

## **Courses with Sustainability Content at Black Hills State University**

Compiled for 2016-2017 Academic Year

By: Dr. Daniel J. Asunskis Associate Professor, Chemistry

Courses indicated by active professors for the 2016-2017 academic year.

### **Undergraduate - 59**

#### **AIS 490 - Seminar**

**Common Course Number & Description** A highly focused, and topical course. The format includes student presentations and discussions of reports based on literature, practices, problems, and research. Seminars may be conducted over electronic media such as internet and are at the upper division or graduate levels. Enrollment is generally limited to fewer than 20 students.

#### **AIS 422 - Issues in Contemporary Indian Life**

**Common Course Number & Description** An analysis of current American Indian life including inquiry into government policies, economics, and social adjustment to non-Indian society, and cultural changes as these relate to Indian citizens on and off the reservation.

#### **ANTH 210 - Cultural Anthropology**

**Common Course Number & Description** Introduces the nature of human culture as an adaptive ecological and evolutionary system, emphasizing basic anthropological concepts, principles and problems. Draws data from both traditional and industrial cultures to cover such concepts as values & beliefs, social organization, economic and political order, science, technology, and aesthetic expression.

#### **BIOL 101 - Biology Survey I**

**Common Course Number & Description** Study of the nature, diversity, and classification of life, ecology, cells and cell cycles, Mendelian and modern genetics evolution and evolution theory. Intended for those not majoring in biology.

#### **BIOL 101L - Biology Survey I Lab**

**Common Course Number & Description** Laboratory experience that accompanies BIOL 101.

#### **BIOL 103 - Biology Survey II**

**Common Course Number & Description** Study of energetics; plant growth; development and reproduction; animal structure and function. Intended for those not majoring in biology.

#### **BIOL 103L - Biology Survey II Lab**

**Common Course Number & Description** Laboratory experience that accompanies BIOL 103.

#### **BIOL 151 - General Biology I**

**Common Course Number & Description** The introductory course for those majoring in biology and microbiology. Presents the concepts of cell biology, evolution, heredity, molecular genetics and ecology.

#### **BIOL 151L - General Biology I Lab**

**Common Course Number & Description** Laboratory experience that accompanies BIOL 151.

#### **BIOL 153 - General Biology II**

**Common Course Number & Description** A continuation of BIOL 151, the introductory course for those majoring in biology and microbiology. Presents the concepts of animal and plant structure and function, energetics, and reproduction.

**BIOL 153L - General Biology II Lab**

Common Course Number & Description Laboratory experience that accompanies BIOL 153.

**BIOL 231 - General Microbiology**

Common Course Number & Description Principles of basic and applied microbiology.

**BIOL 231L - General Microbiology Lab**

Common Course Number & Description Laboratory experience that accompanies BIOL 231.

**BIOL 301 - Plant Systematics**

Common Course Number & Description Principles of phylogeny, classification, nomenclature, evolution; demonstrations, field study and laboratory practice in collection, preserving, and identifying plants.

**BIOL 301L - Plant Systematics Lab**

Common Course Number & Description Laboratory experience that accompanies BIOL 301.

**BIOL 311 - Principles of Ecology**

Common Course Number & Description Basic principles of ecology including the sub disciplines of physiological ecology, population ecology, community ecology, evolutionary ecology, and ecosystems ecology from both a theoretical and applied aspect.

**BIOL 311L - Principles of Ecology Lab**

Common Course Number & Description Laboratory experience that accompanies BIOL 311.

**BIOL 321 - Conservation of Natural Resources**

Unique Course This is a study of the history of the exploitation of our renewable and non-renewable resources, and the contemporary practices used in their conservation.

**BIOL 355 - Mammalogy**

Unique Course Identification of game, fur bearing, and small mammals; taxonomy of these groups, life histories and habits, preparation of study skins and skeletons; special reference to those occurring in Northern Great Plains area.

**BIOL 355L - Mammalogy Lab**

Unique Course Laboratory experience that accompanies BIOL 355.

**BIOL 371 - Genetics**

Common Course Number & Description Principles governing the nature, transmission and function of hereditary material with application to plants, animals, humans, and microorganisms.

**BIOL 371L - Genetics Lab**

Common Course Number & Description Laboratory experience that accompanies BIOL 371

**BIOL 373 - Evolution**

Common Course Number & Description Surveys evidence for biological evolution and the historical development of evolutionary theory, and examines genetic and other mechanisms responsible for life's diversity.

**BIOL 373L - Evolution Lab**

Unique Course Laboratory experiences to complement the lectures and discussions in BIOL 373 make up this course.

**BIOL 434 - Herpetology**

Common Course Number & Description This course is a study of reptiles and amphibians including their life history, ecology, reproductive habits, physiology, systematics, and world-wide distribution.

**BIOL 434L - Herpetology Laboratory**

Common Course This course complements BIOL 434, and will emphasize identification of, and field experiences with, the reptiles and amphibians of western South Dakota.

**BIOL 490 - Seminar**

Common Course Number & Description A highly focused, and topical course. The format includes student presentations and discussions of reports based on literature, practices, problems, and research. Seminars may be conducted over electronic media such as internet and are at the upper division or graduate levels. Enrollment is generally limited to fewer than 20 students.

