

Inventory of Sustainability Courses

School of Science and Engineering

Courses Offered Fall 2012-Spring 2014

Tulane University

“Sustainability education” engages students in the work of building healthy, lasting communities. In sustainability courses, students develop the capacity to critically theorize, analyze and communicate about interconnected social, economic and environmental issues. Students learn to work in collaboration with members of the larger community and to help create solutions in the long-term public interest.

We have attempted to identify both courses in which the primary and explicit focus is on sustainability and/or on understanding or solving one or more major sustainability challenge, and courses that are primarily focused on a topic other than sustainability but incorporate sustainability as unit, module or activity. **We have included all courses with a service learning component.**

Undergraduate courses are numbered 1000-4999. Graduate courses are numbered 5000 and above.

Draft list compiled by Colleen Large, SLA – 2016, by reviewing the Tulane Course Catalog posted at <http://catalog.tulane.edu/content.php?catoid=41&navoid=1639>. Some definitions were found in the schedule of courses through Gibson. Service Learning courses added by Colleen Large from lists obtained from Center for Public Service. The draft list was sent by Dean Altiero to SSE Chairs for review in June 2014.

- **Biological Chemistry**
 - **Sustainability Courses:** no sustainability courses offered
 - **Course that include sustainability:** no courses that include sustainability offered
- **Biomedical Engineering**
 - **Sustainability Courses:** no sustainability courses offered
 - **Course that include sustainability:**
 - **BMEN 2310 Product & Experimental Design** (Service Learning, Optional, Fall 2013): The objective of this course is to introduce students to the design process as they are starting their engineering studies. Through team projects geared toward translating bench research into product development, students will be challenged to begin thinking critically and applying physical fundamentals to complex systems. Weekly lectures will highlight phases of the design process, including problem identification, conceptual design, and early prototyping. Additionally, in the context of

product and experimental design, students will gain experience with computer aided design and be provided an introduction to statistics.

- **BMEN 2311 Product & Experimental Design Lab** (Service Learning, Optional, Fall 2012)
- **BMEN 4031 Team Design Project I Lab** (Service Learning- Optional, Fall 2012): Techniques and experience in the solution of constrained and open-ended design problems. Lecture topics include all aspects of the design process, including goal setting, idea generation, prototyping, fabrication, and product and evaluation. Also included are technical presentation, project planning and management. Included as needed are other topics such as standards, fastening and joining, motors and control, esthetics and finish. Each team will design and construct a device or system to assist an individual with a disability. These designs are presented in a public show during the second semester.
- **BMEN 4040 Team Design Project II** (Service Learning- Mandatory, Spring 2014, Spring 2013): Techniques and experience in the solution of constrained and open-ended design problems. Lecture topics include all aspects of the design process, including goal setting, idea generation, prototyping, fabrication, and product and evaluation. Also included are technical presentation, project planning and management. Included as needed are other topics such as standards, fastening and joining, motors and control, esthetics and finish. Each team will design and construct a device or system to assist an individual with a disability. These designs are presented in a public show during the second semester.
- **BMEN 4890 Team Design** (Service Learning, Optional, Fall 2013): The required BMEN 4030/4040 design sequence is centered on the design and construction of a device or system to assist an individual with a disability or a group servicing such individuals. As an option, students may choose to supplement their interaction with their clients with a service learning component that follows Tulane's guidelines for service learning courses and specifically requires: Completing at least 40 hours in a community setting during the semester; keeping a journal of weekly activities that will allow the student to describe and evaluate his/her experiences with the activity; and creating a product that can be evaluated as part of the course grade (e.g., a review paper on an issue relevant to the service activity, or some product of value to the site).
- **SCEN 1010 Communicating Science** (Service Learning- Mandatory, Spring 2014, Fall 2013, Spring 2013): As the high schools in New Orleans rebuild, one of their many challenges is the uneven level of preparation among students entering the 9th grade. At the New Orleans Charter High School

for Science and Math (SciHi), founded by two Tulane professors, the students are motivated but the disparities in their backgrounds are enormous. In this course, we learn how to help high school students who've fallen behind, both academically and by understanding the origins of their difficulty. Then we apply that knowledge by working with the students and also fulfilling one of the Tulane Center for Public Service requirements. The service, a minimum of 30 hours over the course of a semester, can take the form of teaching, tutoring, assisting with in-class exercises, and always includes acting as a mentor and role model to the SciHi students.

