Background Material for Development of a University of Washington Community and Regional Sustainability Initiative

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Vision

Community and regional sustainability requires new understandings, political and institutional commitments, technologies and infrastructure, and patterns of interaction that facilitate human development and shared prosperity within the means of community-regional ecosystems. This program facilitates collaborative, interdisciplinary learning that propels participation in a transition toward community and regional sustainability.

Mission

The UW Community and Regional Sustainability Program provides a collaborative, interdisciplinary environment for learning that prepares participants to contribute to community and regional sustainability through instruction, research, and service – adjusting community-regional systems and processes to secure human well-being within the means of nature.

Core Topics

Introduction to Community and Regional Sustainability: history, structure and function of community and regional ecosystems, community and regional sustainability principles, policies and practices

Community and the Built Environment: neighborhoods, transportation, land-use, building and infrastructure development

Natural System Linkages to the Community and Regional Complex: consumer, household and institutional metabolisms, resource sequestration and dissipation patterns, regionalization-globalization and environmental change, ecological integrity

Economics and Community-Regional Social Well-being: regulatory structures, taxation and market forces effects on community vitality

Capstone Workshop in Community-Regional Sustainability: integrative technical and social learning experience addressing current topics of community-regional sustainability

1. Why Community-regional Sustainability Matters

"The Northwest has traditions of innovation in the public and private sectors; a well-educated populace; and above all a commitment to conservation. Indeed, the environment is, in many ways, the Northwest's defining issue. This biological region retains a larger share of its ecosystems intact than perhaps any other part of the industrialized world. It has helped set the conservation agenda for the continent – with the first bottle bills and urban growth management laws in the 1970's; trend-setting energy conservation and curbside recycling efforts in the 1980's; old-growth forest protection in the 1990's; and now, the first endangered species listings to affect major cities. But there's a broader environmental challenge to which the Northwest is just beginning to rise – not conservation but sustainability: gradually but fundamentally realigning the human enterprise so that both economies and their supporting ecosystems can thrive. Daunting, complex, systemic, seemingly quixotic, sustainability is nonetheless more attainable here than anywhere else on the continent." [1]

The World Commission on Development and Environment in 1987 published in *Our Common Future* that sustainable development is defined as the ability of humanity *"to ensure that it [development] meets the needs of the present without compromising the ability of future generations to meet their own needs"*. Because water is such a fundamental resource and one of the first to be degraded during development, a Task Force of Civil Engineers explain in *Sustainability Criteria for Water Resource Systems* that "*Sustainability is an integrating process. It encompasses technology, ecology, and the social and political infrastructure of society. It is probably not a state that may ever be reached completely. But is it one for which we should continually strive. And while it may never be possible with certainty to identify what is sustainable and what is not, it is possible to develop some measures that permit one to compare the performances of alternative systems with respect to sustainability."*[2]

In 1998, eighteen participants in a Workshop on Urban Sustainability at Rutgers University funded by the National Science Foundation, articulated a number substantive, conceptual and methodological research needs as gaps in our knowledge about urban sustainability. Substantive issues articulated by participants divided into four workgroups included (a) the relationship between economy and environment, (b) the relationship between local and global, (c) the role of urban and urbanization, and (d) political processes, institutions, and possibilities for action. Cross-cutting those substantive issues were several conceptual and methodological concerns: (1) concept development: research refining the conceptual understanding of sustainability, (2) methodological development: research developing and improving tools, (3) strategic usefulness: research aimed at refining understanding of how analysis of sustainability can be targeted in ways that are most conducive to accomplishing change, (4) uses of knowledge: research designed to uncover how knowledge on sustainability is used

[1] Northwest Environment Watch, 2001, This Place on Earth 2001: Guide to a Sustainable Northwest, p. 2.
[2] Task Committee on Sustainability Criteria, Water Resources Planning and Management Division, American Society of Civil Engineers and Working Group UNESCO/IHP IV Project M-4.3 1998, *Sustainability Criteria for Water Resource Systems* p. 36.

selectively by actors in various contexts, and (5) implementation: research on how change can most effectively be achieved.[3]

In 1999, the National Research Council published in *Our Common Journey: A Transition Toward Sustainability* that *"While many definitions about sustainable development have appeared, each sharing a common concern for the fate of the earth, proponents of sustainable development differ in their emphases on (1) what is to be sustained, (2) what is to be developed, (3) the types of links that should hold between the entities to be sustained and the entities to be developed, and (4) the extent of the future envisioned."*[4]

Drawing those views into focus, we suggest a perspective about "urban-regional sustainability", making use of Farrell and Hart's (1998)[5] description about competing social, economic, and environmental objectives for urban areas that may or may not be considered together with carrying capacities, and Rees' (1998)[6] description about the importance of generational equity in sustainable development of cities. Bringing the two perspectives together we show how urban-regional sustainability relates to growth management - a necessary link if community-regional sustainability is to make progress within current institutional contexts. There are three general levels (weak, semi-strong, strong) for characterizing community-regional sustainability based on competing objectives, carrying capacity, and intra/inter-generational equity, as a progression from weak to strong sustainability (Figure 1). Growth management concerns are mostly about competing objectives and intra/inter-generational equity (the upper row across the matrix, weak and semi-strong sustainability). However, growth management concerns seldom address social, economic and environmental concerns simultaneously. The natural, physical, and social sciences continue to assess carrying capacity related to various social, economic and environmental concerns, and in some sense this is the basis of "integrated assessment science" – perhaps considered the core of "sustainability science"[7]. Sustainability science cuts across jurisdictional boundaries, as for example in watershed sustainability studies. Watersheds do not align themselves nicely with political governance – as the problems of sustainability do not either.

[3] R. Lake and S. Hanson, *Towards a Comprehensive Geographical Perspective on Urban Sustainability*, Center for Urban Policy Research, Rutgers University, 1998, National Science Foundation SBR-9732429, p. 20-22.
[4] National Research Council 1999. *Our Common Journey: A Transition Toward Sustainability* National Academy Press, Washington, D. C. p. 23
[5] A. Farrell and M. Hart 1998. "What is the Meaning of Sustainability?", *Environment*, Vol.40, Issue 9, November, pp. 4-15.
[6] W. Rees 1998. "Understanding Sustainable Development", in B. Hamm and P. K. Muttagi (eds.) *Sustainable Development and the Future of Cities*, Intermediate Technology Publications, London, pp. 19-42.
[7] National Research Council 1999. *op cit.*