**BADM 292 - Topics**

Common Course Number & Description Includes current topics, advanced topics and special topics. A course devoted to a particular issue in a specified field. Course content is not wholly included in the regular curriculum. Guest artists or experts may serve as instructors. Enrollments are usually of 10 or fewer students with significant one-on-one student/teacher involvement.

**BADM 320 - Quantitative Decision Analysis**

Unique Course Markovation of quantitative techniques to business situations. Among the techniques included are: rate-of-change analysis of revenue and cost functions, linear programming, transportation algorithm, PERT/CPM analysis, Markov Chain, Monte Carlo simulation, exponential smoothing, time-series trend analysis and queuing theory.

**BADM 360 - Organization and Management**

Common Course Number & Description This course is a study of management, including the planning, direction, controlling and coordinating of the various activities involved in operating a business enterprise.

**BADM 457 - Business Ethics** Common Course Number & Description This course is a study of the ethical implications of managerial decisions. Topics covered include the responsibility of the organization to the individual and society, the role of the individual within the organization, and ethical systems for American business. The course provides an examination and assessment of current American business practices.

**CHEM 106 - Chemistry Survey**

Common Course Number & Description A one-semester survey of chemistry. Not intended for those needing an extensive chemistry background. Introduction to the properties of matter, atomic structure, bonding, stoichiometry, kinetics, equilibrium, states of matter, solutions, and acid-base concepts.

**CHEM 106L - Chemistry Survey Lab**

Common Course Number & Description Laboratory designed to accompany CHEM 106.

**CHEM 342L - Physical Chemistry I Lab**

Common Course Number & Description A study of the fundamental principles governing the behavior of chemical systems. Topics covered in the two-semester sequence include thermodynamics, chemical kinetics, quantum mechanics, and statistical mechanics. Laboratory designed to accompany CHEM-342.

**CHEM 355 - Field Environmental Chemistry**

Unique Course Assessment of water quality and the origin of pollutants in a watershed are investigated in this interdisciplinary course. Geology and land use are examined and used as the

basis for student designed sampling schemes. Biological, chemical, and physical methods are employed to characterize samples both in the field and in the laboratory. Results and conclusions of student projects are presented orally and in written form.

**CHEM 355L - Field Environmental Chemistry Laboratory**

Unique Course Laboratory designed to accompany CHEM 355.

**CHEM 452 - Inorganic Chemistry**

Common Course Number & Description Theoretical and periodic aspects of inorganic chemistry.

**CHEM 452L - Inorganic Chemistry Lab**

Common Course Number & Description Synthesis and characterization of inorganic compounds.

**ECON 201 - Principles of Microeconomics**

Common Course Number & Description Principles of microeconomics studies basic economic concepts as they relate to consumer, worker, and business decisions. Emphasis is given to satisfaction maximizing behavior by individuals and profit maximization by firms. Market structures are thoroughly analyzed regarding their effect on price, output, and competitiveness.

**ECON 202 - Principles of Macroeconomics**

Common Course Number & Description Principles of macroeconomics considers the economy as a whole, how its sectors interact, and how monetary and fiscal policy can influence output, inflation, interest rates, unemployment, poverty, debt, and other factors.

**ELED 303 - Earth and Physical Science for Elem Teachers**

Common Course Number & Description A non-methods course that presents major concepts and theories in astronomy, geology, meteorology, chemistry, and physics. Scientific concepts and theories for elementary teachers working with K-8 students.

**GEOG 101 - Introduction to Geography**

Common Course Number & Description The course presents a broad, introductory overview of geographic concepts, themes, and elements designed to help students better understand and analyze the world from a geographic perspective. It provides a background to Earth's physical and human elements and systems. It also emphasizes the unique quality of world regions, and the spatial interaction of people, elements, and regions, as well as major global and regional problems and prospects.

**GEOG 210 - World Regional Geography**

Common Course Number & Description A survey of the Earth from a broad global framework through the differentiation of the world in terms of both natural and human environmental features and characteristics on a regional basis.

**GEOL 370 - Hydrogeology**

Unique Course A study of water movement through geologic materials. Topics include subsurface flow modeling, physical properties of aquifers, land subsidence and ground water rights.

**HLTH 315 - Human Nutrition**

Common Course Number & Description A study of the science of food and nutrients relative to health, disease, and human performance. Areas of emphasis include nutrient chemistry, function, and interactions; energy consumption and metabolism; and resources for nutrition education.

**HIST 319 - World Environmental History**

Unique Course Examines the history of interactions between human cultures and the natural world, from early humans to the present day.

**OE 292 - Topics**

Unique Course Includes Current Topics, Advanced Topics, and Special Topics. A course devoted to a particular issue in a specified field. Course content is not wholly included in the regular curriculum. Guest artists or experts may serve as instructors. Enrollments are usually of 10 or fewer students with significant one-on-one student-teacher involvement.