- **SCEN 3020 Leadership in Lego Robotics** (Service Learning- Mandatory, Fall 2012): Students will learn about leadership techniques using the FIRST Lego League (FLL) middle-school robotics program as a platform. Completion of SCEN1020 (previously SCEN101) Communicating Science FLL or previous robotics experience is a prerequisite. Through various activities engaging middle school students, their teachers, and Tulane students in SCEN 1020, participants will have the opportunity to develop skills in leadership, teamwork, and project management. Students will also learn about education pedagogy and have the opportunity to promote STEM (science, technology, engineering, and math) education in New Orleans.
- **Cell and Molecular Biology**
 - **Sustainability Courses:** no sustainability courses offered
 - **Course that include sustainability:**
 - **CELL 1010 Intro to Cell and Molecular Biology** (Service Learning- Optional, Fall 2013): A study of phenomenology and fundamental concepts that apply to all living systems. Major topics include: cell biology, physiology, genetics, and development.
 - **CELL 3210 Cellular Physiology** (Service Learning- Optional, Fall 2013, Fall 2012): A survey of vertebrate anatomy and physiology emphasizing the cellular and molecular basis of organ function. This course emphasizes modern experimental approaches for exploring physiological functions of a variety of organ systems.
 - **CELL 4340 Neurobiology of Disease** (Service Learning- Optional, Spring 2014, Spring 2013): Advanced course on the higher neural functions of the nervous system and neurological diseases resulting from disruption of these functions. An emphasis is placed on the physiology of the nervous system and neural dysfunction caused by inherited and acquired

diseases. Topics range from motor control and neuromuscular diseases to high cognitive function and dementia.

- **Chemical and Biomolecular Engineering**

- **Sustainability Courses:** no sustainability courses offered
- **Course that include sustainability**
 - **CENG 3020 Neurobiology of Disease** (Service Learning- Mandatory, Spring 2013): This course satisfies the university's public-service requirement. Topics include public outreach, application of engineering principles to community issues, and educating the community on scientific and engineering issues.

- **Chemistry**

- **Sustainability Courses:** no sustainability courses offered
- **Course that include sustainability:**
 - **CHEM 1080 Chemistry Outreach in New Orleans** (Service Learning- Optional, Spring 2014, Spring 2013): The chemistry of solutions, equilibrium, thermodynamics, electrochemistry, kinetics.
 - **CHEM 2500 Environmental Chemistry:** An overview of the many aspects of environmental chemistry. Topics include: aquatic chemistry, including water pollution and water treatment; atmospheric chemistry, air pollution and major threats to the global atmosphere; geochemistry and soil chemistry; nature, sources, and environmental chemistry of hazardous wastes; and toxicology chemistry.
 - **CHEM 3915 Chemistry in the Community** (Service Learning- Mandatory, Spring 2014, Spring 2013)

- **Computer Science**

- **Sustainability Courses:** no sustainability courses offered
- **Course that include sustainability:**
 - **COSC 3000 C++ Programming for Science and Engineering** (Service Learning, Optional, Fall 2013) This course presents the fundamentals of the C++ programming language. It covers development of computer-based solutions in C++, using object-oriented and event-driven techniques, and accessing databases with open database connectivity.

- **Earth and Environmental Sciences**

- **Sustainability Courses:**
 - **EENS 1300 Earth as a Living Planet:** An introduction to the interaction of earth systems and man; anthropogenic impacts of population growth and economic development; renewable and non-renewable resources, air, water and soil pollution and mitigation; ecosystems and biological

diversity; and environmental problem solving using the scientific method. Students develop a holistic understanding of environmental science using class discussions and laboratories to reinforce basic scientific principles. (Service Learning- Optional, Spring 2014, Fall 2013, Fall 2012)

