

Curtis, Sarah Kelly

Last, First Middle

Former Name(s): Craig, Sarah ; Craig, Sarah Kelly;

DEGREES CONFERRED:

Bachelor of Science

Awarded 03 Sep 2010

TRANSFER CREDIT:

Start	End	Credits	Title
09/2006	06/2008	90	Pierce College

EVERGREEN UNDERGRADUATE CREDIT:

Start	End	Credits	Title
09/2008	03/2009	32	Olympic Peninsula 4 - Ecology *4 - Entomology 7 - Bioregional Studies of the Olympic Peninsula 7 - Cultural Anthropology 4 - Topics in Forest Ecology 3 - Physical Environments of the Olympic Peninsula 3 - Independent Research in Culture, Ecology, and Sustainability
03/2009	06/2009	16	Energy Matters: Building the Path to Sustainability *8 - Environmental Analysis (Energy, Science, and Policy) *4 - Communications For Environmental Science (Energy) *4 - Independent Research (Energy and Environment)
09/2009	03/2010	32	Ecological Agriculture 4 - Agroecology *2 - Agroecology Lab 6 - Ecological Animal Husbandry 4 - Seminar: History of U.S. Agriculture *4 - Soil Science with Lab 6 - Soil Science with Lab *2 - Ecological Assessment of Farms 4 - Seminar in Agricultural Issues and Ethics
03/2010	06/2010	16	Conservation Study *4 - Nutrient Management Planning *8 - Farm Conservation Planning *4 - Stream Ecology
06/2010	09/2010	6	Geologic History of the Olympic and Cascade Mountain Ranges *6 - Geology of the Olympic and Cascade Ranges, Washington

Cumulative

192 Total Undergraduate Credits Earned

A00131887

Student ID



Curtis	Sarah	K		A00131887	
Student's Last Name	First	Midd	lle ID	Number	
40271	Individual L	earning Contract			
Program or Contract No.	Title				
		21-JUN-2010	03-SEP-201	0 6	i
		Date began	Date ended	Qt	r. Credit Hrs.

DESCRIPTION:

Faculty: Paul Butler, PhD.

For this contract, **Geologic History of the Olympic and Cascade Mountain Ranges**, Sarah (Craig) Curtis built on previous training in geology to complete an independent research project to compare and contrast the two major mountain ranges in Washington. In addition to library research, Sarah took field trips to numerous sites in the Cascade Range and around the Olympic Peninsula to better understand how geologists use field evidence to construct the geologic history of the region. At the end of the summer, Sarah submitted a 20-page paper.

EVALUATION:

Written by: Paul Butler, PhD.

Sarah's work this summer demonstrated a solid grasp of her topic. She effectively built on previous course work to tackle a fairly complex investigation. She appears to have done a thorough job of researching the topic (eight citations in her reference list), and her description of the sequence of events that led to the formation of the Cascade and Olympic Ranges covers all of the key points. Sarah recognized the importance of accretionary events for both ranges, and then correctly identified major differences in the way that each range formed. Writing about geology can be challenging for students, and overall, Sarah did well, using appropriate terminology. The paper would have benefitted from one final round of editing, especially better integration of her photos with the text. Her photos were well chosen and clearly documented her field trips. Sarah did a good job of citing her sources throughout the manuscript.

In summary, Sarah took significant strides in her geologic education this summer. I enjoyed working with her again.

Page 1 of 1

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 6

*6 - Geology of the Olympic and Cascade Ranges, Washington

(* - indicates upper division science credits)

September 17, 2010



Craig	Sarah	K	A	00131887	
Student's Last Name	First	Mid	dle ID I	Number	
30486	Internship L	earning Contract			
Program or Contract No.	Title				
		29-MAR-2010	11-JUN-2010) 16	
		Date began	Date ended	Qtr. Credit Hrs.	

DESCRIPTION:

Faculty: Mike Paros DVM

During the Spring Quarter internship, **Conservation Study**, Sarah assisted Thurston County Conservation District Resource Specialist staff in working with landowners to improve management, water and soil quality on their property or farms. She analyzed site data in order to make recommendations for the best management options. Sarah wrote a complete conservation plan for a landowner including a resource inventory and nutrient management plan. Sarah performed a literature review on appropriate riparian buffer widths by reading scientific, peer reviewed papers on a weekly basis.

EVALUATION:

Written by: Mike Paros DVM

Sarah entered her internship at Thurston Conservation District with a strong background in science and 2 previous quarters in Ecological Agriculture. Over the course of the internship Sarah used her previous knowledge of Ecological Agriculture and other classes and applied them in a work setting. Her main focus of the quarter was to successfully complete a conservation plan for a local farm, do scientific research on riparian buffer zones, and to assist the staff with other projects as needed.

Sarah's conservation farm plan was for a local goat dairy in Centralia, Washington. She successfully completed a SWAPAH (soil, water, animals, plants, air and humans) during several farm visits. Soil test and analysis, as well as forage identification were done on site. GIS maps were made of the property and Sarah met with an engineer to help plan a manure storage facility. A complete nutrient management plan was done for the current and projected number of animals to insure proper balance of soil nutrients.

