

SCIENTIFIC WORLD (SW)

SW 152 | STRESS REDUCTION USING HUMOR AND SPIRITUALITY | 2 quarter hours

(Undergraduate)

Stress affects the body in dramatic ways, and is a major contributing factor in chronic and degenerative diseases. We will understand/describe the physiology and biochemistry of stress and, more importantly, apply effective methods to reduce and manage it. Effective stress reduction and burnout prevention then become important health, wellness, productivity and disease prevention strategies for individuals, schools, businesses, the medical industry and the culture. The effective stress reduction techniques include breathing, biofeedback, humor, spiritual exploration, connection and inspiration. The holistic paradigm of body, mind and spirit supports our informed search for meaning, connection, calm productivity and enhanced health. (2-4 quarter hours)

SW 153 | SCIENCE FOR CITIZENS | 2 quarter hours

(Undergraduate)

Students will learn basic knowledge of science as they engage in activities that are connected to their everyday life. They will explore their natural ecosystem and be able to describe various functions. They will engage in the scientific method through observations, hypotheses, data collection and basic data analysis. Students will apply their critical thinking based on the scientific method to local environmental or science related issues/events. (2-4 quarter hours)

SW 193 | SEXUAL ORIENTATION & SCIENCE | 2-4 quarter hours

(Undergraduate)

This course will engage you in scientific inquiry on the nature of sexual orientation. You will be challenged to master the scientific content of leading programs of research on twins, brain and other anatomical structures, hormones, genetic linkages, birth-order, and animal behavior through assigned readings, lectures, and multimedia resources. Moreover, you will also engage in the scientific process through a collaborative research project concerning an aspect of sexual orientation that leads you through the steps of stating a question, designing a study, collecting and analyzing data, and interpreting the results. You will also develop skills in identifying the limits to particular forms of scientific inquiry by recognizing the constraints of methods, sources of bias, reliability of results, and certainty of conclusions. This course will encourage you to place the modern research within ethical and social contexts in which to make judgments about the potential relevance and impacts of scientific knowledge about sexual orientation.

SW 201 | DATA ANALYTICS | 2 quarter hours

(Undergraduate)

This course is designed as an introduction to fundamental techniques of data analytics and the various fields, such as various business and decision sciences (accountancy, economics, finance, marketing, management, operations, and healthcare), which use data to gain insights and make informed decisions. In this course students will learn various analytical tools and demonstrate their ability to execute, understand, present, and discuss analytical results. Thus, building a strong foundation in supporting data-driven decision making in various fields of interest. Major topics include the applications of logical and financial functions; data visualization and manipulation, and what-if analysis. (2-4 credit hours)

Management Information Systems majors and minors are restricted from registering for this section.

SW 208 | ISSUES IN SCIENCE AND RELIGION | 2 quarter hours

(Undergraduate)

This course develops students' understandings of the scientific and religious constructions of self in the modern world (natural and social). The institutions and bodies of knowledge comprising science, religion, and their overlap are critically analyzed. Key historic debates are examined, for example: the Vatican's trial of Galileo for his teachings of a heliocentric universe; the controversial reception of Darwin's theory of evolution; and the 2001 U.S. policy on embryonic stem cell research. Through such analyses, the course develops students' skills in making ethically-informed decisions and thus recognizing their roles in the public debates involving the intersection of science and religion.

SW 217 | UNDERSTANDING AND MEASURING INTELLIGENCE | 2-4

quarter hours

(Undergraduate)

In this course, students examine intelligence testing and its uses in employee selection and placement. Students learn the principles of assessing human traits (reliability, validity, bias and other systematic errors), and apply them to intelligence testing. We will work to define "intelligence" and consider various approaches to intelligence, contrasting the theories of unitary vs. multiple intelligences. Students will examine the implications of the definitions and measurement approaches on different groups of people, both historically and currently, with attention to the unintended effects of the biases of test developers and the ethical implications of different approaches and uses of intelligence testing.

SW 219 | NEUROPLASTICITY AND THE AGING BRAIN | 2 quarter hours

(Undergraduate)

In this course, we will examine the latest research on the aging process and, specifically, its relationship to the brain. We will cover a mix of material from psychological and, especially, neuroscientific fields. Students will also be introduced to the field of neuroplasticity, which is revolutionizing the way we understand the functioning power of the brain. Neuroplasticity, in simple terms, is the brain's ability to rearrange its connections and, therefore, its functions based on experiences. In other words, the brain has the capacity to literally change itself, based on experiences, to achieve positive results. The goals of this course are to understand how the brain works, examine its impact on our daily actions, study how aging impacts brain functioning, discover the learning and adjustment potential of the brain, and apply the principles of the 3 P's. We will use numerous examples to understand the brain, including health, work, relational, and personal settings. Students will ultimately answer the question of whether they will have an aging or reengaging brain.