- **EENS 3600 The Science of Climate Change:** This course emphasizes the scientific basis for anthropogenic climate change. Students will learn the physics behind the climate system, how climate has changed in the past and reasons why contemporary climate change is different, the scientific basis for anthropogenic climate change theory and how scientists use models to predict future climate. The course will also provide an overview of the physical, ecological, biological, social and economic impacts of climate change. Finally, students will examine various mitigation and adaptation strategies which society can employ in a warmer world.
 - **EENS 3720 Infrastructure of Sustainable Urban Environments:** Selected elements of the urban physical infrastructure serve as starting points to illustrate concepts from underlying science fields. The central question is “What makes a sustainable city work?” Specifically, the course introduces and reinforces key concepts from physics, chemistry, microbiology and environmental science. The course is divided into four segments, each including a field trip to a site in the New Orleans area that will provide opportunities for experimental learning and first-hand observation of relevant physical phenomena. (Service Learning- Optional, Spring 2013)
- **Course that include sustainability:**
 - **EENS 2020 Environmental Geology:** The interaction of humans and their geologic environment. A study of Earth processes and their action on rocks, soil, fluids, and life in ways that either affect or control the human environment. The effect of humans on their environment with consideration of the feedback between Earth processes and human activities. Lectures and field trips.
 - **EENS 2070 Weather and Climate:** An introduction to the Earth’s atmosphere with particular emphasis on weather and climate. Topics covered include: heating and cooling of the atmosphere; atmospheric circulation and wind; air masses and cyclonic storms; tropical weather and hurricanes; and global climates and climatic change.
 - **EENS 2080 Extreme Weather:** This course is designed to give students a fundamental understanding of severe weather and its impact on man and the environment. Students focus on life cycles of thunderstorms, tornadoes, hurricanes, blizzards, and ice storms, as well as the impacts of temperature and precipitation extremes.

- **EENS 3050 Natural Disasters:** An examination of the causes and effects of natural disasters, such as earthquakes, volcanic eruptions, landslides, subsidence, coastal erosion, flooding, severe weather (including hurricanes), and meteorite impacts. Also includes a discussion of options available to mitigate disasters.
- **EENS 3550 Shark Paleobiology** (Service Learning- Mandatory, Fall 2013, Fall 2012): This course examines the processes and patterns of shark speciation, diversification, macroevolution, and extinction within the framework of developing a problem-based learning activity using shark teeth for a K-12 classroom. Particular emphasis is placed on the systematics and functional morphology of shark teeth.
- **EENS 4040 Coastal Marine Geology:** Geomorphic features of estuarine, coastal, and continental shelf environments: erosional, depositional, and geochemical processes; field and laboratory methods; emphasis on dynamic coastal environments of the northern Gulf of Mexico. Offered summers only.
- **EENS 4260 Paleoclimatology:** Understanding past climate change is necessary to effectively predict the future of our planet, which is currently in a state of rapid transition. The main focus of the course is on the reconstruction and modeling of climates of the Quaternary, the past two million years of Earth's history. (Same as EBIO 6260).
- **EENS 4270 Major World River Systems:** Major rivers are important environmental features on Earth's surface in terms of their impact on humans and their vulnerability to negative impact by human activities. This course will explore natural river and watershed processes and how humans affect and are affected by these processes. Case studies from across the world will be explored.
- **EENS 4800 Air Pollution:** Provides both a conceptual and qualitative understanding of meteorology with major emphasis on air pollution. Overview of major air pollutants, including their sources, sinks, transformation, effects and related control technologies. Exploration of the meteorological basis for pollutant dispersion/transport.
- **EENS 6060 Natural Disasters:** An examination of the causes and effects of natural disasters, such as earthquakes, volcanic eruptions, landslides, subsidence, coastal erosion, flooding, severe weather (including hurricanes), and meteorite impacts. Also includes a discussion of options available to mitigate disasters.
- **EENS 6210 Global Biogeochemical Cycles:** An introduction to the global biogeochemical cycles in fresh water, marine, and terrestrial ecosystems. Emphasis will be placed on key environmental issues as they relate to perturbations of these global cycles.

- **EENS 6260 Paleoclimatology:** Understanding past climate change is necessary to effectively predict the future of our planet, which is currently in a state of rapid transition. The main focus of the course is on the reconstruction and modeling of climates of the Quaternary, the past two million years of Earth's history
 - **EENS 6270 Major World River Systems:** Major rivers are important environmental features on Earth's surface in terms of their impact on humans and their vulnerability to negative impact by human activities. This course will explore natural river and watershed processes and how humans affect and are affected by these processes. Case studies from across the world will be explored.
 - **EENS 6800 Air Pollution and Fundamentals of Modeling:** This course presents fundamental concepts associated with air pollution, its modeling and its control. The course discusses major air pollutants and their effects and provides insight into the meteorological basis for pollutant dispersion. IN a core portion, pollutant transport and dispersion modeling are introduced and students gain hands-on experience conducting their own air dispersion modeling with state- of-the art software. Finally major types if control devices are discussed with regard to their scientific basis and operating principles.
- **Ecology and Evolutionary Biology**
 - **Sustainability Courses:**
 - **EBIO H1040 Global Environmental Change:** An introduction to the physical and biological processes that regulate the function of the Earth system. The composition, formation, and stabilization of the Earth's atmosphere and ecosystem will be examined, emphasizing biological processes and ecosystem ecology. With an understanding of the historical rates and mechanisms of natural global change, the means by which human activities alter Earth system function at local to global scales will be explored, along with the consequences of and solutions to human-induced global change. Note: This course meets the college non-laboratory science requirement, but it cannot count toward any major or minor requirements in ecology and evolutionary biology. Students may receive credit for only one of EBIO 1040, 1050, or 2050.
 - **EBIO 1040 Global Environmental Change:** An introduction to the physical and biological processes that regulate the function of the Earth system. The composition, formation, and stabilization of the Earth's atmosphere and ecosystem will be examined, emphasizing biological processes and ecosystem ecology. With an understanding of the historical rates and mechanisms of natural global change, the means by which human

