**Courses That Focus On Sustainability (2019)**

**Biology 104: Organisms and Environment**

This is the second of a two-semester sequence of courses. The combined courses ("Matter and Energy" and "Organisms and Environments") will satisfy the natural science laboratory general education requirements only for elementary education teacher candidates. The courses will also cover the content that is important for future educators in an integrated inquiry-based format. The content in this recommended course sequence will flow from the physical science to earth/space science to life science topics that students will find themselves teaching in the future. This course will primarily include content from the life and earth/space science, though due to the interdisciplinary nature of many of the topics, physical science topics will also be addressed where appropriate.

**Biology 105: General Biology I**

This course includes an overview of ecology emphasizing the ways organisms interact with their physical and biological environment, and the study of animal and plant diversity, anatomy and physiology with an emphasis on structure-function relationships and homeostasis.

**Biology 106: General Biology II**

This course includes the study of cell biology, including cellular structure and function, metabolism, enzyme activity, and energetics, Mendelian and molecular genetics, including discussion and use of modern techniques as a means to answer biological questions, and evolutionary biology, including the relationships between the major taxa, and how the interaction of organisms with their environment drives the evolutionary process.

**Biology 107: General Biology Lab I**

Laboratory experiences designed to complement lecture material in Biol 105. The labs are organized into research experience modules. In this semester, students investigate questions in ecology, animal and plant biology.

**Biology 108: General Biology Lab II**

Laboratory experiences designed to complement lecture material in Biol 106. The labs are organized into research experience modules. In this semester, students investigate questions in cell biology, molecular genetics and evolution.

**Biology 315: Advanced Topics in Ecology**

A course that deals with the interactions between organisms and their physical and biological environments at an advanced level, emphasizing recent developments and specialized problems. Areas of emphasis (e.g., conservation biology, plant-animal interactions, community ecology, and physiological ecology) as well as course format (lecture-lab, lab only) and credits (1-4) will vary.

**Biology 330: Marine Biology and Biophysics**

An interdisciplinary course focusing on the biology of marine organisms and the physic-chemical and geological factors that govern their distribution, abundance, and characteristics. The course covers much of the subject matter of a traditional marine biology course, including a survey of important groups of marine organisms and ecosystems, but it also delves frequently into the ways in which physics informs a deeper understanding of the special challenges of life in the sea and adaptations of organisms to deal with those challenges. Three lectures and one 3-hour laboratory per week. Instruction in SCUBA and a field trip to Caribbean coral reef habitats during spring break will be available to students as an option, at extra cost.

**Biology 340: Advanced Topics in Plant Biology**

An in-depth study of specialized topics in botany such as plant anatomy, plant breeding systems, plant molecular systematics, and eco-physiology of plants. Three ethnobiology lectures and one 3-hour laboratory per week.

**Biology 343: Vascular Plant Systematics**

A study of the biology, evolutionary relationships and identification of selected families of vascular plants, and the principles of plant classification. The laboratory will involve field work and concentrate on the local flora. Two 3-hourlecture and laboratory session per week. Additional out-of-class hours are required.

**Biology 370: Animal Behavior**

An investigation-based study of vertebrate and invertebrate behavior from an evolutionary perspective. Topics include proximate behavioral mechanisms (genetic, developmental and neurological) and ultimate consequences(evolution, ecology and sociology). Two 3-hour laboratories per week plus additional required out-of-class hours. Statistics is highly recommended prior to this course.

**Biology 374: Biology of Insects**

The course is an introduction to the identification, structure, life cycle, ecology and behavior of insects. Field aspects will be stressed. Two 3-hour lecture/laboratory periods per week, plus additional required out-of-class hours.

**Biology 380: Field Studies**

A concentrated study of a variety of organisms in their natural habitats. Normally requires field studies or camping trips as long as two to three weeks in duration. In addition study projects and/or papers will be expected. May be repeated for a maximum of 8 credits.

**Biology 421: Evolutionary Biology**

A study of special topics concerning the process of evolution and its mechanisms involving both micro and macro evolution. Each year a different special topic is explored. Past examples include evolutionary molecular biology and speciation. Three lectures and one laboratory/discussion per week.