SW 232 | APPLIED INFORMATION MANAGEMENT SYSTEMS | 2 quarter hours**(Undergraduate)**

This course introduces students to the key concepts in the field of Management Information Systems (MIS) and enhances understanding of the issues that business organizations face when developing and managing information systems. In this course, students will be presented with a broad overview of the field to first examine the increasing impact of information technology in business organizations, and second, in preparation for more advanced courses in data analytics and information systems. Specifically, the three major topics covered include (1) e-businesses and networks, (2) databases, as well as (3) enterprise resource planning (ERP) and process models. These topics are designed to prepare students for further inquiry on web analytics, data mining, project management, supply chain management, as well as business in general. By completing the course, students should be better equipped to apply IT skills to solve business problems, to participate in IT projects, and to communicate more knowledgeably with IT professionals. (2 quarter hours)

SW 244 | STATISTICAL REASONING: UNDERSTANDING AND USING STATISTICS | 2-4 quarter hours**(Undergraduate)**

This course will teach students the basic concepts of statistics. Students will investigate topics including descriptive statistics, correlation, normal distributions, probability, sampling distributions and hypothesis testing. By the end of this course, students will be able to complete a statistical analysis of datasets using Microsoft Excel as the primary tool. Considerable time will also be devoted to discussing how statistics are used and abused.

SW 250 | SOCIAL MEDIA MARKETING FUNDAMENTALS | 2 quarter hours**(Undergraduate)**

This course will provide students with an overview of the history of the Internet and basic marketing strategies as they relate to the Internet and Web 2.0 technologies. Students will learn about how to keep abreast of new technology, how these technologies can be used to market services and products as well as how they can be used to create and maintain social networks for professional use.

SW 256 | EVERYDAY ECOLOGY | 2 quarter hours**(Undergraduate)**

Every week, we learn of typhoons and landslides, floods and hurricanes, droughts and other natural catastrophes. Scientists now agree that the major cause of climate shift is man-made, specifically our use and abuse of global energy resources. In Everyday Ecology we will analyze our energy use patterns and explore practical alternatives. The word "ecology" originates from the meshing of two Greek words meaning the "study of homes." Although the main focus of this course is the individual household, another "household" we must take into account is the economy. Ecological economics examines how both disciplines need to look toward the other to be viable long term. We will examine options to bring the earth household (ecology) and the human household (economy) together for the benefit of both. This course observes how "man" is connected to the world around him. It allows us to see our options in response to growing concern over global climate change. Through readings, field trips, activities, discussions and an analysis of our personal use of energy, this course enables us to become increasingly aware of ecological issues. You will learn to evaluate the effect of personal choices on the earth and be introduced to alternative, "greener" options.

SW 259 | PREHISTORIC LIFE | 2 quarter hours**(Undergraduate)**

This course promotes students' investigation of fossils to interpret the character of 3.5 billion years of biological evolution and ecological change on earth. By way of scientific reasoning, mathematical inference, and applicable technologies, emphasis is on the exploration of earliest evidence of life, development of multi-celled plants and animals, dinosaur evolution, mass extinction events, mammal diversification, human origins as well as appraisal of the societal reliance on fossil resources and the persistent debate over evolution versus creation. Learning is assessed through labs, a fieldtrip, an exam, video summaries, contributions to online discussions, and a research paper in a scientific format.

SW 267 | NUTRITION FOR A LIFETIME | 2-4 quarter hours**(Undergraduate)**

Today's consumers want and need to be educated about taking charge of their own health. With the current fast-paced world that has spilled over into our eating habits, food choices have become unlimited. Choosing a healthful approach to diet requires basic information about our bodies' nutritional needs. The greater our understanding of our basic bodily needs, the better we are able to make choices concerning our health. This course will offer an overview of the basic science of nutrition, with an emphasis on the relationship between disease and nutrition, and current research findings.

SW 269 | ENERGY AND HEALTH | 2-4 quarter hours**(Undergraduate)**

This course will provide a framework for understanding human energy systems, such as digestion and respiration, in relation to current healthcare practices to enhance their effectiveness (dietary approach, manipulation therapies, acupuncture, exercise, and meditation). We will consider connections between social and environmental variables such as constitution, stress, lifestyle, and vital physiological functions. Each class will build on the basic understanding of biological systems in relation to energy through lecture and discussion. We will review literature on various healthcare practices to discern sound approaches and practical applications. Students will cultivate an appreciation for daily health choices that cumulatively affect their health.