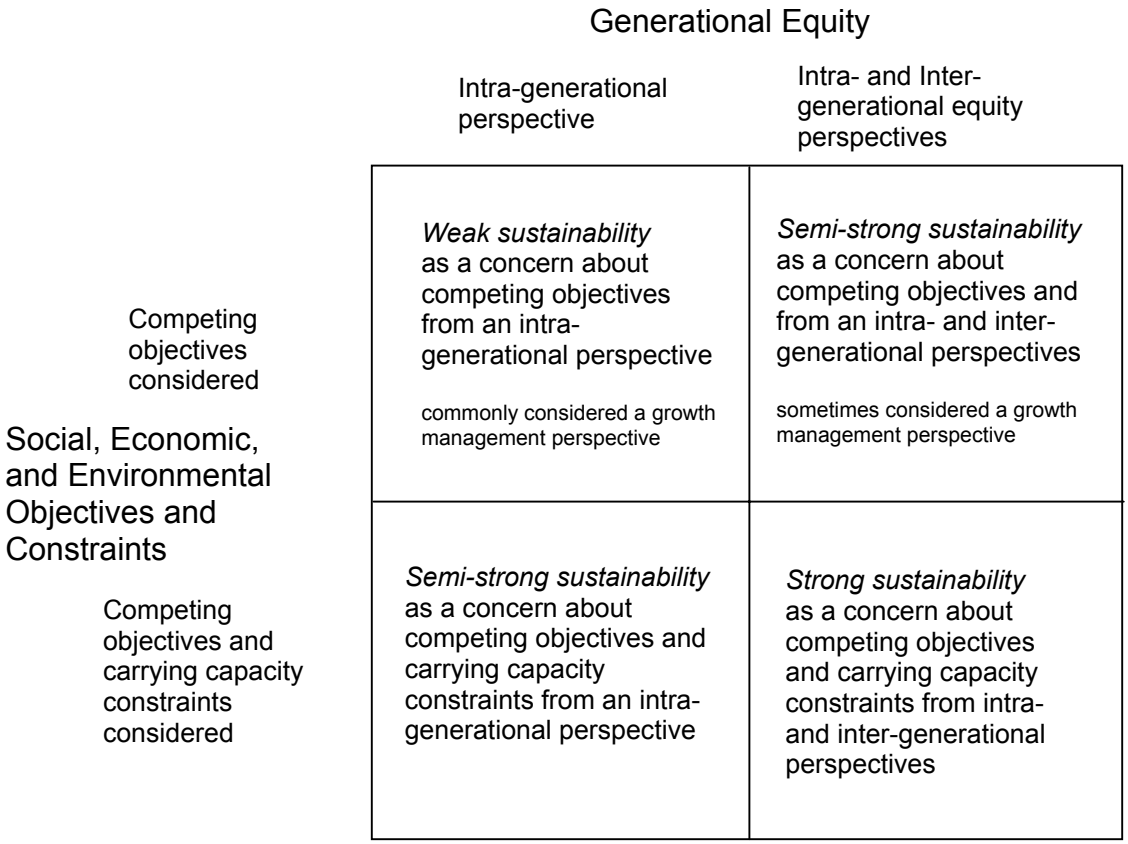

Figure 1. A framework for characterizing community-regional sustainability in terms of three levels - weak, semi-strong, and strong. Weak and semi-strong sustainability can be considered "growth management" in some circumstances.

At the current time, society exceeds the carrying capacity of certain ecosystems; indicators appear in the form of for example six species of fish listed as endangered species in many urban areas throughout the Pacific Northwest USA. The impacts and influence over the long term for social, economic and environmental concerns are as yet unknown. Those concerns are the endeavor of "sustainability science", and in particular, community-regional sustainability science. General recognition that society is exceeding certain carrying capacities often comes rather late. Two of the significant reasons might be due to either lack of credible evidence or the way in which such evidence is presented to a public ill-prepared to interpret such evidence. The difference among data, information, evidence and knowledge is a crucial ladder of knowing both with respect to what and how such knowing is attained. A sustainability science is just now being recognized as a way to better address those concerns in a comprehensive, transdisciplinary manner. Without an "integrated knowledge base" about sustainability science that ties to sustainability planning and decision making, we are not likely to address complex sustainability problems that involve competing objectives, inevitable carrying capacities (even if tempered or postponed with technology), and intra and inter-generational equity.

Although what to do about community-regional sustainability may be a matter of politics – people persuading others that a particular set of emphases is appropriate - sustainability efforts are for the present and future, a matter of choice – but a choice of a very fundamental character. Do we direct our efforts about environment-society quality of life in more sustainable ways or in less sustainable ways? Much of that effort will involve an understanding of the "what, how, why, when and where" of sustainability. The UW is an appropriate place, indeed, and especially opportune place to create a program about community-sustainability set within a national and international (local-global) context. Such a program would be well positioned to tackle research, teaching, and service opportunities, since the Pacific Northwest has been a leader among regions in the world to address many of these concerns. Clearly, there are many activities already underway at the three campuses of the UW. A community-regional sustainability program could not be formed if indeed we had to start from "scratch" to mobilize efforts on such a topic. Among the program activities currently underway (without considering individual courses numbering about 50 listed in Appendix A) are:

- Environment and Society Cluster – Geography Department
- Environmental Anthropology – Anthropology Department
- Industrial Ecology - Mechanical Engineering Department
- Law of Sustainable International Development Program - UW School of Law
- Sustainable Resource Sciences Program - College of Forest Resources
- Sustainable Community Landscapes – Center for Urban Horticulture, Forest Resources
- Urban Ecology Initiative - College of Forest Resources, but with faculty from three colleges participating
- Urban Ecology Research Project – Urban Design & Planning Department
- Restoration Ecology Network – UW Bothell, College of Forest Resources, and PoE (likely)

Those activities are described in this document as part of Appendix A : UW Programs and Courses Related to Sustainability. As such, the current time is an opportune time to initiate a broad-based coordination leading to action in terms of interdisciplinary, programmatic curriculum. The beginning of that effort occurred during an Urban Sustainability Workshop convened in early May, 2001 at the Center for Urban Horticulture of the University of Washington, participants from City of Seattle, King County, the University of Washington, and other community organizations came together to discuss the potential for an educational program about community-regional sustainability. Subsequently, during the summer 2001 several of those participants at the workshop continued discussions to further elucidate what a community-regional sustainability program might be. The material in this document is a continued refinement of those discussions. As such, this material is a contribution toward an increasingly more coherent conversation, and very much related to a reconceptualization of the way the UW offers education that is accountable to its regional context. It is the basis of an action plan for forming a community-regional sustainability program.

2. Vision, Mission and Core Course Topics

Below is the first articulation of a vision, mission, and core course content of a community-regional sustainability program. Through efforts of a broader audience we hope that the vision, mission, and proposed courses are refined into a clearer understanding of community-regional sustainability in particular and sustainability studies more generally.

2.1 Vision

Community-regional sustainability requires new understandings, political and institutional commitments, technologies and infrastructure, and patterns of interaction that facilitate human development and shared prosperity within the means of community-regional ecosystems. This program facilitates collaborative, interdisciplinary learning that propels participation in a transition toward community-regional sustainability.

2.2 Mission

The UW Community-Regional Sustainability Program provides a collaborative, interdisciplinary environment for learning that prepares participants to contribute to community-regional sustainability through instruction, research, and service – adjusting community-regional systems and processes to secure human well-being within the means of nature.

2.3 Core Courses/Topics

During the summer of 2001, Tim Nyerges and Bill Leon, UW Dept of Geography, Chuck Henry, Forest Resources, Richard Gelb, City of Seattle Office of Sustainability and Environment, and Deborah Brockway, King County Dept of Natural Resources discussed what the UW could offer in regards to programs and courses that relate to sustainability. Five core courses have been articulated, but fewer or more are certainly possible depending on faculty interest. The courses are by no means “set in stone”; but they do represent a good starting point for a conversation about such a program. Community-regional sustainability is just one of many subprograms that might be part of a larger sustainability studies program, so the conversation could be rather broad depending on interests of those who participate.

Introduction to Community-Regional Sustainability: history, structure and function of community and regional ecosystems, community-regional sustainability principles, policies and practices

Community and the Built Environment: neighborhoods, transportation, land-use, building and infrastructure development

Natural System Linkages to the Community-Regional Complex: consumer, household and institutional metabolisms, resource sequestration and dissipation patterns, regionalization-globalization and environmental change, ecological integrity

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Clearly, the course/topic descriptions are but a sketch of what could actually constitute a community-regional sustainability program. Following that discussion, Tim Nyerges, with review oversight from Richard Gelb and Deborah Brockway compiled a set of background material on programs and courses that represent faculty teaching and/or research interests related to some aspect of community-regional sustainability. That material is provided in Appendix Section A.1. In that search, at least 50 courses, both undergraduate and graduate, were identified.

