

COVER SHEET
NEW DEGREE PROGRAM PROPOSAL

Program Information

Program Name: Interdisciplinary Arts and Sciences

Institution Name: University of Washington, Bothell

Degree Granting Unit: University of Washington, Bothell

Degrees:

B.A. (Environmental Studies) CIP code 03.0101

Level: Bachelor Type: (of) Arts

Major: Environmental Studies CIP Code: See above

Minor: None Concentration(s): None

Proposed Start Date: Winter 2010

Projected (Current) Enrollment (FTE) in Year One: 46 At Full Enrollment by Year: 68

Proposed New Funding: NONE

Funding Source: State FTE Self Support Other

Mode of Delivery / Locations

Campus Delivery: Bothell

Off-site

Distance Learning

Scheduling

Day Classes Evening Classes Weekend Classes

Other (*describe*)

Attendance Options

Full-time

Part-time

Total Credits varies Quarter Semester

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Endorsement by Chief Academic Officer

July 29., 2009

Date

Application to the
Higher Education Coordinating Board
for New Degrees

Bachelor of Arts in Environmental Studies

University of Washington Bothell

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1. Introduction

The purpose of converting the Environmental Studies option to a B.A. degree, along with seven other options proposed for conversion in 2009, is threefold: to raise visibility to potential students; to better recognize achievements of graduates; and to consolidate past program-building. As part of this larger group of B.A. degrees, this degree will help to build an institution that can meet a range of student, employer, and community demands and aspirations; support the public priority of raising educational attainment among state residents; and address skill gaps caused by retirements over the next decade.

In parallel with the other proposed baccalaureate degrees, the B.A. in Environmental Studies will be supported by a faculty skilled in interdisciplinary scholarship, by administrative structures that facilitate assessment and pedagogy, and by a campus committed to expanding degree opportunities for residents of the Northern Puget Sound region. “Interdisciplinary” signals a commitment to the fundamental values of rigorous inquiry and collaboration that underlie all higher education, whatever its disciplinary allegiances.

The proposed B.A. in Environmental Studies (ES) within Interdisciplinary Arts and Sciences (IAS) at the University of Washington Bothell (UWB) will provide an interdisciplinary educational experience that will prepare graduates to address the gathering environmental challenges in their working and personal lives. Approved as a transcripted option within the Interdisciplinary Studies major and launched in 2008-09, the B.A. will combine the breadth and knowledge-area depth necessary for graduates to understand and work to resolve increasingly complex dilemmas that include scientific, social, and cultural dimensions. This interdisciplinary and problem-centered degree addresses a topic area of identified high demand, complements other IAS and UWB programs, and builds on existing faculty strengths.

Like the current ES option in the Interdisciplinary Studies major, the Environmental Studies B.A. will contain two pathways: 1) Sustainability and Society; 2) Conservation Science and Management. If the B.A. is approved, it is our intention to apply to convert these into options. These pathways will become transcripted degree options within the ES major. All students in the degree will take lower division prerequisites and upper division core courses that provide broad coverage of diverse knowledge areas foundational to environmental studies. The options 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 degrees and, potentially, other UWB programs. Throughout the B.A. and its pathways, the curriculum emphasizes interdisciplinarity, first-hand experience, and field-based and problem-based instruction.

Conversion of options to full B.A. degrees will help visibility and recruitment, and also meet student interest in clearer recognition of their baccalaureate achievements. In a survey conducted in November 2008, 62% of respondents preferred BA status for their degrees, 27% preferred the current option arrangement, and 11% had no preference.¹ Students preferring BA status were

¹ IAS, 2009 Application to the Higher Education Board, Bachelors of Arts in American Studies; Community Psychology; Culture, Literature, and the Arts; Global Studies; Science, Technology and Society; and Society, Ethics, and Human Behavior, Appendix 5.

especially likely to agree with the propositions that their degree name would make a difference when applying to professional or graduate school, or for a job or promotion.

2. Relationship to Institutional Role, Mission, and Program Priorities

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 B.A. 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.

The ES degree will satisfy identified needs of community, employers, students, and UWB itself. As detailed below, the degree will:

- Address an important and current need--in the region and the world-- for environmental problem solvers and environmental literacy;
- Target growth in areas of identified student, workforce and community demand while building on present strengths and maintaining interdisciplinary connections within IAS;
- Expand the number of academic degrees at UWB;
- 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;
- Create a strategic and flexible foundation for future growth beyond the initial proposal that contributes to a coherent expansion of science offerings at UWB.

