Capstone Courses Which Fulfill Sustainability Minor (7/5/18)

**Engaging Environmental Education**
Creating Supportive Spaces for K-8 Environmental Education. Cities harbor significant natural systems, though they are often culturally miscast as the antithesis of nature. The trend in city building over the last couple of millennia has increasingly focused on making our cities more efficient machines to support human habitation. New trends and a study of alternative historical models show us, though, that cities have the potential to contribute to the planet's capacity to support humans as...

**Native American Grantwriting**
Grant Writing for Indigenous Sustainability In the online Capstone course Indigenous Grant Writing, students work collaboratively in teams to research and write grants, and to understand the issues of Indigenous communities. Students gain an understanding of collaborative work and the importance of equal participation from every team member. Students examine the role of non-profit organizations in addressing social, ethical, and political issues. They also consider the role of funding and...

**Learning Gardens, Community Engagement and Sustainability**
In this Capstone, students will explore and participate in the concept of “community food security” through community engagement and learning gardens. Class time will focus on issues of community food security and ways to create food justice through community engagement and learning gardens.* Students will work with a variety of people and organizations partnered with the Learning Gardens Laboratory. Instruction is designed so that students will able to practice skills needed to serve...

**Environmental Activism and Community Engagement in Mexico**
Following three campus class sessions in July and August, students will spend two weeks in the southern state of Oaxaca, Mexico. This international capstone explores sustainability and environmental activism in Oaxaca, Mexico. Given the increasing interconnectedness between Mexico and the United States we want to understand how Mexican families and communities demonstrate environmental awareness and ultimately begin to make behavioral choices by opting for sustainable approaches to everyday...

**Multimedia Production Team**
The Multimedia Production Online Capstone addresses community issues and needs by developing educational interactive online media. Continuously taught since 1999, the class has undergone adjustment to the changes in technology - from output on CD-ROMs and video, to web pages and blogs developed entirely by teams of students working completely online and working remotely, from around the world! Each term students attend the class online, and learn new skills to combine to their existing...

**Outdoor and Environmental Education**
This community-based learning class is designed to ignite question, wonder, and reflection related to the ways we educate ourselves and the next generations as stewards of this planet. Through lived experiences, classroom exercises, relevant readings, and group projects, students will gain a wider and deeper appreciation of ecological, sustainability, and science education. Service in this class will focus on the Friends' Nature Explorations for School Groups field trip program. Capstone...
Nature in the Neighborhood
The Nature in the Neighborhood (NITN) project grew out of the needs expressed by PSU students who desired avenues of involvement in local environmental issues, and the needs of local resource management agencies (THPRD, METRO, Portland Parks) that lacked resources to develop inventories and surveys of natural resources in the Portland area. This summer this capstone has been redesigned to serve majors in Biology and ESR. The course content and goals will assume students have an adequate...

Neighborhoods and Watersheds
This course addresses the health of cities with respect to the community stewardship of its watersheds. Students are challenged in a learning and community development process of discovery and direct involvement. The essential elements of the Capstone focus on the factors that can contribute to the health of Portland's watersheds. Students work with the Portland Bureau of Environmental Services and a neighborhood group on projects that may include "hands on" activities and/or community...

Portland's Water
Portland's Water: History and Challenges. This course is designed to give students an opportunity to learn about tap water and create community outreach products for the Portland Water Bureau. Our community partner for this class is the Portland Water Bureau. This class will focus on the Bull Run watershed (the source of Portland's drinking water) and the work of the Portland Water Bureau -- how they deliver our water to our taps. We will learn about the history of the water system, the...

Environmental Education through Native American Lenses
"For millennia the world’s Indigenous Peoples have acted as guardians of the web of life for the following seven generations. They have successfully managed complex reciprocal relationships between diverse biological ecosystems and multitudinous human cultures. Awareness of Indigenous Knowledge is reemerging…" Original Instructions: Indigenous Teachings for a Sustainable Future, 2008. What are Native American perspectives and how can they affect/inform environmental education? How does...