From that material a list of faculty was identified who could and/or might want to contribute to forming a program about community-regional sustainability, and is presented in Appendix Section A.2. From those courses and faculty, a cross-listing of UW courses and community-regional sustainability core courses was synthesized, and is presented in Section A.3 below. Once again, however, this material is but a starting point for a conversation about the potential for a community-regional sustainability (or more broadly "sustainability program") at the U of Washington. If nothing else, it makes for interesting reading for those who have an interest in an informal program in "sustainability studies at the UW".

Of course, that effort constitutes a partial investigation, but it is a beginning. As a beginning, the material provided a basis of a partial synthesis for how current courses (hence faculty) might contribute materials to the core courses, and furthermore shows an opportunity for yet other courses in a more comprehensive "sustainability studies curriculum".

3. Next Steps

3.1 Community-Regional Sustainability Roundtable Discussions

A significant next step is to convene a series of roundtable discussions with students, faculty and staff, and external partners interested in elucidating a coherent program of activities. Although everyone would like to know immediately what is to be proposed, a series of meetings will draw out what is possible, what is not, what to do first, next and in the future. Many faculty and staff names (email addresses) of those who might be interested have been assembled in this document. If your name (email address) is in this document, you are already on the meeting list. We are collecting names of those who have shown an interest by virtue of their past teaching, research, and/or service activity, as well as those who show an interest.

If you do not want to be associated with any undertaking regarding this effort, please notify Tim Nyerges, and he will remove your name from the list and any appropriate

material as per your instruction. If you know of someone else who should be on the participant list, have her or him send Nyerges an email address for contact.

3.2 Strategy for Curriculum Synthesis

Collating information about a curriculum is a challenge. There are likely many ways to proceed.

3.2.1 Learning Objectives

All faculty whose names and course(s) referenced in this document are being asked to send a copy of the pertinent course syllabus(i) containing course learning objectives to Tim Nyerges for synthesis. If the syllabus does not contain reference to learning objectives, then a brief set of learning objectives is requested in addition to the syllabus.

At the current time we are using the four core course topics listed in Section 2 as a framework for synthesizing what is being taught on campus. This is only a rudimentary start because more detailed discussions at the roundtable meetings can easily foster the collaborations among faculty.

3.2.2 one or more other approaches as they arise, etc.

3.3 Program Vehicles

There are several program activities through which a community-regional sustainability Program can be constituted at the UW. Below are several suggestions for what is possible. The first option “informal, interdisciplinary curriculum” exists as a vehicle already, no matter what other options might be pursued. The options are not listed in any particular order. Clearly, each option has its advantages and disadvantages. Any particularly activity requires resources and commitment to be sustainable. Internal resources and faculty commitment to addressing sustainability topics abound, as per the listing of courses and programs being offered. Coordinating human energies into collaborations is a major leverage point we can explore with significant short term results.

3.3.1 Informal, Interdisciplinary Curriculum on Sustainability

At a minimum, collection and assembling information about course descriptions and/or syllabi with some link to sustainability represents an informal curriculum. The information in this document constitutes a significant start at that. This information can be useful to students regardless of any other institutional coordination. Linkages across departments, schools, colleges and the three campuses can be identified.

3.3.2 Certificate Program

Certificates have been awarded by departments, to signify a student’s having taken courses of special competence. POE at the current time administers several graduate certificate programs. Clearly linkage exists with all of them in some way. Some faculty

and students have questioned the focus of the “environmental management certificate”, which some see as related to a sustainability focus – but those linkages need be worked out.

3.3.3 Interdisciplinary Minor, POE

Rather than undergraduate certificates, undergraduate minor is a vehicle for offering specialized curriculum. Whatever the strategy, the curriculum must complement the PoE offerings.

3.3.4 Coordinated Study

The UW Extension has organized a for-credit certificate 3-area, 3-course program with the Information School, with classes offered on Friday afternoon and Saturday over the course of a quarter. It is an opportunity to offer intensive sessions and to take advantage of UW facilities that are underutilized at that time.

3.3.5 Sustainability Center / Institute Coordinating Research, Teaching, & Service

An effort more broadly interpreted could expand beyond the teaching focus to a sustainability studies center or institute for teaching, research and service.

3.4 Funding

Various funding sources are available. The scope of any effort is both constrained and enabled by the resources. Some of the potential funding sources might be:

3.4.1 UW Internal Sources

- Faculty own creativity and energy
  If courses are already about sustainability, then we are part way there.
- Departmental-based
- College (Curriculum Development for Faculty)
- Tools for Transformation
- University Initiative Fund

3.4.2 External Sources

- National Science Foundation, Division of Undergraduate Education
- Fund for Improvement of Post-secondary education
- Other Foundations yet to be identified

4. Conclusion

If you have read most of the above material, we thank you for taking the time. We look forward to further discussion to craft an initiative as a community-public-private partnership to continue a leading role in making progress toward sustainability in the Pacific Northwest with interests world-wide.

Appendix A. UW Programs and Courses Related to Sustainability

In this section we describe the programs and specific courses that make reference to "sustainability" in the description of the program or course as uncovered through a web site search. This search is most likely not exhaustive, but gave a representative identify of what is happening at the U of Washington. If you have suggestions for additions to this appendix, as it represents an "informal program", please send these to Tim Nyerges (nyerges@u.washington.edu).

A.1 Programs Making Reference to Sustainability

The following programs make reference to "sustainability" on their web sites:

1. Sustainable Resource Sciences Program - College of Forest Resources

http://www.cfr.washington.edu/acad/es/srs/

The Sustainable Resource Sciences (SRS) program at the University of Washington is a group of academic emphasis areas that studies the ways in which our society can actively participate in the sustainability of our environment.

ESC 111 Introduction to Sustainable Resource Sciences (2) S/NW Henry Introduces & I Sustainable Resource Sciences: ecology, soil remediation, life cycle analysis, renewable energy, sustainable building, soil amendments, and recycling. Faculty and guest speakers will present current challenges and career opportunities. Includes a Saturday field trip to a typical environmental activity. Offered: W

2. Law of Sustainable International Development Program - UW School of Law

http://www.law.washington.edu/LawSchool/programs/sid/

International development issues affect developing countries and the industrialized democracies that provide them aid, trade, and investment. Many of these issues unfold amidst a complex web of national, comparative, and international legal problems. This LL.M. program is the first graduate program at a U.S. law school to focus on international development law. Students study issues such as the creation of a market economy in countries moving way from communism, agricultural land reform, and environmental pressures on developing nations.

3. Sustainable Community Landscapes – Center for Urban Horticulture

http://depts.washington.edu/mulch/right.htm

The Sustainable Community Landscapes (SCL) group serves to integrate regional efforts to create, rehabilitate, and manage landscapes in human-altered or urban landscapes. Participants include people from K-12 and higher education, non-profit organizations, governmental agencies, industry, and the community. Through applying plant and soil sciences, we hope to increase the percentage of sustainable landscapes in the Puget Sound region. Our educational focus and outreach activities will allow us to increase practices that damage plants and ecosystems.

4. The Urban Ecology Initiative - College of Forest Resources
http://www.washington.edu/change/proposals/urban.html

Urbanization is one of the largest-scale, most pervasive, and inevitable ecological processes on earth. However, lack of understanding of urban ecological processes is profound, in large part because they are determined by the complex interaction of human behavior and ecosystem processes. A new approach to solving problems is required to unravel the complexities of human behavior, ecosystem processes, and their interaction. We propose such an approach by combining research and education in a team-based, experiential approach to real-world problem solving.

