UNIVERSITY OF WASHINGTON

OFFICE OF THE PRESIDENT

July 18, 2008

Mark A. Emmert, President

Vice Chancellor Susan Jeffords
University of Washington, Bothell
Box 358522

Dear Susan:

Based upon the recommendations of the Executive Council on General Faculty Organization, the Faculty Council on Tri-Campus Policy has recommended approval of an option in Environmental Studies within the existing Bachelor of Arts in Interdisciplinary Studies. A copy of the proposal is attached.

I am writing to inform you that the Interdisciplinary Arts and Sciences program is authorized to offer this option beginning autumn quarter 2008 and thereafter.

The new requirements should be incorporated in printed statements and in individual department websites as soon as possible. The *General Catalog* website will be updated accordingly by the Registrar's Office.

Sincerely yours,

Mark A. Emmert
President

Enclosure

cc: Mr. Bruce Burgett (with enclosure)
Mr. Robert Corbett (with enclosure)
Dr. Deborah H. Wiegand (with enclosure)
Todd Mildon, J.D. (with enclosure BIAS-20080414B)
Ms. Barbara Van Sant (with enclosure)

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UNIVERSITY OF WASHINGTON

CREATING AND CHANGING UNDERGRADUATE ACADEMIC PROGRAMS

After ... FCAS, Box 355850

For information about when and how to use this form: http://depts.washington.edu/... 03instructions.pdf

College: Bothell Campus
Department or Unit: IAS
Date: 4/14/08

New Programs

- [ ] Leading to a Bachelor of ______ in ______ degree.
- [ ] Leading to a Bachelor of ______ degree with a major in ______
- [x] Leading to a Env Studies Option within the existing major in Interdisciplinary Studies
- [ ] Leading to a minor in ______

Changes to Existing Programs

- [ ] New Admission Requirements for the Major in ______ within the Bachelor of ______
- [ ] Revised Admission Requirements for the Major in ______ within the Bachelor of ______
- [ ] Revised Program Requirements for the Major in ______ within the Bachelor of ______
- [ ] Revised Requirements for the Option in ______ within the major in ______
- [ ] Revised Requirements for the Minor in ______

Other Changes

- [ ] Change name of program from ______ to ______
- [ ] New or Revised Continuation Policy for ______
- [ ] Eliminate program in ______

Proposed Effective Date:

Quarter: [x] Autumn [ ] Winter [ ] Spring [ ] Summer **Year:** 20 08

Contact Person: Bruce Burgett, Interim Director
Contact's Phone: 425 352 5350
Contact's Email: burgett@uwb.edu

EXPLANATION OF AND RATIONALE FOR PROPOSED CHANGE

For new programs, please include any relevant supporting documentation such as student learning outcomes, projected enrollments, letters of support and departmental handouts. *(Use additional pages if necessary)*

Please see the attached proposal

CATALOG COPY

Catalogue Copy as currently written. Include only sections/paragraphs that would be changed if you request is approved. Please cross out or otherwise highlight any deletions.

PROPOSED CATALOG COPY

Reflecting requested changes (Include exact wording as you wish it to be shown in the printed catalog. Please underline or otherwise highlight any additions. If needed, attach a separate, expanded version of the changes that might appear in department publications)

The Environmental Studies (ES) option with the Bachelor of Arts in Interdisciplinary Studies combines the breadth and knowledge-area depth necessary for graduates to understand and productively work to resolve increasingly complex dilemmas that include scientific, social, and cultural dimensions.

The ES option contains two informal pathways: 1) Sustainability and Society; 2) Conservation Science and Management. All students in the option will take lower division prerequisites and upper division core courses that provide broad coverage of diverse knowledge areas that are foundational to environmental studies.

(For specific admission and graduation requirements, please refer to pages 8-14 of the attached proposal.)

SIGNATURES (required)

Chair Program Director — Date 4-4-08

Dean — Date 5-27-8

College Committee — GFO - EC Chair — Date 5/19/08

Faculty Council on Academic Standards — Date 6/26/08

RESET FORM

Proposal for an Option in Environmental Studies
Interdisciplinary Arts and Sciences Program
University of Washington Bothell

A new option for Interdisciplinary Arts and Sciences (IAS) students at the University of Washington Bothell (UWB) is proposed to start in Fall 2008. The option in Environmental Studies (ES), along with the concurrent proposal for a new option in Science, Technology, and Society (STS), represents a division of the current option in Science, Technology, and the Environment (STE). If approved, the new options will join five existing options in the Interdisciplinary Studies major: American Studies (AMS); Community Psychology (CP); Culture, Literature and the Arts (CLA); Global Studies (GST); and Society, Ethics, and Human Behavior (SEB). In addition to the normal graduation requirements for the University of Washington and the core requirements for all Interdisciplinary Studies majors, students will complete 40 credits for the ES option.

A faculty and staff working group was charged with developing the proposal for the option in 2006-07 as part of the overall campus initiative to create more diverse degree opportunities for UWB students. They worked with faculty and staff from IAS and UWB, and surveyed similar programs at other institutions to craft the curriculum. The proposal was discussed for the first time at an IAS faculty meeting in Fall 2007; it was discussed for a second time and voted on at an IAS faculty meeting in Winter 2008. The vote to approve was 22 in favor, 0 opposed, and 2 abstentions.

The total incremental cost per FTE (excluding publicity, library, and computing and media start-up costs) is estimated to be $4,518.[1] Incremental revenue per FTE should be $11,500 to $12,000 based on tuition of approximately $6,000 and state subsidy of $5,500-$6,000. The estimate is based on 2 new faculty positions (assistant professor rank) at a salary of $65,000, plus benefits of $15,470 (23.8%), based on a projected increase in enrollment of 40 FTE.[2]

Description

The proposed option in Environmental Studies within IAS will provide students with an interdisciplinary educational experience that will prepare them to effectively address the gathering environmental challenges in their working and personal lives. The option will combine the breadth and knowledge-area depth necessary for graduates to understand and productively work to resolve increasingly complex dilemmas that include scientific, social, and cultural dimensions. Necessarily interdisciplinary and problem-centered, a topic area of identified high

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[1] As a point of comparison, the cost per FTE estimate contained in the proposal for the new Accounting option in the UWB Business program was $8,483 (approved in 06-07), with identical new incremental revenue projections. Note that this ES estimate includes faculty and staff positions that also will build strengths in other curricular areas in IAS and at UWB.

