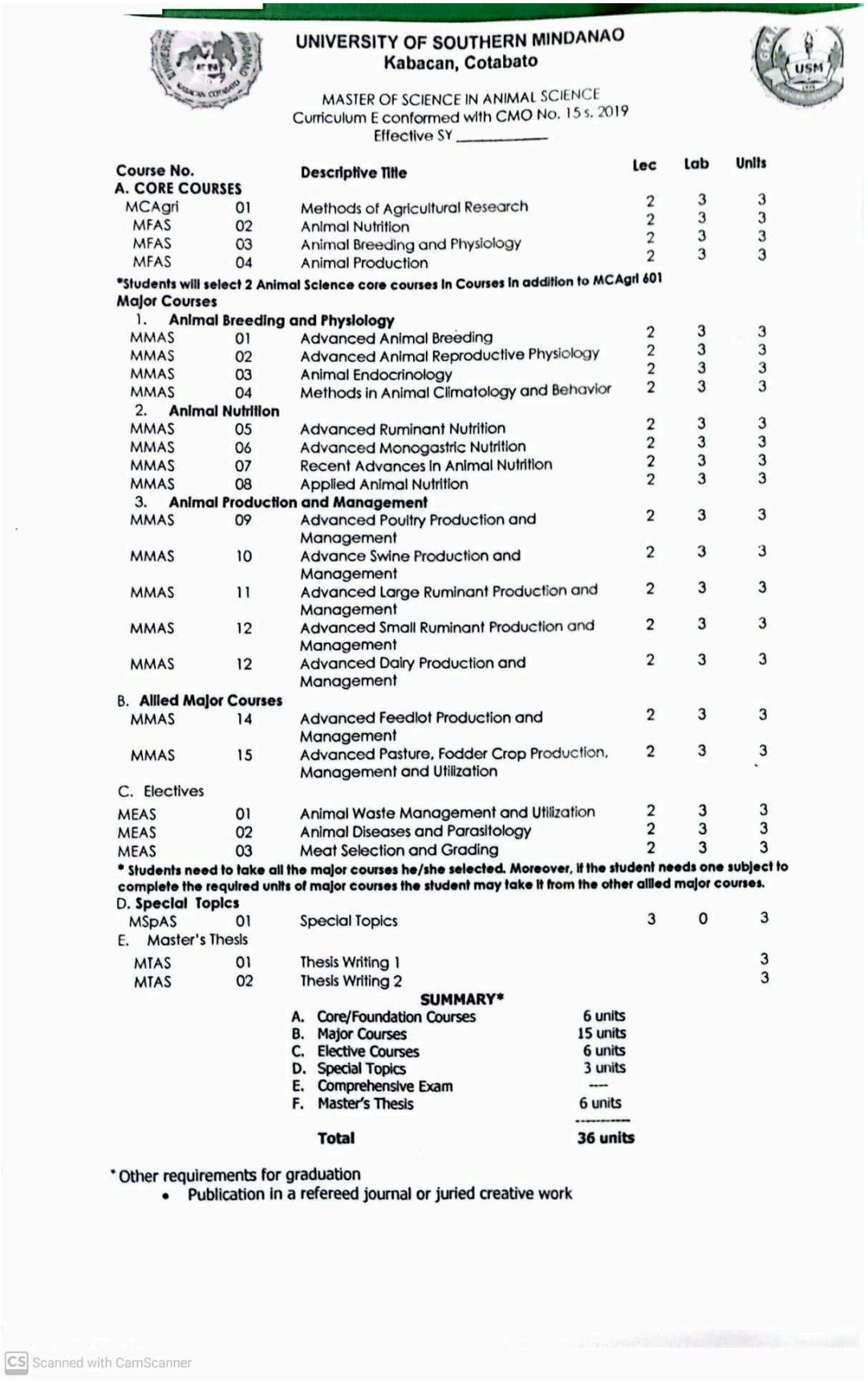
S.1.1. Acquisition of knowledge and theories based on the field of specialization/discipline

Master of Science in Animal Science

S.1.1. Acquisition of knowledge and theories based on the field of specialization/discipline.

- **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	Advance 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
- Publication in a refereed journal or juried creative work

- **MS Animal Science Old 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	Advance 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
- Publication in a refereed journal or juried creative work

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**

*** Sample of syllabus for Advanced Poultry Production highlighted the course content.**

UNIVERSITY OF SOUTHERN MINDANAO

Course Number	AS 617	Course Title	Advanced Large Ruminant Production and Management	Rev. No.	1	Page 5 of 8

COURSE LEARNING PLAN

Intended Learning Outcomes (ILO) *By the end of the learning experience*, students must be able to:*	Aligned to CO:	Time Frame *(Week)*	Course Content *(Topics)*	Teaching & Learning Activities (TLA) Teaching Activities	Learning Activities	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 1.1 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 advance 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]
1.1 2.1 Conceptualize a short term 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 Short term 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]

UNIVERSITY OF SOUTHERN MINDANAO

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

UNIVERSITY OF SOUTHERN MINDANAO						
Course Number	AS 615	Course Title	Advanced Poultry Production and Management	Rev. No.	3	Page 9 of 17

				Teaching Activities	Learning Activities			
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 advance 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]
		9	Midterm Examinations					
2.1 Conceptualize a short term 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 Short-term 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					