We will develop an interdisciplinary approach to teaching designed to expose students to the very different ways in which social scientists, ecologists, policy makers, and natural resource managers define problems, gather information, and analyze issues. We begin with an interdisciplinary class in urban ecology and progress into a yearlong capstone experience that mirrors successful approaches to teaching of team problem solving used at several business schools. "Tiger Teams" of Urban Ecology students will function as "consultants" to analyze urban environmental issues for clients (typically local and regional governmental, policy, and regulatory bodies). We will also create an Interdisciplinary Graduate conservatorium (Lab) intended to greatly improve communication and partnering between Urban Ecology students with diverse background, by housing up to fifteen of them in a common space designed to facilitate interdisciplinary work in a relaxed setting.

The Urban Ecology Initiative will be an ongoing example of integrated, interdisciplinary, graduate education. Graduates of our program will be driven to solve society's problems, and their first reaction to a problem will be to put an interdisciplinary team together to tackle it. They will shift away from thinking they can solve a problem alone, to thinking about how they can contribute to a meaningful solution by assembling, leading, and working with an interdisciplinary team.

The Urban Ecology Initiative will also produce substantial, empirical databases that will be used by students, faculty, and the community at large. We will make at least two specific products available on our web site: (1) a database of urban ecological issues, and (2) an interdisciplinary map of urban change in the Puget Sound.

5. Urban Ecology Research Project – Urban Design & Planning
http://www.urbaneco.washington.edu:8000/in_cont.htm

The Urban Ecology Research Project is an empirical study of the impact of urban development patterns on ecological conditions in the Greater Seattle Area focusing on population and community dynamics of native and exotic biota. We are studying how patterns of urban development (urban form) alter ecological conditions (species composition) through physical changes (patch structure) on an urban to rural gradient in Greater Seattle.

This project is administered jointly through the Departments of Urban Design and Planning, Landscape Architecture, Civil Engineering and the Division of Ecosystem Science at the University of Washington.

6. Environment and Society – Geography Department
http://depts.washington.edu/geog/sustain/

The Geography Department curriculum provides a rich diversity of perspectives on the relationship between society and the environment as relevant to sustainability. Important issues such as environmental management, societal responses to environmental development and degradation, urban growth, health problems, hazards and resources consumption are central aspects of both research and teaching within the department. Focus is placed on understanding the interrelationship between ecological, social and environmental processes in impoverished and affluent societies the world over. Broadly conceived, sustainability is vital to the enduring health of our societies.

A.2 Sustainability-Related Courses at UW

The following are individual courses that make reference to sustainability or a closely related topic based on a Google search of the UW web site. The courses are listed in alphabetical order by Department/Division and number. Course descriptions have been taken from University / College / Department / Course web pages.

1. ANTH 210 Environmental Anthropology
Devon Pena – dpena@u.washington.edu

Introduction to human/environment interactions from various anthropological perspectives. Intellectual history of anthropological approaches to environment, emphasizing the mutual interconnectedness of people and nature. Survey of evolutionary models; cultural ecology; systems approaches; indigenous knowledge; ethnoecology; nature and the state; political ecology; ecofeminism; and environmentalism.

2. ARCH 401 Architectural Design V
Sergio Palleroni – sergiop@u.washington.edu

Offers studio problems in non-residential building design to advance student's understanding of the ideas and technologies of architecture.

3. CEP 120 Introduction to Community and Environmental Planning
Dennis Ryan - frango@u.washington.edu

Introduction to central themes of major. Opportunities to engage in community action and planning process, while developing ecological literacy. Lectures, discussions, community service learning, and critical writing exercises combine to increase knowledge and interest in these fields. Emphasis on developing community of learners in and out of classroom setting. Offered: ASP.

4. CEP 301 The Idea of Community (5) I&S
Dennis Ryan - frango@u.washington.edu

Theories of community and communal rights and responsibilities. Experience building a learning community within major. Explores struggles for community in every sector of life.

Witness essentials of community through service and field experiences, students construct individual curriculum and learning plans for major, selecting cross-disciplinary work. Credit/no credit only. Offered: A.

5. CEP 302 Environmental Response (5) I&S/NW
Dennis Ryan -frango@u.washington.edu

Explores issues of environmental crisis and societal responses. Readings and reflective analysis from broad selection of authoritative sources to develop grounded perspective in ecological literacy and consciousness. Concurrently, experiential education in challenges and practical responses to building sustainable society through participation in community-based environmental effort. Credit/no credit only. Offered: W.

6. CEP 303 Social Structures and Processes (5) I&S
Dennis Ryan - frango@u.washington.edu

Investigates use of formal and informal social structures and processes within context of community and environment. Looks culturally at patterns and institutions of social organization and relationships among different sectors. Issues of interrelatedness, citizenship, knowledge, and communication. Participation in local community service organization. Credit/no credit only. Offered: Sp.

7. CEP 460 Planning in Context (5) I&S
Dennis Ryan - frango@u.washington.edu

Examines theory against backdrop of practice for broad, historical understanding of social, political, environmental planning. Critique from viewpoints, e.g., planning history, ethics, ecofeminism, environmental justice, class and capitalism, planning and global economy.

Develop personalized history reflecting individual experience, professional experience, and philosophical heritage of planning profession. Credit/no credit only. Offered: A.

8. CEP 461 Ethics and Identity (5) I&S
Dennis Ryan - frango@u.washington.edu

Examination of personal, societal, vocational, environmental, planning ethics. Readings and discourse on ethical foundations for public life. Individual and group readings on values, human potential. Develops understanding of ecological context, moral responsibility, self-awareness. Constructs positive, diverse view of humanity, environment regardless of race, gender, ethnicity, beliefs. Credit/no credit only. Offered: W.

9. CEP 462 Community and Environment (5) I&S
Dennis Ryan - frango@u.washington.edu

Capstone quarter merges core seminars, disciplinary courses in major, community field experiences for mastery of personal knowledge and skills. Reflection and synthesis of

themes in major; engagement with contemporary issues. Compares theoretical definitions of community and environment with individual philosophies and knowledge within thoughtful, applied context. Credit/no credit only. Offered: Sp.

10. CEWA 559 Water Resources System Management
Richard Palmer - Palmer@u.washington.edu

Readings in current literature related to the modeling and management of water resources. Topics include drought management, expansion of water supplies, hydropower production, streamflow forecasting, water demand forecasting, regional water supply, climate change, and other topical issues.

11. CEE 576 Water Resources Management
Richard Palmer - Palmer@u.washington.edu

Engineering, social, and economic factors involved in water resources development and planning; water policies, programs, and administration; use relationships and conflicts; considerations for regional water resources systems.

12. CFR 400 Natural Resource Conflict Management (3)
Clare Ryan - cmryan@u.washington.edu

Introduction to the causes, dynamics, and consequences of natural resource conflicts as well as the range of procedural interventions used to manage conflict. Specific cases of environmental conflict and alternative dispute resolution procedures are examined. Emphasis on developing skills to effectively analyze, manage, and resolve natural resource conflicts. Offered: W.

13. CFR 474 / CFR 574 Problem Analysis in Urban Ecology
John Marzluff – corvid@u.washington.edu
Gordon Bradley – gbradley@u.washington.edu
Clare Ryan - cmryan@u.washington.edu
Marina Alberti – malberti@u.washington.edu
Craig ZumBrunnen – craigzb@u.washington.edu
Kristina Hill – kzhill@u.washington.edu

Investigates pressing local and regional issues in urban ecology and develops each into a researchable project proposal. Examines and evaluates how different disciplines study environmental issues, explores criteria for conducting and evaluating quality research, develop skills in problem formulation, and sharpens proposal writing skills.