[2] 2007-08 salaries for Assistant Professors in comparable programs at UW Seattle programs – English, Philosophy, Geography, History – range from $58,972 to $73,890. The average salary for all Assistant Professors in IAS at UW Bothell is $64,663. The average salary for all Assistant Professors in Arts and Sciences as UW Seattle is $65,515.

demand (see below), complementary to other IAS and UWB programs, and building from existing faculty strengths, the option is a particularly good fit for IAS and UWB, and something UWB can do well with few additional resources. This option and a proposed science-focused option in Science, Technology, and Society (the subject of a separate concurrent proposal) are intended to replace the current STE option. The proposed Environmental Studies option will become available in the fall of 2008 and the curriculum will be submitted for conversion to a BA degree (as part of an omnibus package changing many current IAS options to degrees) starting in the fall of 2009.

The ES option will contain two curricular pathways: 1) Sustainability and Society; 2) Conservation Science and Management. These informal pathways may develop into transcripted degree options within a future major, but the current proposal does not rely on that eventuality. The two pathways represent distinct yet complementary high-demand areas of focus. All students in the option will take lower division prerequisites and upper division core courses that provide broad coverage of diverse knowledge areas that are foundational to environmental studies. The pathways consist of partially overlapping sets of upper division core courses and electives that allow students to develop depth in their areas of interest. Electives include many courses in other IAS options and, potentially, other UWB programs. Throughout the option and its pathways, the curriculum emphasizes interdisciplinarity, first-hand experience, and field-based and problem-based instruction.

Rationale

The ES option will be a positive development on many levels, satisfying identified needs of community, employers, students, and UWB itself. As detailed below, the new option will:

1) Address an important and current need--in the region and the world-- for environmental problem solvers and environmental literacy;
2) Target growth in areas of identified student, workforce and community demand while building on present strengths and maintaining interdisciplinary connections within IAS;
3) Expand the number of academic options at UWB in a highly efficient manner, capitalizing on existing resources and personnel;
4) Achieve efficiencies and synergies within and across majors and options, as well as across IAS and UWB as a whole;
5) Improve the quality and expand the breadth of academics in IAS and at UWB, and in particular, contribute to needed expansion of science in the UWB curriculum;
6) Contribute to the development of a UWB "signature," adding elements that will help define UWB and distinguish it from other institutions;
7) Create a strategic and flexible foundation for future growth beyond the initial proposal that contributes to a coherent expansion of curriculum at UWB: an integrated and coordinated set of programs of the type envisioned in the ASTP report that provide a meaningful presence and identity for life and environmental science in IAS at UWB

1. Important need in the region and the world:

With population growth, resource use, and the development of technology, human society is creating ever more urgent, complex, and widespread environmental problems. Understanding

and solving these challenges requires knowledge of both the natural environment and the social and cultural contexts that shape human interactions with the world. Solutions to environmental problems, from local to global scales will depend on an environmentally literate public and innovative thinkers trained to integrate knowledge across the natural sciences, social sciences, and humanities. The proposed Environmental Studies option responds to this important need by educating future practitioners who can address environmental issues both in their professional careers and in their personal lives.

The significance of environmental issues and the need to address them are increasingly recognized nationally and internationally, as evidenced by numerous recent popular treatments in books, films and other media. The importance of environmental issues is particularly widely recognized in the local region (Ewert 1999), making an Environmental Studies degree a natural fit for UWB. Furthermore, efforts to solve these environmental problems are well supported in the area, providing multiple career paths for graduates in Environmental Studies.

2. Growth potential:

In terms of student demand, Environmental Studies programs are increasing in number and importance among colleges and universities [Aldemaro Romero and Paul Silveri 2006. Not All Are Created Equal: An Analysis of the Environmental Programs/Departments in U.S. Academic Institutions From 1900 Until May 2005. Journal of Integrative Biology 1(1):1-15]. Evidence of student demand and the potential for growth offered by an Environmental Studies program, may be found at Middlebury College a comprehensive liberal arts college similar in size to near-term projections for UWB. At Middlebury, Environmental Studies is the fifth largest major, accounting for 9% of all graduates of the college over the last five years 2002-07.[3] Here in Washington, enrollment in the UWS Program on the Environment increased five-fold from 2000 to 2006 (Seattle Times October 26, 2006), while enrollment in the STE option in IAS has also increased to a total of 50 students as of Winter 2008.

It is unlikely that regional student demand for Environmental Studies is satisfied by current programs. Perhaps surprisingly, given the prominence of environmental resources and issues in the state, Washington ranks 23rd among the United States in number of college and university environmental programs per million inhabitants with 3.8 programs/million people (Romero and Silveri 2006). This puts Washington just below Wyoming (3.9) and Virginia (4.0) and well below Vermont (30.5), Montana (16.0) and Maine (15.1). With 24 programs, Washington has roughly the same number of programs as Oregon (23), a state with approximately half the population of Washington. Thus, Washington appears to be underserved in the arena of Environmental Studies and Environmental Science.

An indication of local student demand for the major may be seen in how current UWB students "vote with their feet." As of Oct. 1, 2007, IAS's new sophomore level class Introduction to Environmental Issues (BIS 243) had 53 students registered. Given the fact that this is a new course, the high enrollment suggests substantial interest among the current UWB student population in the general topic area of the proposed option. Of course the current student

[3] Fact Sheet. Middlebury College Environmental Studies. http://www.middlebury.edu/NR/rdonlyres/53541D3C-D34F-4D59-AC35-30F5AA543241/0/ESfactsheet0607.pdf

population did not choose to attend UWB because of an Environmental Studies program. We expect interest to grow further with the presence of an Environmental Studies option and publicity and recruiting directed at the program.