**Biology 422: Invertebrate Zoology**

The biology of selected invertebrate animals will be studied with emphasis on their functional morphology, ecology and behavior. Laboratory includes field studies with a weekend trip. Two 3-hour laboratory/lecture sessions per week, plus additional out-of-class hours.

**Biology 432: Vertebrate Zoology**

Vertebrate examples are used to investigate a broad range of biological topics including evolution, speciation, historical and modern zoogeography, energetics, behavior, ecology and conservation. Laboratory includes both laboratory exercises and field trips that focus on the taxonomy, external morphology, natural history and field identification of local vertebrates. Three lectures and one 3-hourlaboratory per week. Additional out-of-class hours required.

**Business 356: Managing for Environmental Sustainability**

The study of policies and practices usually associated with business, but applicable to other organizations as well, that create environmentally sustainable outcomes. The class will explore the idea that businesses can be profitable and competitive by being environmentally responsible.

**Environmental Studies 377: Environmental Philosophy and History**

An in-depth study of classic and contemporary texts in environmental philosophy and history, including primary sources by Plato, Aristotle, Descartes, Locke, Thoreau, Berry, Carson, and Leopold, as well as secondary studies by Crosby, Ponting, and Steinberg.

**Environmental Studies 395: Topics in Environmental Studies**

A course offered in response to student and instructor interest on topics that are not generally covered in the regular course listings.

**Environmental Studies 490: Research Project**

Advanced collaborative research by student and faculty on topic of mutual interest.

**Environmental Studies 493: Independent Study**

An in-depth investigation of some issue of the student's choosing.

**Environmental Studies 499: Internship**

A supervised practical experience in a local work setting, e.g., business, non-profit organization, governmental agency, educational institution.

**GEMS 152: Atmosphere and Environmental Change**

Storms, droughts, heat waves, and cold snaps make us all aware of how the atmosphere impacts human beings. Recent concerns about the greenhouse effect, climate change, pollution, and ozone depletion have made us more aware of how human beings impact the atmosphere. Subjects will include the basics of the atmosphere and weather, local pollution, acid rain, climate change, ozone depletion, storms, droughts, and floods.

**GEMS 153: Populations in Changing Environments**

In this investigation-based course students will explore the biological principles of population growth and dynamics, extinction and evolution, species interactions, biodiversity and conservation. Topics are studied within an environmental context using quantitative and experimental approaches.

**GEMS 157: Planet Earth**

An introduction to the scientific study of the planet on which we live. This course emphasizes the study of the major Earth systems (atmosphere, hydrosphere, biosphere and solid Earth) and the interactions between them. Particular attention is given to the subject of environmental change and the implications for our future. One or two Saturday morning field trips are required.

**GEMS 160: Chemistry of Our Environment**

This course will look at how chemistry serves as the basis for understanding and predicting how our technological society impacts the environment in which we live. Basic chemical principles will be introduced and serve as building blocks to explain environmental phenomena we encounter in our everyday life. Laboratory investigations of environmental processes, together with case studies of environmental problems will be used to build an understanding of the molecular nature of the world around us and how we interact with it. Topics will include: testing for groundwater pollution, chemicals in the home, chemical manufacturing and recycling, and others.

**GEMS 204: Regional Flora and Fauna**

This course will stress the identification, natural history, and ecological importance of the common plants and animals in the Great Lakes region. Students will be taking field trips to natural areas to learn about the flora and fauna first-hand. Practical aspects of natural history will be stressed such as wildlife watching, tree and wildflower identification, and insect biology.

**GES 130: Introduction to Environmental Science**

This course introduces students to systems thinking, to concepts of the physical world essential for the study of environmental science, and to sustainability as a lens for considering issues of resource production, resource consumption, and generation of waste. Laboratory exercises will explore general scientific principles relevant to study of the atmosphere, oceans, and solid Earth, as well as aspects of resource use in our daily lives. Three lectures and one three-hour laboratory each week.