14. CFR 475 / CFR 575 Applied Theory and Methods in Urban Ecology
John Marzluff – corvid@u.washington.edu
Gordon Bradley – gbradley@u.washington.edu
Clare Ryan - cmryan@u.washington.edu
Marina Alberti – malberti@u.washington.edu
Craig ZumBrunnen – craigzb@u.washington.edu
Kristina Hill – kzhill@u.washington.edu

Discusses broad perspectives in urban ecology and how to analyze data relevant to urban ecology problems. Students write objectives and methods for a selected urban ecology problem that critiques different methodological approaches and reviews/synthesizes literature. Prerequisites: CFR 474 and permission of instructor.

15. CFR 476 / CFR 576 Research in Urban Ecology
John Marzluff – corvid@u.washington.edu
Gordon Bradley – gbradley@u.washington.edu
Clare Ryan - cmryan@u.washington.edu
Marina Alberti – malberti@u.washington.edu
Craig ZumBrunnen – craigzb@u.washington.edu
Kristina Hill – kzhill@u.washington.edu

Shows student teams how to analyze, present, and begin to interpret data that is relevant to addressing issues in urban ecology. Students write and orally present revised Objectives and Methods sections of their interdisciplinary project and present a draft results section. Prerequisite: CFR 475.

16. CFR 580 Advanced Urban Ecology
John Marzluff – corvid@u.washington.edu
Gordon Bradley – gbradley@u.washington.edu
Clare Ryan - cmryan@u.washington.edu
Marina Alberti – malberti@u.washington.edu
Craig ZumBrunnen – craigzb@u.washington.edu
Kristina Hill – kzhill@u.washington.edu

Students and faculty discuss current and important theoretical and empirical papers in urban ecology. Students continue to research interdisciplinary urban ecology projects while developing publishable manuscripts and oral presentations. Emphasis is placed on ethics, diverse views, and presentation skills. Prerequisites: CFR 576.

17. ENVIR 202 Environmental Case Studies: Population and Health

18. ENVIR 203 Environmental Case Studies: Resources
Conway B Leovy - leovy@u.washington.edu
Philip C Malte - malte@u.washington.edu

Exploration of resource environmental issues from natural science, historical, socioeconomic, legal, political, and ethical perspectives. Involves gathering information, analyzing data, applying mathematical and statistical reasoning and decision-making schemes, evaluating conflicting views based on cultural and philosophical frames of reference, and developing communications and research skills.

Specific Class Description - Leovy

A multidisciplinary course that examines human uses of resources and impacts on the global environment by focusing on global climate change as a case for study. Contrasting viewpoints and interactions among natural and engineering sciences, social and political sciences, law and ethics will be stressed. Topics will include: humans as a

geophysical force, understanding climate change, options for response, roles of different societal actors and forces, international legal perspectives and treaty negotiations, and ethical and worldview implications of global climate change.

Specific Class Description - Malte

Renewable energy resources such as direct solar, wind, hydropower, biomass, geothermal, tidal, and wave energy can provide the necessary power to meet society's needs with much less environmental costs and can do so over-and-over without running out. This course explores these methods, including how they work, where they work, how much they cost, and what is required to integrate them into society. Much of the course material is drawn from Europe, since in many respects Europe is a leader in renewable energy and conservation, and from the developing world, because of the many interesting applications of renewable energy underway.

The course considers energy from the natural science, historical, socioeconomic, political, and ethical perspectives and discusses what we have done, why, and what we need to do to prepare for our future energy needs.

The purpose of this class is to provide an introductory Environmental Studies course on Resources, including the cross-disciplinary breadth necessary to study energy and environmental issues. In order to bring diversity of expertise and points of view into the classroom and to encourage meaningful dialogue, this course is designed and taught by a cross-disciplinary team. There will also be guest lecturers, debates, and many opportunities for group discussion.

19. ENVIR/ME/Chem E 341: Energy & Environment I
Philip C. Malte - malte@u.washington.edu

A course on Energy Consumption and Production Patterns, Fossil Energy Conversion and Resources, Nuclear Energy, and Environmental Consequences.

20. ENVIR 342 Energy and Environment II
Philip C Malte - malte@u.washington.edu

Introduction to renewable energy. Principles, practices, and trends of solar, wind, hydro, and biomass (including fuel cell) energy conversion. Reductions in the environmental impact of energy conversion. Offered: jointly with M E 342/CHEM E 342/PHYS 342; W.

Students discuss the lectures and read material (3 credit version)

21. ENVIR 450d Building a Sustainable Campus
Charles Henry – clh@u.washington.edu

22. ESC 417 Recycling: Ethics, Opportunities & Realities
Charles Henry – clh@u.washington.edu

Introductory course on recycling as a current and future way of life in terms of waste management. Introduction to the ways waste is currently managed and discussion of public attitudes and perceptions of waste management and recycling, current and future opportunities for waste management, and true costs of recycling.

23. ESC 418 Compost & Organic Soil Amendments
Charles Henry – clh@u.washington.edu

Introduction to the science of land application of organic soil amendments, including benefits, opportunities, and considerations for land application, management of nutrients and contaminants, and guidelines/regulations. Special focus on composting and use of compost.

24. ESC 452 Soils for Salmon
Charles Henry – clh@u.washington.edu

25. ESC 490c Survey of Soil Restoration
Charles Henry – clh@u.washington.edu

26. FISH/BIOL 438 Biological Monitoring and Assessment
James Karr - jrkarr@u.washington.edu

Explores the technical questions (conceptual, sampling, and analytical), the rationale, policy relevance, and legal basis for tools -- existing and needed to assess ecological health. Prepares students to see the biological components of ecological systems in diverse ways.

27. FISH 439/ PBAF 495/ENVIR 439 Attaining a Sustainable Society
James Karr - jrkarr@u.washington.edu

Discusses diverse environmental issues, the importance of all areas of scholarship to evaluating environmental challenges, and the connections between the past and the future, to reveal integrative approaches to protect the long-term interests of human society.

28. FISH 447 Watershed Ecology and Management
Robert Naiman - naiman@u.washington.edu

Explores fundamental ecological processes at the watershed scale, identifies human-induced changes to ecological systems, and discusses approaches to improve watershed management. Includes lectures, field trips, and discussions with organizations and agencies about how they are addressing ways to improve watershed management. Offered: W

29. FM 272 Environmental Sociology (submitted as change to Human Ecology and Forest Ecosystems)
Robert G. Lee – boblee@u.washington.edu

Social processes by which environmental conditions are transformed into environmental problems. Case studies illustrate the roles played by scientific claims, popularization of science, issue-framing, problem amplification, economic opportunism and institutional sponsorship. Examination of how environmental problems are legitimated and regulated by social constructs such as ecosystem, community, and free-market

economy. Human ecology as a way for assessing whether the current framing of environmental problems promotes ecological adaptability.

30. FM 371 Forest Land Use Planning (3)
Gordon Bradley - gbradley@u.washington.edu

Introduction to the theory and practice of forest land use planning. Emphasis on the process of developing, implementing, and monitoring multiple-resource land management plans. Discussion of laws and regulations influencing forestland use planning. Selected forest resource planning case studies along the urban to wildland gradient. Two weekend field trips. Offered: A

31. FM 377 Environmental Impact Assessment and Regulation in Forest Resource Management (3)
Gordon Bradley - gbradley@u.washington.edu

Current environmental, forest resource, and land-use legislation affecting resource management; origin and evolution of federal, state, and local legislation and their relationship to forest resource planning and management; environmental impact assessment and its relationship to forest practices. Selected case studies of prepared forest land use plans and environmental impact statements. Offered: W.

