

Washtenaw Community College Inventory of Sustainability Courses (9/26/2018)				
SUSTAINABILITY COURSES				
Title	Department	Level	Description	Type
ENV 101 Environmental Science I	Physical Sciences	Undergrad	This introductory science course will cover the physical processes that affect the environment, the impact of people on the environment and the physical resources in our environment. It will also explore the causes, consequences and possible solutions to both local and global environmental issues. Emphasis will be placed on a holistic approach to environmental science, using laboratory exercises, class discussions and projects to reinforce scientific principles.	Sustainability course
ENV 105 Introduction to Environment and Society	Physical Sciences	Undergrad	This course provides an in-depth look at the relationships between individuals, societies and the environment from the perspectives of science, humanities and social science disciplines. Local to global environmental issues and topics will be presented and analyzed through a combination of lecture, readings, classroom discussions and activities.	Sustainability course
CUL 103: Farm Harvesting and Management	Culinary Arts	Undergrad	In this entry-level, hands-on course, students will explore a wide range of topics including composting, soil management, how to prepare beds, choosing the proper tools, how to amend the soil, garden planning, and the growing process from seed starting to harvesting. The course lab will give students an opportunity to use their knowledge about organic growing in a practical setting.	Sustainability course
ELE 106: Renewable Energy Technology	Advanced Manufacturing Technology	Undergrad	This course provides a comprehensive introduction to the principles and practical applications of solar, wind, geothermal, hydroelectric, ocean and biomass renewable energy technologies. Motivations for developing renewable energy will be examined and students will evaluate their personal energy footprint and create a plan to reduce it. Demonstrations, field trips and labs will provide direct contact with the technology. Students will work in teams on a design project to explore one technology in depth.	Sustainability course
HVA 201: Energy Audits	HVACR	Undergrad	This course prepares students to conduct an energy audit on residential, commercial, industrial structures and HVAC systems. Students gain an understanding of the current energy, building, and HVAC standards put out by organizations such as ASHRAE and the U.S. Green Building Council's "LEED" program. Students will also be introduced to topics such as commissioning, ducts loss, building air infiltration, heat recovery, thermal storage and energy waste elimination. Students complete a residential energy audit on their home.	Sustainability course
			# of "Sustainability" courses	5

INCLUDES SUSTAINABILITY COURSES				
Title	Department	Level	Description	Type
ENV 174 ENV Coop Education I	Physical Sciences	Undergrad	In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career related work experience.	Includes sustainability
ENV 199 ENV Internship Education	Physical Sciences	Undergrad	In this course, students gain skills through an approved environmental science work experience. Students will have obtained a work experience position in order to register for this course. Together with the instructor and the employer, students establish learning objectives to connect classroom learning with career-related work experience. This class does not meet in person regularly. Most communication is via e-mail with some in-person meetings with the instructor required.	Includes sustainability
BIO 101: Concepts of Biology/BIO 103: General Biology II	Biology	Undergrad	Basic principles and concepts of biology are surveyed in lecture and laboratory. Emphasis is placed on biological processes as well as practical applications including (but not limited to) major units on chemistry, cells, genetics, cellular energy, kingdoms, reproduction, ecology, evolution and laboratory skills.	Includes sustainability
BIO 107: Introduction to Field Biology	Biology	Undergrad	This course is an introduction to the field study of biological systems and biodiversity. Students will explore the techniques and complexities of studying Michigan organisms and ecosystems in an outdoor setting. Topics will include wetland and river habitats, native trees, shrubs and wild flowers, fungi, animal diversity, and ecology. Several off-campus trips will enhance the field experience in addition to exploring the natural areas on campus	Includes sustainability
BIO161: Ecology and Evolution	Biology	Undergrad	This course discusses the mechanisms and current research of evolution and examines how these adaptations relate to complex ecological relationships. Sustainability, climate change, and conservation are discussed in the ecology unit of the course.	Includes sustainability
BIO 227: Biology of Animals	Biology	Undergrad	This course is an intensive study of the diversity, evolutionary and environmental relationships, structures and functions of the major animal groups. Animals are studied with an emphasis on comparative anatomy and physiology, behavior, and ecology.	Includes sustainability
CUL 100: Introduction to Culinary Arts Industry	Culinary Arts	Undergrad	Topics include eco-tourism, sustainable practices, and making decisions with the environment in mind.	Includes sustainability
CUL 150: Food Service Management	Culinary Arts	Undergrad	Topics include marketing, purchasing decisions, who to buy from, specifying local content in vendor contracts and being a good community member by being an environmental steward when making overall decisions in the marketplace.	Includes sustainability
ELE 204: National Electrical Code	Advanced Manufacturing Technology	Undergrad	Part of one week's lesson is Article 690 Solar Photovoltaic Systems.	Includes sustainability
GLG 100: Introduction to Earth Science	Physical Sciences	Undergrad	Provides a basic understanding of geology, hydrology and meteorology and includes an overview of both local and global environmental problems and possible solutions.	Includes sustainability
GLG 103: Field Geology	Physical Sciences	Undergrad	Examines the processes that have formed the local landscape. Emphasis is placed on environmental impact on the landscape and waters of Washtenaw County.	Includes sustainability
GLG 104: Weather	Physical Sciences	Undergrad	Introduces students to analysis of weather phenomena and atmospheric processes. Units on climate change and global warming are included.	Includes sustainability
GLG 114: Physical Geology	Physical Sciences	Undergrad	Examines the processes that have formed the earth. Emphasis is placed on the local geology of Michigan and the Great Lakes.	Includes sustainability
GLG 202: Earth Science for Elementary Teachers	Physical Sciences	Undergrad	Presents the content and methodology for teaching elementary earth science. Topics include climate change and environmental issues.	Includes sustainability