**GES 211: Earth Environmental Systems I**

This course introduces the scientific study of our planet in terms of natural systems, their interactions, and their modification by human activities, on a local scale. Subjects addressed include air pollution modeling, fate and transport of water pollution, contaminant toxicology, human health risk assessment, soil chemistry and degradation, wastewater and drinking water treatment, and land-use assessment. Learning is facilitated by quantitative problem solving and case studies. Three hours of lecture per week.

**GES 213: Global Physical Systems**

This is the scientific study of physical systems on our planet with a focus on global environmental problems. The course will emphasize analysis of large-scale problems and potential strategies for addressing them. Subjects include biogeochemical cycles, current climate and climate change, human interactions with physical systems, and sustainability.

**GES 215: Global Change in Human and Biological Systems**

This course focuses on biological systems and how humans have altered them. Topics include ecosystems, biological diversity, population growth, land-use change, disturbance, and invasive species. We also explore how humans can conserve ecosystems and resources in order to provide for the future human global population.

**GES 220: Lab Methods in Environmental Science**

This laboratory course accompanies GES211 and GES 212. This class will introduce laboratory and field methods necessary to investigate the natural systems which comprise our ecosystem, and the effects of human activities on it. Sampling techniques, field identification, and common methods of chemical analysis for environmental study will be emphasized. Three hours of laboratory per week and one hour of discussion.

**GES 310: Environmental Public Policy**

An introductory analysis of the economic, scientific and political factors involved in environmental public policy. American environmental management will be viewed in terms of the interplay among economic efficiency, scientific feasibility and the demands of the political process. Topics covered will include federal lands, intergovernmental relations, agency law, comparative institutions, U.S. environmental regulations and technological compliance. This course is team taught by faculty from Economics, Geological and Environmental Sciences, and Political Science. Four hours of lecture per week.

**GES 401: Advanced Environmental Seminar**

This is an interdisciplinary course where students with different academic majors will work in teams to research a local environmental problem. The students will work with faculty members in geological/environmental sciences, biology, chemistry, and possibly other departments in the design of a research project, the collection and interpretation of data, and the making of recommendations. This course is meant to duplicate the process by which scientists work to solve actual environmental problems and is intended as a "capstone" experience for environmental science minors. One two-hour group meeting per week. Additional times to be arranged for consultation, field and laboratory work.

**GES 430: Environmental Geochemistry**

The principles of physical and inorganic chemistry will be applied to geochemical systems of environmental interest. Element recycling and evaluation of anthropogenic perturbations of geochemical cycles will be examined with a strong emphasis on aqueous chemistry. Laboratory exercises will emphasize computer modeling and the analyses of natural waters by a variety of techniques. Three lectures each week. This is a flagged course for the environmental science minor.

**GES 450: Hydrogeology**

This is a study of the geological aspects of the water cycle with an emphasis on groundwater. Topics include aquifer testing, groundwater flow, geology of aquifers, water resource management, groundwater chemistry, contamination, and remediation. Emphasis is placed on quantitative problem solving. Three hours of lecture and one three-hour laboratory each week. This is a flagged course for the environmental science minor.

**IDS 100: Day One on Great Lakes (Best, Krueger)**

The Day1: Great Lakes First Year Seminar and Statistics course has a three-day field research experience on Lake Michigan's sand dunes before classes start (August 22-25, 2016). Students will collect data on Pitcher's thistle, a threatened plant, and analyze this data and other real Great Lakes data using the statistical methods they learn during the semester. The discussions for the course focus on ecological issues facing the Great Lakes and highlight the importance of research, public policy, and personal involvement. The cohort of students engaged in this Day1 experience will live in Lichty Hall with other Day1 program participants. This will give participants more opportunities to build community with other students interested in not only the Great Lakes, but also science, engineering and mathematics and applications of their skills to real-world problems.