Each week 2 scientific papers about riparian buffer zones were read and a short write-up was done on each. At the end of the quarter a short paper was written on what the proper width of a riparian zone should be, consolidating all of the ideas from the papers. Using scientific research with in-text citations, Sarah successfully completed a paper stating that there should be minimum standards set for all properties with a waterway using calculations set by the Department of Ecology and the Department of Fish and Wildlife.

One of the other major tasks of the quarter was to finish the windshield surveys in the non-shellfish district of the Nisqually watershed. This is a grant through the Department of Ecology (#D092) to insure clean water quality through fencing, proper manure storage, pasture conditions and heavy use areas. Approximately 30 hours were spent in search of properties with livestock, and were ranked high, medium or low in priority. A short grant report was written to the Department of Ecology to conclude the surveys.

The Thurston Conservation District does many programs with children in which Sarah assisted the staff with. At Tolmie State Park, there was a week long program where she went on beach walks with the junior high aged children and did mini lectures on the sea organisms the kids found. This included a seminar from a marine biologist to teach them all of the marine life on the beach. There was also a day with "students & the shore" where they went to a local residents property with a 4th grade class and helped pull ivy, plant some trees and do a beach walk. Sarah was also involved in Envirothon, which is a yearly competition between

June 17, 2010



Craig	Sarah	К		A001318	887
Student's Last Name	First	Mid	dle	ID Number	
30486	Internship L	earning Contract			
Program or Contract No.	Title				
		29-MAR-2010	11-JUN-20	010	16
		Date began	Date ended		Qtr. Credit Hrs.

high schools with a series of tests to access their knowledge on natural resources. The winners move onto State and National competitions. Sarah was a judge of the oral presentations.

Around the office Sarah did tasks such as equipment rentals to customers, picked up and delivered the manure spreader, attended staff and board meetings. Sarah also took a short course on water quality testing and attended a seminar on noxious weeds put on by Lewis County Conservation District.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

*4 - Nutrient Management Planning

*8 - Farm Conservation Planning

*4 - Stream Ecology

*denotes upper division science credit



Craig	Sarah	К	A0	0131887
Student's Last Name	First	Midd	le ID Nu	mber
10059, 20035	Ecological A	griculture		
Program or Contract No.	Title			
		28-SEP-2009	19-MAR-2010	32
		Date began	Date ended	Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Martha Rosemeyer, Ph.D., Mike Paros, DVM

The full-time, three-quarter Ecological Agriculture program provides a broad, interdisciplinary study of agriculture, from a critical perspective of social and ecological sustainability.

In the fall quarter, ecological concepts and animal husbandry were highlighted. Seminar work consisted of critical reading, discussion and thesis-supported writing on six books examining the history and present predicament of American agriculture. Critical reasoning was emphasized in study questions on agroecology lectures, as well as field work in agroecology. Concepts learned in class were illustrated by field trips to organic and conventional, small and large scale production systems including: vegetable and fruit producers (for farmer's market, wholesale and community supported agriculture), crop (wheat and corn silage) and livestock producers (dairies, cow-calf and sheep ranches, egg laying processors, and swine operations). Students also attended a 4-day field trip visiting farming operations in the Columbia Gorge area of Washington. Students maintained extensive portfolios documenting all program work.

In the Ecological Animal Husbandry portion of the fall program, topics covered included animal nutrition, behavior, housing, economics, reproduction, health, and genetics. Through lectures, readings, and field trips, students gained an understanding of how chickens, pigs, sheep, goats, beef cattle, and dairy cattle are raised. Students learned about general forage production for livestock. Students participated in a chicken dissection lab emphasizing concepts in animal digestive and reproductive physiology. Industrial and natural animal agroecosystems were compared and ecological animal husbandry practices were examined. The text *Contemporary Issues in Animal Agriculture* by Cheeke, and other written materials were used to support student exploration of topics in animal welfare, food safety and quality, bioethics, biotechnology, and the role of livestock production in sustainable agriculture.

In the Agroecology portion of the fall program, topics covered in lecture and from Gliessman's text *Agroecology: The Ecology of Sustainable Food Systems* and other sources included: systems concepts, landscape ecology, biodiversity and land equivalency ratios, origins of agriculture, system approaches to weed and pest management, pesticides and genetic engineering. Students participated in an extended lab exercise assessing diversity and abundance of Carabid ground beetles at three levels of disturbance (annual production, perennials and forest) at the campus organic farm. Student collected Carabids from pitfall traps and grew out soil samples to estimate the weed seedbank. Results were presented in two drafts in scientific paper format, and included a brief literature review, hypothesis testing, diversity measures (Shannon and Simpson), and community similarity indices. Upper-division students performed analysis of variance analyses, species-area curves and included at least six references to peer-reviewed literature.

