WASHINGTON STATE UNIVERSITY

Office of
Provost and Executive Vice President

MEMORANDUM

TO: Faculty Senate

FROM: Daniel J. Bernardo, Provost and Executive Vice President

SUBJECT: Bachelor of Science in Earth and Environmental Science to Global

DATE: April 19, 2019

The attached proposal for extending the Bachelor of Science in Earth and Environmental Science to the Global Campus has been reviewed by the Provost's Office review committee. Some minor clerical issues associated with the budget have been addressed.

These changes satisfy us that the proposal is ready for Senate review.

PO Box 641046, Pullman, WA 99164-1046
509-335-5581 | Fax: 509-335-0103 | http://provost.wsu.edu

PROPOSAL TO OFFER A NEW DEGREE PROGRAM OR EXTEND AN EXISTING DEGREE TO GLOBAL CAMPUS

Degree Title:	BS Earth and Environmental Sciences
Academic Program:	Environmental and Ecosystem Sciences
Academic Plan:	Environmental and Ecosystem Sciences
Number of Credits:	120
Department(s) or Program(s):	School of the Environment
College(s):	CAHNRS & CAS
Campus(es):	Global, Vancouver, Tri-Cities, Pullman
Method of Instructional Delivery:	Online

Contact Name:	Kent Keller	Email Address:	ckkeller@wsu.edu
Contact Phone:	509-335-3009	*Proposed start date:	Fall 2019

***Proposed Start Date:** Approval must be received from the Northwest Commission on Colleges and Universities (NWCCU) before the program may be advertised or recruited for. Financial aid may not be available until the program has been approved by the Department of Education subsequent to NWCCU approval.

SIGNATURES: The names typed below certify that the relevant academic and campus officials have reviewed and approved this proposal:

Chair Signature:	Kent Keller	Date:	January 16, 2019
Everett Chancellor:		Date:	
Spokane Chancellor		Date:	
Tri-Cities VCAA		Date:	
Vancouver VCAA		Date:	
Dean Signature:	Matt Jockers	Date:	March 1, 2019
Dean Signature:	Andre-Denis Wright	Date:	March 1, 2019
VP Global Campus:	Dave Cillay	Date	January 10, 2019
Provost Office:		Date:	
Comments:			

For Registrar's Office Use Only:					
Current CIP Code:		New CIP Code:		Date:	

Send completed form in Word format to: provost.deg.changes@wsu.edu

This template asks you to answer the array of questions about your proposed program that are important to your department, your college, the Faculty Senate, the State of Washington, accreditors, and other external stakeholders.

By placing all proposals in a similar format, this template provides a common standard for comparison, ensuring that all potential programs can be evaluated in an equitable fashion. It can be used to determine whether or not a program is feasible within the university's academic and financial situation, and if it will have the resources to further the university's objective of providing high quality education and scholarship.

This template is also a framework to think about the viability of your ideas. It can thus be a tool for strengthening both your proposal and the resulting program itself, since a program that is starved for either students or resources from its inception is not likely to become a high quality program.

Here are some of the things to consider as you complete the template:

> What are the aspirations for the reputation of this program – local, regional, national? What will it take to make that a reality?
> Who are you trying to attract with this new program? Will it bring new students to the university, better meet the needs of current students in the department, or draw students away from other departments?
> How strong is the demand for education of this kind, and in what specific careers will someone who receives such an education find meaningful employment?
> How many students do you need to attract to break even, and can both the market and WSU's capacity support this number?

Providing good answers to hard questions maximizes the likelihood that a new program will not just win acceptance by the Faculty Senate and administration, but will ultimately be successful in attracting students and placing graduates. The analyses in the Demand, Financial and Library workbooks will assist you in creating a persuasive proposal. The findings in each area, and their basis or justification, should be summarized in the proposal itself.