Consistent with the high level of interest in environmental matters in recent years, the current employment outlook for Environmental Studies graduates is favorable. This has been widely reported in the popular press. For example:

> "Graduates of the class of 2007 are finding the job market is receptive to those who want to do good by the environment. As public awareness of global warming grows, companies are scrambling to put in place greener practices, to present themselves as more eco-friendly and to develop products and services to fill a new demand for all things green. The phenomenon is creating jobs in fields like urban planning, carbon trading, green building and environmental consulting... green jobs are growing especially quickly—at double-digit rates in some specialties, like consulting." (Newsweek July 27, 2007. A Green Living; Graduates of the class of 2007 are finding that being environmentally friendly is a growth industry. By Anna Kuchment).

Projected local employment demand is also favorable, as indicated by the Prosperity Partnership's cluster size and growth analysis, which identifies the Environment and Alternative Energy sector as an economic "star," a sector that is concentrated in the region and is projected to grow faster than the US average (Prosperity Partnership 2003).

While the proposed Environmental Studies option is characterized by a flexibility and interdisciplinarity designed to serve students well in diverse career paths, the curricular pathways within the option also target the high-demand areas of (1) Sustainability (S&S pathway) and (2) Conservation Science and Management (CSM) (and eventually, Environmental Education). These areas correspond to specific employment fields identified by *The Complete Guide to Environmental Careers in the 21st Century* (1999) as having particularly high employment demand. Accordingly, the CSM pathway prepares students for employment and/or graduate work in related to Planning, GIS, and Conservation Biology. The S&S pathway prepares students in the high demand areas of Environmental Communication and Integrative Management. The future Environmental Education pathway would address high-demand areas of Communication and Education, both traditional teaching and non-traditional environmental education (Complete Guide to Environmental Careers in the 21st Century 1999).

In terms of diversifying Science, Technology, Engineering, and Math curriculum and students, numerous national studies have highlighted needs for expansion of STEM training for under-represented populations: women, minorities, persons with disabilities, and first attenders of college. Many best practices for drawing and retaining underrepresented populations in STEM fields include features that are hallmarks of UWB and the IAS program: a commitment to inclusiveness across the campus community, high faculty investment in individual students through classroom work and connections to community work, and beyond-classroom learning opportunities that connect to the world of work (BEST 2004). Context-based curricula with considerable STEM components, such as this proposed Environmental Studies option, can enhance success of underrepresented populations in STEM fields. In particular, community-UWB partnerships, such as the UW Restoration Ecology Network Capstone program, provide

essential motivation for student achievement and aid in building capacity among a greater diversity of students through a close alignment of research and practice (BEST 2004). Opportunities for development of community-based learning will be further enhanced by connections with Community Psychology and other existing IAS options, for example in areas of environmental justice and human rights.

3. Efficiency and use of existing resources to offer a new option:

A finding of UWB's 2007 Applied Science and Technology Planning (ASTP) Report is that in order to attain growth targets and respond to student demand, UWB must offer a greater variety of recognizable majors. The proposed option in Environmental Studies provides a way to expand transcripted offerings in a popular, recognizable area with few additional resources. Largely by appropriately re-structuring existing curriculum, and adding two new faculty positions, UWB can offer a new option with two new pathways focused in clearly recognizable areas: Sustainability and Conservation Science and Management. The two new positions required will support curriculum in other areas of IAS as well. A Geography/Mapping Systems/GIS position will support the newly re-started Environmental Science BS, as well as supporting other option / degree areas within IAS that benefit from geographic/spatial analysis such as MAPS, CP, GST, MACS, and others. An environmental philosophy/humanities/arts position will also support diverse elements of the IAS program.

4. Synergies and efficiencies across and within programs:

Overlapping but complementary curricula in the Environmental Studies (ES) option and the Environmental Science BS will create efficiencies in instruction, as well as providing greater numbers of students for classes in the degree programs. For example, nine of eleven courses in the Environmental Science BS major core and option cores are also required or elective in the Environmental Studies option. Similarly, extensive overlaps exist in electives, with over 90% of elective courses in the BS also serving as electives in the ES option. Within the ES option, the pathways also have extensively overlapping course requirements and electives, providing similar efficiencies. For example, of the eight courses that can be taken to satisfy pathway core requirements for the Conservation Science and Management Pathway, seven can be taken to satisfy pathway core or elective requirements in the Sustainability and Society Pathway. (It should be noted that these are *potential* overlaps. Course selections of students following different degrees, options, and pathways are likely to differ to a greater degree in most cases.)

Most electives and many of the requirements of the ES option will also be appropriate for IAS students who are not focused on Environmental Studies or Environmental Science. Each year, faculty primarily associated with the Environmental Studies and Science majors will offer approximately 20 courses (100 credits) in which we expect high or moderate participation by non-Environmental Studies/Science majors, including approximately 10 courses that will primarily draw students from outside those majors (Appendix A). Thus, the option in Environmental Studies strongly supports curriculum outside the major, as well as the IAS goal of increasing the presence of natural sciences across the curriculum and fostering general scientific literacy. Because most courses in the option will have multiple constituencies, they are expected

to have healthy enrollments. The Environmental Studies option curriculum is also integrated with IAS more broadly as Environmental Studies students can fulfill major elective requirements with courses identified with other IAS options, ranging from STS and Global Studies to Community Psychology and the two Master of Arts degrees in Policy Studies and Cultural Studies.

Beyond practical efficiencies, synergies extend to pedagogical matters as well. By providing related but distinct courses of study, the option will bring together students of different academic backgrounds and expertise to collaborate in meaningful ways in problem-centered courses. The different prerequisites and structured curricula of the options will allow students to bring complementary in-depth knowledge to bear on the course material. Furthermore, the increased diversity of student knowledge will increase the richness of interaction among students program-wide in courses outside the option.