Seminar on US Agriculture met weekly for two hours and students were required to submit either notes or questions on the reading to aid in preparation for class, and a final 5-page synthesis essay exploring an important historical factor that has shaped US agriculture and rural society today supported by seminar materials. Readings included: Pollan's *The Omnivore's Dilemma: A Natural History of Four Meals*, Wilson's *Buffalo Bird Woman's Garden*, Danbom's *Born in the Country: A History of Rural America*, 2nd Edition various essays in Imhoff and Baumgartner's *Conservation and the Fate of Wild Nature*, Imhoff's *Food Fight*, and a chapter on genetic engineering in Zimdahl's *Agriculture's Ethical Horizon*. Videos included: *King Corn*,

Page 1 of 4

May 26, 2010



Craig	Sarah	К	A	00131887
Student's Last Name	First	Mid	dle ID N	umber
10059, 20035	Ecological A	Agriculture		
Program or Contract No.	Title			
		28-SEP-2009	19-MAR-2010	32
		Date began	Date ended	Qtr. Credit Hrs.

Fast Food Nation, Natural History of the Chicken, Holy Cow, Big Spuds/Little Spuds, The Plow that Broke the Plains, Power to the Land (REA), The Global Banquet, My Father's Garden, and Food Inc.

In the winter quarter, advanced work in soil science and ecological analysis of farming systems was offered. In the soil science portion of the course, the biological, chemical, and physical properties of soils were studied through lectures, labs, and quantitative exercises. The textbook, *The Nature and Properties of Soils*, 14th Edition by Brady and Weil was used along with peer-reviewed scientific articles. Emphasis was placed on soil biology, soil organic matter, and soil management practices in the study of soil formation, soil orders, cation exchange capacity, soil acidity, plant macro- and micronutrients, and symbiotic plant-microbe relationships that are important in sustainable agriculture. In the context of carbon and nitrogen cycling, soil organic matter formation, maintenance, and decomposition were covered in detail. In associated laboratory exercises students tested soil texture and acidity, soil macrofauna and nematodes (parasitic and free-living) and viewed stained cross-sections and fresh material of mycorrhizae and nitrogen fixing nodules. They used the SMP buffer method to calculate lime requirement for these soils and learned how to interpret a soil analysis report.

In the Ecological Assessment of Farms part of the program, students were required to assess agricultural energy use and nutrient cycling through a series of farm planning exercises. Plant nutrient uptake, cover cropping, tillage, rotations, and use of animal manures were emphasized. Whole farm analysis and calculations were performed in order to examine possibilities of internal nutrient cycling, carbon sequestration, and environmental stewardship in agriculture. These concepts were supported by reading peer-reviewed scientific articles on biofuels, carbon neutrality, crop-livestock integration, and methane gas production.

Seminar in Agricultural Issues and Ethics readings consisted of a number of books addressing trends and ethical issues in contemporary agriculture including *Agriculture's Ethical Horizon, Just Food, Food Rebellions* and an excerpt from *Amish Society*. Students were required to write weekly papers analyzing the texts, culminating in a final essay describing their vision of the future of agriculture and their place in it. In January, students attended the Eco-farm conference in Asilomar, California. Concepts learned during the conference and the course were demonstrated in a week-long series of farm visits to small and large-scale vegetable producers, orchards, and livestock operations in coastal and central California. Films viewed included *Life in the Soil, Organic No-tillage, Not to Be Modern: The Amish* and *Little Ice Age: The Big Chill.*

Student evaluations are based on participation, weekly pre-lecture quizzes to test preparation, a mid-term and final exam, study questions, written essays, and lab reports. Upper division credit was awarded based on consistent, advanced preparation, exam performance, and the ability to apply concepts to practical situations.

Page 2 of 4

May 26, 2010 Date



Craig	Sarah	к		A001318	387
Student's Last Name	First	Mide	dle	D Number	
10059, 20035	Ecological A	Agriculture			
Program or Contract No.	Title				
		28-SEP-2009	19-MAR-20	010	32
		Date began	Date ended		Qtr. Credit Hrs.

EVALUATION:

Written by: Martha Rosemeyer, Ph.D., Mike Paros, DVM

Fall Quarter written by Mike Paros, DVM

Sarah does high quality work and has participated well in the ecological agriculture learning community. Her program portfolio is a complete resource that will be useful in the future. She takes comprehensive notes in lectures, field trips, workshops, and labs. Sarah was actively engaged in all components of the course.

In the Agroecology portion of the program, Sarah's work in her two exams demonstrated a good, general understanding of ecology as applied to agricultural systems. Her basic plant anatomy improved over the quarter. Her knowledge of the parameters necessary to design an agroecosystem to fit into the local area was adequate. She might benefit from greater attention to detail.

Sarah's lab report was complete, exhibiting proficient use of technical formats in scientific papers. She did an excellent job integrating laboratory data into comprehensive discussions.