Proposal

Mission and Core Themes (Strategic Goals):

Provide a clear statement of the nature and purposes of the new degree in the context of WSU's mission and core themes (strategic plan).
The purpose of the online Environmental and Ecosystems Sciences (EES) major is to better serve "degree completers" (individuals who have completed some college courses at WSU or elsewhere, and now wish to return to school), as well as nontraditional students from diverse backgrounds. In addition, because implementing the EES major will involve increasing the variety of courses offered to Global Campus students, the major will be useful not only for those students interested in majoring in EES, but also for students in other majors seeking electives and UCORE courses. Because the EES major can be completed in two years, it is an ideal major for degree completers, those with some college yet no degree, including those who are already employed and need a college degree to improve their career trajectory. Providing access to the WSU Environmental and Ecosystem Sciences bachelor's degree via the Global Campus is consistent with the core mission of the WSU strategic plan in that it provides expanded access to a transformational undergraduate experience, to personalized student services and extended learning opportunities, and to world-class faculty.

Educational Offerings:

Describe the degree program, including the total number of credits required. Provide the four-year degree plan (undergraduate) or appropriate plan of study (graduate and professional). Please note that all courses for the degree must be approved before the degree will be reviewed by the Catalog Subcommittee.
Environmental and ecosystem scientists focus on the interactions of physical, chemical, and biological conditions of natural and human-modified environments, with the goal of solving growing environmental challenges. The EES major at WSU features a broad interdisciplinary science and social science core coupled with a flexible advanced curriculum. This flexibility allows students to choose in-depth studies in an area of interest, minors, and hands-on research and management experience, and prepares students for graduate school and management careers. The online program will allow place-bound students the same opportunity to earn a B.S. as students who are not place-bound. In addition, the program gives access to students who prefer the convenience of the Global Campus without having to relocate to Pullman, Vancouver or Tri Cities to complete a degree from the School of the Environment. The degree is designed to meet the needs of aspiring and working professionals and adult learners, as well as students entering college directly from high school. It will also provide opportunities for working professionals to refresh and update their skills and for those seeking to change careers. It offers all the opportunity to raise their credentials to WSU standards. See Exhibit A for four-year degree plan.

See Exhibit B for advising check sheet for the degree.

See Exhibit C for new course development and delivery schedule.

Provide descriptive information regarding (the) method(s) of instructional delivery (percent face-to-face, hybrid, distance, and/or competency-based).

This degree will be delivered primarily online, asynchronously via the Global Campus LMS infrastructure.

Students will access most courses via online delivery. However, students will be required to transfer credits from community colleges or other universities to satisfy introductory laboratory science courses, such as Biology 106-107, Chemistry 101, 102 or 105, 106

Students will have the opportunity to engage in hands-on experiences in their own communities at the direction of their instructors in key courses.

Assessment of Student Learning and Student Achievement
*** For graduate programs, please contact the Graduate School before completing this section.**

Please provide a list and description of expected student learning outcomes.

- Demonstrate understanding of the complex interactions of humans and ecological systems in the natural world.
- Interpret and apply basic statistical analysis or systems modeling methodology in environmental analysis.
- Interpret, synthesize, and apply a wide range of scientific literature in the ecological and environmental sciences, particularly dealing with both climate change and global change.
- Interpret a wide range of scientific literature in biology, ecology, and environmental science and apply this information to problem-solving analysis, specifically in the realms of environmental and natural resource sciences and sustainability.
- Prepare technical reports and analyses of environmental, resource ecology, and sustainability issues and present analytical results and conclusions effectively in both written and oral communication.
- Interpret environmental, resource management, and sustainability conflicts from multiple perspectives.
- Effectively analyze and integrate the social and natural sciences to understand diverse environmental and sustainability challenges ranging from local issues to global environments

For undergraduate programs, provide the department's plan for assessing student learning outcomes. Describe briefly how information on student learning will be collected and incorporated into existing processes for evaluating student learning in the department. Please attach the plan and a curriculum matrix.
School of the Environment has worked with ATL to develop an assessment plan that has been adopted system wide (including Global, Pullman, Vancouver, and Tri Cities), (curriculum map and assessment plan attached as Exhibit D). We will be utilizing embedded assessment and direct and indirect measures to ensure assessment of the Global Campus degree is robust and meets applicable standards. Furthermore, many faculty involved in the assessment process are teaching both face-to-face and Global sections, ensuring an equivalent experience.

