production and management	CO3		V. Research Topics in Advanced Large Ruminant Production 1. Production and Management 3. Nutrition 4. Health and Biosecurity 5. Product Development and Processing 5. Farm Waste Management	Presentation Group Discussion	Online Research Journal Reading Oral Presentation	Online Educational Resources Compilation of Research Papers Reaction Paper	[1] [2] [3]	
All ILOs covered in the Course		18	Short Term Research Evaluation					

* [any](https://www.edglossary.org/learning-experience/) interaction, course, program, or other experience in which learning takes place (<https://www.edglossary.org/learning-experience/>).