

| <b>AC-1 Academic Courses</b>              |                   |              |  |                              |   |
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| <b>INVENTORY</b>                          |                   |              |  |                              |   |
| <b>COURSE # and TITLE</b>                 | <b>DEPARTMENT</b> | <b>LEVEL</b> | <b>General Course Description with Sustainability related content in BOLD</b>  | <b>Sustainability Course</b> | <b>Course includes Sustainability related content</b> |
| ARC-106 Building Materials & Methods II   | Architecture      | UG           | The description and analysis of building materials and methods and their use in masonry, steel and reinforced concrete construction. <b>Sustainable building principles will be introduced.</b> Methods are clarified through the development of drawings such as wall sections, window details, plan details, etc.  |                              | YES   |
| ARC-111: Architectural Design             | Architecture      | UG           | An introduction to the basic elements of architectural design -scale, proportion, rhythm, mass, textural effects,contrast, unity, sequential spatial experience. Execution of two and three dimensional design projects, <b>including one "green" building design element.</b> An exploration of nature of art and architecture.   |                              | YES   |
| ARC-215: Architecture to the 18th Century | Architecture      | UG           | A survey of the development of Western architecture through the 18th century. Physical characteristics, form,interior spaces, construction materials, and structural systems from ancient Egypt through the eighteenth century will be covered. <b>The relationship between builtform and a society's institutions and culture, level of technology, and environment will be considered.</b> |                              | YES   |

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| ARC-216: Architecture from 19th Century                    | Architecture | UG | A survey of modern architecture. Form and space, aesthetic philosophy, material usage, and structural systems of architecture from 1850 to the present will be explored. <b>The influence of technology, society, and the environment on architectural form will be explored.</b>  | YES |
| ARC-220: Mechanical and Electrical Equipment for Buildings | Architecture | UG | Description, analysis, and basic design of heating, ventilating, plumbing, and electrical systems and equipment, fire protection, vertical transportation and acoustics in buildings, <b>with a focus on sustainable mechanical and electrical systems.</b>  | YES |
| ART-107: Design I  | Art          | UG | An introduction to the vocabulary and elements of two-dimensional design including line, shape, texture, color and typography. Students learn basic design elements and media and master manual dexterity and "craft" through hands-on practice completing drawing, painting, and multimedia projects. Students work with a variety of media in a studio setting, employing fundamental design principles to create successful two-dimensional designs as well as participating in collective and individual critiques and working cooperatively on group design projects. <b>A unit including art work for Earth Day presentations is included.</b> | YES |

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| BIO-101: General Biology I  | Biology | UG | <p>Topics include a study of the nature and scope of science in general and biological science in particular: the chemical and physical basis of life; the structures and functions of the cell with an emphasis on photosynthesis, respiration, functions of DNA, and the processes of mitosis and meiosis. The course concludes with the genetic and evolutionary consequences of meiosis and reproduction. <b>Students are assigned a semester long project to reduce their carbon footprint in changing their purchasing/transportation/energy use behavior.</b></p>   |  | YES |
| BIO-102: General Biology II | Biology | UG | <p>A study of the plant and animal organism with an emphasis on the vertebrate animal and the flowering plant. Comparative systems are studied. The relationships between organisms and the environment are also covered. <b>The last week of class is dedicated to a survey of environmental issues such as sustainability and climate change. A portion of the final exam tests the application of the scientific method but all of the examples revolve around environmental issues. Throughout the course, topics are introduced such as the threats to coral reefs when corals are studied and the scientific papers used to study the reading of scientific papers deal with climate change.</b></p> |  | YES |