**IDS 100: Day One on Macatawa Watershed (Koh, Pearson, Yurk)**

This course begins with a three-day field and laboratory research experience in the Macatawa Watershed. Students will learn about this watershed that surrounds Hope College and begin conducting research for three days before classes start. Students will address issues of water quality that have plagued Lake Macatawa for over a century. Teams will use standard and cutting edge experimental techniques, including next generation DNA sequencing of the watershed bacterial communities. These techniques are foundational to emerging scientific fields, ranging in application from personalized medicine strategies for treating cancer and other diseases to understanding and mitigating global climate change. The readings for the course focus on ecological issues facing the Great Lakes and highlight the importance of scientific research, public policy, and personal involvement in our communities. The students engaged in this experience will live in Lichty Hall, providing opportunities to build community with other students interested in not only the watershed but also in applying their skills to real-world problems.

**IDS 100: Day One on Michigan Rocks (Hansen)**

This course gives you the opportunity to join upper-level students and faculty mentors to explore rock formations that record events from throughout Michigan’s rich geological history. Study ancient volcanoes and mineral deposits, fossil-rich inland seas, expansive glaciers and modern geological processes as you build the skills to become a professional geologist or environmental scientist. This course brings together first-year students interested in learning science in the outdoors with current Hope students who want an immersive introduction to geology. This course will show you how to interpret clues in ancient rocks to understand past episodes of glaciation, volcanic eruptions and other major environmental changes that have shaped Michigan. As part of Day1: Michigan Rocks you will travel and camp together throughout the wilds of northern Michigan for nine days before the start of the fall semester.

**IDS 100: Sustainability for Normal People (Bodenbender)**

It’s easy to be concerned about the health of our planet and to worry about the environment, but it’s harder to connect our everyday surroundings and activities to the idea of a sustainable planet. This seminar explores how the choices we make every day connect us to global issues. Discussions, readings, field trips, and classroom visitors will help us tackle the subject of sustainability by examining production, consumption, and waste. We will meet a variety of people who promote sustainability in a variety of ways. We will also learn to have fruitful discussions with classmates using intergroup dialogue, which will help us probe more deeply in our conversations to understand the assumptions, background, values, and choices that guide our own lives. This will help each of us better envision how we can plan our lives so we can live more sustainably.

**IDS 100: From Farm to Table (Bonnema)**

This class will join around the table for a culinary tour around the world as we examine what food means to various cultures. We will ask questions such as Where does the food we eat come from? How does our food reflect our culture? What parts of a food culture do people take with them when they move from one place to another? We will also examine how our food gets from farm to table in Michigan, the United States, as well as various other countries. Recipe for this class: 1 tsp readings/films, 2 TBS lively discussion, 1/2 tsp guest speakers, 3/4 tsp eating. Come hungry to learn.

**IDS 100: There’s No Place Like Home (Bouma-Prediger)**

Hometeam. Homelessness. Homecoming. The meanings and feelings of home run very deep in our human consciousness. Allegiances to home fuel athletic rivalries and instigate wars. The longing for home sustains soldiers and motivates pilgrims. Making a home is complex and costly—for beavers building a lodge as well as for humans fashioning a culture on this our home planet. But what exactly is a home? Why do some people lose their home? What does it mean to leave home (to come to college, for example)? How do you make a home? What does it mean to be “at home” not just in terms of a place but emotionally or intellectually speaking? In this course we will explore these and other related questions concerning the meaning of home, homelessness, and homecoming. This will involve reading classic texts and contemporary novels, viewing movies and listening to music, writing papers and doing journals.

**IDS 100: Home (Beard)**

What defines “home?” Is it people, a specific place, or the memories made during a certain period of time? What is home making? How do you leave home and make a new home? What does it mean to be homeless? And where does having a house fit into being at home? We will consider how home is a place, sometimes the first place where we find a profound sense of connection, identity and even love. We will also explore what it means when one experiences home as not a safe place. We will thus explore how homelessness is a kind of displacement. We will think together about the journey away from your home of childhood and young adulthood into the new home of college in the new hometown of Holland, Michigan into which each of you are stepping. We also grapple with the journey of home-finding and home-making beyond college.