Urban Agriculture and Food Systems
In this Capstone, we will critically examine the limits and possibilities of urban agriculture’s contribution to the food system. The course is both reading-intensive/discussion-driven and hands-on. Our community partner is the Growing Gardens, an organization establishing urban gardens for low-income residents throughout Portland. Through this year's final Capstone project (see below), we will help collect survey data and stories from Growing Gardens project participants. The course will...

Promoting science inquiry in middle school classrooms: Water quality in freshwater habitats
Globally, freshwater ecosystems are at risk from a number of anthropogenic stressors. One of the foremost stressors is declines in water quality. We will partner with Sherwood Middle School to promote scientific inquiry into water quality issues in the Tualatin National Wildlife Refuge (NWR). The Tualatin NWR is one of a handful of urban wildlife refuges in the nation, highlighting a unique region where urban areas intersect with natural spaces. Understanding the effects of environmental...

Reclaiming the Commons
Encouraging the stewardship of our shared resources. This course will focus on the concept of "the commons" - those resources that humans share and depend on to thrive and
survive. Examples of the commons include clean air and water, shared scientific knowledge, or publicly funded resources such as parks, libraries and schools. Increasingly, many aspects of the commons are controlled by the market or private interests. Students in this course will partner with the "Oregon Commons" project (...)

**Sustainable Rural Development in NW Argentina**
Rural communities in NW Argentina are among the poorest in the country. Lacking the rich soils of the Pampas, facing more extreme climatic conditions, and subject to a heavily concentrated land tenure system, agricultural production, the mainstay of the region’s economy, has failed to raise the standard of living of the bulk of the population. The northward expansion of soybean production into marginal lands, while providing new economic opportunities for large landowners, threatens small...

**Building EcoDistricts**
This course is designed to give students an opportunity to learn about and become involved in the development of the Portland Metro EcoDistrict Pilot Program. This class will focus on providing students with the history and present-day state of the work on EcoDistricts in Portland, as well as real and powerful ways to engage with the development of an EcoDistrict. Students will be introduced to basic concepts and practices related to EcoDistrict in general and then specifically work to develop...

**Sustainable Living**
In light of looming environmental crises, what can individuals do to change direction? In this course we collectively examine our society to determine which cultural values support, and which inhibit, sustainability. Working with established green teams and enrichment programs, students develop and facilitate sustainability activities for youth. Our partner groups, The Northwest Earth Institute (NWEI) and the Center For Earth Leadership (CERL) empower individuals and organizations to...

**Case Studies in Environmental Problem Solving**
This class will involve students in monitoring the ecological impacts of backyard habitats that are near Portland parks. Students will work in teams in particular targeted neighborhoods. They will monitor some of the following: native and non-native plants, birds, and insects. They will learn about the ecology behind backyard restoration, the procedure for establishing backyard habitats, and assist as residents implement new habitats. They will develop presentations about benefits of...

**Sustainability Outdoors: Communicating Sustainability through the Forest**
Spend your summer at Tryon Creek State Park, located just 15 minutes from PSU. Learn to effectively educate for sustainability through non-formal, outdoor experiences. Students will examine current practices in education for sustainability and outdoor and environmental education. Students will then use this information to create informative, engaging programs for Nature Day Camp participants. Student learning will benefit from discussion, team work, outdoor experiences, and practical...

**Volunteer Stream Monitoring**
Quality Assurance for Volunteer Stream Monitoring. Science Background Not Required. Students will coordinate and implement all aspects of the quality assurance project plan (QAPP) for the Student Watershed Research Project (SWRP)’s volunteer monitoring program. Students will work as a team to ensure data quality for the 15 high school groups involved in SWRP. Non-
science majors are encouraged to become "citizen scientists" through their participation in this capstone. Potential Students for...

**Grantwriting: Bike Transportation**
This course will partner with Portland’s Community Cycling Center, helping them increase their capacity by developing grants for specific projects. The Community Cycling Center works to broaden access to bicycling and the benefits of cycling. Their vision is to build a vibrant community where people of all backgrounds use bicycles to stay healthy and connected. In order to write a successful grant proposal, one must gather up as much knowledge about the topic and the organization as possible....

**Grantwriting: Environment**
This service-learning class uses an experiential approach: students learn to research and write compelling grant proposals by engaging in the process of writing real proposals to be used by our Community Partner in its pursuit of funding. Students in this Capstone course partner with a Portland based nonprofit organization who advocates for our natural resources, the wild, and the preservation of these special places.