Sarah successfully completed the required essay, which showed good comprehension of the seminar texts. Her writing demonstrated the ability to develop a perceptive thesis and to support it with pertinent evidence.

In Ecological Animal Husbandry, Sarah attended almost all of the lectures, labs, and field trips throughout the quarter. Her performance on weekly quizzes demonstrated satisfactory preparation in advance of lectures and workshops. Sarah shows persistence and dedication to her studies. Based on exams, she showed a good understanding of the animal science concepts covered in the course.

Winter Quarter written by Martha Rosemeyer, Ph.D.

Hailing from Puyallup, Sarah is a senior student in her second year at Evergreen. She is a dedicated student that has come back to college to study the sciences and agriculture. Sarah enrolled in Ecological Agriculture full-time and has earned 16 qtr. cr. hrs (6 UD) for her winter term's work.

Sarah's portfolio was fairly organized and complete and she contributed regularly to seminar discussion. Her seminar papers including a "letter to the editor," clearly identified a thesis statement and were well-written. Her final 5-page synthesis essay on the future of US agriculture and her role, contained an excellent synthesis of her personal and academic trajectory and was supported by two program references.

In Soil Science overall Sarah has worked hard and has demonstrated a good, general understanding of the physical, chemical and biological properties of soil. Her preparation for the lecture as assessed through open-note weekly quizzes on the soil textbook, resulted in scores that were nearly perfect. Her lab reports on soil science lab exercises were fair to excellent. She worked through nearly all of the two sets of study questions per lecture. However, her exam scores demonstrated a variable (very good to fair with portions of the final left blank) understanding of the material, and review of the principles demonstrated in the soils labs would have been beneficial. Sarah gained good knowledge of soil organic matter management as well as carbon and nitrogen cycling.

May 26, 2010



Craig	Sarah	K	A00131	887
Student's Last Name	First	Middle	ID Number	
10059, 20035	Ecological Agricultur	re		
Program or Contract No.	Title			
	28-SE	P-2009 1	I9-MAR-2010	32
	Date beg	jan D	ate ended	Qtr. Credit Hrs.

In Ecological Assessment of Farms Sarah attained basic ecological assessment skills of farms. Her quiz scores indicate thorough preparation prior to lecture. Based on winter quarter exams, Sarah showed an adequate understanding of how energy flows and nutrients cycle through agroecosystems. She is able to make calculations needed to formulate a basic nutrient management plan.

She chose to visit the Thurston County Conservation district instead of joining the program at the Eco Farm conference, an internship that she will continue next quarter.

All together, Sarah has made significant progress in her understanding of soil science.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 32

- 4 Agroecology
- *2 Agroecology Lab
- 6 Ecological Animal Husbandry
- 4 Seminar: History of U.S. Agriculture
- *4 Soil Science with Lab
- 6 Soil Science with Lab
- *2 Ecological Assessment of Farms
- 4 Seminar in Agricultural Issues and Ethics
- * Denotes upper division natural science credit



The Evergreen State College - Olympia, Washington 98505 THE STUDENT'S OWN EVALUATION OF PERSONAL ACHIEVEMENT

Craig	Sarah	к	A00131887
Student's Last Name	First	Middle	ID Number
Ecological Agriculture			
Program or Contract Title			
		28-SEP-2009	19-MAR-2010
		Date Began	Date Ended

I came into Ecological Agriculture with a strong science background of biology, chemistry and geology. I enrolled in this class to learn about where and how my food is produced, how an agricultural system functions and to learn about different farming practices and how to apply them in my life.

With all of the hands on experience in this class such as labs, field trips, seminars, farm tours and lectures I learned how a farming environment has an affect on the surrounding ecosystem and how it corresponds to the surrounding areas.

In the fall we did a Carabid lab and did in-depth research on Carabid beetles and their affect on the surrounding areas. We did statistical analysis comparing previous research and wrote a paper using peer reviewed research.

Seminar for the Fall Quarter was about the history of farming in the United States and issues with the current food system. Weekly papers were written and a final synthesis paper was due at the end. The topic of my paper was GMOs and genetic selection.

We also learned about rotational grazing, how animals are kept in captivity and did a chicken dissection lab.

In the winter quarter we did several labs including: soil texture, macro fauna of soil, nitrogen fixation, soil pH, and nematodes. Although I have done several of these labs in previous classes, I began to understand how they relate to a system rather than just a single specimen in the biological world.

Seminar was based around books with a different perspective such as Just Food and Food Rebellions. We needed to look from the author's standpoint and different point of view. For these books we write several micro-themed thesis papers and a letter to the editor.

Overall, Ecological Agriculture was a challenging class with in-depth lectures, seminars and labs. It was a life changing class and learned new information that can be applied to my life through agriculture.

Student's \$ignature

09-JUN-2010

Date

Faculty Member's Signature (optional)

Date



Craig	Sarah	к		A00131887			
Student's Last Name	First	Mid	ldle IC	Number			
30291	Energy Ma	Energy Matters: Building the Path to Sustainability					
Program or Contract No.	Title		······				
		30-MAR-2009	12-JUN-200	9 16			
		Date began	Date ended	Qtr. Credit Hrs.			

