

ANIMAL SCIENCE 5303 AGRICULTURAL GENETICS AND BIOTECHNOLOGY

Instructor: Scott Ericsson

Fall 2014

Office: RAS 110

Time: Web-delivered

Office Hours: (MW) 1:00-4:00 pm

Meeting Place: Web-delivered

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This web-delivered course will be accessible through Blackboard. Class correspondence will be through Blackboard or student's SRSU email account.

Course Description:

This course provides a student with solid grounding in core genetics and biotechnology concepts, as well as information on cutting-edge science and technology and their applications in real-world agriculture, medicine, and health care.

Course Objectives:

By the end of the course, you will be able to understand:

- Essential topics such as cell functions, genetics and biotechnology applications.
- Genetic engineering, genetically modified organisms and cloning.
- The potential dangers of biotechnology to humans and the environment.

Program Learning Objectives:

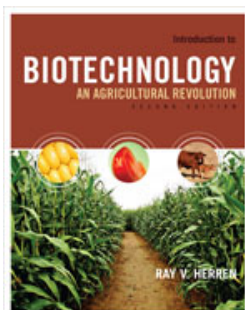
M.S (non-thesis) in Animal Science. The graduating student will demonstrate that he/she is able to:

1. Apply statistical concepts and procedures to animal science data.
2. Evaluate literature and references as they apply to animal science field.
3. Demonstrate their knowledge of the fundamentals and advanced concepts of animal science.

M.S. (thesis) in Animal Science. The graduating student will demonstrate that he/she is able to:

1. Apply statistical concepts and procedures to animal science or natural resource data.
2. Evaluate literature and references to substantiate an applied research project.
3. Examine, select, and utilize appropriate resources, materials, and data collection instruments to implement research projects.
4. Justify and defend the research questions and design.

Textbook: Required. The below item is necessary to achieve success in this class.



Introduction to Biotechnology, 2nd Edition
Ray V. Herren University of Georgia, Athens (Emeritus)
ISBN-10: 1435498372
ISBN-13: 9781435498372
432 Pages Hardcover
Previous Editions: 2005
©2013 Published

<http://www.cengagebrain.com/shop/search/9781435498372>

Amazon: <http://www.amazon.com>

Barnes & Noble: <http://www.barnesandnoble.com>

Exams and grading:

There will be two midterms and a final exam which will be available on Blackboard. Exams will cover readings, PowerPoint presentations and study guide materials. Each exam has a value of 100 points (300 points total). There will be 12 assignments. Each assignment is worth 20 points (240 points total). Grade assignment (average of all exams and assignments): A =100-90; B = 89-80; C= 79-70; D = 69-60 and F= < 60.

Exam schedule and Breeding simulation project due date:

Midterm 1 – Wednesday, October 1.

Midterm 2 – Wednesday, November 5.

Final - Wednesday, December 3.

16 week calendar (subject to change)

| <u>Week</u> | <u>Presentation Order of Topics:</u> | <u>Readings and Assignments:</u> |
|-------------|---|--|
| 1 | Introduction | <ul style="list-style-type: none">• Syllabus |
| 2 | Chapter 2. The Historical Development of Biotechnology. | <ul style="list-style-type: none">• Textbook - Chapter 2• Lecture slides – Chapter 2• Study Guide – Chapter 2• Assignment - Chapter 2 |
| 3 | Chapter 3. The Principles of Scientific Research. | <ul style="list-style-type: none">• Textbook - Chapter 3• Lecture slides – Chapter 3• Study Guide – Chapter 3• Assignment - Chapter 3 |

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| 4 | Chapter 4. Cells: The Foundation of Life. | <ul style="list-style-type: none"> • Textbook - Chapter 4 • Lecture slides – Chapter 4 • Study Guide – Chapter 4 • Assignment - Chapter 4 |
| 5 | Chapter 5. The Principles of Gene Transfer. | <ul style="list-style-type: none"> • Textbook - Chapter 5 • Lecture slides – Chapter 5 • Study Guide – Chapter 5 • Assignment - Chapter 5 |
| 6-7 | Chapter 6. Producing Genetically Modified Organisms. Exam 1 | <ul style="list-style-type: none"> • Textbook - Chapter 6 • Lecture slides – Chapter 6 • Study Guide – Chapter 6 • Assignment - Chapter 6 |
| 8 | Chapter 7. Animal Cloning. | <ul style="list-style-type: none"> • Textbook - Chapter 7 • Lecture slides – Chapter 7 • Study Guide – Chapter 7 • Assignment - Chapter 7 |
| 9 | Chapter 10. Biotechnology in Animal Reproduction. | <ul style="list-style-type: none"> • Textbook - Chapter 10 • Lecture slides – Chapter 10 • Study Guide – Chapter 10 • Assignment - Chapter 10 |
| 10 | Chapter 11. Biotechnology in Medicine. | <ul style="list-style-type: none"> • Textbook - Chapter 11 • Lecture slides – Chapter 11 • Study Guide – Chapter 11 • Assignment - Chapter 11 |
| 11 | Chapter 12. Biotechnology in the Food Industry. Exam 2. | <ul style="list-style-type: none"> • Textbook - Chapter 12 • Lecture slides – Chapter 12 • Study Guide – Chapter 12 • Assignment – Chapter 12 |
| 12 | Chapter 13. Biotechnology in Ecology. | <ul style="list-style-type: none"> • Textbook - Chapter 13 • Lecture slides – Chapter 13 • Study Guide – Chapter 13 • Assignment – Chapter 13 |
| 13 | Chapter 14. Consumer Concerns about Biotechnology. | <ul style="list-style-type: none"> • Textbook - Chapter 14 • Lecture slides – Chapter 14 |

- Study Guide – Chapter 14
- Assignment – Chapter 14

- 14 Chapter 15. Ethical Issues and Biotechnology.
 - Textbook - Chapter 15
 - Lecture slides – Chapter 15
 - Study Guide – Chapter 15
 - Assignment – Chapter 15

- 15-16 Chapter 16. Careers in Biotechnology. Final Exam.
 - Textbook - Chapter 16
 - Lecture slides – Chapter 16
 - Study Guide – Chapter 16

It is Sul Ross State University policy to provide reasonable accommodation to students with disabilities. If you would like to request such accommodation because of a physical, mental, or learning disability, please contact the ADA Coordinator for Program Accessibility in Ferguson Hall 112 or call (432) 837-8203.