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| **Holistic Systems in Time and Space** |
| **College** | **Faculty Fellow** | **Course** | **New Course****Status \*** | E**ssential Question** | **Learning Outcome****Students will be able to:** | **Project/Activity** |
| CAS | CharlesRader | Geography 322Urban Geography and Sustainability**Substantial****Redesign****Has not gone through yet** | IP | How do cities provide sustainable places in which to live? Can cities be sustainable? | 1. Identify where and what practices are creating sustainable cities.
2. Document how sustainable cities currently are sustainable.
3. Analyze an aspect of a city that should be more sustainable and recommend strategies for achieving this.
 | Through three writing research projects, students will identify one sustainability aspect (environment, economic, or equality). Each must be covered in one of the three papers. One must cover a city in North America, an MDC, and an LDC (e.g. environment – north America, equality- Europe, economic – sub-Saharan Africa)A final project will be to choose one city and create an integrated analysis across all three sustainability aspects and make recommendations for how the city can become more sustainable… |
| CAFES | Loretta Ortiz-Ribbing | Crop 468Organic Agronomic Production Systems | NT | How can farming practices return ecosystem services to create a healthy environment / soil?How can/do organic food production systems differ from conventional food production systems? | 1) Understand differences between organic food production systems and conventional production systems. | Visit organic farms and discuss family practices w/ producersDevelop an organic plan for an “ideal” farmDevelop a crop rotation plan and certification plan for an “ideal” farm |
| CAFES | Dean Olson | AGEN 325Sustainable Energy?**Integrated?****Taught?** | I | Is alternative (renewable) energy sustainable vs. conventional non-renewable energy sources | 1) Understand how to quantify and assess resources needed to produce energy | Identify what is needed to produce a given form of energy, (nuclear, wind, ethanol, etc.) and quantify a life cycle analysis of the system, Mass and Energy balance. |
| CBE | Dawn Hukai | ACCT 461AuditingI**ntegrated****Taught****2011-12****Going through?** | I | How do sustainability risks (environmental, social justice and economic) impact audit risk? | 1) Understand environmental, social justice and economic sustainability risks impact audit risk in a variety of ways. | Incorporate a section on a business’s sustainability risk in the audit plan project. Students will draw the content from annual reports, 101K’s and articles about public or companies. |

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| **Ecology and Sense of Place** |
| **College** | **Faculty Fellow** | **Course** |  | **Essential Question** | **Learning Outcome****Students will be able to:** | **Project/Activity** |
| CEPS | Gay Ward | TED 424Inquiry Learning: Society and Environment: Early Elementary**Integrated****Taught** | I | How can you provide children with a sense of place, a sense of wonder and an understanding of sustainable culture? | 1) Understand how to use inquiry learning to provide children with a sense of place, a sense of wonder and sustainable culture. | Journal reflection on connection to nature. The catalyst for this reflection will be reading Louw’s “Lost Child in the Woods”Nature log- creative log on own experiences (art, poetry, photography, etc)Life cycle activitiesStories of sustainable culturesInquiry unit – explore with children using Science and Social Studies resources. Design Social Studies and Science lessons integrated with Art and Literature to assist students in finding answers to key questions emerging from nature exploration, inquiry. |
| CAFES | Juliet Tomkins | AG EC 445EMS 445 Being taught Fall 2013 | I | **Essential Question****Part A**What is your “place”? What do you need to live? Where do those things come from? What laws apply to the creation, protection, conservation of those “things”?**Part B**Who are the parties involved in the controversies surrounding frac sand mining in MN/WI? What are their concerns?What governmental entities get involved? | **Part A**Students will be able to appreciate their sense of place and how their answers to the questions asked are interconnected and needing conservation/protection to remain sustainable.**Part B**Students will be able to understand  1) the complexity of a controversial land use e.g. the numerous sides that individuals can take in a complex issue2) the government entities that regulate land use: federal, state, county, township3) how prevalent the frac sand mining issue is in MN/WI 4) how close to home the issue is happening | **Project/Activity**Part AInstructions for the Exercise:Close eyes Envision your "place" (home, farm field, job etc) Remember smells, feel plants, hear sounds…… Think of what you need to liveOpen eyes - take a moment to write what you need to liveShare with the rest of the class what you need to liveOn the board – I will create a “map” of our class’ needs, having the students work backwards to figure out where/how those needs get metAfter the map is done we will discuss where the law is involved in each of  these interactions/uses**Part B**Frac Sand Mining Module as a Case Study of a Controversial Land Use Issue Day 1: Assignment for Day 2 Read: newspaper articles, website information from, the industry, Land Stewardship Project, Save the Bluff, Houston County Protectors, Winona Area Citizens Concerned About Silica Mining, Minnesota Trout Unlimited, Friends of Wabasha, Audobon Minnesota, Winona organization "Myths of Frac Sand Mining" ( ask for from Kathleen), postings from community members concerned about jobs, community members concerned about environment Complete worksheet questions which will be collected: Who in the articles/websites is for the frac sand mine?  