DESCRIPTION:

Faculty: John H. Perkins, Ph.D.

Energy Matters provided an opportunity in environmental studies to learn about the United States and global energy economy, its problems, and the avenues available for reconstructing it. Supply of and demand for energy framed the discussions of all the major sources of energy: coal, oil, gas, hydropower, nuclear, solar, biomass, wind, geothermal, and others. They also studied issues with climate change, systems for reducing carbon emissions, the importance of efficiency and conservation, and the prospects for increasing the significance of renewable, alternative sources of energy. Students read seven books and twelve reports or articles from peer-reviewed journals. They had three special events: field trips to a hydroelectric facility and a wind/solar facility, plus a special commemoration of the 23rd Anniversary of the nuclear accident at Chernobyl. Two items formed the major basis for evaluation: a mid-term exam and an individual term research paper of 8 - 12 pages, which was also presented in an 8-minute oral format. They were expected to write a one-page seminar paper in each of the 10 weeks of the quarter plus a one-page report on each of the three special events. To enhance their media literacy on energy issues they kept a weekly journal of media clips with their added commentary. Teams of two students each prepared a two-minute media script to record as an audio file in MP3 format. Each student was expected to be in class 14 hours per week including a three-hour weekly seminar discussion of class reading; they were also expected to work 26 hours outside of class. Completion of all work at a satisfactory level merited 16 quarter credit hours at an upper division level. Students with an appropriate science background were able to earn upper division science credits in environmental analysis in the area of energy, science, and policy.

EVALUATION:

Written by John H. Perkins, Ph.D.

Sarah entered this program with a background in the sciences, and her long-term interests lie in environmental science. She participated in almost all of program activities. She earns full credit; and overall, the quality of her work was very good.

For her research project, she prepared a paper, "Oil Shale Of The Green River Formation." Her very good paper described the origins of oil shale deposits in the Green River basin, the changing fortunes of efforts to extract the oil, and a variety of environmental and economic factors affecting the use of this resource. She concludes that it would be better not to develop these resources at this time. Sarah related her topic to the overall themes of the program, and she delivered a good oral presentation of her results. Her mid-term exam demonstrated she had a strong grasp of the program's main concepts. She wrote all of the weekly seminar papers, all field trip reports, and prepared an interesting audio recording with one other student on the potential for using small-scale wind turbines for generating residential electricity. Sarah's media journal focused on renewable energy and was extensive and thoughtful.

It was a pleasure to work with Sarah. She clearly is interested in the topic and I recommend she pursue further study in this field.

June 30, 2009 Date



Craig	Sarah	к		A00131887	,	
Student's Last Name	First	Mide	lle ll	D-Number		
30291	Energy Mat	Energy Matters: Building the Path to Sustainability				
Program or Contract No.	Title	· · · · · · · · · · · · · · · · · · ·				
		30-MAR-2009 Date began	12-JUN-20 Date ended	09 <u>1</u> Qt	6 r. Credit Hrs.	

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

*8 - Environmental Analysis (Energy, Science, and Policy)

*4 - Communications For Environmental Science (Energy)

*4 - Independent Research (Energy and Environment)

(* - indicates upper division science credits)

June	30,	2009
Date		



Craig	Sarah	K	A001	31887
Student's Last Name	First	Middle	D Numb	er
10062, 20048	Olympic Penins	ula		
Program or Contract No.	Title			······
	_29	9-SEP-2008	20-MAR-2009	32
	Da	ite began	Date ended	Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Paul Butler, Ph.D.; Dylan Fischer, Ph.D.; Karen Gaul, Ph.D.; and John Longino, Ph.D.

Fall quarter, 2008: The first quarter of this interdisciplinary program focused on cultural anthropology, ecology, and entomology. Our studies took place within the context of the Olympic Peninsula in northwest Washington. The cultural anthropology portion of the program provided an introduction to key concepts and fundamental tools of ethnographic methods. Lectures addressed place-based learning, cultural landscapes, sustainability, traditional ecological knowledge, and ethnographic case studies. Field trips included visits to a local tribal cultural center and casino, a paper mill, and a biodiesel plant.

The ecological sciences portion of this program used "foundation species" in forested ecosystems as a vehicle to examine major concepts in ecology. Lectures explored concepts and recent research related to symbioses, biogeography, ecological communities, trophic dynamics, evolution, nutrient cycling, keystone species, carbon cycling, gene-to-ecosystem interactions, and mycorrhizal communities. Labs addressed study design, data interpretation, scientific writing, plant community ecology, decomposition experiments, below-ground ecology, and salmonid ecology.

The entomology portion was a broad overview of terrestrial arthropod diversity. A lecture component addressed structure and function, and a phylogenetic presentation of the major groups of terrestrial arthropods. A laboratory component addressed field sampling methods, use of dissecting microscope, basic insect morphology, and identification of major groups.