5. Expanded breadth of academics at UWB, and in particular, contribution to needed expansion of science:

The proposed option will be an important contribution to strengthening science at UWB and integrating science with other areas of knowledge within IAS. It is widely acknowledged that there is high regional need for educational opportunities in science, as expressed in recent government and private studies, the local media, and the recent 2007 ASTP report. A premise of the Environmental Studies option is that although natural science alone is not sufficient to solve most environmental issues, it is essential. Thus, the Environmental Studies option has a strong natural science orientation and the curriculum includes substantial natural science course work. The degree requires a minimum of 15 credits of natural science and math as prerequisites, and a minimum of 10 natural science and math credits at the upper division.

The proposed option will respond to the need for more science education and science literacy in less direct ways as well. First, it will provide a new and attractive program of study that will appeal to students who are not necessarily committed to pursuing a more technical BS program but who nonetheless want to understand and participate in science-based environmental problem solving. The option is designed to allow these students to bring important alternative skills to bear on the issues. In addition, as an option that is distinct from, but related to, the Environmental Science BS, the ES option will give students the flexibility and alternatives that come with related tracks of study, a critical need also identified by the ASTP report. As students typically change majors at least once in the course of their undergraduate education, this is important for retention. Finally, in complementing the BS, the proposed ES option supports the BS by allowing more diverse course offerings and more comprehensive coverage of important knowledge areas, all of which will create a program with that will be more attractive to a greater diversity of students. The proposed option would similarly support and be supported by the new STS option and other emerging initiatives in the natural sciences within IAS and across the campus.

6. The UWB and IAS signature and mission:

The Environmental Studies option will strengthen the UWB "signature" and mission in a variety of ways. UW Bothell is already well regarded for its innovative, community-based courses, connecting students and academics to challenges faced by local, regional, and global communities. As an inherently place-based and problem-centered field, environmental studies is well suited to teaching activities that take place the local community.

Hands-on involvement by undergraduates in field research, and the sites where that fieldwork occurs (i.e., the campus wetlands and other field sites in the region), are also potential signature elements for UWB. Many of the Environmental Studies core faculty are committed to undergraduate research and have field research interests in the local area revolving around such topics as wetland ecology and restoration, water quality and stream hydrology, and habitat conservation at the suburban/wildland interface. Faculty-undergraduate collaboration at local field sites, ant the sites themselves, such as the campus wetland, local creeks and watersheds, and other field sites in the greater King/Snohomish County area can be a distinguishing feature of UWB. The necessarily interdisciplinary nature of Environmental Studies also contributes to the well-established tradition of interdisciplinarity at UWB. As this tradition is brought to bear on specific complex community-based environmental issues, the value of interdisciplinarity will be better understood by, and communicated to, others outside of UWB.

7. Coherent expansion of curriculum at UWB and a strategic and flexible foundation for future growth:

The proposed Environmental Studies option is part of a coordinated and integrated package of offerings that would augment science at UWB in a way that is both strategic and consistent with the educational values in which UWB is grounded. It will complement other campus programs, and in particular, will contribute to, and benefit from, the BS in Environmental Science and the proposed STS Option. It will also lay important groundwork for possible future degrees in Environmental Health and Biological or Life Sciences, areas of high growth potential for UWB (ASTP Report 2007). Many synergies and efficiencies will result from the combination of these developments. The ES option will foster connections across UWB, particularly among those interested in sustainability, policy, and management. It will also augment and diversify the offerings of Natural World courses open to all IAS students, in addition to maintaining current offerings of such courses.

An indication of the proposed option's fit with campus development goals is its close alignment with the most current expression of campus-wide thinking on strategic growth planning, the 3/28/08 draft UW Bothell Academic Priorities document "The 21st Century Campus Initiative." This planning effort, still in progress, has identified sustainability as one of our seven top priorities as we grow over the next 12 years:

> ***Develop environmental and human sustainability as a signature initiative.*** *Sub-priorities under this include: Become a national model for leadership, scholarship and teaching in sustainability issues; Build on interdisciplinary and cross-programmatic studies and research in environmental and human sustainability; Promote community partnerships and leadership in sustainability activities; and Promote a green campus*

culture, with the wetlands as a centerpiece, to embody sustainability and serve as a research and teaching laboratory.

Faculty, staff and students involved in the Environmental Studies option can take the lead in fulfilling these objectives.

Learning Objectives

The cornerstone educational goals of the ES option will reinforce and extend the four core learning objectives in IAS: *critical thinking*; *collaboration and shared leadership*; *interdisciplinary research*; and *writing and presentation.* Students in the option will develop broad, rigorous, and synthetic understanding within and across disciplines; an area of focus in which a depth of understanding and knowledge is achieved and specific useable skills are acquired; an understanding of methods of inquiry – including quantitative and qualitative techniques; the ability to understand and critically evaluate diverse perspectives and forms of evidence; and skills for collaborative problem solving and effective communication of knowledge.

The specific learning objectives for the ES option focus on improving students' abilities to:

1. To understand and think critically about information and approaches from the natural sciences, social sciences, and arts and humanities, and to examine problems in an interdisciplinary fashion using multiple approaches (critical thinking and interdisciplinary research).

2. To acquire a depth of understanding of one or more knowledge areas, and use specific techniques appropriate to those knowledge areas to investigate environmental issues and contribute to solutions (interdisciplinary research).

3. To synthesize knowledge and evidence from diverse disciplines, and to bring this synthesis to bear on specific issues (critical thinking).

4. To work collaboratively with others, including those from other fields of knowledge to address complex, real-world problems (collaboration and shared leadership).

5. To consider the implications of diverse forms of information in the broad context of policy, management and other social and cultural factors (writing and presentation).

6. To communicate knowledge, principles, and practices effectively to both peers and public audiences (writing and presentation).

Note: Assessment of IA learning objectives will be undertaken in the context of IAS's current program-wide, portfolio-based assessment process.

Curriculum

1. Lower Division Prerequisites

The lower division prerequisites for the Environmental Studies option are designed to prepare students to succeed in the upper division courses of this subject area.