**IDS 100: Water: Precious, Precarious, Problematic, Perplexing, Promising**

Water is essential for life. Despite this, or perhaps because of it, humans have put this precious resource in a precarious state in the world; rivers have run dry, aquifers are overdrawn, pollution is widespread, and much of the world lacks access to safe drinking water or water for basic sanitation. This raises many global, domestic, and local problems, and conflict over water is increasingly common. Americans, especially, treat water in perplexing ways, mostly based on our perceptions that water is (or should be) abundant, accessible, and affordable. At the turn of the century, then UN Secretary General Boutros Boutros Ghali said, "Water will be more important than oil this century." We are slowly waking up to this reality, responding in many cases in a manner that provides promise that we are rising to meet the challenge. This course will look at water from each of these “Five P’s” perspectives as we delve into the scientific, political, economic, societal, and religious implications of water.

**IDS 100: Cycling Toward a Sustainable Future (Bultman)**

**IDS 100: Food Is Life (Toppen)**

**IDS 492: God, Earth, Ethics**

In this course we ask questions about God and God’s relationship to the earth, about the earth and its well-being, and about our ethical responsibilities as humans to care for the earth. For example, are we in the midst of a growing ecological crisis? If so, why? If creation is groaning, what are the causes? Is religion, and especially the Bible and Christianity, the culprit, as some argue? Why should we care about marmots, sequoias, spotted owls, or old growth forests? And what can and should we do about acid rain, overflowing landfills, holes in the ozone layer, shrinking rain forests, smog?

**Physics 295: Physics of Sustainable Energy**

This special topics course is on the physics of sustainable energy. We will discuss energy generation, energy conversion, and energy storage technologies with the goal of understanding the fundamental principles that apply to those technologies and learning about the current state of their application to the modern world. These topics are an active area of interest of mine, including in my own research at Hope. We will be learning together about many interesting areas of technology such as solar cells, wind energy, geothermal energy, nuclear technology, fuel cells, batteries, and many other topics.

**Religion 100: Earth and Ethics**

Global warming, holes in the ozone layer, toxic wastes. Oil spills, aid rain, drinking water contamination, overflowing landfills, topsoil erosion, species extinction, smog. The earth and its many inhabitants are in trouble claim numerous professional earth-watchers. Is this true? If so, why? How have religions contributed to ecological degradation and how might they part of the solution? In this course we will explore these crucial questions and learn how Jews, Christians, Muslims, and Buddhists answer such questions.

**Religion 365: Ecological Theology and Ethics**

A study of the nature and causes of current ecological degradation, the witness of Christian scripture and tradition concerning ecological matters, the responsibilities of humans as earthkeepers, and the practical implications of living in a more earth-friendly way. This is an off-campus course combining traditional academic study with a wilderness backpacking, canoeing, and kayaking trip in which participants learn wilderness camping skills and develop their leadership ability in addition to examining issues in the area of ecological theology and ethics.

**Sociology 295: Environmental Sociology**

Environmental sociology studies the relationships found within and among both human and nonhuman communities. It studies what is shared by people with other humans and with other forms of life. A central concern is the study of social inequality. Social inequality is often the product and/or producer of many of the problems and challenges confronting life today. This course provides a sociological perspective on environmental issues, investigating how political, social, and economic factors have come to shape our patterns of interaction with the natural environment. We will use the sociological perspective to understand the landscape of environmental problems, focusing on issues such as the relationship between the environment and health, natural disasters and relief efforts, environmental policy and environmental risk, human and animal interactions, environmental justice and social movements.

**Courses That Include Sustainability (2019)**

**Biology 295: Studies in Biology**

A course offered in response to student and instructor interest. Topics are not generally covered in the regular course listings. Course may be taken multiple times if topics are different.

**Biology 318: Mathematical Biology**

An exploration of the ways in which mathematics is used to understand and model biological systems. Using examples from ecology, neuroscience, epidemiology, and molecular evolution, we will focus on continuous and discrete models and their analytical and computational solutions. Differential equations, linear algebra, and statistical methods will figure prominently among the mathematical topics. Students will become familiar with the statistical, graphical & modeling capabilities of the R computer language.

**Biology 390: Independent Study**

A special course to allow students to study an area of biology not included in the regular curriculum or an in-depth study of a selected biological topic.

**Biology 395: Studies in Biology**

This course may be a lecture or laboratory on a topic in biology related to special interests of the faculty or to significant current developments in the field.