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 B.A. in Environmental Studies expands the existing transcripted degree option in the Interdisciplinary Studies major in a popular, recognizable area. \

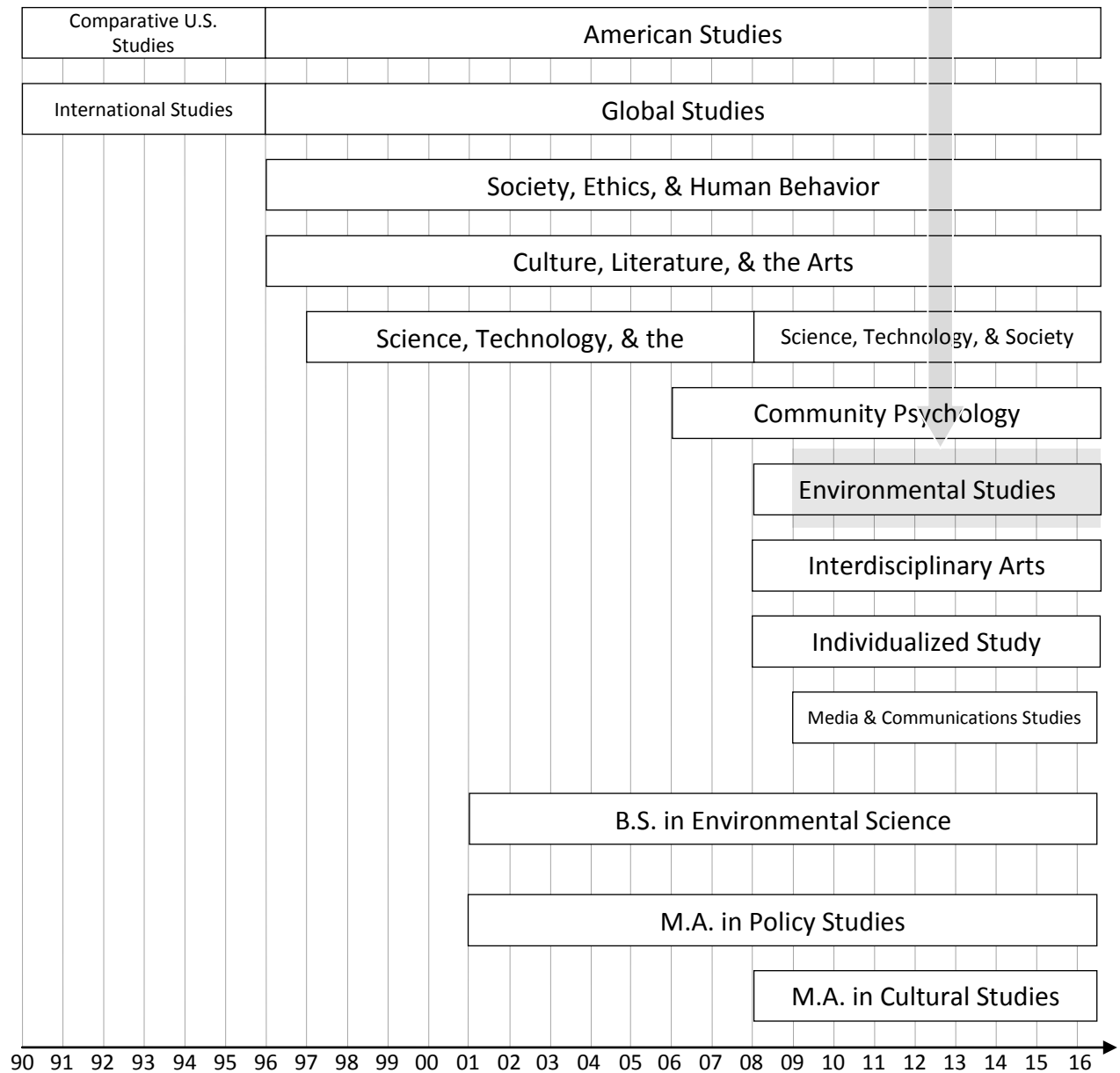
Overlapping but complementary curricula in the Environmental Studies (ES) B.A. and the Environmental Science B.S. will create efficiencies in instruction and provide greater numbers of students for classes in the degree programs. For example, nine of eleven courses in the Environmental Science B.S. major core and B.A. 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 degree. Within the ES B.A., 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 option 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.

Most electives and many of the requirements of the Environmental Sciences B.A. are 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 offer approximately 20 courses (100 credits) in which we see high or moderate participation by non-Environmental Studies/Science majors, including approximately 10 courses that will primarily draw students from outside those majors. Thus, the B.A. 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. The Environmental Studies curriculum is also integrated with IAS more broadly as Environmental Studies students can fulfill major elective requirements with courses identified with other IAS degrees, ranging from Science, Technology, and Society (STS) and Global Studies (GST) to Community Psychology (CP) and the two Master of Arts degrees in Policy Studies and Cultural Studies.

Interdisciplinary Arts and Sciences Current and Proposed* Degrees

Conversion from option to major discussed in this proposal



*The first nine degrees are now offered as options under the B.A. in Interdisciplinary Studies. The Media and Communications Studies option has recently been approved and is planned to start in Fall 2010.

3. Need for Program

3.1 Student Demand

Environmental Studies programs are increasing in number and importance among colleges and universities.² 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 B.A.. The launch of the ES option in 2008-09 has generated similar levels of interest.