One introductory Chemistry course (BCUSP 142 or equivalent)

One introductory Biology course (BES 180 or equivalent)

One introductory Earth System Science course (BIS 242 or Geology or Oceanography or Physical Geography or equivalent)

One introductory Statistics course (BIS 232 or equivalent.). Students can be admitted to the major without having met this requirement if they enroll in BIS 315 during their junior year.

2. Upper Division Option Structure

Environmental Studies Option Requirements:

The upper division Environmental Studies option curriculum consists of core courses that address widely relevant interdisciplinary coursework in the natural sciences, social sciences, and the humanities, and two pathways, each providing students with a different focus and specific area of technical expertise.

All Environmental Studies students are required to take BIS 300 (Interdisciplinary Inquiry) and BES 301 (Science Methods and Practice) or BIS 312 (Foundations of Social Research) to establish a foundation for advanced coursework in the degree program. All students would also take a common core course in the fundamentals of environmental studies (BIS 243). Courses in introductory Ecology (BES 312 or BIS 390), Economics (BIS 200, BIS 320, BIS 324 or BIS 394), and Environmental Ethics (BIS 356) or Foundations of Environmental Thought (BIS 3xx) provide students with basic natural science, economic, and cultural understandings on which all branches of Environmental Studies are based. These courses will ensure that all Environmental Studies students have a rigorous background in the principles and practices that underpin their more focused coursework in the option. All students also take a Senior Seminar or Senior Capstone course.

All students will be encouraged (but not required) to take a Current Environmental Topics seminar, which will present a series of local, regional, and national speakers on environmental issues of current importance three to four times each quarter. This seminar series will also be attended by Environmental Science students, and should be of interest to other students and faculty from across UWB as well. In addition to giving students diverse perspectives on current issues, the seminar series will serve as an opportunity for building community among Environmental Science and Environmental Studies students as well as allowing exchange with peers in other fields of study.

Pathway Core Course Requirements

The pathway requirements are designed to provide students with the fundamental knowledge and approaches necessary for more advanced study in their pathway and to lay the foundation for graduate study or employment in that area. Most of these requirements take the form of sets of a small number of courses, from which the student must take one or two. This has the benefits of making the program more feasible to offer, giving students more flexibility, and allowing for a greater diversity of course offerings.

Pathway Distribution Requirements

Students in both pathways are required to take courses in distribution areas of (1) Environmental Policy and Management, (2) Society and Environment, (3) Methods and Practices, and (4) Environmental Science, as well as fulfilling a senior capstone or senior seminar requirement. These courses contribute to breadth in areas in which students choose not to concentrate, and greater depth in their focus areas.

An appropriate senior capstone or any appropriate IAS senior seminar requirement will challenge students to apply what they have learned to hands-on, real-world situations – often in a collaborative, community-based context. The University of Washington Restoration Ecology Network capstone is a well-recognized example of such an experience. As student numbers grow, we could also offer a similarly integrative and collaborative conservation or sustainability capstone. Students engaging in these capstone or senior seminar experiences would have the benefit of a review of their learning portfolio, as is accepted practice in the IAS program.

Upper division course requirements of the option total 70 credits, leaving students 20 additional general elective credits that may be used for any University-approved courses.

Environmental Studies Upper Division Requirements	
BIS 300 Interdisciplinary Inquiry	
BES 301 Science Methods & Practice **OR** BIS 312 Approaches to Social Research	
BIS 243 Introduction to Environmental Studies	
BES 312 Ecology **OR** BIS 390 Ecology and the Environment	
Economics (Political Economy or Environmental Economics) (BIS 200, 320, 324, 394 or equiv.)	
BIS 356 Ethics and the Environment **OR** BIS 3xx Foundations of Environmental Thought	
BIS 490 Senior Seminar or Senior Capstone Experience	
Sustainability and Society Pathway	**Conservation Science and Management Pathway**
Pathway Core Requirements	
	BIS 3xx Introduction to GIS
Sustainability Focus courses: 10 credits	BES 485 Conservation Biology
Pathway Distribution Requirements *Lists of courses in each category are shown on the following pages*	
Environmental Science – 5 credits	**Environmental Science** – 5 credits
Methods & Practices – 5 credits	**Methods & Practices** – 5 credits
Society & Environment – 10 credits	**Society & Environment** – 5 credits
Policy & Management – 5 credits	**Policy & Management** – 10 credits

Pathway Core Requirements
Students in each pathway are required to take courses in designated areas of study (see curriculum table on preceding page). The courses available at UW Bothell to satisfy these areas of study will change with time. Current courses that are included in the sustainability focus are listed below. Courses in italics have not been offered to date, but are planned.

Sustainability Focus

Courses in this area directly incorporate substantial knowledge and approaches to the study of sustainability as a major focus of the course.

BIS 240 Introduction to Sustainable Practices
BIS 392 Water & Sustainability
BIS 459 Conservation & Sustainable Development
BIS 3xx Topics in Sustainability

Pathway Distribution Course Lists

The following courses satisfy pathway distribution requirements in the proposed Environmental Studies option. An open (white) box indicates the course satisfies the distribution requirement for that pathway. Shaded box indicates that it does not. Courses in italics have not been offered to date. Courses are 5 credits unless indicated otherwise in parentheses. Courses taken to fulfill pathway cores may not be used to fulfill distribution requirements.