**Environmental Justice and Salmon**
Celilo Falls: Decolonization, Dams and Salmon in the Pacific NW In recent years, social movement organizations have increasingly strived to address the overlapping problems of environmental degradation and social inequality. Realizing that environmental problems disproportionately affect marginalized communities, these movements have attempted to address the social, political and economic root of what they frame “environmental injustice.” This course will combine an analysis of the literature...

**Environmental Issues In Nicaragua**
This Capstone project brings together PSU students, international community development specialists and community members in rural Nicaragua to learn how to implement some of these examples of appropriate technology. Please contact John Reuter, rueterj@pdx.edu, for more information. Part I: On Campus Coursework: In the first phase of the course, conducted on campus at PSU, students will address small-scale development of sustainable power that is environmentally “friendly” while also supporting...

**Educating the Community about Metro’s Travel Options and Nature in Neighborhoods**
As Portland's regional government, Metro's role includes promoting transportation choices and protecting natural areas. Working with Metro as the community partner, students will explore Metro's role in promoting regional travel options and nature in neighborhoods through a hands-on project with the Travel Options and Nature in Neighborhood Programs, incorporating concepts of sustainable behavior and social marketing.

**The Citizen Tree Project**
Capstone students will develop a network of citizen scientists who will participate in long-term monitoring of the impact of climate on Portland trees. Increase public awareness and help collect baseline data that can be used to reduce Portland’s carbon footprint. Capstone objectives: Learn background information on climate change, phenology, tree growth and carbon sequestration, and citizen science. Develop educational presentations for community outreach....
Community Greenworks
This Capstone offers students an analysis of social justice; a framework that promotes successful civic engagement; and an application of these principles in community settings. Students choose from several projects that best fit interests, expertise and schedules, and complete team projects with community partners addressing a pre-determined need and promoting lasting change in the community. Projects will focus on the three areas of...

Interpretation of Sustainability
Many businesses and organizations, including Oregon State Park, have developed progressive plans to move their organizations toward sustainability. Oftentimes sustainable practices are not shared with the public. This class will investigate the sustainability action plans from a variety of organizations, including Nike, Burgerville, Oregon State Parks and Weyerhaeuser. Students will then develop interpretive programs or exhibits, for Tryon Creek State Park, crafted to inform park visitors and...

Stormwater Pollutant Reduction through Urban Retrofits
Urban stormwater runoff can lead to degradation of streams and rivers by increasing both the concentration and volume of pollutants. Students will work with City of Gresham staff to improve water quality through community outreach and hands-on reduction of stormwater volume by disconnecting downspouts, building rain gardens and other infiltration techniques. Treating stormwater near the source is one of the most effective ways to reduce pollutant volume and concentrations.

Cultural And Ecological Education
2017_FOTC_field-66.jpg The Clackamas Chinook lived in this region from time immemorial. The traditional “Ikanum”, the ancient stories, tell how things came to be. The Clackamas speaking people included many different communities and villages that lived along the lower Willamette river. To the west and south of the West Hills summit is the interconnected ridgeline, home to the many bands of Tualatin Kalapuya. Under Treaty, the Clackamas, Willamette Tumwater,...

Non-Profit Grantwriting Northwest Earth Institute
With the intention of producing funding for support of its educational offerings in sustainability, this Capstone will partner with the Northwest Earth Institute. Utilizing best practices for grant writing, students will find and study likely funders for this organization, will prepare grant cycle files for NWEI and write submission-ready proposals based on sound research. Through the process of seeking legitimate funding for NWEI, students will learn to differentiate funding sources, process...

Natural Food Industry
Natural Food Industry and Cooperative Business Model. This Capstone investigates sustainable food systems from producer to consumer, with a focus on the business practices of food cooperatives. We will work with our community partner People's Food Cooperative on projects related to health and nutrition, farmers markets, local and equitable food distribution, food justice and ethical business practices. Class Specific Learning Goals Introduce students to the complexities and challenges of...
Solid Waste Reduction, Reuse, and Recycling
This Capstone partners with governmental organizations in the Portland Metropolitan Region to increase solid waste reduction, reuse, and recycling through community research, education, and outreach. Capstone students may be involved in activities ranging from designing resources to educate residents, to assisting business meet the requirements for mandatory business recycling, to researching how to reduce waste, increase recycling, and implement composting at public events.