3.2 Employer and Community Demand

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

² 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

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

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).

Although the proposed Environmental Studies B.A. is characterized by a flexibility and interdisciplinarity designed to serve students well in an expansive array of diverse career paths, the options within the major also target the high-demand areas of (1) Sustainability (S&S option) and (2) Conservation Science and Management (CSM). 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, CSM prepares students for employment and/or graduate work in related to Planning, GIS, and Conservation Biology. S&S prepares students in the high demand areas of Environmental Communication and Integrative Management(Complete Guide to Environmental Careers in the 21st Century 1999).

In terms of diversifying Science, Technology, Engineering, and Math (STEM) 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 together represent an “underrepresented majority” in STEM fields. 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 investment in beyond-classroom learning opportunities that connect to the world of work (BEST 2004). Context-based curricula with considerable STEM components 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).

4. Support for Statewide Strategic Master Plan for Higher Education

Approval of the Environmental Studies B.A. and its sister B.A. degrees in IAS will make a range of arts and sciences studies sciences available to students in our fast-growing service region of northern King County and southern Snohomish County, and support current campus efforts to develop innovative degree offerings capable of attracting students from greater distances.

As institutional research has shown⁴, offering a wider range of formal degrees should appeal to students who currently do not see their interests reflected in our curriculum. Retention will be aided by offering a range of interconnected degrees, so that students who find their interests evolving will be more likely to find new landing places on our campus. Such movement is facilitated by an interconnected set of degree offerings in which students have regular contact with other students pursuing other degrees.

IAS has grown up serving students who have families and jobs, and almost half our students are still of “non-traditional” age. Interdisciplinary Arts addresses a category of study that shows up high on interests stated by state residents but which is otherwise unavailable to place bound students in our area. While this and other liberal-arts B.A.s are not strictly vocational degrees, the proposed B.A. should help address regional employment demand in a range areas, and help provide foundations for new K-12 teachers.

5. Relationship to Other Institutions

IAS and indeed UWB developed as upper-level institutions offering courses only at the junior level and above. Only in the last two years has the campus had freshmen and sophomores. Thus we have accepted large numbers of community-college transfers from our founding, and developed programs with an eye to the needs of that population. Roughly half of the student flows through the proposed BA degrees, in their current form as options, remains community college transfer students. We are working with the UWB Admissions Office to expand the reach of recruiting beyond our immediate region.

6. Program Description and Curriculum

Context

IAS is built around a common core of pedagogical goals

- critical thinking
- collaboration and shared leadership
- interdisciplinary research
- writing and presentation

The B.A. in Environmental Studies will be supported by:

- An IAS program staff with many years of experience serving students in the region, in particular nontraditional students and community college transfers.

⁴ Please see the current six-degree proposal (IAS, 2009 *Application to the Higher Education Board, Bachelors of Arts in American Studies; Community Psychology; Culture, Literature, and the Arts; Global Studies; Science, Technology and Society; and Society, Ethics, and Human Behavior*), Section 5 and appendices 16.2, 16.4, and 16.5, for further data and discussion.

- Faculty members recruited for skills in interdisciplinary teaching, and prepared to offer courses in more than one area.
- A common, in-depth assessment system.
- Long-standing integration between IAS faculty and the professional staffs of the library and writing and quantitative skills centers.

Among formal mechanisms for the exchange of ideas are the Project for Interdisciplinary Pedagogy, the annual committees that work on assessment and the Program Core course, and teaching circles.

Basic requirements for admission are that students applying with 80 or more credits must have five credits of intermediate algebra, ten credits of foreign language, five of English composition, and five of quantitative and symbolic reasoning, in addition to fifteen in each of the three UW distribution areas, Visual, Literary and Performing Arts, Individuals and Societies, and Natural World. IAS conducts a holistic review of all applications. A 2.5 minimum cumulative GPA is expected, but special circumstances may allow for admission of students with lower cumulative GPAs. These requirements apply to all six degrees described below with the exception of Science, Technology, and Society, which has additional requirements described in that section.

Learning Objectives

The cornerstone educational goals of the ES B.A. 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 degree 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 B.A. focus on improving students' abilities to:

1. 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. 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. Synthesize knowledge and evidence from diverse disciplines, and to bring this synthesis to bear on specific issues (critical thinking).
4. Work collaboratively with others, including those from other fields of knowledge to address complex, real-world problems (collaboration and shared leadership).

5. 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. 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 degree are designed to prepare students to succeed in the upper division courses of this subject area.

- Two introductory lab courses in Biology, Chemistry, or Earth Sciences. (This gives the student the latitude to take more than one course within an area (e.g., BIOL 180 & 200 or CHEM 142 & 152) , and also provides more flexibility for student scheduling. We anticipate that many students starting the major here on the UWB campus will satisfy this requirement by taking the first two quarters of the Biology sequence.)
- One 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 Structure

The upper division Environmental Studies B.A. 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.

