

I. Catalog Description and Credit Hours:

Forage crops for pasture, hay and silage with reference to growth and development, production, nutritional quality, and grazing systems. Two lectures and one two-hour laboratory. (3)

II. Prerequisites: AO120 (Plant Science)

III. Objectives of the Course:

- a. Explain growth and development of forage species as determinants of forage management and quality.
- b. Describe agronomic techniques for forage species of cultivar selection, stand establishment, pasture renovation, fertilization, and pest control.
- c. Explain forage quality as determined by chemical composition, environment, and agronomic practices.
- d. Describe techniques of hay and silage production and preservation.
- e. Present systems approach to integrating different forage species, soil types and time of year in meeting livestock production objectives.

IV. Expectations of Students:

- a. Read required material prior to class attendance and be prepared to discuss it fully and intelligently.
- b. Attend class regularly and actively participate in class discussion.
- c. Meet all announced deadlines for assignments.
- d. Appropriate performance on examinations.
- e. Read appropriate supplementary materials.

V. Course Content:

| Topic | Lecture(s) | Weeks |
|--|------------|----------|
| <i>Unit One: Characteristics of Forages</i> | | 4 |
| Introduction; Pasture ecology | | |
| How forage grasses grow | | |
| How forage legumes grow | | |
| Species identification: Grasses, Legumes, Forbs | | |
| Legume inoculation; N fixation | | |
| Carbohydrate dynamics and canopy management | | |
| Forage availability and feed budgeting | | |
| <u>Exam 1</u> | | |
| <i>Unit Two: Forage Production Practices</i> | | 4 |
| Soil nutrients and nutrient cycling | | |
| Fertilizer management | | |
| Animal waste as a fertilizer | | |
| Endophyte and fescue toxicosis | | |
| Weed control | | |
| <u>Exam 2</u> | | |
| <i>Unit Three: Forage Utilization and Quality</i> | | 4 |
| Grazing concepts | | |
| Grazing management | | |
| Pasture calculations | | |
| Forage quality | | |
| Animal disorders | | |
| Forage systems for beef production | | |

Forage systems for dairy and horses
Field trip to identify plants
Exam 3

Unit Four: Forage Harvest and Storage

4

Hay production
Hay production, storage
Silage production
Silage production and storage
Problem solving
Exam 4 - Final

VI. Textbook and References:

Southern Forages. 2007. D.M. Ball, C.S. Hoveland, and G.D. Lacefield. 4th Edition. International Plant Nutrition Institute, Norcross, Georgia.

Recommended texts are:

Forages: An Introduction to Grassland Agriculture Vol I. 2003. (Eds.) Barnes, Nelson, Collins, and Moore. 6th Edition. Iowa State Press, Ames, Iowa.

Forages: An Introduction to Grassland Agriculture Vol II, 2007. (Eds.) Barnes, Nelson, Moore, and Collins. 6th Edition. Iowa State Press, Ames, Iowa.

Understanding Grass Growth: The Key to Profitable Livestock Production
(<http://www.grassland.unl.edu/grass.htm>).

Supplementary information will be available as: handouts, e-mail, and Internet resources, and a Grazing Manual.

Internet searching for forage information: Forage Information System
(<http://forages.oregonstate.edu/index.cfm>)

VII. Basis for Student Evaluations :

Papers: Papers (1 individual @ 50 points; 1 group @ 200 points) You will be assigned one large group project, which includes an oral presentation and a paper.

Exams: Exams (4 @ 100 points each) Exam questions will come from lecture notes, reading assignments, and class discussions. Therefore, your attendance would be beneficial.

Quizzes: Quizzes (10 quizzes @ 25 points each) will be multiple choice, true and false, short answer, species identification, definitions, fill in the blank, short essay, and similar sorts of questions to assess your factual knowledge and to provide incentive for you to keep your reading and studying current.

Participation Points (0-50 points): Attendance, pop quizzes, class discussions and participation, and classroom attitude will be used to assign participation points at the end of the semester.

Grade Scale is percent of total points: A is 100-90%; B is 89-80%; C is 79-70%; D is 69-60%; F is <60%

Attendance:

While attendance per se cannot be required of students, there are consequences associated with absences and policies governing excused and non-excused absences. The official statement about attendance, derived from the Undergraduate Bulletin, may be accessed at <http://www.semo.edu/bulletin/pdf/2008bulletin.pdf>.

Academic Honesty:

The Undergraduate Bulletin defines academic dishonesty as "...those acts which would deceive, cheat, or defraud so as to promote one's scholastic record...", and states that "[v]iolations of academic honesty represent a serious breach of discipline and may be considered grounds for disciplinary action, including dismissal from the university".

The official statement about academic honesty, including plagiarism, may be accessed at:

<http://www.semo.edu/bulletin/pdf/2008bulletin.pdf>.

Additional information may be accessed at: <http://www6.semo.edu/stuconduct/>.

Civility and Harassment:

Judicial Affairs is responsible for addressing such matters and that information is available at:

<http://www6.semo.edu/stuconduct/>.

Disabilities Statement:

Diversity in all its forms merit the respect of the faculty, and this applies equally to students with disabilities. While it is the responsibility of the student to inform the faculty of any physical or learning disabilities, the faculty should inform the students that there are policies and services available to them. Student may obtain official information about disabilities from Learning Assistance Programs & Disability Support Services.

<http://www6.semo.edu/lapdss/index.htm>.