

991. Research Seminar in Work and Organization

Fall, Winter, Spring. 2(2-0) May re-enroll for a maximum of 6 credits. Thirty graduate credits and approval of instructor. An advanced seminar devoted to analysis of designs used in current research in work and organization.

999. Research

Fall, Winter, Spring, Summer. Variable credits. Approval of department.

SOIL SCIENCE

SLS

College of Agriculture and Natural Resources

202. Soils and Man's Environment

Winter. 3(3-0) Interdepartmental with Fisheries and Wildlife and Resource Development Departments and Natural Resources. Use of soil-water resources in a technological society as it relates to environmental quality. Nature of pollution problems and their possible solutions. Food production and world population.

210. Fundamentals of Soil Science

Fall, Spring. 5 credits. Principles of the origin and development of soils. Relationship of properties to utilization and soil fertility to plant composition and animal health. Emphasis is placed on changing soils to serve man.

331. Soil Management

Winter. 4(4-0) 210. Management of soils, drainage and irrigation, organic matter, tillage, rotation, conservation practices, soil reaction, lime, fertilizers, and micronutrients. Soil management vs. soil conservation. Special study in general crops, horticultural crops, greenhouse crops, turf and organic soils.

390. Soil Conservation and Land Use

Spring. 3(3-0) 210. Soil resources of the United States and methods and plans for soil conservation including control of erosion. Interpretation of soil survey maps and land evaluation for farm crops, fruits, forestry, engineering and wildlife. Soil judging.

410. Special Soil Problems

Fall, Winter, Spring, Summer. 1 to 3 credits. May re-enroll for a maximum of 5 credits. Approval of department.

420. Seminar

Winter. 1(1-0) May re-enroll for a maximum of 4 credits. Interdepartmental and administered jointly with Crop Science.

424. Forest Soils

Spring. 4(3-3) 210; FOR 220. Interdepartmental with and administered by the Forestry Department. Interrelationships of forest site and the growth of forests. Classification and productivity of forest soils. Effects of silvicultural and forest management practices on the soil. Two-day field trip required.

430. Soil Fertility and Fertilizers

Winter. Summer of even-numbered years. 5(4-1) 210. Assessment of the fertility of soils and alteration of fertility by the use of fertilizers, lime, manure, and cropping systems. The role of colloids in ion fixation and exchange. Soil and tissue tests. The history, technology, and use of fertilizers.

442. Soil Microbiology

(481.) Spring. 4(3-2) MPH 200; 301 or 401. Interdepartmental with and administered by the Microbiology and Public Health Department. Major groups of microorganisms of importance in soils are studied with emphasis on ecological, biochemical, and physical aspects.

470. Soil Classification and Mapping

Fall, Spring; Summer of odd-numbered years. 4(0-8) 210 or approval of department. Classification of soils. Interpretation of profiles in relation to land utilization for farm crops, fruits, forestry, highway-airfield engineering, county and township planning, urban development and wildlife. Preparation of land use reports based upon soil maps of assigned areas.

480. Soil Geography and Land Use of the World

Winter. 4(4-0) 210 or approval of department. Survey of the great soil groups and their use throughout the world, their location, significant characteristics, how they are and can be utilized, and the relation of each to food and population increase.

488. The Impact of Animal Resource Management Upon the World's Developing Nations

Winter. 3(4-0) For course description, see Interdisciplinary Courses.

810. Advanced Studies in Soil Science

Fall, Winter, Spring, Summer. 1 to 5 credits. May re-enroll for a maximum of 6 credits. Approval of department. Areas of study include chemistry, fertility, geography, management, microbiology, micropedology, organic soils, physics, physical chemistry, and soils of the tropics.

820. Seminar

Fall, Winter, Spring. 1(1-0) May re-enroll for a maximum of 3 credits.

825. Clay Mineralogy

(945.) Winter. 4(3-4) 840, 850 or approval of department. Interdepartmental with and administered by the Geology Department. Structures and properties of clays; their origins, occurrence, and utilization. Methods of studying clays including x-ray diffraction, differential thermal analysis, infrared absorption and other chemical and physical techniques.

840. Soil Physics

Fall. 5(3-6) 430; CEM 162 or approval of department. Physical properties of soil (texture, structure, consistency, aeration, water, temperature, etc.), their quantitative measurement, and relation to plant growth, and agronomic and engineering practices.

850. Soil Chemistry

Winter. 5(3-6) 430; CEM 162, 383; or approval of department. Chemistry of mineral weathering and soil formation, ion activities, ionic exchange and equilibrium reactions, soil pH, specific elements and their chemical analysis, and availability of nutrients to plants.

860. Soil Biochemistry

Spring of even-numbered years. 4 credits. 850; MPH 442. Biochemical transformations of mineral nutrients and of natural and exotic organic materials in soils, considered in relation to chemical, physical and ecological systems in the complex soil environment.

870. Origin and Classification of Soils

Winter. 4(3-2) 470, 840, or approval of department. Genesis, morphology and classification of major soils of the world. Relationships among soils in natural and cultural landscapes. How soil properties affect their use, management and conservation. Land classifications for various purposes.

880. Soils and Land Use in Tropical and Subtropical Regions

Spring. 3(3-0) Approval of department. Interdepartmental with Agriculture. Problem oriented studies of soils and land use in the tropics and subtropics in relation to their genesis, morphology, taxonomy, and management.

899. Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

930. Soil Fertility

Spring. 4(4-0) 850 or approval of department. Fundamental concepts in soil fertility and nutrient uptake by plants; history and development of field plot and greenhouse techniques; research methods in soil fertility; and origin, utilization and management of organic soils.

999. Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

SOUTH ASIAN LANGUAGES

See Linguistics and Oriental and African Languages.

SPANISH

See Romance Languages.

STATISTICS AND PROBABILITY

STT

College of Natural Science

Courses are classified as follows:

- Courses with the last two digits more than 40 require minimum prerequisites of MTH 215.
- Courses with the last two digits less than 40 require fewer mathematics prerequisites. Introductory courses are further classified as follows:
 - 121, 123—sequence for Business Administration students.
 - 201—survey course.