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| BIO-110: Intro to Biology          | Biology | UG | An introductory course covering the scientific method, basic chemistry, cell biology, structure and function of the vertebrate body, biochemical pathways, cellular division, genetics, diversity and biological systems. <b>Students are assigned a semester long project to reduce their carbon footprint in changing their purchasing/transportation/energy use behavior.</b>  | YES |
| BIO-112: Anatomy and Physiology II | Biology | UG | Continues the study of the structure and function of human systems begun in BIO 111 (Anatomy and Physiology 1). Included are the Circulatory, Lymphatic, Immune, Respiratory, Digestive, Urinary and Reproductive systems. Acid-base, fluid and electrolyte balance are also discussed, and functional inter-relationships and homeostasis are stressed throughout. Laboratory work includes analysis of the structure and function of the above systems at the histological, gross anatomical and organ system levels. The laboratory experience includes dissection of the cat and beef and sheep hearts as well as prepared histological specimens, human anatomical models and computer/videopresentations related to the above systems. <b>Air pollution and its contributions to asthma and respiratory health are the focus of several activities.</b> | YES |

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| BIO-120: Biology for Today | Biology | UG | This course is designed for students with little or no academic back ground in biological sciences. <b>The course surveys environmental issues including sustainability, climate change, energy use, and population growth. The second unit surveys local and global wildlife and addresses how habitat loss and other issues are affecting biodiversity. Many activities are used.</b>   | YES |
| BIO-123: Prehistoric Life  | Biology | UG | A survey of the diversity of prehistoric life including the dinosaurs, mammals, birds, reptiles, amphibians, fish, invertebrates and plants of the past. An overview of other relevant topics such as fossilization, evolution, extinction, vertebrate anatomy and ecosystem structure will be presented. The course will include a trip to the Museum of Natural History. <b>After considering extinction, the storage of carbon from the geologic past, and climate fluctuations, we end by addressing how climate change is affecting the modern world. A few activities are used.</b> | YES |

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| BIO-141: Diversity of Life | Biology | UG | <p>This course offers the non-science major an opportunity to study representatives of the major groups of bacteria, protists, plants, fungi, and animals in both lecture and lab. Emphasis will be placed on the major characteristics of each group. The interrelationships among these organisms will be studied both through discussion and through field trips to local sites. The global loss of biodiversity and its significance will be discussed. Students are responsible for their own transportation on field trips. <b>Incorporates several in-class activities and assignments relating to sustainability, such as calculating an ecological footprint, impact of invasive exotics, effect of algal blooms on water quality, causes of biodiversity loss, and the importance of biodiversity to functioning ecosystems and human welfare.</b></p> |  | YES |
| BIO-143: Field Biology     | Biology | UG | <p>This course will acquaint students with the plants and animals of the Orange County area, with emphasis on ecological relationships between them and their environment. Weekly field trips within the area will identify organisms found and conduct outdoor studies to better understand interactions among them. Real data will be collected and analyzed to answer scientific questions concerning the natural history of the county's biodiversity. <b>Includes a unit on the biodiversity crisis, in which the causes of biodiversity loss and the importance of biodiversity are addressed, as well as reading and discussing in class a paper on the effects of climate change.</b></p>  |  | YES |

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| BIO-146 Avian Biology                      | Biology | UG | A study of the birds of the Mid-Hudson Region, emphasizing field identification, migration, flight and ecological adaptations, voice and behavior, distribution and classification. Lectures and weekly field trips to diverse habitats are included. <b>Includes a unit on bird conservation, in which threats to bird populations are identified and discussed.</b>   |            | YES |
| <b>BIO-148: Environmental Conservation</b> | Biology | UG | This course will explore local, regional, national, and global issues of water quality and usage, such as types and sources of pollutants and their effects on humans and wildlife, surface and ground water overuse, and conservation of water resources. The expanding human population and its creation of resource conflicts and their resolutions are presented and discussed. Lab experiences will focus on monitoring the quality of nearby waterbodies, with the collection of real data that will be used by Orange County in their formulation of a watershed management plan. Students are responsible for their own transportation to off campus sites. | <b>YES</b> |     |