Seminars in the program covered weekly reading assignments focused on human relationships with landscapes of the Olympic Peninsula. Students submitted 500-word essays and discussion questions for each seminar. Evaluations were based on midterm and final exams, laboratory exercises, written seminar commentary, final oral presentations in lab, the creation (and peer review) of interdisciplinary research proposals in both written and presentation format, and preparation of Human Subjects Review applications. Students attended at least three of a series of Sustainability and Justice Symposia featuring panel presentations, guest speakers, artists, films, photography and examples of community engagement.

Winter quarter, 2009: During the second quarter of the program, the focus shifted from a strong lecturebased format to a largely hands on, field and lab based format. Students continued with group research projects, including data collection and analysis, which included both cultural and ecological topics. In seminar each week, program participants read books and articles that focused primarily on people's interaction with trees (*The Golden Spruce* by Vaillant, *Between Earth and Sky* by Nadkarni, and *Wild Trees* by Preston) and landscapes of the Olympic Peninsula (*The Land that Slept Late* by Wood, *The Last Wilderness* by Morgan, and *Our Lady of the Forest* by Guterson). For each of these books students submitted response papers, which were posted online for review by their colleagues prior to class. Students participated in an all-group field trip around the Olympic Peninsula, examining cultural use of the peninsula, the research role of the National Park Service, champion trees, rainforests, and coastal geology of the Olympic Peninsula.

For the cultural anthropology element of the program, students continued to consider the complex mix of native and non-native residents on the peninsula in historical and contemporary contexts. Students had weekly field activities and labs, which included: a visit to the Cushman dam to learn about the recent



Craig	Sarah	К		400131887	
Student's Last Name	First	Mide	dle ID	Number	
10062, 20048	Olympic Penin	sula			
Program or Contract No.	Title				· · · · · · · · · · · · · · · · · · ·
		29-SEP-2008	20-MAR-200	9 32	
	E	Date began	Date ended	Qtr.	Credit Hrs.

settlement between Tacoma Power and the Skokomish Tribe; an examination of the realist vs. constructivist Wilderness debate; working with writer/performer Peter Donaldson on creative writing; participating in a series of writing workshops to develop both creative and academic writing; and examining the role of visual representation of people and places on the peninsula. The theme of sustainability was tracked through all of these investigations, and students continued to attend Sustainability and Justice Symposia.

The forest ecology portion of the program included integrated field work, computer labs, and a series of guest speakers and lectures that covered canopy biology, silviculture, evolution, and old-growth ecology. Students measured a permanent plot network in a 70 year old second-growth mixed hardwood/conifer forest. They learned to measure forest structure in terms of tree diameter distribution, canopy cover, basal area, trees per acre, and relative distribution of trees, snags, large woody debris, and saplings. In computer labs they learned about ecological data management, Microsoft Excel, and forest modeling using the forest modeling software package, Forest Vegetation Simulator (FVS). Students then evaluated modeled impacts of forest management activities on the landscape. They learned to trouble-shoot errors, critically interpret forest data, and think critically about forest development. They interpreted all trends in forest development in terms of traditional succession paradigms and old-growth forest ecology. They were also required to read *Silviculture and Ecology of Western U.S. Forests* by Tappeiner, Maguire, and Harrington. Finally, students visited a 40 acre private forest to view and discuss a federal program to improve wildlife habitat. While on site they completed a vegetation mapping exercise, which allowed them to apply field techniques learned earlier in the program.

Winter quarter also included an emphasis on the physical environment of the Olympic Peninsula, and how that informs us about the ecology and human uses of the region. Major topics covered included geology, weather and climate, and hydrology. This material was then integrated to assess the effects of past and future climate change on the region's landscapes. Throughout the quarter we also discussed forest management activities in light of these physical processes and ecological factors. To improve students' understanding of these topics, they completed workshops and computer labs on mineral and rock identification; descriptive statistics based on precipitation records at Quillayute Airport near Forks; flood-frequency analysis for rivers on the peninsula; and modeling of sea-level change based on past and present global ice volumes.

EVALUATION:

Written by: Paul Butler, Ph.D.; Dylan Fischer, Ph.D.; Karen Gaul, Ph.D.; and John Longino, Ph.D.

Fall 2008: Sarah Craig successfully completed all of the requirements for the Olympic Peninsula program, fall quarter. She attended seminars, wrote fairly good responses to all seminar readings, and fairly consistently participated in seminar discussion, contributing to the overall learning environment of the group.

Students had the opportunity to attend two ethnographic field trips. They were to make observations, record field notes, and write papers responding to field-related assignments. The first assignment focused on the interrelationship between the Squaxin Island Museum and Library, the Little Creek Casino, and other tribal entities; the changing nature of the Squaxin tribe; and ways the tribe represents itself to the public. Sarah wrote a fairly good paper. A second assignment focused on the sustainability practices of Grays Harbor

April 15, 2009



Craig	Sarah	К	A001	31887
Student's Last Name	First	Middl	e ID Numb	er
10062, 20048	Olympic Penins	ula		
Program or Contract No.	Title			
	_29	9-SEP-2008	20-MAR-2009	32
	Da	ite began	Date ended	Qtr. Credit Hrs.