Environmental Science Courses

		S&S	CSM
BIS 306	Marine Diversity and Conservation		
BES 311	Environmental Chemistry & Lab (7)		
BES 312	Ecology		
BES 362	Introduction to Restoration Ecology		
BIS 386	Global Environmental Issues		
BIS 390	Ecology and the Environment		
BES 397	Special Topics in Env. Science		
BES 3xx	*Pacific Northwest Plants*		
BES 3xx	*Evolution*		
BES 3xx	*Environmental Microbiology*		
BES 3xx	*Hydrogeology*		
BES 430	Air Pollution and Health		
BES 460	Water Quality		
BES 485	Conservation Biology		
BES 488	Wetland Ecology		
BES 489	Pacific Northwest Ecosystems		
BES 4xx	*Adv. Topics in Env. Science*		
BES 4xx	*Adv. Topics in Ecol. and Cons. Biol*		

Methods & Practices Courses

		S&S	CSM
BBSKL 300	Business Team Skills		
BES 302	Environmental Problem Solving		
BES 316	Ecological Methods		
BES 317	Soils Laboratory		
BES 3xx	*Env. Monitoring Practicum(3)*		
BES 3xx	*Pacific Northwest Plants*		
BES 3xx	*Science Writing*		
BIS 3xx	*Intro. to Geographic Info. Systems*		
BIS 430	Topics in Qualitative Inquiry		
BES 415	Adv. Env. Meas. Laboratory		
BES 439	Comp. Model. & Vis. in Env. Sci.		
BES 460	Water Quality		
BES 487	Field Lab Wildland Plants and Soils		
BEDUC	493: Environmental Education		
BES 4xx	*Env. Interpretation*		
BES 4xx	*Field Applications in Env. Science*		
BES 4xx	*Field Applications in GIS*		

Environmental Policy & Management Courses

		S&S	CSM
BIS 338	Political Institutions &Processes		
BIS 346	Topics in Environmental Policy		
BES 362	Intro. to Restoration Ecology		
BIS 4xx	*Environmental Policy*		
BIS 415	Public Policy and Law		
BIS 419	Urban Politics and Policy		
BIS 421	Technology Policy		
BIS 458	Energy, Env. and Society		
BES 485	Conservation Biology		
BES 486	Watershed Ecol & Management		
BPOLST 492	Topics in Policy Research		
BIS 4xx or BBUS 4xx	*Environmental Management*		
BIS 4xx	*Land Use Planning & Conserv.*		
BIS 4xx	*Environmental Impact Assess.*		

Society & Environment Courses

		S&S	CSM
BIS 281	Global Politics		
BIS 282	Globalization		
BIS 303	History and Globalization		
BIS 304	Institutions and Social Change		
BIS 320	Comparative Political Economies		
BIS 324	International Political Economy		
BIS 333	Individual and Society		
BIS 353	Human Rights Theory & Pract.		
BIS 356	Ethics and the Environment		
BIS 358	Issues in Environmental Science		
BIS 359	Ethics and Society		
BIS 362	Contemp. Polit. Ideas & Ideol.		
BIS 365	Expl Am Pop. & Consum.Culture		
BIS 386	Global Environmental Issues		
BIS 390	Ecology and the Environment		
BIS 392	Water and Sustainability		
BIS 393	Env. History of the Bioregion		
BIS 394	Comparative Economic Devel.		
BIS 395	Sustainable Practices		
BIS 3xx	*Future Washington*		
BIS 3xx	*Foundations of Env. Thought*		
BIS 3xx	*Eco-arts*		
BIS 411	Biotechnology and Society		
BIS 445	Meanings & Realities of Inequal.		
BIS 458	Energy, Environment & Society		
BIS 459	Conservation and Sustain. Devel.		
BIS 470	Art, Politics and Social Change		

Administration and Advising

The Environmental Science option will be located and administered in the IAS Program under the direction of the IAS program director. Advising will be done principally by IAS advisors, as is done for other IAS options and degrees. Increased advising support needs can be anticipated to be minor with the addition of this one option (partly as it is a replacement for some of the STE option), but this new options in conjunction with other proposed curricular developments in IAS may place substantially increased burdens on the administrative and advising personnel. The Environmental Studies Curricular Area Working Group will work with the IAS advisors to provide clearly understandable advising materials (hard copy and web-based) for prospective and enrolled students.

Impact on other Curricular Areas

The proposed Environmental Studies option presents an efficient means to expand offerings at UWB, allowing IAS to offer two new options (ES and STS) and a new major (Environmental Science), along with substantial support for other curricular areas, with a small commitment of additional resources. The curriculum for the proposed option consists nearly entirely of courses already offered by existing faculty and a small number of new courses offered by existing faculty. Thus, the proposed option, to a large degree, represents a structuring of existing curriculum to produce a new degree. The exception is two new hires in the near term: Environmental Philosophy/Humanities/Arts and Geography/Mapping Systems/GIS. These hires would also support the BS in Environmental Science and other areas within IAS.

Under the proposed curriculum, courses taught by environmental studies faculty that serve non Environmental Studies students would continue to be taught, and additional courses would be added (see Appendix C). Thus, students from across IAS would benefit from having larger numbers of more diverse courses available to them. Each year, faculty primarily associated with the ES option would offer approximately 20 courses (100 credits) in which we expect high or moderate participation by non-Environmental Studies students, based on current and past enrollments in these courses . It is anticipated that an average of approximately 10 of these courses would primarily draw students from outside the Environmental Studies option. Approximately 15 courses per year could be taught at night, although it is not anticipated that all courses that could be taught at night would be only taught at night (Appendix B). In addition, each year a MAPS course, a section of BIS 300, approximately 4 sophomore courses, and approximately 4 CUSP courses would be staffed by Environmental Studies core and affiliate faculty (not including Dolsak).

Faculty and Staff

Listed below are the core and affiliate faculty and staff currently involved in the Environmental Studies curricular area working group. Once the option is launched, this list will change and grow, both in IAS and across UWB.