**Biology 490: Research in Biology**

This course is designed to give students majoring in biology a chance to do research in an area in which they have a special interest. Students are expected to attend weekly seminars. Requires permission of the instructor with whom the student will work.

**Biology 493: Independent Study**

Course provides opportunity for a junior or senior biology major to engage in an independent study project in an area in which the student has special interest.

**Chemistry 104: Matter and Energy**

Matter and Energy is one of a two-semester sequence of courses. The combined courses("Matter and Energy" and "Organisms and Environments") will satisfy the natural science laboratory general education requirements only for elementary education teacher candidates. The courses will also cover the content that is important for the future educators in an integrated inquiry-based format. The content in this recommended course sequence will flow from the physical science to earth/space science to life science topics that students will find themselves teaching in the future. This course will primarily include content from physical science and earth/space science, though due to the interdisciplinary nature of many of the topics, life science will also be addressed where appropriate. CHEM 104 is intended for students seeking teacher certification.

**Chemistry 295: Studies in Chemistry**

A lecture and/or laboratory course in a chemical area of current interest.

**Chemistry 343: Physical Chemistry I**

The basic principles of physical chemistry are introduced with applications in the chemical and biological sciences. Underlying principles of thermodynamics, equilibrium, and kinetics are developed and applied to solutions, enzymes, spectroscopy, and macromolecules from macroscopic and statistical perspectives. Lecture 3 hours per week and discussion session 1 hour per week.

**Chemistry 344: Physical Chemistry II**

The quantum description of matter is investigated by studying basic concepts of quantum mechanics, simple quantum models, atomic orbitals, molecular energy levels, spectroscopy, and chemical bonding. Lecture 3 hours per week and discussion session 1 hour per week.

**Chemistry 345: Physical Chemistry Lab I**

Laboratory experiments provide an introduction to modern laboratory techniques used in physical chemistry. The work stresses thermochemistry, kinetics, transport phenomena, data and error analysis, vacuum techniques, the use of instrumentation, and technical report writing in obtaining, analyzing and presenting accurate data from chemical systems. One 3-hour session per week.

**Chemistry 346: Physical Chemistry Lab II**

Molecular structure and dynamics of chemical systems are studied using Fourier transform infrared and ultra-violet spectroscopy. Spectral interpretation in terms of basic quantum mechanical models is emphasized. One 3-hour session per week.

**Chemistry 490: Research in Chemistry**

This course provides chemistry majors an opportunity to do research in a field in which students and faculty have special interests. An appropriate report must be submitted to the department chairperson in order for credit to be awarded. Students should contact faculty or the department chairperson to arrange for research with a faculty member.

**Economics 211: Macroeconomics**

An introduction to economic principles and concepts, designed to fulfill the objectives of the college social science requirement and to prepare students for additional work in economics, business, and accounting. The course deals with such topics as supply and demand, markets, money, the determination of national income, employment and the price level, and international trade. The government's role in the economy is examined throughout.

**Education 305: Physical Geography**

This course explores the basic concepts and terms related to the study of physical geography. The characteristics and uses of maps, globes, and other geographic tools and technologies are addressed. The course also identifies the characteristics of landmasses and the physical processes in their development, including the shapes and patterns on the earth’s surface, e.g., the atmosphere, the biosphere, the hydrosphere and the lithosphere.

**Education 306: Cultural Geography**

This course examines the geographical and climatic factors that have influenced the social and economic development of global populations. It analyzes the relationship of humans and their environment and explores the nature and complexity of earth’s cultural mosaics. It distinguishes the patterns and networks of economic interdependence on the earth’s surface with an emphasis on world health, religions, foods, gender relationships.

**Engineering 346: Fluid Mechanics**

The study of fluid mechanics is essential in analyzing any physical system involving liquids and gases. The properties of a fluid and the concepts of fluid statics, the integral and differential analyses of fluid motion, and incompressible flow are presented. Applications of these concepts to various engineering situations, such as propulsion systems, aerodynamics, and piping systems, are examined.