SW 275 | BODY, MIND, SPIRIT: YOGA AND MEDITATION | 2 quarter hours (Undergraduate)

Why are 20 million Americans practicing yoga? This course answers that question with an introduction to yoga and meditation techniques and the underlying scientific and philosophical principles of the system of yoga. The first half of each class will be experiential, conducted as a yoga and meditation class for beginners, providing tools to reduce stress, focus the mind, and cultivate inner peace. This first hour and a half will use yoga postures, breathing exercises, and meditation techniques. The second half of each class will use readings, reflection, and discussion to examine the scientific and philosophical knowledge of yoga as a way to ease stress, strengthen the bone and muscle structures, lower blood pressure, increase flexibility and strength, improve mind functioning, and provide spiritual sustenance. We will read *Yoga Mind Body and Spirit: A Return to Wholeness* by Donna Farhi, and *The Yoga Sutras of Patanjali*, research articles on the scientific studies of yoga's benefits from journals and websites, etc. Students will keep weekly reflection journal observations on the changes(s) they notice in themselves. This course will refresh, relax, rejuvenate. Yoga mats and other props will be provided. Bring/ wear comfortable clothes (no jeans, belts, dresses). This is a Gentle Yoga class for beginners. Yoga means to unite or yoke so course will explore the ways to unite body, mind, spirit. This course is designed to 1) help establish good health and well-being; 2) gain scientific knowledge and understanding of the various systems of the human body; and 3) explore the spiritual benefits of meditation.

SW 285 | ENVIRONMENTAL ETHICS | 2-4 quarter hours (Undergraduate)

This course contains two distinct strands of learning: (1) the current condition of the natural world and the ways it is approached scientifically; and (2) the major premises of the most significant ethical frameworks in use today. Using this knowledge, students investigate several contemporary environmental problems, identifying their underlying causes, and analyzing various proposed solutions. This is complemented by the intensive study of major ethical perspectives, particularly those which have developed alongside, and as a consequence of, grave environmental concerns. The course project is a collaborative endeavor to integrate the knowledge and skills acquired through mastery of both learning strands.

SW 292 | EXPLORING EARTH'S PHYSICAL FEATURES | 2 quarter hours (Undergraduate)

This course advances student exploration of earth's 4.5 billion year geologic record in order to evaluate the planet's evolution and the interrelationships between humans and landforms. Through the application of scientific reasoning, mathematical inference, and prevailing technologies used by geologists, emphasis is on plate tectonics, geologic time, the rock cycle, weathering, earthquakes, fluvial features, rock structures, volcanoes, mountains, plateaus, plains, glacial features, deserts, caves, and coasts. Students also assess human reliance on landforms, the economics of landforms, and cases of earth pseudoscience. Learning is assessed through labs, fieldtrips, a scientifically-formatted research paper, an exam, and contributions to online discussions.

SW 320 | TECHNOLOGY, CRIME, AND CIVIC ENGAGEMENT | 4 quarter hours (Undergraduate)

The focus of this course is the well-functioning civic community, and its reliance on the productive engagement of its members (group and individual). We examine crime in the age of the internet, and use models of civic engagement to posit novel solutions to these "hidden" and ubiquitous activities.

SW 328 | GLOBAL INFECTIOUS DISEASES AND HEALTH | 2 quarter hours (Undergraduate)

In this course we will learn about the global burden of disease with an emphasis on understanding the critical intersection of policy, social expectations in determining how health systems function and adapt to address new challenges; and examine why some health systems are so fragile in the face of new disease challenges such as the Covid-19 pandemic. We will look at the role of globalization in introducing "western world" diseases to low and middle income countries, and we will learn about the science-based methods and tools we have to track the emergence of new disease threats, assess global disease burden, understand disease mitigation strategies, and compare our ability to measure improvements in health outcomes in well-resourced and resource-poor countries. Online learning will include readings, slide presentations, discussions, and open-source epidemiological tools to examine disease burden and trends.

SW 329 | DATABASE DEVELOPMENT FOR MANAGING INFORMATION | 2-4 quarter hours (Undergraduate)

Using MS Office tools suite (in particular Access), this course takes students through the entire process for building a database system that will be used to capture, store and present information. In addition to database concepts like designs, reports and SQL queries, the students will discuss and analyze relationships between technology and society.