A. Common Requirements (35 credits)

- BIS 243, a common core in the fundamentals of environmental studies
- BIS 300 (Interdisciplinary Inquiry)
- BES 301 (Science Methods and Practice) or BIS 312 (Foundations of Social Research)
- BES 312 Ecology or BIS 390 Ecology and the Environment
- At least one course in Political Economy or Environmental Economics (BCUSP 200, BIS 320, 324, 394 or equivalent)
- BIS 356 Ethics and the Environment or BIS 3xx Foundations of Environmental Thought
- BIS 490 Senior Seminar or Senior Capstone Experience

B. Pathway cores: Students are asked to elect one of two pathways: (10 credits)

1. Sustainability and Society Pathway Cores: at least ten credits from this list:

BIS 240 Introduction to Sustainable Practices
 BIS 392 Water & Sustainability
 BIS 459 Conservation & Sustainable Development
 BIS 468 Human Rights and Sustainable Development
 BIS 396 Topics in Sustainability

2. Conservation Science and Management Pathway Cores

BIS 342 Introduction to GIS
 BES 485 Conservation Biology

C. Electives: (20 credits) At least one from each category, in addition to pathway core courses.

Environmental Science

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 Environmental Science
 BES 490 Pacific Northwest Plants in Conservation & Restoration
 BES 3xx Evolution
 BES 3xx Environmental Microbiology
 BES 318 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 Advanced Topics in Environmental Science
 BES 4xx Advanced Topics in Ecological and Conservation Biology

Methods and Practices

BBSKL 300 Business Team Skills
 BES 316 Ecological Methods
 BES 317 Soils Laboratory
 BES 303 Environmental Monitoring Practicum(3)
 BES 490 Pacific Northwest Plants in Conservation & Restoration
 BES 3xx Science Writing
 BIS 342 Geographic Information Systems
 BIS 410 Topics in Qualitative Inquiry
 BES 415 Advanced Environmental Meas. Laboratory
 BIS 430 Social Theory and Practice
 BES 439 Computer Modeling & Visualization in Environmental Science

BES 460	Water Quality
BES 487	Field Lab Wildland Plants and Soils
BEDUC	493: Environmental Education
BES 4xx	Environmental Interpretation
BES 4xx	Field Applications in Environmental Science
BES 4xx	Field Applications in GIS

Society and Environment

BIS 281	Global Politics
BIS 282	Globalization
BES 302	Environmental Problem Solving
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 & Practice
BIS 356	Ethics and the Environment
BIS 358	Issues in Environmental Science
BIS 359	Ethics and Society
BIS 362	Contemporary Political Ideas & Ideologies
BIS 386	Global Environmental Issues
BIS 390	Ecology and the Environment
BIS 392	Water and Sustainability
BIS 393	Environmental History of the Bioregion
BIS 394	Comparative Economic Development
BIS 395	Sustainable Practices
BIS 398	Environmental Change in Washington State
BIS 3xx	Foundations of Environmental Thought
BIS 3xx	Eco-arts
BIS 411	Biotechnology and Society
BIS 445	Meanings & Realities of Inequality
BIS 458	Energy, Environment & Society
BIS 459	Conservation and Sustain. Development
BIS 468	Human Rights and Sustain. Development

Environmental Policy and Management

BIS 338	Political Institutions and 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, Environment 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 & Conservation
BIS 4xx	Environmental Impact Assessment

Upper division course requirements of the B.A. total 65 credits, leaving students 25 additional general elective credits that may be used for any University-approved courses.

Courses in introductory Ecology (BES 312 or BIS 390), Economics (BCUSP 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 B.A..

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.

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.

Environmental Studies Major Curriculum
Environmental Studies Core Requirements
BIS 300 Interdisciplinary Inquiry
BIS 243 Introduction to Environmental Issues
BES 301 Science Methods & Practice OR BIS 312 Approaches to Social Research

BES 312 Ecology OR BIS 390 Ecology and the Environment	
BIS 356 Ethics and the Environment OR BIS 3xx Foundations of Environmental Thought	
Economics (Political Economy or Environmental Economics) (BCUSP 200, BIS 320, 324, 394, or equivalent)	
BIS 490 Senior Seminar or Senior Capstone	
Sustainability and Society Pathway	Conservation Science and Management Pathway
Sustainability Course 1	BIS 342 Introduction to GIS
Sustainability Course 2	BES 485 Conservation Biology
Distribution Requirements <i>Lists of courses in each category are shown on the following pages</i>	
Environmental Science – 5 credits	
Methods & Practices – 5credits	
Society & Environment – 5 credits	
Policy & Management – 5 credits	

7. Infrastructure Requirements

This degree is designed to be deliverable with existing facilities and equipment. Nonetheless expansion of this and related offerings on the UWB campus, over time, will require additional laboratory facilities.