What are four reasons they give for mining there? Who in the articles/websites is against the frac sand mine?  What are four reasons they give against the mine? What government entities regulate land use regarding this mine?  What does each of their regulations say about the mining operation?Day 2: Watch the DVD "Price of Sand"; (I hand back worksheets after viewing the DVD)Class discussion based on readings, the DVD and the following questions: Who in the DVD is for the frac sand mine? What are four reasons they give for mining there? Who in the DVD is against the frac sand mine? What are four reasons they give against the mine? What government entities regulate land use regarding this mine?  What does each of their regulations say about the mining operation? What process is being used to resolve this controversy?What process could be used that would be more effective to resolve this issue?Assessment: Questions on Final Exam  Who should decide whether frac sand mining should be allowed in the community? Why? How should they decide whether to locate a frac sand mine in a community? Why?Note: I will be grading these questions based on the comprehensiveness of the student’s answer, whether their answers are logical and well supported by their arguments, not on whether I agree with their opinion or not. |
| CBE | Joy Benson | MNGT 350Decision Making**I** | I T | Why is sustainability the key driver of innovation? | 1) Understand sustainability is a necessary aspect of resilient thinking and innovation, because there is no economy without the environment. | Read and discuss green articles and topic digest. Incorporate sustainability into a semester long development project related to product/process innovation and organization design. |
| CEPS | Florence Monsour | TED 211Educational Psychology**I** | I T | What is the relevance of sense of place?What are the boundaries to appropriate energy and transport within a sense of place? | 1) Understand how to articulate a sense of place, and the boundaries for appropriate energy and transportation systems within a sense of place | Research and write a lesson plan for elementary aged students. |
| CEPS | Molly Gerrish | TED 326- Place Based Science | I T | What can you identify in your place that needs attention in terms of that place’s ecological, biological, and geographical factors? This is done as you exam the social and natural factors surrounding a specific ethical challenge in your place. | Students will be able to identify with the ecological, biological, and geographical factors of their place. Identify challenges related to those factors related to a specific place.Plan an appropriate project to address the issue in socially relevant ways. | The final project will utilize a framework that incorporates watershed principles as well as a place’s ecological, biological, and geographical factors in the examination of social and natural factors that influence the decisions surrounding a specific ethical challenge in the context of your *place*.Students will choose a specific ethical challenge in a *place* they have identified and summarize the purpose of the proposed project, why it is of interest to and what they hope to achieve in terms of sustainability, ecology, social change. |
| CAS | Stacey Stoffregen | Chemistry 236 and 237: Organic Chemistry I Laboratory and Organic Chemistry II Laboratory | IT | How can synthetic organic reactions be conducted using sustainable practices?  | Students will be able to identify which of the 12 principles of green chemistry can be applied to a synthetic procedure.  | Students complete post-laboratory assessments of the experiment in which they identify the sustainable practices conducted as well as the aspects of the experiment that are not green.  |

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| **Social Justice, Democracy and Citizenship** |
| **College** | **Faculty Fellow** | **Course** |  | **Essential Question** | **Learning Outcome****Students will be able to:** | **Project/Activity** |
| CAS | Lissa Schneider-Rebozo | ENGL 428Contemporary British Literature | IT | How are we bound to others (environmentally, economically and socially) through the lens of British Literature? | Understand the impact of economic, social and environmental interconnectedness. | Final project options: paper, film poster. |
| CAS | Jennifer Willis – Rivera | COMS 389Communication and the Environment | N UR | How does communication about the environment impact how we think and act toward and upon the environment? | Understand communication about the environment impacts how we think and act toward and upon the environment. | Substantial paper on a communication artifact that analyzes how it hides or highlights particular attitudes towards the environment. |