Core Faculty and Staff:

Nives Dolsak (Associate Professor, IAS); public and international policy, governance of common pool resources, environmental policy, international relations

Mike Gillespie (Senior Lecturer, IAS): environmental philosophy, social philosophy

Warren Gold (Associate Professor, IAS): ecology, plant ecology and physiology, restoration ecology

Martha Groom (Associate Professor, IAS): conservation biology, sustainable development, ecology, environmental policy

Dan Jaffe (Professor, IAS); global atmospheric chemistry, environmental chemistry

Dave Stokes (Associate Professor, IAS): conservation biology, animal ecology, conservation planning

Rob Turner (Assistant Professor, IAS): earth and environmental sciences, coastal processes, hydrology

Affiliate Faculty and Staff:

Steve Collins (Associate Professor, IAS): technology studies, political economy, asian studies
Colin Danby (Associate Professor, IAS): political economy, development
Ben Gardner (Assistant Professor, IAS, beginning in Autumn 2008) cultural studies, environmental studies, geography
Cinnamon Hillyard (Assistant Professor, IAS): mathematics education, applied math
Chuck Jackels (Professor, CSS/IAS): computational science, environmental and atmospheric chemistry
Kanta Kochhar-Lindgren (Associate Professor, IAS); performance studies, eco-arts, sci-arts
Bruce Kochis (Senior Lecturer): human rights, policy studies
Carole Kubota (Professor, Education): science education, environmental education
Peter Littig (Assistant Professor, IAS): mathematics, interdisciplinary mathematics
Rebecca Price (Assistant Professor, IAS): evolutionary biology, paleobiology, invertebrate zoology
Marc Servetnick (Associate Professor, IAS): developmental biology, genetics, human health

Near future core faculty and staff hires: Environmental Humanities/Arts, Geographer/Mapping Systems/GIS; Wetlands Coordinator
Near future affiliate faculty and staff hires: Science and Technology Studies, Policy Studies, Cultural Studies, Physical / Chemical Environmental Scientist

Budgetary Impact

The proposed option can be offered with two additional tenure-track faculty hires, one professional staff position (wetlands coordinator shared with CCC and other areas of IAS), and start-up costs for publicity. Library resources have already been accrued through the existing STE degree option.

Tenure-track environmental geographer

The most pressing need is for a faculty person with expertise in GIS and any of several areas of spatial or geographic study, and perhaps community-based mapping systems and practices. The area of academic focus for a person with such knowledge and approaches can range widely and further discussion among IAS faculty would be necessary to decide whether a broad search would be conducted or if it would be restricted to a subset of academic areas. This person is expected to contribute to the wider IAS program in addition to Environmental Studies, as there are many areas in other options and MAPS that would benefit from GIS and a geographic approach. The same hire is also a major resource requirement for the other new science option and the proposed modified Environmental Science BS.

Tenure-track environmental humanities position

Arts and humanities are fundamental to Environmental Studies, and also serve to integrate the option with other curricular areas within IAS. We currently have restricted adjunct faculty coverage in the area of environmental ethics, a particularly important foundational element of the field. A new hire in this area will provide long term sustainability of the option and improved course availability in this area, providing more course offerings than can be accommodated with current adjunct staff. This position is expected to strongly support other curricular areas in IAS outside of Environmental Studies, including the new Interdisciplinary Arts degree option. It is also anticipated that diversity of course offerings in environmental arts and humanities generally will increase with time through collaborations with existing and future faculty identified with other IAS options.

Professional staff wetlands coordinator position

This proposal also requests support for a shared staff position of a campus wetlands science and education coordinator. Such a position would focus on integrating science classes and student and faculty research with legally-mandated permit compliance monitoring and long-term scientific monitoring needs. This staff position would be instrumental in developing the use of this campus resource for K-12 students (enhancing our emerging efforts in the curricular area of environmental / science education and campus recruitment efforts), other colleges and universities, and the general public. The .25 staff line for a Wetlands Coordinator would support research and community outreach centered on our campus restoration project. The position would be split 50:50 with Cascadia, and the costs borne by IAS would be split between the BS in Environmental Science and this option.

Facilities

Supporting growth in related laboratory sciences will require large-scale investments across the campus. While lacking these investments will not prevent this option from getting started, this will limit its growth over the long term.

Permanent Costs:

2 Faculty lines ($65,000, plus $15,470 benefits)	$160,940
0.25 Wetland Coordinator ($12,500, plus $7,285 benefits)	$19,785
TOTAL	$180,725

Start-up Costs:

Start-up Publicity (08-09)	$7,500

Appendix A: Sample Student Schedules

Sample student schedules for the Conservation Science and Management and Sustainability and Society pathways. These are only examples of many possible permutations. Because most of the pathway requirements consist of sets of alternative courses, and the lists of distribution electives are quite inclusive, students will have a high degree of flexibility in their schedules. Even entering Juniors who begin the option in Winter quarter can finish in six quarters. The degree could likely be completed by part-time night students, over three years within the Sustainability and Society pathway.

Conservation Science & Management Pathway

Junior Year

Fall	Winter	Spring
BES 3XX Current Environmental Topics Seminar (*2 credits during year*)		
BES 300 Interdisciplinary Inquiry	BES 312 Ecology	BES 362 Restoration Ecology
BES 301 Sci. Methods & Pract.	BIS 356 Ethics & Environment	Field Applications Course
Environ Policy & Mgmt. course	BES 485 Conservation Biology	Elective

Senior Year

Fall	Winter	Spring
Policy & Mgmt. course	Methods & Practice course	Environ. Science course
BES 3XX Intro to GIS	Society & Environment course	Conservation Capstone
Elective	Elective	Elective

Sustainability and Society Pathway

Junior Year

Fall	Winter	Spring
BES 3XX Current Environmental Topics Seminar (*2 credits during year*)		
BES 300 Interdisciplinary Inquiry	BES 312 Ecology	Methods & Practice course
Society & Environment course	BIS 356 Ethics & Environment	Policy & Mgmt. course
BES 301 Sci. Methods & Pract.	Sustainability Focus course	Elective

Senior Year

Fall	Winter	Spring
Sustainability Focus course	Society & Environment course	Senior Seminar
Environ. Policy & Mgmt. course	Elective	Environ. Science course
Elective	Elective	Elective

Appendix B: Environmental Studies Course Availability

The number in bold (and red font) following each requirement indicates projected course availability. **It is the number of times a course is offered that can fulfill that requirement in a 2 year period** (based on projected offerings from 2009-10 and 2010-11).

"+" following the course availability number means that 1-3 courses taught by someone outside of the principal faculty in Environmental Studies/Science would also satisfy the requirement. These courses were not included in the count because we cannot be certain how often they are offered.