activities alter Earth system function at local to global scales will be explored, along with the consequences of and solutions to human-induced global change. Note: This course meets the college non-laboratory science requirement, but it cannot count toward any major or minor requirements in ecology and evolutionary biology. Students may receive credit for only one of EBIO 1040, 1050, or 2050.

- **EBIO 2050 Global Change Biology:** This course explores the biological basis of environmental issues and the changes occurring at a global scale, divided approximately into halves. The first half will provide a strong foundation in the interactions among biological and physical systems. The second half will be devoted to specific issues including global climate change, atmospheric pollution, community stability, habitat fragmentation, and loss of biodiversity. Changes that have occurred over geological time will be compared with changes in the modern industrial era. Note: Students may receive credit for only one EBIO 1040, 1050, or 2050.
 - **EBIO 2040 Conservation of Biological Diversity:** A consideration of biological diversity and its persistence, threats, human value, conservation efforts, and biological bases. Specific topics include extinction, global change, population viability, habitat loss and degradation, ecosystem management, restoration, agricultural ecosystems, economic and legal considerations, and the human population. (Service Learning- Optional, Spring 2014, Spring 2013)
 - **EBIO 3580 Urban Ecology:** Urban Ecology is the study of cities, including human inhabitants, as functioning ecosystems, supporting a complex web of life. In this course students will learn how basic ecological principles can be applied to the study of urban ecosystems and the effects of cities and urbanization on regional and global environments. Through a combination of lectures, readings and discussions, site visits and service learning, this course will provide an overview of interactions, at multiple scales, between the built environment and the natural environment with particular focus on New Orleans and the Gulf coast region. (Service Learning- Optional, Fall 2012)
- **Course that include sustainability:**
 - **EBIO 1010 - Diversity of Life:** Co-requisite: EBIO 1015. A survey of plant and animal life emphasizing the diversity among individuals, population, species, communities, and ecosystems.

- **EBIO 2010 Evolution in Human Health and Disease:** An introduction to the study of infectious and non-infectious human diseases from an evolutionary perspective.
- **EBIO 2060 Case Studies in Environmental Science:** This course uses case studies to introduce students to interdisciplinary aspects of environmental issues. Emphasis is placed on environmental topics along the Gulf Coast region; past topics have included wetland loss, mercury contamination, and hypoxia events in Louisiana coastal waters.
- **EBIO 2120 Climate Change, Biodiversity, and Tropical Forests:** This course is offered as part of the Stone Center for Latin American Studies' Summer in Costa Rica Program. Students may not register on-line for this course; they must register directly with the Stone Center Summer Program office. The course will introduce students to the structure and ecology of tropical forests. Students will be expected to integrate what they learn about the real social and economic causes of deforestation and grass roots efforts to revert it with the social, political, economic and biological logic of world climate change agreements and disagreements.
- **EBIO 2210 Insect Biology** (Service Learning- Optional, Fall 2013): Basic insect biology with an emphasis on insect interactions with humans and how insects fit into our culture.
- **EBIO 2330 Natural History of Louisiana** (Service Learning- Optional, Spring 2014, Spring 2013): A survey of terrestrial and aquatic ecosystems of southern Louisiana. Lectures cover the ecology of regional plant and animal communities, with special emphasis on environmental issues such as invasive species, hurricane disturbance, conservation and management. The geology, geography, history, and culture that contribute to the formation and maintenance of each ecosystem will also be examined, from barrier islands to upland forests.
- **EBIO 2600 Natural Resource Conservation Theory and Practice:** This course examines the theory and practice of natural resource preservation in the United States, and the agencies and organizations involved in this endeavor. Note: Students may not apply this course and EBIO 3600 toward the course requirements for the EE Biology major. (Service Learning, Mandatory, Spring 2013)
- **EBIO 3180 Plants and Human Affairs:** Since ancient times, people have relied on plants for food, clothing, shelter, medicines, and more. This course investigates some of the ways in which plants support and shape human life. Topics include: early ideas about plants and the origin of

plant lore; plant domestication and the rise of agriculture; plant products in commercial economies; cultural uses of plants; plants and the future of civilization.