**English 113: Expository Writing (section taught by Gruenler)**

A course designed to encourage students to explore ideas through reading, discussion, and writing. The emphasis is on development of writing abilities. The area of exploration varies with individual instructors. Consult department for current list.

**English 371: Historical Connections**

An examination, using a comparative model, of how literature, over time, reflects and records intellectual, perceptual, and aesthetic changes. Recent topics include The Middle Ages and Medievalism; Walt Whitman’s America; Jane Austen and her World; Literature and the American Environment; Women on Trial; The House of Gothic; Medieval Romance; Old and Middle English. May be repeated for additional credit with a different topic.

**GES 111: How the World Works**

Plate tectonics is a theory that has revolutionized geology, giving the science its first coherent, widely accepted picture of how the whole Earthworks. This course is designed to give students a solid understanding of the basic theory, the evidence on which it is based, and its application to subjects as diverse as earthquakes, volcanoes, mountain ranges, precious metal deposits, the topography of the sea floor, and the history of life.

**GES 125: Michigan Field Geology**

This course is designed as a hands-on introduction to the broad scope of geology using phenomena found within the state of Michigan. Its goal is to give students direct experience with the ways geoscientists ask and answer questions about the Earth. The class begins with a 10-day field trip during which students will travel, camp, and observe and interpret a variety of sedimentary, igneous, and metamorphic rocks and processes that affect them. The course finishes work at Hope College to further understand processes encountered in the field. This course is one possible introduction to the geology major. A 10-day August field trip is required.

**GES 203: Historical Geology**

This is an introduction to the physical and biological development of the Earth during the last 4.5 billion years. Topics include the formation of the Earth, interpretation of major events in Earth history as preserved in the rock record, and the origin and evolution of life. Three lectures and one three-hour laboratory each week. One weekend field trip is required.

**GES 295: Special Topics**

A course offered in response to student and instructor interest on topics not generally covered in the regular course listings. May be taken multiple times if topics are different.

**GES 341: Regional Field Study**

This course is a field investigation of the geology of an area selected by the instructor. The entire spring vacation or an extended period in the spring or summer will be spent in the field. Courses maybe repeated for credit if fieldwork is conducted in different regions.

**GES 453: Sedimentology**

This is the study of the mineralogy, petrology, occurrence, and stratigraphic associations of sedimentary rocks. Thin section examination, textural analysis, and field investigation of sedimentary rocks and unconsolidated sediments will be performed in the laboratory. Three hours of lecture and one three-hour laboratory each week. One or more weekend field trips will be required.

**GES 493: Independent Study**

Course provides opportunity for a junior or senior GES major to engage in an independent study project in an area in which the student has a special interest.

**History 357: U.S Cultural History**

Spanning the years from the Civil War through the late 20th century, this course examines the ways both ordinary people and elites created, challenged and shaped American culture. Students will consider cultural history on two levels. First, we will explore changes in the ways American men and women of different classes, races, and regions expressed themselves through popular and high culture – including entertainment forms like vaudeville, world’s fairs, novels, and movies. Second, we will analyze the influence of cultural ideas on political, economic and social changes, such as fights for African-American and women’s rights, the emergence of consumer culture, debates over immigration restriction, economic struggles during the Great Depression, participation in World War II, protests of the1960s, and the rise of conservatism in the 1980s.

**History 395: Special Topics**

A course offered in response to student and instructor interest. Topics are not generally covered in the regular course listings, e.g., the history of food and sustainability. Course may be taken multiple times if topics are different.

**IDS 100 Holistic Health (Kamstra)**

Health is considered a condition of optimal well-being. Well-being encompasses every aspect of our self, not just the physical body. It is important to create balance in your life by nurturing your whole person. This includes addressing spiritual, mental, emotional, and physical needs. This course will explore many aspects of health from emotional well-being to nutrition and physical fitness. We will explore readings and discuss strategies to support these aspects of health. In addition to our classroom work, we will also be participating in a variety of physical activities. Be prepared to look at yourself from multiple perspectives to gain insight as to what makes you a “healthy” person.