"++" following the course availability number means that many (> 3) additional courses taught by faculty outside of the principal faculty in the ES would also satisfy the requirement. These courses were not included in the count because we cannot be certain how often they are offered.

Environmental Studies Upper Division Requirements	
BIS 300 Interdisciplinary Inquiry **MANY**	
BES 301 Science Methods & Practice **OR** BIS 312 Approaches to Social Research **~ 6**	
BIS 243 Introduction to Environmental Studies **~ 4**	
BES 312 Ecology **OR** BIS 390 Ecology and the Environment **~ 4**	
Economics (BIS 200, 320, 324, 394 or equivalent) **~ 6**	
BIS 356 Ethics and the Environment **OR** BIS 3xx Foundations of Environmental Thought **~ 2-3**	
S&S Pathway	**CSM Pathway**
Pathway Core Requirements	
Sustainability Focus (10 cr) **~5**	BIS 3xx Introduction to GIS **2**
	BES 485 Conservation Biology **2**
Pathway Distribution Requirements	
Senior Seminar OR Capstone – 5credits **2 +**	**Senior Seminar OR Capstone** – 5 credits **2 +**
Environmental Science – 5 credits **> 10**	**Environmental Science** – 5 credits **>10**
Methods & Practices – 5credits **> 8 +**	**Methods & Practices** – 5credits **~ 4**
Society & Environment – 10 credits **> 10 ++**	**Society & Environment** – 5 credits **> 10**
Policy & Management – 5 credits **7 ++**	**Policy & Management** – 10 credits **7 ++**

Appendix C: Commitment to teaching across the curriculum

Based on the above teaching schedule, teaching commitments (expressed in credits) covered outside of the Environmental Studies option and BS in environmental science required courses by core faculty (MG, WG, DJ, BP, MS, DS, RT and NH) are summarized. Also included are courses that bring natural science to students outside of the ES option or environmental science major (these include some courses that are taken by students in the major / option but are accessible for other students).

NOTES: The following numbers are approximate. Credits are expressed on an academic year basis followed by credits in each quarter in parentheses (Autumn, Winter, Spring)

1st year:	**# Credits**	(A, W, Sp)
100-level (CUSP)	20	
200 level (including Biology 180)	15	
BIS 300	5	
Upper division courses designed to accommodate non majors:	40	(15, 15, 10)
All upper division courses with high non-majors enrollment:	82	(32, 30, 20)
All upper division courses with moderate non-majors enrollment:	33	(10, 13, 10)
MAPS	5	
Potential nighttime offerings *	60	(20, 30, 10)
2nd year:		
100-level (CUSP)	20	
200 level (including Bio180)	15	
BIS 300	5	
Upper division courses designed to accommodate non majors:	40	(10, 15, 15)
All upper division courses with high non-majors enrollment:	57	(10, 25, 22)
All upper division courses with moderate non-majors enrollment:	38	(15, 18, 5)
MAPS	5	
Potential nighttime offerings *	50	(10, 25, 15)
3rd year:		
100-level (CUSP)	25	
200 level (including Bio180)	15	
BIS 300	5	
BIS 490	5	
Upper division courses designed to accommodate non majors:	50	(15, 20, 15)
All upper division courses with high non-majors enrollment:	72	(25, 32, 15)
All upper division courses with moderate non-majors enrollment:	43	(15, 13, 15)
MAPS	5	
Potential nighttime offerings *	65	(25, 25, 15)

* only indicates credits associated with courses that could reasonably offered in the evening given the course content, target audience, and activities– many would not necessarily be offered at night

UNIVERSITY CAMPUSES UNDERGRADUATE PROGRAM REVIEW PROCEDURES**

CHECKLIST

Title of Proposal: Option in Individualized Study (BIAS-20080305B)

Proposed by (unit name): Interdisciplinary Arts and Sciences

Originating Campus:

___UW, Seattle

_X_UW, Bothell

___UW, Tacoma

I. **Phase I. Developed Proposal Review** (to be completed by Originating Campus' Academic Program Review body)

A. Review Completed by: (list name of program review body)

Chaired by:

05/01/08 Date proposal received by originating campus's review body

05/02/08 Date proposal sent to University Registrar

05/07/08 Date proposal posted & email sent to standard notification list

06/26/08 Date of originating campus's curriculum body approval
(Note: this date must be 15 business days or more following date of posting)

B. __2___ Number of comments received. Attach the comments and a summary of the consideration and responses thereof : (1-2 paragraphs)

II. **Phase II. Final Proposal Review** (to be completed by FCTCP)

A. Review Completed by:
7/11/08 FCTCP subcommittee
n/a FCTCP full council
Chaired by: Janet Primomo

7/8/08 Date request for review received from University Registrar

7/16/08 Date of FCTCP report

B. Review (attached)

YES NO
_x__ ___ Was notice of proposal posted on UW Website for 15 business days?

_x_ ___ Was notice of proposal sent to standard mailing list 15 business days in advance of academic program review?
_x_ ___ Were comments received by academic program review body?
_x_ ___ Was response to comments appropriate? (explain, if necessary)
_x_ ___ Was final proposal reviewed by FCTCP within 14 days of receipt?
_x_ ___ Was there adherence to the University Campuses Undergraduate Program Review Process? (explain, if necessary)

C. Recommendation

_x_ Forward for final approval
___ Forward to Provost because of University issues (Explain)
___ Return to campus council because of insufficient review (Explain).

**Endorsed by Faculty Senate Executive Committee, 1/10/05, modified 1/31/06; These procedures apply to new undergraduate degrees, majors, minors (and certificates) and substantive changes to same

Summary:
A subcommittee of FCTCP completed the Phase II review of the Option in Individualized Study (BIAS-20080305B) at UW Bothell). The FCTCP sub-committee noted that all procedures were followed; the proposal generated 2 comments that were responded to appropriately by the originating unit.

The FCTCP is pleased to have the Registrar forward the final proposal to the President for final action and transmit the information to the UWB Chancellor. Thank you.
Janet Primomo, Chair, FCTCP