| CAS | Lisa Kroutil | CHEM 300Sustainable Practices and Environmental Health | N UR | How can implementing sustainable practices improve the health of individuals and communities? | Define what makes a practice sustainableEvaluate how practices are sustainableAnalyze the health impacts of sustainable practices | Substantial paper that addresses all three learning outcomes. |
| CAS | Greta Gaard | HUM 305: Human-Animal Studies | N UR | How do human-animal relations shape our self-identity as well as our relations to ecosystems and to sustainability? | Define sustainability in the context of cultural studies and human-animal studiesExamine human-animal relations through social, economic, and ecological institutions (zoos, the arts, health care, science, food and agriculture, hunting, companionship) | Portfolio of cultural artifacts presenting human-animal relationsShort essay on the readings, and a student-initiated formal research project & class presentation |
| CAS | Greta Gaard | ENGL 228: Literature of Environmental Justice | IT | How do environmental injustices adversely affect community, democracy, ecology, and economics? What responses have environmental justice communities taken to call attention to their situation and compel business and government to take remedial and sustainable actions? | Define environmental justice in terms of community health, ecology, and economicsIdentify actions that communities can take to initiate and advance sustainable practices | Readings and research-based essays on four environmental justice issues (hydropower, immigration and labor, community-based economics, industrial food systems) through novels, short stories, films, and student research |
| CAS | Robin Murray | THEA 110 Sustainability from the Perspective of the Arts | N T | What is our personal responsibility to engage in sustainable economic, ecological and social practices and how can the Arts support that? | -Demonstrate understanding of basic sustainability literacy-Demonstrate understanding of the interdependency between a healthy environment and economic, ecological and social well-being-Demonstrate understanding of the interdependency between the arts and sustainability-Demonstrate an understanding of their responsibility to engage in sustainable practices | Pre and post objective testsEssay examResearch an artist or an arts institution who promote and/or engage in sustainable practicesCreative presentation by student using an art form to illustrate their sustainability ethic |

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| **Economics and Entrepreneurship** |
| **College** | **Faculty Fellow** |  |  | **Essential Question** | **Learning Outcome****Students will be able to:** | **Project/Activity** |
| CAS | Tracy O’ Connell | MARC 289/389 | NT | What is sustainability and why does it matter in an economic framework? | Understand that sustainability takes many formsUnderstand how business treats humans and natural resources | Essay on a documentary addressing businesses’ approach to sustainabilityDevelop a process of identifying sustainability for a local business and prepare a communications plan for that business |
| CAS | Michael Kahlow | CHEM 261Laboratory Safety | IT | How do principles of laboratory and environmental safety relate to sustainability practices? | Recognize and assess riskMinimize risk hazardsPrepare for emergencies | Students will apply RAMP (Recognize, assess, minimize and prepare) to various laboratory scenariosIllustrate a scenario (lab incident) artistically via video or other mediaFinal project: video where an accident happens and sustainable practices must be initiated. |
| CAS | Dan Paulus | ART 225Advertising Design 1 | IT | How can advertising be sustainable, and still be effective in attaining results?What advertising methods could support both sustainability and produce effective results? | Explore, identify and implement creative advertising methods that are sustainable and effective. | Create an unconventional method of advertising demonstrating sustainable practices. |
| CAS | Greta Gaard | ENGL 266: Business Writing | IT | How can sustainability practices improve business on economic, ecological, and social levels? | Define sustainability in business as increasing both stakeholder and shareholder values | Sustainability problems and practices explored through business correspondence assignments, employment writing and research on “green jobs,” blogging and analytical business proposals & reports |

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| **Community: Local to Global** |
| **College** | **Faculty Fellow** |  |  | **Essential Question** | **Learning Outcome****Students will be able to:** | **Project/Activity** |
| CAS | Erik Johnson | DFT 389Defining Sustainability Through Visual Storytelling | N UR | How can sustainability be defined through the art of filmmaking? | Define sustainability through research and interviews for a documentary digital film.Understand the theory and practice of how sustainability can be defined through filmmaking. | Write, research direct and produce a documentary digital film defining sustainability |
| CAS | Greta Gaard | ENGL 200: Reading, Writing, & the Disciplines | IT | How can the essentials of effective argumentation and research writing be used to examine contemporary issues and debates around sustainability? | Define sustainability as the nexus of economic and ecological health rooted in social justice | Essays cultivating skills of summary & analysis (tar sands oil production/pipeline), rebuttal (“fracking”), research (climate change), and visual argumentation (geoengineering) |