- **EBIO 3290 Behavioral Ecology** (Service Learning- Optional, Fall 2013): This course addresses the ecological and evolutionary causes and consequences of animal behavior, using both proximate and ultimate approaches. Topics include sociality, mating systems, sexual selection, animal movement, signals, behavior and conservation, and cognition.
- **EBIO 3690 Experimental Animal Behavior** (Service Learning- Optional, Spring 2014): This course provides students the opportunity to design, implement, and write-up an independent research project related to behavioral ecology. Research will be conducted on live animals at the Audubon Zoo. The course will emphasize general principles of experimental design; the collection, organization and analysis of data; and written and oral presentation of results. The course consists of 3 hours of laboratory per week and 2 hours of seminar per week, all at the zoo.
- **EBIO 4230 Molecular Evolution and Ecology:** Molecular ecology employs principles of population genetics and phylogenetics to answer questions about organismal diversity, population dynamics, community assembly and macroecology. Having a foundation in molecular evolution and genomics allows for broad topical applications, including the study of infectious diseases, conservation of endangered species, organismal responses to global environmental change, and the evolutionary origins of biological diversity. Students will first learn the principles of molecular evolution, after which they will be introduced to the core techniques used to generate molecular data. Students will learn how molecular data can be developed and analyzed to address questions in ecology and evolutionary biology.
- **EBIO 4270 Population Ecology:** Principles of population dynamics in space and time, population regulation, and population interactions as determined from an integrated study of plants and animals, followed by exploration of the applicability of these principles to an understanding of the contemporary growth and control of the human population.
- **EBIO 6180 Plants and Human Affairs:** Since ancient times, people have relied on plants for food, clothing, shelter, medicines, and more. This course investigates some of the ways in which plants support and shape human life. Topics include: early ideas about plants and the origin of

plant lore; plant domestication and the rise of agriculture; plant products in commercial economies; cultural uses of plants; plants and the future of civilization.

- **EBIO 6260 Paleoclimatology:** Understanding past climatic variation is necessary to fully comprehend present and model future climate. The focus will be on climate change during the late Quaternary Period, with special emphasis on climate reconstruction methods. (Same as EENS 6260.)
 - **EBIO 6270 Population Ecology:** Principles of population dynamics in space and time, population regulation, and population interactions as determined from an integrated study of plants and animals, followed by exploration of the applicability of these principles to an understanding of the contemporary growth and control of the human population.
 - **EBIO 6580 Urban Ecology:** Urban Ecology is the study of cities, including human inhabitants, as functioning ecosystems, supporting a complex web of life. In this course students will learn how basic ecological principles can be applied to the study of urban ecosystems and the effects of cities and urbanization on regional and global environments. Through a combination of lectures, readings and discussions, site visits and service learning, this course will provide an overview of interactions, at multiple scales, between the build environment and the natural environment with particular focus on New Orleans and the Gulf coast region.
- **Engineering Science**
 - **Sustainability Courses:** no sustainability courses offered
 - **Course that include sustainability:** no courses that include sustainability offered
 - **Mathematics**
 - **Sustainability Courses:** no sustainability courses offered
 - **Course that include sustainability:** no courses that include sustainability offered
 - **Neuroscience**
 - **Sustainability Courses:** no sustainability courses offered
 - **Course that include sustainability**
 - **NSCI 4130/6130 Applied Neuroscience: Sport Related Brain Injury** (Service Learning- Mandatory, Spring 2014)
 - **NSCI 4530/6530 Psychopharmacology** (Service Learning- Optional, Fall 2013, Fall 2012): An introduction to the effects of psychoactive agents on the nervous system. Lectures emphasize the mechanisms by which drugs regulate neurotransmitter systems to alter psychological and physical states.