SW 332 | BIODIVERSITY | 2 quarter hours (Undergraduate)

The science of Biodiversity is the study of life on earth, both past and present. It involves the exploration and measurement of the amount of genetic, species, and ecological variation on earth and is emerging as one humanity's most important and urgent endeavors. Scientific efforts to study earth's biodiversity have intensified because of our growing appreciation of the role human population growth and urbanization play in accelerating the extinction of plant and animal species. This course introduces students to the nature of science and the central issues concerning life on earth including: the current state of biodiversity, valuing life's variations, human dependence on biological diversity, the origin and extinction of species, mass extinction, critical habitats at risk, and policies and approaches to conserve biodiversity (2-4 hours)

SW 354 | DATA DRIVEN DECISIONS | 2-6 quarter hours (Undergraduate)

This course provides different topics including approaches to problem solving, an introduction to data analysis and its role in business decisions, how to manage the future value of money, basic concepts in statistics and probability and how they are applied in everyday settings. Students will have great opportunity to explore and use Excel application as a tool for solving business problems. As a group, we will investigate topics in descriptive statistics, correlation, normal distributions, probability, sampling distributions and hypothesis testing. Students will learn various advanced graphing and charting techniques available in Excel and use them for data analysis and interpretation.

SW 356 | DATABASE DESIGN AND IMPLEMENTATION FOR SMALL BUSINESS APPLICATIONS | 2-4 quarter hours**(Undergraduate)**

This course will teach non-computer literate persons to be able to translate a business problem into a conceptual database design, and further to convert the design into a database application using Microsoft Access. By the end of the course, the student should be able to apply knowledge to the following: (1) describing basic database concepts and using common database terminologies; (2) designing databases using appropriate designing notations; (3) translating a schema into a database application in Access; (4) conducting simple user-interface design; and (5) designing small business-based applications.

SW 366 | EXPRESSIVE ARTS THERAPY | 2 quarter hours**(Undergraduate)**

This course offers a multi-arts approach in which different art modalities are woven into the therapeutic process as appropriate to a client's situation. It is grounded not in any particular techniques or media but in the capacity of the arts to respond to human suffering. Various arts—poetry, movement, drawing, painting, journaling, improvisation, music, and sculpture—are used in a supportive setting to facilitate growth and healing. Expressive arts processes have been used successfully in almost all psychotherapeutic contexts, ranging from work with the severely ill to the facilitation of human growth and potential. There is a growing use of the arts in health education, hospice work, and in community art projects especially after catastrophic events. The class will be conducted in a workshop format in which theoretical content will be combined with experiential learning. Lecture, discussion, audio-visual presentation, experiential exercise, guest speakers, and field trips comprise the structure of the class.

SW 367 | LEISURE, RECREATION, AND HEALTH | 2 quarter hours**(Undergraduate)**

This course will stimulate your thinking about the meaning of leisure in your life. Leisure today and historically has been central to the human experience. It is an elemental experience, essential to the total well-being of every person; it is a reflection and expression of the cultural values of a society; it is an important vehicle for treatment. Leisure and recreation services are also essential for healthy communities in terms of social climate, environmental quality, and economic stability. Leisure services comprise one of the largest and fastest growing industries in the world, whether measured in dollars spent, persons served, hours of time devoted, or resources used. The study of leisure and recreation is a broad discipline, combining diverse fields of study and professional practice. This course will (1) illustrate the importance of leisure to you and your loved ones, (2) contribute to your ability to become an informed consumer of leisure, (3) question the binary relationship of work and leisure and, (4) teach you how to use leisure to increase emotional and physical health, resulting in a higher quality of life. The course will be interactive and participatory.

SW 371 | DINOSAURS | 2 quarter hours**(Undergraduate)**

Dinosaurs are one of the most diverse and successful groups of vertebrates in earth's history. Originating over 220 million years ago, they dominated earth's land biomes for over 150 million years and diversified to include the largest land animals in earth's history, a wide range of aquatic groups, and even a diverse clade capable of flight (the birds). Consequently, mammals remained in the background as small nocturnal creatures during the dinosaurs' long reign. Only after a cataclysmic extinction event 65 million years ago involving most dinosaur groups did the mammals diversify into modern groups including our own primate lineage. This course will introduce students to the remarkable dinosaurs, tracking their origin, surveying their success, and evaluating their decline. Learning will emphasize investigation of the forms, function, and variation within the major dinosaur groups as well as the connections of dinosaur evolution to diverse factors such as climate change, ecology, biological competition, and mass extinction. The course learning activities will encompass discussions, readings, lectures, labs, internet resources, museum resources and original inquiry.