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| BIO-204: General Botany         | Biology | UG | This is a general botany course that will study plant morphology and physiology of herbaceous and woody plant divisions within the plant kingdom as well as other related plant-like organisms. Topics covered include plant structure and function, plant growth, transpiration, photosynthesis, evolution, and reproductive cycles. The course concludes with the diversity of flowers and plant life. Laboratory work includes microscopic examination of cells and tissues of typical plants. The course will also require an investigative plant project by each student. <b>A special project, where students convert used vegetable oil into biofuel is included.</b> |            | YES |
| BIO-125: Nutrition              | Biology | UG | Students study carbohydrate, fat, protein, mineral and vitamin requirements; an overview of the chemical and biological body functions, nutrient metabolism and deficiencies, food safety legislation, functions of the Food and Drug Administration and the USDA. Students conduct a caloric self-study. <b>A year-end project asks students to pick a sustainability issue related to food and present this at Earth Day celebrations.</b>   |            | YES |
| <b>BIO-205: General Ecology</b> | Biology | UG | Ecology is the branch of science studying interactions and relationships between organisms and their environment. Topics include a study of individual, population, community and ecosystem ecology. <b>Applications of ecology and the influence of humans on the biosphere will also be addressed.</b>   | <b>YES</b> |     |



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| BUS-202: Business Law II              | Business       | UG | This course deals with negotiable instruments; partnerships and corporations; and real and personal property. <b>Analysis of Dodge vs. Ford focusing on profits and CSR includes the topic of sustainability of customer relationships. When the topic of Corporate Social Responsibility (CSR) is covered it includes ethics, customer and human relations, and sustainable practices and standards.</b>   |  | YES |
| DNT-101: Prev. Oral Health Services 1 | Dental Hygiene | UG | An introduction to the profession of dental hygiene and to the scientific principles of practice are core topics presented in this preclinical course. Didactic concepts and clinical techniques are integrated and applied in laboratory and clinical practice. Fundamental patient assessment procedures, instrumentation skills and infection control protocols are the major foundational concepts presented. <b>Topics of environmental stewardship in dental hygiene practice are included.</b> |  | YES |
| DNT-102: Prev. Oral Health Services 2 | Dental Hygiene | UG | This course is designed to prepare the student to begin dental hygiene practice. The major topics include: Ethical and Legal Considerations of Dental Hygiene, Licensure, Professional Development, Seeking Employment and Practice Management. The clinical experiences emphasize the Evaluation and Documentation phases of the Dental Hygiene Process of Care. <b>Topics of environmental stewardship in dental hygiene practice are included.</b>   |  | YES |

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| DNT-201: Prev. Oral Health Services 3 | Dental Hygiene | UG | Advanced dental hygiene theory and skills are presented in this course and integrated into the clinical experience. Periodontal instrumentation skills including ultrasonic scaling, implant care, and advanced assessment procedures are covered. Emphasis is placed on the implementation and evaluation phases of the Dental Hygiene Process of Care. The role of the dental hygienist in the dental specialty areas of prosthodontics and orthodontics is also included. <b>Topics of environmental stewardship in dental hygiene practice are included.</b> | YES |
| DNT-202: Prev. Oral Health Services 4 | Dental Hygiene | UG | This course is designed to prepare the student to begin dental hygiene practice. The major topics include: Ethical and Legal Considerations of Dental Hygiene, Licensure, Professional Development, Seeking Employment and Practice Management. The clinical experiences emphasize the Evaluation and Documentation phases of the Dental Hygiene Process of Care. <b>Topics of environmental stewardship in dental hygiene practice are included.</b>  | YES |
| ENG-101: Freshman English I           | English        | UG | This first course in the Freshman English sequence introduces college-level writing and revision, construction of expository essays, and research skills. Reading and class discussion center on the formal and informal essay. Research essay is required. <b>One essay, related to Sustainability is included during the semester.</b>   | YES |

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| HON Seminar: Humanitarian Architecture: Design Responses to Displacement | Honors  | UG | One of the greatest humanitarian challenges we face today is that of providing shelter. In this seminar, <b>students will be introduced to the environmental , geographic, political and historical context of humanitarian architecture.</b> Developments will be examined through in-depth case studies, and students will design their own response to a theoretical humanitarian situation. |  | YES |
| HON Seminar: Frontiers in Biology  | Honors  | UG | This seminar covers three areas of current biology: discovery of new species and habitats, biotechnology, and <b>the challenge of living sustainably on earth.</b> Readings, discussions, case-studies and guest speakers expose participants to new scientific findings and the ethical challenges that these discoveries bring.   |  | YES |
| GLG-220 Environmental Geology  | Geology | UG | A lecture-seminar approach is used in <b>studying selected environmental problems related to geology, such as geologic hazards, waste disposal, energy resources and their recovery, engineering problems, environmental alterations, and land-use planning.</b>  |  | YES |