Paper, in comparison to neighboring Imperium Renewables (a biodiesel processing facility) and Weyerhaeuser. Sarah did a good job on this paper.

Sarah's performance in the introductory ecology portion of this program was good. She was an active participant in class and in the field. She was a very strong participant in a study examining the distribution and diversity of plants along an elevation gradient in the southern Olympic Mountains. From this work she produced one excellent short scientific paper. Her field performance was excellent on a difficult project mapping the exact locations of anadromous salmon carcasses along 100 meters of a second-growth rainforest stream. However the final finished map her group produced for this project was very rough, and needed extensive refinement. She has shown solid potential in the study of concepts we covered this quarter.

Her performance in the entomology portion of the program was fair to good in terms of in-lab exercises, oral presentation, and exams. She was always present and a great participant in lab activities. On the final exam she showed good knowledge of a range of entomological facts.

Sarah participated in the development of a group research project on the use of solar power on the Evergreen campus. The group did a substantial amount of work, finding suitable literature and human resources, and learning a great deal about solar power in general. Sarah did a fine job, participating fully in project planning. She played a significant role in writing the project proposal, drafting the Human Subjects Review application, and helping to prepare the oral presentation. The proposal was a 6-page document with excellent organization, writing quality, bibliography, and figures. The oral presentation was well organized, had excellent graphics, and was professionally and clearly delivered.

Winter 2009: Sarah has successfully completed all of the requirements of the Olympic Peninsula, Winter Quarter. She was an active participant in all aspects of the program, and completed the work assigned.

For the cultural element of the program, Sarah participated in a fieldtrip to the Cushman Dam and hydropower facility. She wrote a fair paper about the settlement between Tacoma Power and the Skokomish Tribe. While on a trip around the entire peninsula, students made observations about human behavior based on evidence left behind. Sarah wrote a fairly good paper using these unobtrusive methods; it could have benefitted from a more clear focus. Students also compared their own observations of Forks, Washington, to William Dietrich's descriptions in "The Final Forest" and Gutterson's fictional town of North Fork in "Our Lady of the Forest." Sarah wrote a good paper for this assignment with very nice attention to detail.

Students participated in creative writing workshops to develop expressive writing, and to complement their academic writing. They also worked on a multi-staged revision process with multiple peer reviews for their final research projects. Sarah demonstrated a commitment to expressive writing, and kept a good creative writing journal.

For the Forest Ecology portion of winter quarter Sarah did fine, but could benefit from more attention to technical writing. She was present for most guest speakers, lectures, and labs. Her work was on time and she was consistently concerned with having met the requirements of each assignment. In our first computer

April 15, 2009



Craig Student's Leat Name	Sarah	K	A	00131887	
			IIE ID N	Number	
Program or Contract No.		IISula			
•	_	29-SEP-2008	20-MAR-2009	932	
		Date began	Date ended	Qtr. (Dredit Hrs.

lab she did a good job learning a complex modeling software package, modeling a forest management action, and tracking changes in forest dynamics over 100 years based on data from a permanent plot network. She did a decent job in the field measuring the same permanent forest plot network, where she measured height, diameters, and distribution of trees and saplings. Her report from the field lab was passable, but she could improve with better attention to scientific language. She did a passable job with final group paper comparing forest structure field data from 1997 and 2009 using the program FVS. Sarah kept a good, detailed field notebook for each field trip and assignment in ecology and anthropology. On her final group lab report, her group had problems with technical writing and scientific writing style, but they completed the lab quickly and efficiently.

Assignments designed to enhance each student's understanding of concepts and principles related to the physical environment focused on both qualitative and quantitative aspects of the material. Sarah attended all workshops, and completed the assignments on time. Overall, she did a good job on each of the exercises, which indicates the she has developed a firm grasp of the underlying principles and concepts that were covered this quarter. Overall, Sarah did a pretty good job on these assignments

Students worked in groups to conduct research projects on a topic of their choice addressing the intersection of cultural and ecological elements on the Olympic Peninsula. Sarah worked on a project called, "Evergreen Solar Power: Can Evergreen be Self-Sufficient with Solar Power?" The project investigated the possibilities for solar powered energy on campus (including the status of a demonstration solar project on the campus library), and considered additional energy options in biomass as steps toward a carbon neutral campus. The group also surveyed students on campus to assess student awareness of sustainability work on campus and in their own communities, including solar possibilities. They wrote a paper summarizing their findings, and presented a PowerPoint presentation to a group of their peers. Students of this group learned about the topic as well as the process of conducting research. Sarah contributed to the research and took the lead on compiling the PowerPoint. The public presentation was clear and informative.