- **NSCI 4060/6060 Endocrinology** (Service Learning- Optional, Spring 2013): An introduction to the roles of steroid and peptide hormones in physiology and behavior. Lectures focus on the hormonal mechanisms that control reproductive and regulatory functions in human and infrahuman species.
 - **NSCI 6150 Neuroscience Methods** (Service Learning- Optional, Fall 2012): A lecture course exposing students to contemporary theories and techniques used in cellular and behavioral neuroscience by Tulane neuroscientists in their own research programs.
 - **NSCI 6910 Neuroscience Capstone Seminar: Applications of Neuroscience** (Service Learning, Optional, Fall 2013): This course is designed for senior neuroscience majors who have completed their core course requirements of Brain and Behavior, Cellular Neuroscience and Systems Neuroscience. It is designed to be a culminating experience in which students utilize and apply their skills and knowledge developed over the course of their major. This course will have three versions. One; Service and Application of Neuroscience will allow students to apply their knowledge of basic neuroscience in approved clinical or educational settings while providing service to the community. Second; Independent Research and Writing in Neuroscience this is for students to do independent research in the laboratory of a neuroscience faculty member and to complete a written assignment that includes a review of the pertinent neuroscience literature and/or a summary of the completed research. Third; Concepts and Applications this option is for students to participate in a combination of journal club/seminar series, in which students will present and discuss neuroscience research articles and attend neuroscience seminars presented by researchers from Tulane and other institutions.
- **Physics and Engineering Physics**
 - **Sustainability Courses:** no sustainability courses offered
 - **Course that include sustainability**
 - **ENGP 2310: Product and Engineering Design** The objective of this course is to introduce students to the design process as they are starting their engineering studies. Through team projects geared toward translating bench research into product development, students will be challenged to begin thinking critically and applying physical fundamentals to complex systems. Weekly lectures will highlight phases of the design process, including problem identification, conceptual design, and early

prototyping. Additionally, in the context of product and experimental design, students will gain experience with computer aided design and be provided an introduction to statistics. Course restricted to ENGP and PHYS majors, or by permission of the instructors. *Note from instructor: In this course, we discuss sustainability as one of the important factors in engineering a new product. There are definitely societal benefits and applications of the work discussed in the class, even if the course is not primarily about sustainability. We also discuss many research areas related to sustainability as examples.*

- **ENGP-3910 Materials for Energy (also PHYS 3910 and PHYS-7310)** Lecture topics include Introduction to Energy & Power: Wide Range of Materials Applications; History of Energy: From Aristotle to Einstein; Review of Thermodynamics; Introduction to the Different Forms of Energy; Nanotechnology and Energy; The Sun: Photosynthesis, Geothermal and Photovoltaics and more.
 - **ENGP 3911 Kinetics of Material Systems (also PHYS 3911 and PHYS 7310)** This course explores materials and materials processes from the perspective of thermodynamics and kinetics. The thermodynamics aspect includes laws of thermodynamics, solution theory, and equilibrium phase diagrams. Thermodynamics provides the driving forces and energetic considerations and there are no implied time or length scales. The kinetics aspect includes diffusion, phase transformations, and nucleation and growth, the development of microstructure, dislocations, and microstructure. The kinetics involves rates and time, transformations limited by the slowest step; length and time scales are critical.
 - **ENGP 4320 Senior Engineering Design** (Service Learning- Mandatory, Spring 2014, Spring 2013): Design project taken in the fourth year of study with student teams.
 - **PHYS 2910 Introduction to Physics Pedagogy** (Service Learning, Mandatory, Fall 2013, Spring 2013): Introduction to the theory and practice of teaching physics courses through workshops, observations and assisting teachers at local schools with lectures and/or classroom demonstrations.
 - **PHYS-3910-01 Materials for Energy** Special topics in physics depending upon faculty and student interest.
- **Psychology**
 - **Sustainability Courses:** no sustainability courses offered

- **Course that include sustainability**
 - **PSYC 3200 Educational Psychology** (Service Learning- Mandatory, Fall 2013, Fall 2012): Examines psychological principles applied to educational practices with special emphasis on cognition. Its purpose is to help adults working with children to understand better the relationship between applied educational practices and psychological principles and research. Includes observational assignments in schools.
 - **PSYC 3310 Introduction to African American Psychology** (Service Learning- Optional, Spring 2013): A study of a wide range of topics relating to psychology generally, and African Americans specifically. Topics include personality, education, psychological assessment, racism, psychology in communities, and research.
 - **PSYC 6610 Culture, Social Identity, and Intergroup Relations** (Service Learning- Mandatory, Spring 2014): By arrangement with department.