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| <b>IDS-151: Introduction to Sustainability</b> | Inter-disciplinary Studies | UG | This course will explore meanings of the sustainability concept, including its historical context and application to the contemporary global society. Environmental impacts of resource use in the context of conventional economic growth will be assessed in the areas of energy, technology, production of goods, and transportation, and the nature of these impacts will be detailed. Tradeoffs associated with various strategies for mitigating impacts will be analyzed with the intent of proposing solutions to the challenges of achieving economic and environmental sustainability at local, regional and global scales. | <b>YES</b> |     |
| MGT-201: Principles of Management              | Management                 | UG | The theory and applications of management techniques are examined. The essential processes necessary for the practice of management are developed. Within the framework of the functions of management, such topics are covered: Managing Change, Organizational Communication and Structure, Making Decisions, Strategic Planning, Leadership, Work Groups, <b>Ethics and Social Responsibility.</b>   |            | YES |

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| MGT-205: Human Resources Mangement               | Magement          | UG | The student is introduced to an overview of this complexhuman resource management function as it applies to both thesmall and large business organization. The major thrust of thecourse is devoted to the basic personnel practices involved inemployee recruitment selection, training, appraisal, affirmativeaction, labor relations, compensation, safety, and career planning. <b>Ethics &amp; Values in the hiring and training process.</b>  |     | YES |
| PHL-220: Ethics                                  | Philosophy        | UG | The course introduces students to basic ethical theories and explores the values behind moral decision-making. Readings are drawn from classical and modern sources; classroom discussion centers on ethical issues in such areas as medicine,health, business, education, <b>sustainability</b> , the arts, and law.   |     | YES |
| PBH-240: Global Health                           | Public Health     | UG | The environment affects our health, economics, and quality of life. Globalization has made the earth a much smaller place so that we can no longer focus merely on issues in the United States. <b>This course will address global environmental concerns and their impact on human health.</b> Students will discuss various affecting factors (e.g. urbanization, population pressure, climate change, atmospheric pollution, sanitation, etc.) within the context of their impacts on population throughout the world. |     | YES |
| <b>PSC-140: Physical Science-the Environment</b> | Physical Sciences | UG | A study of the interaction between the physical environment and man. Concepts in natural sciences are introduced as a basis for discussion of current environmental issues. Local environmental issues are discussed.   | YES |     |

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| RDG-080: Reading and Study Skills 2 | English   | UG | Students are introduced to doing research using sustainability issues as topics. Preliminary information includes: <b>finding a topic that focuses on one specific way in which colleges, including this one, are “Going Green”</b> . The report will include how the initiative is implemented, benefits and drawbacks and whether SUNY Orange is now participating in this specific initiative or has plans to do so.   |  | YES |
| SOC-202: Social Inequality          | Sociology | UG | This sociology course examines the tensions and conflicts generated by the struggle for power and between the defenders of tradition and the forces of change, research evidence and <b>statistical analysis are used to see how race, class, and gender are used as fundamental reference points for understanding how power and resources are distributed in American Society</b> . While across-cultural perspective is sometimes used for comparative purposes, the primary focus is on the surging changes that have swept through American institutions since World War II. The American family, schools, economy, political life, military, sports world and religious life will be studied. |  | YES |

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| SOC-220: Race, Ethnicity and Society | Sociology | UG | This course will explore the basic dynamics and processes of race and ethnic relations from a sociological perspective. <b>Such topics as dominant-minority relations, prejudice, discrimination, assimilation, racism and antisemitism will be explored.</b> The primary focus will be upon American society but examples from other societies will be explored as well. |  | YES |
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