For seminar, students read weekly articles or books, wrote a synopsis of the material, and developed discussion questions. Sarah wrote all of the seminar papers, and they were, on average, fair to good. Overall, Sarah's attendance in seminar was good and her participation in was fairly good; it would have been nice to hear more from Sarah.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 32

- 4 Ecology
- *4 Entomology
- 7 Bioregional Studies of the Olympic Peninsula
- 7 Cultural Anthropology
- 4 Topics in Forest Ecology
- 3 Physical Environments of the Olympic Peninsula
- 3 Independent Research in Culture, Ecology, and Sustainability

(* - indicates upper division science credits)

EVER GREEN

The Evergreen State College • Olympia, WA 98505 • www.evergreen.edu

EVERGREEN TRANSCRIPT GUIDE

Accreditation: The Evergreen State College is fully accredited by the Northwest Commission on Colleges and Universities.

Degrees Awarded: The Evergreen State College awards the following degrees: Bachelor of Arts, Bachelor of Science, Master of Environmental Studies, Master of Public Administration and Master In Teaching. Degree awards are listed on the Record of Academic Achievement.

Educational Philosophy:

Our curriculum places high value on these modes of learning and teaching objectives:

- Interdisciplinary Learning
- Collaborative Learning
- Learning Across Significant Differences
- Personal Engagement
- Linking Theory with Practical Applications

Our expectations of Evergreen Graduates are that during their time at Evergreen they will:

- Articulate and assume responsibility for their own work
- Participate collaboratively and responsibly in our diverse society
- Communicate creatively and effectively
- Demonstrate integrative, independent, critical thinking
- Apply qualitative, quantitative and creative modes of inquiry appropriately to practical and theoretical problems across disciplines, and,
- As a culmination of their education, demonstrate depth, breadth and synthesis of learning and the ability to reflect on the personal and social significance of that learning.

Our students have the opportunity to participate in frequent, mutual evaluation of academic programs, faculty and students. In collaboration with faculty and advisors, students develop individual academic concentrations.

Academic Program

Modes of Learning: Evergreen's curriculum is primarily team-taught and interdisciplinary. Students may choose from among several modes of study:

- Programs: Faculty members from different disciplines work together with students on a unifying question or theme. Programs may be up to three quarters long.
 Individual Learning Contract: Working closely with a faculty member, a student may design a one-quarter-long, full-time or part-time research or creative project. The contract document outlines both the activities of the contract and the criteria for evaluation. Most students are at upper division standing.
- Internship Learning Contract: Internships provide opportunities for students to link theory and practice in areas related to their interests. These full- or part-time opportunities involve close supervision by a field supervisor and a faculty sponsor.
- Courses: Courses are 2-6 credit offerings centered on a specific theme or discipline.

The numerical and alpha characters listed as Course Reference Numbers designate modes of learning and are in a random order.

Evaluation and Credit Award:

Our transcript consists of narrative evaluations. Narrative evaluations tell a rich and detailed story of the multiple facets involved in a student's academic work. A close reading of the narratives and attention to the course equivalencies will provide extensive information about student's abilities and experiences. Students are not awarded credit for work considered not passing. Evergreen will not translate our narrative transcript into letter or numeric grades.

Transcript Structure and Contents: The Record of Academic Achievement summarizes credit awarded, expressed in quarter credit hours. Transcript materials are presented in inverse chronological order so that the most recent evaluation(s) appears first.

Credit is recorded by:

Quarter Credit Hours:	Fall 1979 to present
Evergreen Units:	1 Evergreen Unit (1971 through Summer 1973) equals 5 quarter credit hours
	1 Evergreen Unit (Fall 1973 through Summer 1979) equals 4 guarter credit hou

Each academic entry in the transcript is accompanied by (unless noted otherwise):

- The Program Description, Individual Contract or Internship Contract which explains learning objectives, activities and content of the program, course or contract.
- The Faculty Evaluation of Student Achievement provides information on specific work the student completed and about how well the student performed in the program
 or contract.

rs

- The Student's Own Evaluation of Personal Achievement is a reflective document written by the student evaluating his or her learning experiences. Students are encouraged but not required to include these documents in their official transcript, unless specified by faculty.
- The Student's Summative Self Evaluation is an optional evaluation summarizing a student's education and may be included as a separate document or as a part of the student's final self- evaluation.

Transfer credit for Evergreen programs, courses and individual study should be awarded based upon a careful review of the transcript document including the course equivalencies which are designed to make it easier for others to clearly interpret our interdisciplinary curriculum. These course equivalencies can be found at the conclusion of each of the Faculty Evaluation of Student Achievement.

The college academic calendar consists of four-eleven week quarters. Refer to the college website (www.evergreen.edu) for specific dates.

This record is authentic and official when the Record of Academic Achievement page is marked and dated with the school seal.

All information contained herein is confidential and its release is governed by the Family Educational Rights and Privacy Act of 1974 as amended.

If, after a thorough review of this transcript, you still have questions, please contact Registration and Records: (360) 867-6180.