8. Faculty and Staff

Convenor: David Stokes, Ph.D., Zoology, 1994, University of Washington

Core faculty

Nives Dolšak, Ph.D., Public Policy, Indiana University, 2000
Michael Gillespie, Ph. D., 1974, Philosophy, Southern Illinois University
Warren Gold, Ph.D. Plant Ecology, Utah State University
Martha Groom, Ph.D., Zoology, 1995, University of Washington
Daniel Jaffe , Ph.D. Chemistry, University of Washington.
Robert Turner, Ph.D., Marine Science, 1999, University of North Carolina at Chapel Hill

Affiliate faculty and staff

Rob Estes, M.L.I.S. 1994, University of Washington

Ben Gardner, Ph.D., Geography, University of California, Berkeley

Charles Jackels, Ph.D., Physical Chemistry, 1975, University of Washington

Carole Kubota. Ph. D., Education, University of Washington

9. Administration

The Environmental Science B.A. will be located and administered in IAS under the direction of the IAS program director. Advising will be done principally by IAS advisors, as is done for other IAS options and majors. The Environmental Studies Curricular Area Working Group works with the IAS advisors to provide advising materials (hard copy and web-based) for prospective and enrolled students.

IAS is overseen by a Director with the assistance of two Associate Directors; its committee structure consists of a Program Council with broad responsibility for policy questions, a Curriculum Committee for new courses, course changes, and like business, and a Personnel Committee. Faculty members are additionally organized into Curricular-Area Working Groups (CAWGs) to oversee individual degree offerings.

10. Students

Projected Enrollment

	2009-10	2010-11	2011-12	2012-13	2013-14
FTE	46	49	56	65	68
Majors	15	20	30	40	45
Program graduates	0	5	22	30	38

Diversity Plan

IAS is committed in its mission statement, its pedagogy, and its institutional development to building a diverse workplace and learning environment. One of the Associate Directors in IAS is charged with overseeing recruitment, retention, and diversity efforts, and many IAS faculty members research, teach, and develop programming at the cutting edges of diversity issues, broadly construed. Many of those faculty members work in interdisciplinary diversity-related fields that have emerged over the past three decades: ethnic studies, postcolonial studies, working class studies, gender studies, queer studies, and disability studies, among others. In addition, the annual program assessment process, though it does not include a specific learning objective focused on diversity, does attend to diversity throughout. The 2005-06 focus on collaboration and shared leadership, for example, produced some significant findings about how unequal forms of social recognition structure group work in and across IAS classrooms. An attention to diversity, in other words, is woven throughout the program.

Undergraduate recruiting for IAS is housed centrally in the UWB Admissions Office. Campus-wide diversity efforts related to the priorities of UWB's 21st-Century Campus Initiative, including the development of bridge programs over the past year, promise to create a viable and sustainable strategy for our future success in the recruitment and retention of diverse students, staff, and faculty.

11. Accreditation

IAS will not seek specialized program accreditation. That is, the changes proposed here will not affect existing accreditation procedures. IAS has just completed a review (see appendix).

12. Program Assessment

Program assessment includes yearly merit reviews of all faculty members (for teaching, research, and service), standard UW tenure and promotion procedures, standard student evaluation forms, Center for Instructional Development and Research peer monitoring, and annual program-wide assessment of student portfolios. While the Promotion and Tenure and merit reviews are summative, we approach our other means of assessment as formative for both faculty members and students. As a program, we are interested as much in our future development as in our present status.

The major course of formative evaluation and assessment in the IAS undergraduate curriculum is linked to the annual review of student program portfolios. IAS requires its students to keep their graded coursework in a portfolio. Students receive instructions on portfolios in their program core course, Interdisciplinary Inquiry (BIS 300), which they take during their first quarter in IAS. At the beginning of their senior seminar or thesis, the students review those materials and write evidence-based self-reflections in which they address their progress with respect to the program's four core learning objectives: critical thinking; shared leadership and collaboration; interdisciplinary research; and writing and presentation. Each of these self-assessment essays is accompanied by two assignments from the portfolio.

Each Winter Quarter, the program collects from senior seminar students their self-assessment essays and the corresponding assignments that relate to one of the learning objectives. We also conduct and record for further analysis discussions within focus groups with students from those seminars. In 2004-05, the assessment committee worked with the materials on critical thinking; in 2005-06, the committee worked with those related to shared leadership and collaboration; in 2006-07, the committee focused on interdisciplinary research; in 2007-08, the committee will attend to writing and presentation.

In each case, a sub-group of the faculty (rotating on a four-year cycle) reviews the student portfolio materials and focus group transcripts at a day-long retreat in May, having earlier developed or revised an assessment rubric based on sample assignments submitted by each member of the faculty. The findings of this faculty sub-group are documented, reported at the June IAS meeting, and archived in an assessment dossier. All of these materials provide the

basis of a workshop on that learning objective the following autumn, at which point the cycle begins anew.

13. Student Assessment

Students receive grades on a 4.0-0.0 scale as do other students in the UW system. On the question of measuring student learning outcomes and using the results, please see material on Program Assessment above.