32. FM 470 Natural Resource Policy Processes (5) I&S/NW
Clare Ryan - cmryan@u.washington.edu

33. FM 575 Advanced Natural Resources Sociology
Robert G. Lee - boblee@u.washingtonl.edu

Participants will be involved in reading texts and articles, leading discussions on readings, and presenting individual or group projects. Grading will be based on participation, the quality of contributions to discussions, and explicit criteria for evaluating bi-weekly assignments and the final presentation. Participation in all final presentations will be required. Readings focus on basic theories of how conservation or sustainability is possible, including social processes involved in institutionalizing ecologically appropriate patterns of behavior. Application of theory to practical problems will be included in discussions and student projects.

34. GEOG 360 Principles of Cartography
Timothy Nyerges – nyerges@u.washington.edu

An introduction to the concepts, terminology, software, and hardware involved in computer-aided mapping as a component of geographic information systems (GIS). Lectures emphasize basic concepts for understanding the process of geographic information representation and use. All concepts and techniques learned in this course are applicable to GIS. In addition, this course adopts a sustainability theme through which we understand information construction and use.

35. GEOG 371 World Hunger and Resource Development
Lucy Jarosz - jarosz@u.washington.edu

Addresses issues of hunger and poverty in their relationship to resource development at the local, national, and global levels. Examines various approaches to the problem of world hunger rooted in critical development studies.

36. GEOG 372 Asian Environment and Development
Nayna Jhaveri - jhaveri@u.washington.edu

Examines the contemporary relationship between environmental protection and development paths in Asia. Inquires into the forces driving both environmental change and societal responses (state and local regulations, social movements, etc.) to that change, at many geographical scales. Asian concepts of nature-society relations also explored.

37. GEOG 380 Geographical Patterns of Disease
Jonathan Mayer – jmayer@u.washington.edu

Health and disease are not only medical issues, but they are also social and geographical phenomena. People and groups must always live in the contexts and constraints of the world that is extraneous to them. Disease is also a major world problem. Both infectious and non-infectious diseases have social causes, in part, and also influence societies. This course sets disease and health within the framework of human-environment interaction. The major goal of this course is to introduce students to geographical approaches to health and disease, particularly within the setting of human-environment interactions. We will cover many specific diseases, but in addition to their inherent interest, each is prototypical of one or more aspects of environmental equilibrium and disequilibrium.

38. Geog 435 Urbanization and Industrialization in China
Kam Wing Chan – kwchan@u.washington.edu

Examines the impacts of industrialization strategies adopted by the Peoples Republic of China on urbanization and rural-urban relations. Topics include: economic development strategies, industrial geography, rural industrialization, urban development patterns, migration, and urbanization policies.

39. GEOG 440 Regional Analysis
William Beyers – beyers@u.washington.edu

Regional industrial structures and economic change. Application of shift-share, cohort, multiplier, input/output, and programming models to the analysis and projection of regional population and employment patterns, regional growth differentials, and regional impact analysis.

40. GEOG 448 Geography of Transportation
Stephanie Chang – sec@u.washington.edu
Circulation geography, principles of spatial interaction emphasizing commodity flow, the nature and distribution of rail and water transport, the role of transport in area development.

41. GEOG 458 Map Sources and Errors
Nicholas Chrisman – chrisman@u.washington.edu

Analysis and appraisal of source materials for maps, production constraints of mapping agencies, coverage and quality. Focus on errors inherent in maps and geographic information; metadata resources; judgment of fitness for specific applications.

42. GEOG 460 Geographic Information Systems Analysis
Nicholas Chrisman – chrisman@u.washington.edu

Methods of Analysis provided by geographic information systems (GIS). Operations on map information including map overlay, aggregation/disaggregation, and other spatial and attribute procedures. Exposure to raster and vector software. Review of capabilities of current available GIS software.

43. GEOG 461 Urban Geographic Information Systems
Tim Nyerges - nyerges@u.washington.edu

The course is designed to enhance a student's understanding of geographic information systems (GIS) as applied to growth management and community-regional sustainability. A geographic perspective underpinning economic, social, environmental, and political aspects of land use, transportation, and water resource activities provides an integrating view in the course. Course organization is a combination of lecture, small group discussion, and lab projects. Group project work is included.

44. GEOG 471 Methods of Resource Analysis
Craig ZumBrunnen – craigzb@u.washington.edu

Economic and non-economic criteria for resource analysis. Theory and methods of linear models of natural resource analysis. Includes materials-balance modeling, residuals management, constrained system optimization approaches to water quality analysis, land-use patterns and interregional energy use, and multiple objective planning techniques applied to natural resource problems.

45. GEOG 477 Advanced Urban Geography
Michael Brown – michaelb@u.washington.edu

Proto-seminar on health geography in the city. Students read a series of case study monographs on AIDS politics, pollution politics, and quarantine politics.

46. GEOG 495 Geography of Natural Hazards: Human response to Earthquakes and Other Natural Disasters
Stephanie Chang – sec@u.washington.edu

This course provides a survey of the human geography of natural hazards, with emphasis on the U.S. Its goals are to help students to: (1) become familiar with fundamental concepts and issues regarding natural hazard risk; (2) develop an understanding of how environmental risk arises from the complex interaction between the physical environment and human society; (3) develop skills for collaborative team work; and (4) develop skills for effective writing and oral presentation.

47. LA 303 Design with Natural Systems
Kristina Hill – kzhill@u.washington.edu

48. LA561 Urban Ecology and Representation
Kristina Hill – kzhill@u.washington.edu

49. ME 415/ ENVIR 415 / CEE 495 Sustainability and Design for Environment (3)
Joyce Smith Cooper - cooper@me.washington.edu

Analysis and design of technology systems within the context of environment, economy and society. Applies concepts of pollution prevention, lifer cycle assessment, and extended product responsibility. Examines the practice, opportunities, and role of the engineering, management and public policy.

50. PBAF 561 / URBDP 561 Urban Economics
Paul Waddell

This course provides an introduction to urban economics within a context of public policy and planning. It is balanced between theory and application and is targeted to students interested in better understanding the rationale for and effects of urban policy and planning. The first half of the course provides a basic understanding of the operation of urban real estate markets and the motivation and effects of public sector interventions. The second half of the course applies the theoretical foundations to the study of a series of current urban problems and controversies. While the treatment of the material in the course will not principally be mathematical, familiarity with introductory microeconomics is required.

51. PBAF 565A Transportation Theory, Policy and Politics
Paul Waddell and Dan Carlson

His course will concentrate on the central Puget Sound's metropolitan vision for managing growth, with an emphasis on the interactions between land use and transportation. We will cover the state Growth Management Act, its regional manifestation in the four county Vision 2020 and the urban form and land use implications of an urban growth boundary and the strategy of concentrating future development into "centers" and urban villages to accommodate growth while preserving open space. We will examine the role that high capacity, fixed-route mass transit plays in realizing the Vision 2020 objectives and will explore through readings and guest presentations, the relative merits of various forms of transportation including light rail, monorail, bus, and high occupancy lanes. We will also examine the impediments to achieving the Vision 2020 objectives, and the calls by critics for strategies that target congestion reduction through roadway expansion. The course will provide a historical and theoretical context for a fuller understanding of federal and local policies towards land use and transportation and public policy options including transportation pricing, demand management, and provision of non-motorized options.

52. POL S 422 International Environmental Politics Seminar (5)
Karen Litfin – litfin@u.washington.edu

Study of the practical and theoretical challenges associated with global ecological interdependence. Examination of international treaties and institutions, state, and nonstate actors with an emphasis on the emerging concept of sustainability.

53. URBDP 422 Geographic Information Systems in Planning Analysis (5)
Marina Alberti - alberti@u.washington.edu

Principles of GIS applied to problems in urban design and planning, landscape architecture, and environmental and resource studies. Practical problem-solving approaches using contemporary desktop mapping packages and vector and raster GIS systems. Siting, environmental evaluation and inventories, and modeling.