| CEPS | Molly Gerrish | TED 332; Preschool Curriculum**Integrated****Taught** | IT | How can sustainability be explored, planned and implemented in family- appropriate, classroom- appropriate, and community appropriate ways? | Students will be able to identify sustainability practices and plan meaningful connections for the students and families at their field sites. | -Students write and teaching a nature-based, integrated lesson plan for preschoolers.-Students also complete a significant nature/sustainability exploration that includes:\*Observation and critique of outdoor play spaces (using several assessment forms)\*An investigation of consumable materials in preschool programs as well as the development of a plan to help programs become more sustainable in their practices as well as ways to involve children in the process.\*The development of a family event that would connect children and their families to the outdoors.\*Compilation of a community resource guide for families and educators with a focus on nature and sustainable resources in the area. \*Connection to the WIMELS for all the activities they observe and plan in their outdoor field placement. |
| CEPS | Debra Allyn | EXSS 450Sport, Fitness and Recreation Management | IT | What does the sport world teach us about sustainability?How is the sport world a leader in sustainability?How can the culture of sport be changed to be more sustainable? | Understand sustainability in the “sport” world | Target Field Tour,Reading and reflection on 3 Sustainability Models;Culminating project: Evaluate a sport/fitness/recreation program/organization based on 3 componentsPresentation |
| CEPS | Paul Shirilla | PED 301- Foundations of Outdoor Leadership | IT | As a future outdoor professional, what is your responsibility to the natural environment in both your personal behavior and professional work with students/clients? | Demonstrate outdoor skills that promote the sustainable use of natural resources in the areas of planning, travel, waste disposal, campfire use, and respect for wildlife.  | Attend a 2-day Leave No Trace Trainer course and nearby state park. Through this training, all students become Certified Leave No Trace Trainers and are authorized to facilitate Leave No Trace Awareness workshops. |
| CAFES | Joel Peterson | AGEN 365 – Waste Management Systems | I | Can waste from modern agricultural production operations be treated and used in a sustainable manner? | Determine the impacts of waste on the environment and analyze the assimilative capacity of land for waste. | Undertake a semester term project that addresses sustainability of agricultural waste. Past projects have presented in the form of a video production, poster and oral presentation. |
|  | Cohort 3 |  |  |  |  |  |
| CEPS | Hilary Pollack | TED 255 Children’s Literature for Elementary Education | I |  |  |  |
| CEPS | Tim Holleran | TED 300Nonviolence & Cooperation as Strategies for Sustainable Community | I |  |  |  |
| CAS | Grace Coggio | COMS 316: Organizational Communication | I |  |  |  |
| CAFES | Holly Dolliver | GEOL 350: Geological Destinies of Nations | I | Essential Questions: How sustainable is the extraction of geologic resources?What are the environmental, social, and economical issues associated with resource extraction? | Students will be able to: 1.       Research and discuss environmental, social, and economical issues associated with the extraction of a particular geologic resource2.       Analyze geologic resource extraction issues to evaluate overall sustainability3.       Understand how resource extraction paradigms differ across the globe4.       Discuss how policies, war, political instability, etc. have influenced geologic resource extraction and sustainability5.       Discuss and support their interpretations in written and oral format  | Project/Activity Develop several case studies exploring geologic resource extraction. Examples include gold in Peru, Rare Earth Elements in China, Diamonds in Africa, etc.  |
| CAS | Doug Margolis |  | I | How can principles of sustainability be infused into a theory and methods of teaching languages course, particularly, teaching of English to speakers of other languages (TESOL)? | Two outcomes have been added to the course: (a) Identify global and local context features that influence instruction and learning.(b) Compare and evaluate traditional instructional practices with approaches that promote more sustainably oriented practices. | The first assignment of the semester, which was introduced in the first class, focuses on this sustainability task. We brainstormed a list of possible contexts & roles in which they might work in the future and then they are to write a self-assessment of their strengths & needs in relations to working in this context. Next, they are to compare with at least one other context. Then they are to develop a “product”--paper, digital story, poster, wiki, etc.--that reflects how your assumed future teaching contexts affect teaching and learning; and what teachers can do to promote a more sustainable learning |

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| New Course Status key \*NT - taughtIP - In ProgressSR - Substantial RedesignUR - Under reviewI - integrated |