14. Budget

Form 5: Enrollment and Graduation Targets

FTE	46	49	56	65	68
Majors	15	20	30	40	45
Program graduates	0	5	22	30	38

Form 7: Summary of Program Costs and Revenue

Following practice with the other option-to-BA conversions proposed for 2009-10, this budget presentation acknowledges that important IAS expenditures are common to all the program's transcribed degrees, and that teaching relevant to Environmental Studies produces significant FTE from students obtaining other degrees. This gives us welcome startup flexibility, though this should not lead us to underestimate the long-term hiring and facilities needs to build this degree. Note also that revenue is allocated centrally at UWB to a range of campus costs, such as Physical Plant and Student Services, that do not show up in the program costs listed here. Startup costs for this degree were addressed in the proposal to make it an IAS option; like the other options-to-majors conversions proposed in 2009, this proposal is resource-neutral.

Budget Table

	2009- 2010	2010- 2011	2011- 2012	2012- 2013	2013-2014
Total IAS Undergraduate					
Faculty Salaries and Benefits (22.3% benefits)	2,435,091	2,483,792	2,533,468	2,584,138	2,635,820
Aux Teaching (23.9% benefits)	415,223	423,528	431,998	440,638	449,451
TA/RA Salaries (13.3% benefits)	193,975	197,855	201,812	205,848	209,965
Classified Staff (29.6% benefits)	123,749	126,224	128,748	131,323	133,950
Professional Staff (26.2% benefits)	239,657	244,450	249,339	254,326	259,412
Other Salaries & Benefits	1,364	1,391	1,419	1,447	1,476
Contract Services	36,469	37,198	37,942	38,701	39,475
Goods and Services	18,479	18,849	19,226	19,610	20,003
Travel	11,067	11,288	11,514	11,744	11,979
Equipment	3,060	3,121	3,184	3,247	3,312
Total Costs	3,546,333	3,688,186	3,835,714	3,989,142	4,148,708
General Funds	4,336,275	4,776,841	5,233,294	5,706,095	6,007,966
Tuition	3,250,000	3,510,000	3,770,000	4,030,000	4,160,000
Total revenue	7,586,275	8,286,841	9,003,294	9,736,095	10,167,966

Environmental Studies	2009-10	2010-11	2011-12	2012-13	2013-14
Faculty Salaries and Benefits (22.3% benefits)	256,899	262,037	267,278	272,624	278,076
Aux Teaching (23.9% benefits)	43,806	44,682	45,575	46,487	47,417
TA/RA Salaries (13.3% benefits)	20,464	20,873	21,291	21,717	22,151
Classified Staff (29.6% benefits)	13,055	13,316	13,583	13,854	14,132
Professional Staff (26.2% benefits)	25,284	25,789	26,305	26,831	27,368
Other Salaries & Benefits	144	147	150	153	156
Contract Services	3,847	3,924	4,003	4,083	4,165
Goods and Services	1,950	1,989	2,028	2,069	2,110
Travel	1,168	1,191	1,215	1,239	1,264
Equipment	323	329	336	343	349
Total Costs	366,939	374,278	381,763	389,399	397,187
General Funds	316,470	345,671	403,265	479,044	509,053
Tuition	237,192	253,998	290,507	338,331	352,475
Total revenue	553,662	599,669	693,772	817,375	861,528

External Reviews and Departmental Response

- 1) Paulette Bierzychudek, Ph.D., Professor and Chair of Biology, Member of Environmental Studies faculty, Lewis and Clark College
- 2) Linda Fink, Ph.D., Professor of Biology, Sweet Briar College



July 15, 2009

Robert Corbett
Coordinator of New Programs
University of Washington-Bothell

Dear Robert,

Here is my review of the proposed major in Environmental Studies at University of Washington-Bothell. I have structured the review as requested, using the Washington State Higher Education Coordinating Board's guiding questions for new degree proposals:

1) Does the program demonstrate a coherent design, reflecting appropriate depth and breadth, curriculum, sequencing of courses, synthesis of learning, and assessment of learning outcomes?

The program has lower-division prerequisites in math/science so that certain fundamental skills can be assumed. It includes a common core of coursework in the natural sciences, the social sciences, and the humanities, with a slight and appropriate emphasis on the sciences. The core also includes a course in interdisciplinary inquiry and a senior seminar or capstone course; presumably these courses are where interdisciplinary thinking is taught and demonstrated. Beyond the core, students take 10 credits in one of two possible pathways, and they choose electives from each of four areas: science, methodology, social sciences, and policy/management. This curriculum covers all of the important fields of knowledge with which an environmentally-knowledgeable citizen or a young professional at this level should be familiar.

It is challenging to construct a curriculum in Environmental Studies that includes significant components from the biological sciences, the physical sciences, the humanities and the social sciences, and especially to do so in a way that includes upper-level courses that engage a subject in a reasonably sophisticated way. The proposed curriculum does this as well as can be expected, given limitations on numbers of credits required, the diverse preparation of undergraduates coming from different community college backgrounds, and so forth.