54. URBDP 498 Environmental Impact Management
Marina Alberti - alberti@u.washington.edu

Integration of principles of ecology and ecosystem management into planning and decision-making. Emphasis on both methods of impact analysis and the process of environmental planning and management. Students learn techniques for predicting and evaluating the environmental impacts of alternative development projects, developing environmental management strategies, and designing mitigation measures. The course explores a broad range of approaches to environmental assessment and management, including adaptive environmental management, area-based and cumulative impact assessment, and strategic environmental assessment. Case studies are used to highlight the complexities of environmental decision-making due to multiple actors, conflicting objectives, incomplete information, and scientific uncertainty.

55. URBDP 530 / CETS 588A Integrated Urban Models
Paul Waddell – pwaddell@u.washington.edu

This course introduces students to the evolving use of computerized models of urban land use, transportation and environment in the development of plans and policies. The course focuses on the metropolitan planning context for these models, reviews the state of the practice, and examines emerging directions for these analytical tools. The structure of the course is designed to involve students in active research projects at the UW on the design, development and testing of new land use, transportation, and environmental models.

56. Fundamentals of Urban Surface Water Management (Short Course)
Derek Booth

This course focuses on the effects of urban development on the movement of water and the materials it transports through watersheds. We analyze how these effects modify the environment in wetlands, lakes, streams and rivers receiving runoff from urban areas, as well as the consequences of these alterations on aquatic life. Attendees will learn and practice specific techniques to analyze rainfall/runoff relationships, soil loss and deposition, surface and subsurface flow, and the hydraulics of stormwater transport systems. An overview of available management techniques to avoid undesirable consequences of urban development and their applications and limitations concludes the course. Other courses in the program detail the implementation of the major strategies.

A.2 Faculty Who Might Have an Interest in Community-Regional Sustainability Program

The following table identifies faculty whose research/teaching interests have some relation to "community-regional sustainability". Any program is of course formed by the interests of those who participate. Hence, a community-regional sustainability program could take on quite a diverse focus.

Table A1. Faculty and Courses Related to Community-Regional Sustainability

Faculty Name, Title, Unit, and email	Teaching/research interests related to sustainability	Course(s) related to community-regional sustainability*
Marina Alberti, Assoc Prof, Urban Design and Planning, *alberti@u.washington.edu*	Urban ecology, sustainable urban development, sustainability indicators, environmental planning and management, GIS, and environmental impact assessment.	CFR 474 / CFR 574 Problem Analysis in Urban Ecology CFR 475 / CFR 575 Applied Theory and Methods in Urban Ecology CFR 476 / CFR 576 Research in Urban Ecology URBDP 422 Geographic Information Systems in Planning Analysis URBDP 498 Environmental Impact Management
William Beyers, Prof., Geography *beyers@u.washington.edu*	Economic Geography and Northwest Environmental concerns	GEOG 302 Pacific Northwest GEOG 440 Regional Analysis
Gordon Bradley, Assoc Dean, Forest Resources *gbradley@u.washington.edu*	Urban forests, land use planning, environmental impact statements	CFR 474 / CFR 574 Problem Analysis in Urban Ecology CFR 475 / CFR 575 Applied Theory and Methods in Urban Ecology CFR 476 / CFR 576 Research in Urban Ecology EHUF 470 Urban Forest Landscapes FM 485 Conservation Area Planning and Design
Stephanie Chang, Res. Asst. Prof., Geography, *sec@u.washington.edu*	Economics of natural hazards mitigation	GEOG 495 Geography of Natural Hazards GEOG 448 Geography of Transportation
Nick Chrisman, Prof., Geography, *chrisman@u.washington.edu*	Social science studies of geographic information technology, natural resource management	GEOG 458 Map Sources and Errors GEOG 460 Geographic Information Systems Analysis
Joyce Smith Cooper, Asst Prof., Mechanical Engineering *cooper@me.washington.edu*	Design for Environment, Life Cycle Assessment of Products	ME 415 Sustainability and Design for the Environment
Robert Halvorsen, Prof., Economics *halvor@u.washington.edu*	Economics and environment	ECON 436 Economics of the Environment
Alan Haynie, Graduate Teaching Associate, Economics *haynie@u.washington.edu*	Economics and environment	ECON 235 / ENVIR 235 Introduction to Environmental Economics
Charles Henry, Research Assoc Prof, Forest Resources *clh@u.washington.edu*	Recycling as sustainable waste management	ESC 111 Introduction to Sustainable Resource Sciences
Kristina Hill, Assoc Prof. Landscape Architecture, *kzhill@u.washington.edu*	Ecological design, GIS	CFR 474 / CFR 574 Problem Analysis in Urban Ecology CFR 475 / CFR 575 Applied Theory and Methods in Urban Ecology CFR 476 / CFR 576 Research in Urban Ecology
Lucy Jarosz, Assoc Prof. Geography *jarosz@u.washington.edu*	Agrarian and environmental change; food and agriculture; labor process and labor relations; international development theory.	GEOG 371 World Hunger and Resource Development
Nayna Jhaveri, Asst. Prof., Geography *jhaveri@u.washington.edu*	environmental protection and economic development paths within the Asian context; assessing consumptive behavior, ecological and social sustainability	GEOG 270 Consumption, Nature & Globalization GEOG 372 Asian Environment and Development

James Karr, Prof., Aquatic and Fishery Sciences, and Zoology *jrkarr@u.washington.edu*	Ecosystems, indicators and sustainability	ENVIR 201 Humans in the Environment FISH/BIOL 438 Biological Monitoring and Assessment FISH 439 Attaining a Sustainable Society
Michael Kucher, History of Technology & the Environment, UW Tacoma	Environmental history; urbanization and the environment from an historical perspective	ENVIR 201 Humans in the Environment
Victoria Lawson, Prof. Geography *Lawson@u.washington.edu*	Labor and economic/social development in an urban context in the developing world	GEOG 230 Urbanization in Developing Nations
Robert G. Lee, Prof., Forest Sociology, Division of Management and Engineering, Forest Resources boblee@u.washington.edu	institutionalization of ecosystem processes; impacts of urbanization on natural ecosystems and producer communities.	ESC 460 / ENVIR 460 Institutionalizing Sustainable Ecological Practices FM 272 Environmental Sociology FM 575 Advanced Natural Resource Sociology
Conway B Leovy, Prof., Earth and Space Science, *leovy@u.washington.edu*	Climate dynamics; role of clouds in the climate system; dynamics of the stratosphere; planetary atmospheres.	ENVIR 203 Environmental Case Studies: Resources
Karen Litfin, Assoc. Prof. Political Science *litfin@u.washington.edu*	specializes in international relations theory and international environmental politics. Interested in the impact of science and technology on world politics. Other interests include globalization, gender related issues, and ethics in world politics.	ENVIR 203 Environmental Case Studies POL S 203 Introduction to International Relations POL S 422 International Environmental Politics Seminar
Philip C Malte, Prof., Mechanical Engineering *malte@u.washington.edu*	Combustion, the formation and control of pollutants in combustion chambers; energy systems, especially high efficiency; and renewable energy.	ENVIR 203 Environmental Case Studies: Resources; ME/Chem E/Phys/Envir 341: Energy & Environment I ME/Chem E/Phys/Envir 342: Energy & Environment II
John Marzluff, Associate Prof., Forest Resources, Ecosystems Sciences	Wildlife sciences	CFR 474 / CFR 574 Problem Analysis in Urban Ecology CFR 475 / CFR 575 Applied Theory and Methods in Urban Ecology CFR 476 / CFR 576 Research in Urban Ecology
Doug Mercer, Lecturer, Geography *dmercer@u.washington.edu*	Institutional controls of resource management, risk, social, population	ENVIR 202 Environmental Case Studies: Population and Health
Robert Naiman, Prof., Aquatic and Fishery Sciences, *Naiman@u.washington.edu*	River and watershed ecology and management	FISH 447 Watershed Ecology and Management
Tim Nyerges, Prof., Geography *nyerges@u.washington.edu*	GIS development and use for collaborative decision making and risk evaluation, particularly for land use, transportation, water resource sustainability concerns	GEOG 360 Principles of Cartography GEOG 461 Urban Geographic Information Systems GEOG 463 GIS Workshop
Sergio Palleroni, Assoc. Prof., Architecture, sergiop@u.washington.edu	material culture, theory, and preservation in architecture and urban design	ARCH 401 Architectural Design V
Devon Pena, Prof, Anthropology, *dpena@u.washington.edu*	Agroecology, bioregionalism, ethnoecology	ANTH 201 Environmental Anthropology
Sarah E Reichard, Assistant Professor, Urban Horticulture, Ecosystem Sciences Division, Forest Resources *reichard@u.washington.edu*	Invasive plant species	EHUF 201 Ecology of the Urban Environment

