ANIMAL SCIENCE 5325 AGRICULTURAL GENETICS AND BIOTECHNOLOGY

Instructor: Scott Ericsson
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Fall 2016
Time: Web-delivered
Meeting Place: Web-delivered

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:

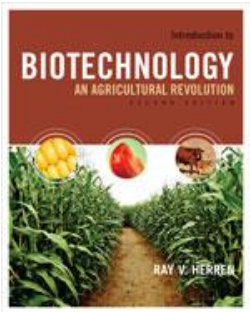
M.S (non-thesis) in Animal Science. The graduating student will demonstrate that he/she is able to:

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)
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ISBN-13: 9781435498372
432 Pages Hardcover
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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:

Midterm 1 – Saturday, October 1.
Midterm 2 – Saturday, November 5.
Final - Wednesday, November 30.

16 week calendar (subject to change)

Week	Presentation Order of Topics:	Readings and Assignments:
1	Introduction	• Syllabus
2	Chapter 2. The Historical Development of Biotechnology.	• Textbook - Chapter 2 • Lecture slides – Chapter 2 • Study Guide – Chapter 2 • Assignment - Chapter 2
3	Chapter 3. The Principles of Scientific Research.	• Textbook - Chapter 3 • Lecture slides – Chapter 3 • Study Guide – Chapter 3 • Assignment - Chapter 3

4	Chapter 4. Cells: The Foundation of Life.	• Textbook - Chapter 4 • Lecture slides – Chapter 4 • Study Guide – Chapter 4 • Assignment - Chapter 4
5	Chapter 5. The Principles of Gene Transfer.	• Textbook - Chapter 5 • Lecture slides – Chapter 5 • Study Guide – Chapter 5 • Assignment - Chapter 5
6-7	Chapter 6. Producing Genetically Modified Organisms. Exam 1	• Textbook - Chapter 6 • Lecture slides – Chapter 6 • Study Guide – Chapter 6 • Assignment - Chapter 6
8	Chapter 7. Animal Cloning.	• Textbook - Chapter 7 • Lecture slides – Chapter 7 • Study Guide – Chapter 7 • Assignment - Chapter 7
9	Chapter 10. Biotechnology in Animal Reproduction.	• Textbook - Chapter 10 • Lecture slides – Chapter 10 • Study Guide – Chapter 10 • Assignment - Chapter 10
10	Chapter 11. Biotechnology in Medicine.	• Textbook - Chapter 11 • Lecture slides – Chapter 11 • Study Guide – Chapter 11 • Assignment - Chapter 11
11	Chapter 12. Biotechnology in the Food Industry. Exam 2.	• Textbook - Chapter 12 • Lecture slides – Chapter 12 • Study Guide – Chapter 12 • Assignment – Chapter 12
12	Chapter 13. Biotechnology in Ecology.	• Textbook - Chapter 13 • Lecture slides – Chapter 13 • Study Guide – Chapter 13 • Assignment – Chapter 13
13	Chapter 14. Consumer Concerns about Biotechnology.	• 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

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Students enrolled in distance education courses have equal access to the university's academic support services, such as Smarthinking, library resources, such as online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website. Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires secure login information to verify students' identities and to protect students' information. The procedures for filing a student complaint are included in the student handbook. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website.