WATERSHED MANAGEMENT
ESSM 636 Sections 399, 700 and 720
Taught by Distance in the 10-week Summer Term
Credits 3 (3-0)

Content and dates may change depending upon the semester.

Description

Management of range and forest watersheds; influence of range and forest practices on runoff, interception, infiltration, erosion and water quality; current literature and research advances.

Learning Outcomes:

1. To be able to describe the hydrologic cycle and its components with special emphasis on the role of vegetation
2. To be able to describe the impacts of range and forest practices on water quality and quantity basis for land use decisions.

Instructor:

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Grades:

Two exams: 50%
Term paper: 20%
Class discussion: 18%
Homework: 12%

Grading policy: Missed tests and late work will be handled according to University Rule 7. Late work for unexcused absences will be penalized 10% of the total points per day late. There will be no makeup exams for unexcused absences. Grades will follow A=100%-90%, B=89.5%-80%, C=79.5%-70%, F=<69.5% (http://student-rules.tamu.edu/rule7.htm)

Text:
No assigned text. Required readings will be posted on eCampus.
Watershed Management
ESSM 636

Topic Outline

I. Introduction
   a) Definitions (Week 1)
   b) Historical Development (Week 1)
   c) Importance, Distribution and Problems (Readings) (Week 1)
   d) Water Law (Readings) (Week 2)

II. Hydrologic Cycle – Overview of Processes, Measurement and Analysis of:
   a) Hydrologic Cycle (Week 2)
   b) Precipitation (Week 2)
   c) Interception (Readings) (Week 2)
   d) Evapotranspiration (Readings) (Week 3)
   e) Infiltration (Readings) (Week 3)
   f) Runoff (Week 3)
   g) Groundwater (Week 4)

III. Erosion – Overview of Processes, Measurement and Analysis of:
   a) Surface (Readings) (Week 5)
   b) Mass Movement (Week 5)
   c) Channel (Week 5)

Test 1 (Week 6)

IV. Hydrologic Models (Readings) (Week 7)
V. Influence of Vegetation Manipulation on Water Yield
   a) Forestland (Readings) (Week 7)
   b) Rangeland (Readings) (Week 7)

VI. Water Quality Criteria
   a) Physical Parameters (Week 8)
   b) Chemical Parameters (Week 8)
   c) Biological (Week 8)

VII. Impacts of Land Management Practices on Water Quality
   a) Forest – Roads, Logging, Planting (Readings) (Week 9)
   b) Range – Grazing, Improvement Practices (Readings) (Week 9)
   c) Recreation and Urbanization (Week 9)

Term Paper Due (Week 10)

Test 2 (Finals Week)

ESSM 636 Due Dates
Exam Dates:

Exam 1    July 11, Friday
Exam 2    August 11, Monday

Term Paper:

June 30 – Proposed paper title, one paragraph description of paper and 10 references

August 4 – Final paper due by 5:00 p.m.

Homework:

Transpiration study results due    June 16
Infiltration study results due    July 7
Raindrop splash erosion results due    July 7

ADA Statement:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu

Academic Integrity:

For additional information please visit: http://aggiehonor.tamu.edu
“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

Helpful Websites

Academic Calendar    http://admissions.tamu.edu/Registrar/General/Calendar.aspx
On-line Catalog    http://www.tamu.edu/admissions/catalogs/
Student Rules    http://student-rules.tamu.edu/