Grantwriting: Sustainability
A grant is a proposal that seeks funds to solve a problem and normally is directed by a nonprofit organization [IRS 501(c)(3) designation] to a federal, state, or local government agency, a foundation, or a corporation. Each term, partners for this capstone change. You will be writing on behalf of a nonprofit that promotes or engages in sustainability in some way. Specifics about these partners and their funding needs are provided in the Course Learning Modules on the Home Page.

Sustainable Food Systems and Educational Farms at JEAN's Urban Educational Farm Site
JEAN's Urban Educational Farm Site: M/W 8:15am-10:45am *Due to the nature of this course, it will be held at JEAN's Urban Educational Farm (3635 SE Johnson Creek Blvd) with the exception of the first class, which will be held at the designated PSU classroom. The time is ripe to be part of the growing sustainable food movement! This class addresses the current food issues that face urban citizens by holistically engaging students in the many layers of Portland's local food and farm culture.

Documenting Sustainable Practices
Documenting Sustainability in the Pacific Northwest  In 1989, the World Commission on Environment and Development defined sustainable development as "[development that] meets the needs of the present without compromising the ability of future generations." As the 21st century progresses, the concepts of sustainable development and sustainability have become increasingly complex. Partnering with Northwest History Network, this class will explore the idea of sustainability by looking at its...

Food, Democracy and Sustainability
In this capstone, students will consider and participate in promoting the concept of "food democracy" and the related intersections of social, political, ethical, and technoscientific values and practices related to the concept of food justice. Students will work with residents and staff at two Housing Authority of Clackamas County residence sites to develop food security projects such as community garden design and building; garden education; assessments and evaluations, and community-engaged...

Grant Writing for Friends of Trees
Grant writing skills are critical to the survival of many non-profit environmental organizations. In this course you will learn grant writing skills by developing real proposals for the Friends of Trees Program. The rich history of citizen-based environmental advocacy in the US will play a central role in class discussions, presentations and reflective writing assignments throughout the term.
**Carbon Neutrality**
The purpose of this Senior Capstone will be to evaluate the potential for Portland State University to become ‘carbon neutral’ and to involve students in energy and policy decisions with PSU administration to move toward this goal. Global climate change is a critical issue that has been identified by PSU students, faculty, staff, and administrators. Collectively the PSU community is committed to adopting strategies to mitigate the impact of campus activities on the Earth's climate. Through...

**Belize Environmental Studies**
A 12 day international program that will introduce students to mangrove and coral reef ecosystems and scientific research and marine conservation in tropical marine ecology. Participants will explore the relationship between land-sea connections on coastal ecosystems. The program will cover experimental design, conducting field research projects, data analysis, and presentation of research and discussion of conservation and management strategies. Students will participate in field...

**Sustainable Business in Action**
If the sustainability movement is to be successful it must include all people, not just the wealthy few. For low-income small businesses in this economy, it is hard enough to make ends meet, much less distinguish what eco-friendly decisions make sense. In this course, students will review the business, ecological and social justice aspects of the triple bottom line approach to business and apply their learning in action. Students will study methods to communicate sustainable principles to...

**Reducing Toxic Air Pollution in Portland**
Oregon DEQ (Department of Environmental Quality) is using an innovative geographic approach to reduce toxic pollutants in the air we breathe. Air toxics are pollutants suspected or known to cause serious health problems including cancer, birth defects, organ damage and respiratory irritation. Young children, older adults, and people with asthma, lung or heart disease may be more sensitive to the effects of air toxics. As part of this geographic approach, DEQ has identified the Portland region...

**Empowering Portland's EcoDistricts: Tree Inventory**
Empowering Portland's EcoDistricts with GIS and Asset Mapping  Asset mapping methods combined with geographic information systems (GIS) technology have proven to be an effective way to help citizens and organizations identify, analyze, describe, and mobilize around assets and issues of concern to them. The Community Geography Project of the Institute of Portland Metropolitan Studies trains community groups and middle and high school students in GIS technology to enable them to ask new questions...

