

Discovery of Sustainable Cattle Systems

ANS 4932

Monday Period 8 (3:00 – 3:50 pm, via zoom) and 3 h lab period TBD

Dairy Science Room 210

Dr. Corwin Nelson

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CATALOG DESCRIPTION: CREDIT: 2; Junior level standing or above, or instructor consent.

Multidisciplinary lecture and laboratory course focused on development of perspectives on sustainable cattle systems through experiential learning opportunities. Non-animal science majors are encouraged to enroll.

COURSE FORMAT:

This is a two-credit course that will meet once per week for lectures (via zoom), and once per week for hands-on learning projects. The course will encompass multiple aspects related to cattle systems, including agronomy, engineering, human and animal health and nutrition, sociology, and soil science. Students will be expected to keep a journal of the discussions and learning experiences throughout the course.

See page 6 for safety plan regarding COVID

COURSE LEARNING OBJECTIVES:

Upon completion of the course, students will be able to:

- Explain costs and benefits (to environment and human health and nutrition) of animal sourced foods
- Identify factors that define sustainability of cattle production
- Critically evaluate sustainability of cattle production systems and associated impacts on human health and affordability
- Develop and evaluate approaches to improve sustainability of cattle production systems

OFFICE HOURS: By appointment.

REQUIRED TEXTBOOKS: None.

Recommended Reading:

Sustainable Animal Agriculture, (2014) E. Krebeab, Editor, CABI, Boston, MA, ISBN: 1780640420

http://www.fao.org/fileadmin/user_upload/animalwelfare/20133419221_2.pdf

COURSE SCHEDULE: (1 hour lecture/discussion on Mondays via zoom, 3 hour lab various times and locations)

Week	Date	Topic	Reading	Assignment
1	8/31	Course introduction - Defining sustainability	Ch. 1 & 2, Sustainable Anim. Ag.,	Essay
2	9/7	Labor Day, no lecture, Start group projects		Select group project
3	9/14	Role of Animal Sourced Foods in Human Societies		Essay
4	9/21	Domestication of Cattle		Quiz 1
5	9/28	Dairy Systems I		World Cattle population
6	10/5	Dairy Systems II		Dairy Production worksheet
7	10/12	Beef Systems I		Beef production worksheet
8	10/19	Beef Systems II		Quiz 2
9	10/26	Grazing and forage management		Essay
10	11/2	Soil, water and manure management		Soil nutrient worksheet
11	11/9	Life Cycle Assessments		Quiz 3
12	11/16	Antibiotics and hormones		Antibiotic worksheet
13	11/23	Biotechnology		Production comparison worksheet
14	11/30	Current societal issues		Quiz 4
15	12/7	Group project reports		Final project report

EXPERIENTIAL LEARNING:

A key component of the course is to learn through experiences. The farm tours and hands on activities are designed to help the student learn about three key elements of sustainability: People, Profit and Planet. Students will be expected to document their learning experiences from the tours and activities in a journal (described below) and to use those learning experiences to evaluate current practices, identify opportunities to improve sustainability, and develop and evaluate approaches that maximize sustainability of cattle production given in the form of group project reports (described below).

Activities include:

- Feeding and care of cattle
- Milking cows
- Study of cropping and grazing management systems
- Study of water and nutrient management
- Study of food processing and distribution of cattle products

ASSIGNMENTS AND GRADING:

Students will be graded on completion of:

- **Essays and Worksheets** (12 at 5 pts each)
- **Experiential learning participation and journal** (60 pts)
- **Group project reports** (20 pts)
- **Quizzes** (20 pts)
- **150 points total**

Experiential learning and journal entries: You are required to participate in 30 h (10 – 3 h periods) of on-farm activities over the course of the semester. The hours must be documented by the farm supervisor/staff you that will supervise your activities (2 pt/h). Along with the participation, you are required to keep a journal of your activities. These are intended to document your learning experiences from activities. Each entry should contain three main elements: Farm activity (what you did), what you learned, and impressions of sustainability in regards to the activity.

Worksheets and essays: Students will be required to complete essays or worksheets regarding the lecture topics and readings. For example, calculations for land and energy requirements, production outputs, soil nutrient requirements (manure application) and estimates for global capacity.

Group Projects: Students will select an on-farm group project (from activities listed above) and work on the project for the semester. The purpose is for the student to gain a better understanding of the inputs of each system and to gain a connection with actual practices on farm. Students are expected to keep a journal of their on-farm experiences. Students also will need to do further study on the sustainability issues (societal, economic and environmental issues) regarding their on-farm activity. At the end of the semester, students will give a 10-minute presentation on their group project experiences. The report will be formed with input from journal entries, worksheets, class discussions, and further reading. The reports should include two key elements: 1) evaluation of current practices and 2) an approach, or evaluation of approaches, to maximize sustainability. Reports will be graded on coherence and clarity.

Quizzes: Students will be quizzed on assigned readings and lecture materials. There will be four quizzes worth five points each for a total of 20 points. Quizzes will be administered via Canvas.

GRADES AND GRADE POINTS

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students will receive a letter grade based on the following scale:

Percentage	Grade
93 - 100	A
90 – 92.99	A-
87 – 89.99	B+
83 – 86.99	B
80 – 82.99	B-
77 – 79.99	C+
73 – 76.99	C
70 – 72.99	C-
67 – 69.99	D+
63 – 66.99	D
60 – 62.99	D-
< 60	E

The percentage is calculated from points earned from assignments out of a total of 100 possible points.

ATTENDANCE AND MAKE-UP WORK

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

ONLINE COURSE EVALUATION PROCESS

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

ACADEMIC HONESTY

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

SOFTWARE USE:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

SERVICES FOR STUDENTS WITH DISABILITIES

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/*
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation
 - Self-Help Library
 - Wellness Coaching
- U Matter We Care, www.umatter.ufl.edu/

- *Career Resource Center*, First Floor JWRU, 392-1601, www.crc.ufl.edu/

ANIMAL CONTACT AND RISK

Direct animal contact is not required as part of this course, but the student's choice of project may require animal contact or work around farm equipment. **Students are required to complete Dairy Cattle Safety and Beef Cattle Safety courses (ANS 800 and ANS801 in MyUFL training) in the first week of class.** The farm environment presents health and physical risks from contact with farm animals and farm equipment. Any concerns or questions should be brought to the attention of the Instructor. Despite efforts to make students aware of potential risks, not all situations or events can be foreseen or prevented. The University of Florida is not liable for illness or injuries to students participating in coursework and, per University policy, students are required to purchase the Student Health Insurance Plan or comparable coverage. See: <http://healthcompliance.shcc.ufl.edu/insurance>

COVID SAFETY PLAN

The course will adhere to all University of Florida requirements to minimize risk of spreading COVID for participation in coursework.

1. All lecture and large group discussions will be held virtually
2. No class meetings will be held on campus, in-person activities will take place at farm units at times approved by the unit manager and course instructor
3. Group sizes of no more than 4 will be permitted for activities that require a physical presence so that social distancing can be maintained as much as possible.
4. Students will remain in the same small group for the duration of the semester.
5. You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.
6. Students who become ill or exposed to COVID are required to refrain from in-person course activities for 14 d, or until cleared according to UF policy.
7. The instructor will work with students to make-up exams or activities that were missed because of illness or quarantine.
8. If all in-person instruction is cancelled by the University or the participating farm units, alternative assignments will be given to meet the learning objectives of the on-farm activities.