Introduction to Animal Science
NRM 220
University of Alaska
Fairbanks and Palmer and Campuses
Fall Semester 2017

Instructors: Dr. Milan P. Shipka
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Office hours: By appointment or when my door is open; I am also available for consultation immediately following class periods.

Class Hours:
11:45 – 1:15 MW
Class Locations: **Fairbanks – O'Neill Hall Room 305**
Palmer – Matanuska Experiment Farm and Extension Center Classroom
Distance - ZOOM

Course Objectives: The student will develop a basic understanding of the role of animal agriculture (U.S. and global) and be exposed to principles of sustainability as it applies to animal agriculture. The course will introduce basic concepts and principles of animal nutrition, growth, health, behavior, physiology, reproduction, and genetics, as well as practical applications of animal science technology such as disease prevention, artificial insemination and other reproductive management techniques, genetic selection, and concepts of animal well-being. Throughout the semester these concepts and principles will be related to current issues such as population growth, resource use and availability and changing social preferences as they relate to animal agriculture.

Text: No text required. Weekly readings assigned.

Student Learning Outcomes: By the end of the semester the student will demonstrate a basic understanding of the concepts and principles of animal science and sustainable management concepts in animal agriculture. Student Learning Outcomes include:

1) Ability to critically apply scientific knowledge and integrate concepts about the science of keeping domestic and non-domestic animals for production of food and fiber in applications including sustainable agriculture (with consideration of economic, social and environmental sustainability of agricultural practices) and the importance of companion animals in modern culture.

2) Development a basic understanding of the role of livestock in global and U.S. animal agriculture and appreciation of the science behind animal care and husbandry the role of animal in society.

3) Reading and homework assignments aimed at concepts of animal science will be accomplished weekly by the student and will assist in understanding practical application of the scientific concepts of animal science discussed in lecture.

Best way to do well in this class:

1) Attend the lectures,
2) Take good notes,
3) Read the assigned readings before class,
4) Download the PPT before or right after class,
5) Go back through your notes and the PPT soon after class, and
6) Complete 15 weekly homework assignments.

Course Grading:

Exam I	100 points
Exam II	100
Final exam	150
Homework assignments (15)	150
Total	**500 points**

Final course grades will be assigned on the following basis:

≥ 97%	= **A+**
92 - 96.9%	= **A**
90 – 91.9%	= **A-**
87 – 89.9%	= **B+**
82 – 86.9%	= **B**
80 – 81.9%	= **B-**
77 – 79.9%	= **C+**
72 – 76.9%	= **C**
70 – 71.1%	= **C-**
Etc.	

For important UAF grading policy information, see the UAF Catalog at:
http://catalog.uaf.edu/academics-regulations/grading-system-gpa-computation/

Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA) and insures that UAF students have equal access to the campus and course materials. I will work with the Office of Disabilities Services (203 WHIT, phone: 474-7043) to provide reasonable accommodation to students with disabilities.

	Course Outline	**Readings**	**Weekly Assignment**
August 28	Animals Science: What is it? Animal Domestication The big five, The other nine, Still others now?	Contemporary Issues in Animal Agriculture; 3rd Ed Chapter 1 Pages 1 – 31 Chapter 3 Pages 95 - 112	**Week 1** Animal Agriculture Issues; Is Animal Agriculture Sustainable **Due September 6**
August 30 & September 6	Animal Anatomy Animal Growth and Development	Scientific Farm Animal Production; 7th Ed Chapter 18 Pages 314 - 334	**Week 2** Anatomy and Development **Due September 11**
September 11 & 13	Animal Nutrition Classes of Nutrients Anatomy of Digestion: 1) Mammals a) Monogastric b) Ruminant c) Hindgut fermenter 2) Avian Nutritional Physiology	Applied Animal Nutrition Chapter 1 Pages 3 - 28	**Week 3** Animal Nutrition I **Due September 18**
September 18 & 20	Nutrient Utilization Energy Partitioning Review for Exam	Scientific Farm Animal Production; 10th Ed Chapters 15, 16, & 17 Pages 248 - 287	**Week 4** Animal Nutrition II **Due September 27**
September 25	Exam I		
September 27	**No Class** – Work on reading and next assignment	Fundamentals of Animal Science Chapter 15 Pages 287 – 303	**Week 5** Genetics **Due October 2**
October 2 & 4	Animal Genetics Animal Breeding Artificial Selection	Scientific Farm Animal Production; 10th Ed Chapters 12, 13, & 14 Pages 197 - 247	**Week 6** Animal Breeding, Selection, and Mating Systems **Due October 9**
October 9 & 11	Endocrinology Physiology of Reproduction	Scientific Farm Animal Production; 10th Ed Chapter 10 Pages 158 - 180	**Week 7** Endocrinology **Due October 16**
October 16 & 18	Physiology of Reproduction Physiology of Egg Laying	Introduction to Animal Science; 2nd Ed Chapter 11 Pages 213 - 237	**Week 8** Animal Reproduction **Due October 23**
October 23 & 25	Physiology of Lactation Review for Exam	Introduction to Animal Science, 2nd Ed Chapter 12 Pages 238 – 248 Scientific Farm Animal Production; 10th Ed Chapter 19 Pages 307 - 315	**Week 9** Lactation **Due November 1**
October 30	Exam II		

November 1	**No Class** – Work on reading and next assignment	Scientific Farm Animal Production; 10th Ed Chapter 20 Pages 316 - 327	**Week 10** Environmental Adaptation **Due November 6**
November 6 & 8	Ecology Considerations Environmental Physiology	Contemporary Issues in Animal Agriculture; 3rd Ed Chapter 6 Pages 155 - 188	**Week 11** **Environmental Concerns** **Due November 13**
November 13 & 15	Animal Behavior	Introduction to Animal Science; 2nd Ed Chapter 13 Pages 249 - 273	**Week 12** Animal Behavior **Due November 20**
November 20 & 22	Animal Health	Contemporary Issues in Animal Agriculture; 3rd Ed Chapter 5 Pages 133 - 154	**Week 13** Animal Health **Due November 27**
November 27 & 29	Bioethics, Animal Welfare, Animal Rights, Biotechnology Issues	Contemporary Issues in Animal Agriculture; 3rd Ed Chapter 10 Pages 331 - 394	**Week 14** Biotech **Due December 4**
December 4 & 6	Livestock in a Sustainable Agriculture System	Contemporary Issues in Animal Agriculture; 3rd Ed Chapter 11 Pages 395 - 429	**Week 15** **Sustainable Agriculture** **Due December 9**
	Final Exam	**Due by 12:15 PM**	**December 15**

Additional selected reading:

Contemporary Issues in Animal Agriculture; 3rd Ed

Chapter 7 – Livestock Grazing and Rangeland Issues