**The Feasibility of Interstate Water Transfer**
This course will be geared towards students with an interest and academic background in hydrology, water resources engineering, environmental sciences or studies, Natural Resource economics and /or policy. It will look at the physical, economic, legal, and political feasibility of transporting water from one state to another, as well as the environmental impacts of such an undertaking.
**Environmental Justice**
This Capstone will work with one or more community organizations concerned with health impacts of toxins in the environment. We will be focusing our work on environmental justice issues, i.e. where there are disproportionate impacts of environmental pollution on disadvantaged communities. Our work will involve environmental science, public education and communication. Please contact Linda A. George, georgeL@pdx.edu, for more information.

**Race and Sustainability**
This Capstone addresses concepts of racial equity, social sustainability, public health and environmental justice. We will study the racial disparities related to public health, and specifically, access to healthy food systems, and use an “equity lens” research study with a local food store (People’s Food Cooperative), to understand institutional barriers to providing healthy food to underserved communities of color.

**Documenting Sustainable Development in the Pacific Northwest**
The Pacific Northwest has earned an international reputation for innovative environmental policies, from land-use planning to organic farming to solid waste recycling and more. Oregon’s business leaders, non-profit organizations, and elected officials have been working to build on this historical legacy in order to position the state as a global leader in sustainable development. Through this capstone project, since 2006, students have developed what is now referred to as the Sustainability...

**Sustainable Cities**
This course is designed to give students an opportunity to learn about and become involved in urban sustainability projects and organizations in Portland, OR. Students will be introduced to basic concepts and practices related to urban sustainability and understand how social, ecological and technological issues are interlinked. Students will then directly participate in a sustainability project that will provide a base of experience for furthering the learning and appreciation for the...

**Water Scarcity (online)**
The project will work alongside Water4 Foundations, a non-profit that is focused on water scarcity issues. Students will address needs affecting the field of water scarcity. Students may participate in the following service-learning: Research cultural practices and country dynamics to assist NGOs transition into new markets; Research water technologies, benefits/drawbacks of each, identify best practices; and Survey water scarcity activities, map out industry trends, and...

**Grant Writing for Environmental Advocacy**
Grant writing skills are critical to the survival of many non-profit environmental organizations. In this course you will learn grant writing skills by developing real grant proposals for Rising Tide. Rising Tide (http://www.portlandrisingtide.org/) is an international, all-volunteer, grassroots network of groups and individuals who organize locally, promote community-based solutions to the climate crisis and take direct action to confront the root causes of climate change. In order to write a...
Grantwriting for Environmental Defense
Environmentalism is a philosophy and social movement (come call it a revolution) involving both protection and improvement of the health of our natural environment. Environmentalism is an attempt to achieve sustainability so that both humans and the Earth thrive without compromising future generations. The movement in this country is credited as starting with Rachel Carson and her extremely popular book Silent Spring published in 1962, when it fact it was spawned in 1945 with the return of...

Portland's Stormwater
This course is designed to give students an opportunity to learn about stormwater and the challenges of cleaning up the Willamette River. Portland is a leader in innovative ways to manage stormwater and this management helps to keep our surface waters here in Portland cleaner than they have been for over 100 years. Our community partner for this class is the Bureau of Environmental Services. We will learn about the history of the wastewater system (a combined system for sewer and stormwater),...

Interpreting Wildlife Areas and Refuges
Oregon's wildlife refuges strive to protect its fish and wildlife for present and future generations. The Wildlife Area helps the public learn that its flora and fauna teaches us many things, such as biomimicry, the study of nature's sustainable design strategies that will help our world. (Example: Sunflower leaves turns to face the sun: Can we design solar cells that do the same?) In this capstone, students help interpret the nature of Sauvie Island Wildlife Area for a public audience....

Rise for the Planet
This course will focus on the issue of climate change and individual steps we can take to respond to this global problem. In this course, we will explore the complexities of this issue, its impact on marginalized communities, and a variety of responses to climate change. Students in this course will be encouraged to reflect on their own identity and skills to determine a meaningful response to the issue. Our community partner for this course is 350PDX, https://350pdx.org/. Students will...