I would like to have learned more about why there are two pathways in the major, and what different constituencies they are intended to serve. I acknowledge that students will naturally lean either toward the natural sciences or toward the social sciences/humanities. But I hoped for more explanation of why there is a Conservation Science and Management pathway within the Environmental Studies major, given that there is already a Conservation and Restoration Ecology pathway within the BS-level Environmental Science major. Is CSM just CRE-lite? What kind of employment/professional future is the CSM pathway intended to prepare students for? How will it do this better, or differently, than the existing CRE major would? Wouldn't conservation management professionals also benefit from learning the statistics, chemistry, etc. that CRE majors learn? Or is there a credit limit that precludes combining these?

The document I received did not make clear how the courses are sequenced, so I have not assessed that aspect of the program.

There are several aspects of the program that seem designed to promote “synthesis of learning.” These include the senior capstone/seminar, and the requirement that students prepare a portfolio addressing a list of learning objectives (see response to question 4).

2) How does the program compare to other institutions' programs? Is it traditional? Is it innovative ("cutting edge") in some way(s)?

Most institutions with undergraduate programs in environmental studies and/or science offer students a choice between a curriculum with a strong emphasis on science vs. one with a scientific foundation but a stronger orientation to policy/management/social sciences. Most institutions that have started environmental programs as options, pathways or concentrations eventually elevate them to the status of full majors. In these respects the program described here is comparable to others around the country. Also, like most other programs, the emphasis is on science (primarily), social science (secondarily), and to a much lesser extent, the humanities.

The inclusion of a course in environmental ethics is not universal, and is an excellent idea. The fact that one pathway emphasizes sustainability is an innovative feature. This theme is certainly very much in the public eye right now.

Many environmental studies programs require or encourage their students to pursue an internship opportunity, and this does not seem to be a feature of this program (although I noticed that it was present in the B.S.-Environmental Science degree).

3) Does the program respond to current trends in the field?

The major “trend” in environmental education is the existence of diverse viewpoints about how it is best carried out. There are many different models. Across these models, there seems to be increasing recognition that there is a difference between a multidisciplinary curriculum and an interdisciplinary one. (The theme of the 2009 meeting of the Association for Environmental Studies and Sciences is: *Environment: the Interdisciplinary Challenge*.) Interdisciplinarity is a goal that many programs strive for but that few achieve. A truly interdisciplinary undergraduate program requires extensive resources, including a faculty who themselves have had interdisciplinary training and understand how (and are given the opportunity) to teach it.

4) Are student learning outcomes appropriate and clearly defined?

The list of learning outcomes on pp. 12-13 of the document I received was quite clear, and the items are entirely appropriate. I am pleased to see attention being paid to effective communication.

5) Is the student assessment system adequate, stellar, innovative? Why?

The development of student portfolios, and faculty assessment of portfolios, is an intensive and time-consuming form of assessment. I admire program faculty for their willingness to take this on. For the students who take it seriously, the development of a portfolio can be an important tool for the synthesis of their acquired knowledge and skills. Student who create such a portfolio are ideally more aware than those who do not of what they have achieved. It appears that student portfolios are carefully scrutinized by faculty, and that a mechanism exists (workshops) to use what is learned from that scrutiny to improve the program. I am curious to know who attends the workshop. Is it mandatory or optional? Does it

involve only the core faculty or are faculty who teach electives also invited (or required or encouraged) to attend? (see below)

6) Is the program assessment system adequate, stellar, innovative? Why?

The program assessment is at least adequate. It consists (at least) of the same kinds of assessment procedures (faculty merit reviews, student course evaluations, etc.) as are in place in most institutions, including my own. The application provided little detail about this aspect, however, so it is difficult for me to make an informed judgment.

I wondered how the learning objectives are incorporated into the program assessment system. My definition of a “stellar, innovative” system is one in which this incorporation occurs in a deliberate, effective way. What happens if significant numbers of students are judged not to have met one or more of the learning objectives? It appears that there is a workshop where the achievement of these objectives can be addressed, but what actually takes place? What mechanism exists to identify which courses are or should be honing which skill(s)? How will improvement be brought about in any individual courses where such instruction is inadequate? Is there a mechanism for bringing about any necessary changes in the curriculum as a whole? Is there an understanding among the myriad course instructors about which learning objectives are to be emphasized in each instructor’s class? After all, each instructor created her course for reasons of her own.

It would be interesting to circulate a list of the learning objectives to all the faculty teaching core and elective courses, asking them to indicate which (if any) of the learning objectives receive particular emphasis in each of their classes. By scanning their responses, it is relatively easy to discover which goals receive much emphasis, and which receive less. If it is discovered that one or more learning goal is likely to be neglected as a typical student makes her way through the curriculum, one or more of the core courses could be revised to shift more emphasis onto that goal. My department recently performed such an exercise with our courses relative to our learning goals, to good effect.

7) Are the resources (faculty, administrative, facility, equipment) appropriate?

Core faculty represent a good variety of disciplinary backgrounds. Few of them appear to have truly interdisciplinary training at the graduate level. Is the number of faculty sufficient to staff a greater student demand for courses than currently exists? If the program grows as expected, re-allocation of faculty positions to this program might become necessary.