**IDS 100 Vote With Your Feet: Walking as a Way of Life (Misovich)**

One of the most natural activities of our lives is walking. From the time a baby takes his or her first steps, walking is a fundamental mode of transportation. Yet it is such a common activity that its implications are taken for granted. In this class we will explore walking from various perspectives which may include sociology, psychology, physiology, materials science, economics, politics, urban planning. So slip on a pair of comfortable shoes and let’s see where our feet and our minds will take us. Students in this section should be physically capable of walking a distance of two miles in 40 minutes or less.

**IDS 492: Christian Examination of Placemaking (Beard)**

A Christian examination of housing, homemaking, homelessness and finding home at Hope and in life beyond the college experience. We will explore housing issues, policies and struggles faced in communities across our country in the seeking of housing and home. We will consider how communion with God, ourselves and others are key characteristics for Christian understandings of housing, home and place-making. We find home in Christ now but will find perfect home and rootedness place in Christ in eternity. We will explore how we live out this “now” and “not yet” of home in everyday life. At the heart of the Christian gospel is the message that we are all homeless, but that there is a home in which our yearning hearts can and will find rest. The Christian gospel, in other words, is a grand story of redemptive homecoming that is at the same time grateful homemaking. This promise of a restored home motivates Christians who are making places, longing for places, or wandering from places in this world to press in and press on to the end. We will together explore what these realities mean in finding home and making home in students’ final days at Hope and in whatever comes next for each of us.

**Philosophy 195: Topics in Philosophy**

A half-semester course designed to introduce students to a selected significant topic and to applications of philosophical methods for critical reflection upon it. Recommended as a good introduction to philosophical thinking, but not required nor can it substitute for any of the courses on lists II, III, or IV for the major or minor. Past topics included sexual ethics, animal rights, liberal democracy and Islam, and philosophy of race.

**Philosophy 245: Applied Ethics**

An introduction to the application of philosophical theories on ethics to concrete ethical questions. Possible topics include: euthanasia, abortion, professional (e.g., medical or business) ethics, human cloning, just war theory, military ethics, sexual ethics, animal rights, duties to the poor, and so on. Each instance of the course will begin with a brief discussion of philosophical theories on ethics and utilize these theories in the treatment of the topics to be discussed.

**Philosophy 395: Studies in Philosophy**

A course offered in response to student and instructor interest. Topics are not generally covered in the regular course listings. Course may be taken multiple times if topics are different.

**Political Science 151: Introduction to Global Politics**

This introductory course focuses on the twin themes of globalization and democratization. While critically examining these dominant phenomenon, students will examine the roles of security for governmental and non-governmental actors, human rights, the environment, ethnic conflict, role of religion in politics and culture, international political economy, and movements for change.

**Political Science 352: Global Political Economy**

An exploration of the impact of development and economic globalization after World War II. Students will be introduced to the role of transnational and multinational corporations, as well as international financial institutions, such as the World Bank and International Monetary Fund. The course will examine the importance of economic integration and regionalism. It will also explore topics including international trade and its impact, and the role of the World Trade Organization.

**Psychology 330: Social Psychology**

This course addresses the scientific study of how people think about, influence, and relate to one another. Topics include the self, conformity, persuasion, prejudice, and interpersonal attraction. Data collection and analysis are part of the laboratory experience.

Includes a unit on environmental psychology.

**Religion 265: Christian Ethics**

This course focuses on the connection between Christian beliefs and practices, including the formation of our moral vision and the role of authority in moral decision-making. Special attention is given to the way the Bible is used as a source of moral authority. The course presumes that Christian ethics as an academic discipline is in service of those who seek to live a life of Christian discipleship. To that end, the course invites students to engage in serious reflection about the meaning and practice of discipleship in the context of a variety of contemporary moral challenges: injustice, violence, environmental degradation.

**Religion 369: Studies in Religion**

A course designed to enable current staff or visiting faculty to teach a course in the area of their current research, and to facilitate cross-listing courses.

**Religion 490: Independent Study in Religion**

A program providing an opportunity for the advanced student to pursue a project of his/her own interest beyond the catalog offerings. The course can be based upon readings, creative research and/or field projects.