GLG 276: Principles of Geographic Information Systems	Physical Sciences	Undergrad	Students are introduced to the basic principles and techniques of map creation and manipulation using Geographic Information Systems (GIS). The intersection of GIS, Sustainability and Environment comes up frequently in the exercises as students work through activities that include assessing natural resources, protecting habitats, and weighing potential environmental impact. There is also a discussion component where students are to share their findings on the uses of GIS. Much of the research presented encompasses how GIS is used in various ways to support sustainability and environmental projects. Finally, throughout the course I included links to various interesting uses of GIS many of which fall under the sustainability / environment category as well.	Includes sustainability
HVA 101: Heating, Ventilation and Air Conditioning I	HVACR	Undergrad	This course introduces the concept of thermodynamics and the principles of refrigeration, air conditioning and residential furnace systems. One class focusses on the whys and hows of refrigerant recovery. Students practice proper handling of refrigerants.	Includes sustainability
HVA 105: Residential and Light Commercial Heating Systems	HVACR	Undergrad	In this course, students build on the heating system skills and knowledge learned in prerequisite courses. Major units covered include HVAC mathematics, service and preventative maintenance for residential electric, gas, oil or hydronic and heat pump systems. 2 to 3 classes focus on air to air heat pumps and 1-2 classes focus on ground source heat pumps. High efficiency (80 and 90%) variable stage gas furnaces are also covered.	Includes sustainability
HVA 107: Residential and Light Commercial Air Conditioning Systems	HVACR	Undergrad	In this course, students review basic electrical and refrigeration principles needed for maintaining and troubleshooting A/C equipment. Sequence of operational, mechanical and electrical failures are covered for residential and light commercial equipment. 2 to 3 classes focus on air to air heat pumps for A/C and 1-2 classes focus on ground source heat pumps for A/C	Includes sustainability
HVA 108: Residential HVAC Competency Exams and Codes	HVACR	Undergrad	In this course, students will learn the relevant codes to residential heating, ventilation and air conditioning. 3 classes are devoted to refrigerant recovery. Students study for and take the 608 EPA certification exam for proper refrigerant handling	Includes sustainability
SOC 207: Social Problems	Behavioral Sciences	Undergrad	This course examines social problems that affect societies and the lives of the people who live in them. One unit in the class focuses on problems of Environmental Injustice.	Includes sustainability
# of "Includes Sustainability" courses				20