The application provides little information with which to answer other aspects of this question.

8) What are the program’s strengths and weaknesses?

This depends on one’s perspective. From the perspective of the university, this major has been developed without new faculty, without release time for new course development, without new facilities, and without new equipment. This efficiency has attendant costs, however. A truly interdisciplinary education will be difficult to deliver without faculty who have had such training, or the opportunity to acquire it, and without their having the time to work together to develop and teach one or more new courses that can help students learn how to integrate the diverse perspectives and types of knowledge they will acquire in the program.

9) What are your recommendations?

This program is certainly strong enough to stand on its own as a major. The concerns I have expressed apply to many (probably most) programs around the country, and as the program at UW–Bothell matures, I expect these and other issues to be addressed and refined.

I hope these remarks are useful in your deliberations.

Sincerely,

Paulette Bierzychudek
Professor and Chair of Biology
Member of Environmental Studies faculty



MEMORANDUM

Date: 27 July 2009

To: Robert Corbett, Coordinator of New Programs

From: Bruce Burgett, Director and Professor, Interdisciplinary Arts and Sciences, UW Bothell

Cc: Susan Jeffords, Vice Chancellor for Academic Affairs, UW Bothell
Colin Danby, IAS Associate Director for Undergraduate Education, UW Bothell
Annette Anderson, Curriculum Specialist, UW Bothell

Re: Response to External Reviews of UW Bothell Proposal (Environmental Studies)

I am writing in response to the external reviews of the UW Bothell (UWB) Interdisciplinary Arts and Science (IAS) proposal to transition our existing option in Environmental Studies within the Interdisciplinary Studies major to an independent major housed in IAS. We appreciate the time, effort, and thought both Linda Fink (Sweet Briar College) and Paulette Bierzychudek (Lewis & Clark College) put into their comments. Each of their reviews strongly supports the proposal. This support echoes the recommendations that emerged in the IAS program review conducted by the UW Graduate School last year. In that context as well, the internal and external reviewers were enthusiastic about the IAS strategy of growing its degrees by creating more differentiated curricula (independent majors) within an integrative and interdisciplinary unit with common learning objectives and an overlapping network of core courses.

We are particularly pleased that the reviewers of the proposal comment on the degree's use of learning portfolios, which are integrated into the IAS assessment system. Professor Bierzychudek's questions on the portfolio, under "program assessment," are useful and merit further comment. The four IAS learning objectives guide the annual assessment process, with specific rubrics developed and refined by each year's committee to draw from student work evidence of whether we are meeting our goals. As we use the results of assessment to improve our work and address problems, we focus on our ability to develop and reinforce student skills across their coursework. Standard IAS practice is that courses are developed by and shared among multiple instructors, and that applies with particular force to required, frequently-offered courses. The faculty members centrally involved in Environmental Studies take responsibility for ongoing monitoring and assessment of these courses in their degree.

Both reviewers comment on the integration of the Environmental Studies BA and the Environmental Studies BS, noting that this is common practice. The reviewers find our

curriculum in line with the current state of practice in Environmental Studies, though both also make useful comments on particular aspects of the curricular structure. Professor Bierzychudek points out the importance of distinguishing the pathways in the Environmental Studies BA from each other and from those of the Environmental Science BS. Accordingly, the Conservation Science and Management pathway in the BA, while overlapping with the Conservation and Restoration pathway of the BS, differs sharply in its focus and intended outcomes for students. Though it requires less natural science than the BS pathway, it is no less rigorous, including greater interdisciplinary breadth and more focus on the content and methodologies of social science and policy. As noted by Professor Fink, each of the BA pathways corresponds to established areas of academic interest and in-demand career outcomes.

Both reviewers also comment helpfully on the challenges that we will face in expanding the course offerings of this degree as the campus grows. It should be noted, in response to Professor Fink's comments, that budgeting at UWB and in IAS operates in a way that makes it difficult for us to break out the cost of laboratory facilities and equipment used by courses related to this degree, so that the budget figure she notes indeed significantly understates the total support provided by this campus. Nonetheless, as Professor Fink states, the costs to the UW system of converting the existing option to a major are minimal.

We agree with Professor Bierzychudek on the value of internships, and although internships are not required in the curriculum, they are an option that we encourage students to take. The environmental studies faculty is committed to helping students locate and complete appropriate internships.

In response to Professor Fink's question about our senior seminars, it is possible that an environmental studies student could take a seminar in a topic such as "arts in Seattle," though it is highly unlikely. We think the flexibility in our interdisciplinary curriculum is an advantage, allowing the exceptional student to develop an innovative senior project on, for example, art and restoration in Seattle. However, because students are advised in their choice of senior seminar, and must be accepted into the seminar by the instructor, most students take the seminars closely related to their chosen degree.

In sum, we are pleased with the reviews and look forward to implementing the proposal in autumn 2010. Please let us know if you have any questions.