Clare Ryan, Assistant Professor Natural Resource Policy and Conflict Management, Division of Management and Engineering *cmryan@u.washington.edu*	Participant Roles in Collaborative Decision-Making Processes; Adaptive Management in the United States and Canada; Nonpoint Source Pollution Control: Assessing Methods and Behaviors; Collaborative Watershed Planning in Washington	CFR 400 Natural Resource Conflict Management (3) CFR 474 / CFR 574 Problem Analysis in Urban Ecology CFR 475 / CFR 575 Applied Theory and Methods in Urban Ecology CFR 476 / CFR 576 Research in Urban Ecology FM 470 Forest Policy and Law: Natural Resource Policy Processes FM 571 Policy Analysis Design
Dennis Ryan, Prof, Urban Design and Planning, Community and Environmental Planning *frango@u.washington.edu*	Community planning and design; public processes; educational democracy/ interdisciplinary education; socio-cultural dimensions of planning and places; urban change and continuity.	CEP 120 Introduction to Community and Environmental Planning CEP 302 Environmental Response
Paul Waddell, Assoc Prof. Public Affairs, and Urban Design and Planning,*waddell@u.washington.edu*	urban policy and planning; processes and impacts of urban and regional development	PBAF 565A Transportation Theory, Policy and Politics
Craig ZumBrunnen, Prof, Geography, Co-Director Program on Environment	Environmental problems in Russia and the NIS; problems of social-economic transformation in Russia and the NIS; methods of resource analysis; mathematical modeling (optimization and simulation) of natural resource management; issues of sustainable development	CFR 474 / CFR 574 Problem Analysis in Urban Ecology CFR 475 / CFR 575 Applied Theory and Methods in Urban Ecology CFR 476 / CFR 576 Research in Urban Ecology GEOG 370 Problems of Resource Management GEOG 471 Methods of Resource Analysis
		*Course Descriptions are provided in Section A.1

Other Important Topics and Faculty not Yet Detailed Above
Economic Geography of Natural Hazards – Stephanie Chang, Research Asst Prof., Geography
Natural Resources, GIS, and Spatial Uncertainty – Nicholas Chrisman, Prof. Geography
Geological processes and water resources – Derek Booth, Research Assoc Prof
Water resources planning – Richard Palmer, Professor, Civil and Environmental Engineering
Urban Watershed Hydrology – Richard Horner, Civil and Environmental Engineering

A.3 An Organic Approach to Curriculum Development

The first four core courses listed in Section 2.3 are cross-listed with the courses listed in section A.2. This cross-listing is but a first attempt at synthesizing interests. The courses are by no means "set", but they do represent a good starting point for a conversation about such a program. Community-regional sustainability is just one of many subprograms that might be part of a larger sustainability studies program, so the conversation could be broader depending on interests.

Introduction to Community-Regional Sustainability: history, structure and function of community-regional ecosystems, community-regional sustainability principles, policies and practices

Community and the Built Environment: neighborhoods, transportation, land-use and infrastructure

Natural System Linkages to the Community-Regional Complex: consumer and institutional metabolisms, resource sequestration and dissipation patterns, effects of globalization

Economics and Community-Regional Social Well-being: regulatory structures, taxation and market forces effects on community vitality

Capstone Workshop in Community-Regional Sustainability: integrative technical and social learning experience addressing current topics of community-regional sustainability

Table A2 cross-lists courses currently being taught at the UW Seattle campus with the four courses listed above. The cross-list provides a basis for conversation about how faculty might contribute to a Community-Regional Sustainability Program. Any teaching program is defined in part by those who contribute their ideas as part of the curriculum.

Table A2. Cross-list of UW courses with USP proposed core courses

(Column-wise entries provide an indication of potential collaboration)

Course*	Introduction to Community-Regional sustainability	Community and the Built Environment	Natural System Linkages to the Community-Region Complex	Economics and Community-Regional Social Well-Being
ANTH 201 Devon Pena	X		X	
ARCH 401 Sergio Palleroni		X		
CEP 120 Dennis Ryan	X	X		
CEP 302 Dennis Ryan		X	X	
CFR 474/574 John Marzluff Gordon Bradley Clare Ryan Marina Alberti C. ZumBrunnen Kristina Hill	3			
CFR 475/575 John Marzluff Gordon Bradley Clare Ryan Marina Alberti C. ZumBrunnen Kristina Hill			3	
CFR 476/576 John Marzluff Gordon Bradley Clare Ryan Marina Alberti C. ZumBrunnen Kristina Hill			3	
ECON/ENVIR 235 Alan Haynie	X			X
ECON 436 Robert Halvorsen				X
EHUF 201 Sara Reichard	X			
EHUF 470 Gordon Bradley				
ENVIR 201 Jim Karr and Michael Kucher	X			
ENVIR 202 Doug Mercer	X			
ENVIR 203 Conway Leovy			X	

ENVIR 203 Philip Malte			X	
ESC/ENVIR 460 Bob Lee	X		X	X
FISH/BIOL 438 Jim Karr			X	
FISH/ENVIR 439 Jim Karr	2			
FM 272 Bob Lee				2
FM 571 Clare Ryan			1	
FM 575 Bob Lee				2
GEOG 270 Nayna Jhaveri			X	
GEOG 302 Bill Beyers				X
GEOG 360 Tim Nyerges	1			
GEOG 370 Craig ZumBrunnen		X	X	
GEOG 371 Lucy Jarosz	X			
GEOG 372 Nayna Jhaveri			X	
GEOG 440 Bill Beyers				X
GEOG 448 Stephanie Chang		X		X
GEOG 460 Nick Chrisman			X	
GEOG 461 Tim Nyerges		3	1	2
GEOG 471 Craig ZumBrunnen			X	
ME/ENVIR 415 Joyce Smith Cooper			X	
ME/ENVIR 341 Philip Malte			X	
ME/ENVIR 342 Philip Malte			X	
PBAF 565A Paul Waddell		1		
URBDP 422 Marina Alberti		X		
URBDP 498 Marina Alberti	X		X	

*See Appendix section A.2 for course descriptions.

Key to entries:
X = based on course description the course can likely provide material
1 = Based on course syllabus, some of the course topics appear to provide material
2 = Based on course syllabus, much of the course topics can provide material
3 = Based on course syllabus, most of the course topics can provide material

Information from course syllabi will help identify, perhaps, even a broader range of topics than indicated in course descriptions. With a broader range of topics at hand, that will likely broaden the focus for an "community-regional sustainability program". What this means is that the "sense of community-regional sustainability" must emerge from a conversation among all those who participate, and the program will take on that character – as in most curriculum development activities.