**OE 310 - Outdoor Education Programs**

Unique Course This course provides training in several nationally known environmental and outdoor education programs. The use of these programs in designing a comprehensive outdoor education curriculum and how these programs meet state curriculum standards will be discussed. Programs such as Project Wild, Project Learning Tree, Project Wet, Project Adventure, Leave No Trace, Beyond Fair Chase, The Leopold Project and others will be taught.

**OE 350 - Environmental Interpretation**

Unique Course This course provides front line interpretive skills. Oral presentations utilizing these skills and hands on props, visual aids, and power point will be emphasized. Nationally recognized interpretive certification programs will be introduced. The end of the course requires membership in the National Association for Interpretation.

**PHYS 113 - Introduction to Physics II**

Common Course Number & Description This course is the second course in a two semester algebra-level sequence, covering fundamental concepts of physics. Topics include electricity and magnetism, sound, light, optics, and some modern physics concepts.

**PHYS 213 - University Physics II**

Common Course Number & Description This course is the second course in a two semester calculus-level sequence, covering fundamental concepts of physics. This is the preferred sequence for students majoring in physical science or engineering. Topics include electricity and magnetism, sound, light, and optics.

**POLS 320 - Public Administration**

Common Course Number & Description This course uses simulations and public management cases, as well as contemporary public administration literature, to introduce students to the theory and practice of public administration. Students work in teams to resolve issues and problems common to the public service environment.

**PSYC 492 - Topics**

Common Course Number & Description Includes current topics, advanced topics and special topics. A course devoted to a particular issue in a specified field. Course content is not wholly included in the regular curriculum. Guest artists or experts may serve as instructors. Enrollments are usually of 10 or fewer students with significant one-on-one student/teacher involvement.

**SCI 388 - Global Positioning & Geographical Information Systems**

Unique Course The course will allow a student to learn the basics of two new information gathering and processing systems. Global Positioning Systems (GPS) allow a student to learn to determine their position as well as precisely record the location of any attribute anywhere in the world. The Geographic Information System (GIS) component will allow the student to

create maps by using GPS, or by importing and modifying maps from data bases. Students will participate in a field project.

**SOC 100 - Introduction to Sociology**

Common Course Number & Description Comprehensive study of society, with analysis of group life, and other forces shaping human behavior.

**SOC 150 - Social Problems**

Common Course Number & Description A study of present day problems in contemporary societies, such as racism, sexism, ageism, alcoholism, drug addiction, physical and mental health, war and environmental issues - their significance and current policies and action.

**SOC 151 - Social Issues in Sustainability**

Common Course Number & Description This course examines issues of sustainability that include social impacts on the environment, inequality, consumption and waste, urbanization, violence, and issues of health and well-being.

**SOC 403 - Sociological Theory**

Common Course Number & Description This is an introduction to the classics in social theory, various schools of social thought, and modern developments in the discipline. It also covers the major ideas of the classical and modern theorists, the social environment in which they wrote, and the implications of their contributions.

**SOC 440 - Urban Sociology**

Common Course Number & Description A study of the urban community, focusing on its development, social structures and institutional patterns.

**Graduate - 6**

**Fundamentals of Sustainability – SUST 510 – 3 Credits**

This course will examine the multifaceted dimensions of sustainability. Natural, social and economic systems will be explored for key relationships, factors and elements of sustainability. Students will acquire the necessary knowledge and tools needed to be change agents for a sustainable future.

**Science for Sustainability – SUST 520 – 3 Credits**

Science for Sustainability is a course designed to take a systems approach to analyze important science topics (solid and air pollution, the carbon cycle, water, energy, etc.) and their role in a sustainable future. Students enrolled in this course will develop a deeper understanding and an ability to describe in detail the scientific connections in each system and between different systems, in addition to the various economic and social factors that play important roles in working with these systems.

**Human Dimensions in Sustainability – SUST 710 – 3 Credits**

This course will explore both the individual and societal aspects of sustainability. It will examine the influence that human thought, action and technology has on a sustainable way of life. It will examine population trends, global consumption patterns, belief systems, social organizations, social norms, and social identities.

**Quantitative Methods in Sustainability – SUST 750 – 3 Credits**

Quantitative Methods in Sustainability will introduce students to analytical methods for sustainability (carbon footprint, polling and demographic analysis, etc.). In this class the students will gain the knowledge of various methods for the collection and analysis of data. The student will gain proficiency in these methods as well as the ability to communicate and utilize the results.

**Global Climate Change – SUST 760 – 3 Credits**

This course emphasizes the current status of climate change science and the impacts climate change is having on human society and biodiversity on a global scale. Participants will explore the cultural and societal implications of climate change, the impact that climate change has on biological diversity, as well as discuss why biological diversity is important to human culture and society. The different attitudes and responses to climate change will be explored, as well as how to discuss the topic with people from a wide range of opinions on the subject.

**Internship – SUST 794 – 3-6 Credits**

Applied, monitored and supervised, field-based learning experience for which the student may or may not be paid. Students gain practical experience; they follow a negotiated and or directed plan of study. A higher level of supervision is provided by the instructor in these courses than is the case with field experience. This course requires permission of the Instructor and Program Coordinator. Fees will be charged in addition to tuition and regular campus fees.