Please indicate as appropriate:

☒ Assessment of this program will be incorporated into the existing assessment plan for Pullman, Vancouver, and Tri Cities. Please attach a copy of the existing plan.

☐ A draft assessment plan is attached.

☒ A curriculum matrix is attached.

Planning:

Describe plans and include descriptions which provide evidence of: 1. The need for the change
In 2017, WSU Global Campus commissioned a market research project through EAB to assess the need for an online degree program. It showed that "Employer demand for environmental and ecosystem sciences and earth science or geology skills have followed similar growth curves since H1 2010. This past year, national employers posted approximately 19,500 jobs that required environmental and ecosystem sciences skills and 16,000 jobs that required earth science or geology skills. Combined, job postings that requested environmental and ecosystem sciences skills or earth science/geology skills represented approximately seven percent of total job postings that required a bachelor's degrees from December 2013 to November 2014. This past year, local and regional employers respectively posted approximately 800 and 1,500 job postings for individuals with environmental and ecosystem science bachelor's degrees or skills. Between H1 2010 and H1 2013, employer demand for environmental science and ecosystem skills grew by 56 percent. Additionally, market research firm Emsi produced data showing that the labor market in the area of Environmental Sciences nationally is increasing faster than the national average for all jobs. California, Texas, New York, and Florida are among the top employers with Washington in the top 10. Also, EES degrees are highly sought after in rural and indigenous communities and, therefore, an online program may serve those communities.

2. The student population to be served Provide realistic justification for the projected FTE. How can transfer students articulate smoothly into the program and complete it with approximately the same number of total credits as students who enter WSU as freshmen?

Please describe specific efforts planned to recruit and retain students who are persons of color, disabled, or whose gender is underrepresented in this discipline.

WSU Global Campus programs typically appeal to those students who might not be able to attend a four-year program on a physical campus, but still want an accredited degree offered by a Tier 1 Research University with an excellent reputation.

As described above, the EES major is useful for "degree completers" – students who have completed one or two years of college and are returning to school in order to improve their career options. EES is an excellent major for these students, because it is intrinsically interesting, it contributes to a range of useful skill sets, and the requirements can be met in two years, thus helping students complete their degree in a timely manner. Because most Global Campus students enter the program having already completed some college courses, they are looking for majors that can be completed efficiently. The EES major meets that need. Students who take advantage of the direct transfer agreement guidelines and articulation agreements will be able to transfer seamlessly from a two-year program without relocating to Pullman, Vancouver, or Tri Cities. WSU Global Campus has been accommodating transfer students and former students who are at varying levels along the transfer continuum since its inception. The program is also designed to appeal to working professionals and adult learners who may already work in other fields but wish to refresh and update their skills.

Our students go on to make careers utilizing their interdisciplinary skills in a variety of agencies, consulting firms, and public utilities as urban planners, sustainability scientists, geospatial experts, restoration and watershed consultants, water quality managers, water resource managers, park and green space managers, conservations scientists, or health advocates. Many of our students continue their education in Masters and PhD programs.

WSU Global Campus is focusing on digital marketing to generate awareness and promote all new degrees broadly across social media platforms and other digital access points. Specifically, the goal of the marketing effort is to meet target enrollment goals that enable the degree to reach a sustainable level of enrollments. Recruitment efforts for the online major will diverge substantially from those on the Pullman campus. In contrast, the Global Campus, CAS, and CAHNRS will specifically market the EES major to prospective students – providing information to students about the EES major that campus-based freshman typically lack. We expect that these marketing efforts in conjunction with the characteristics of the major (allowing for timely completion, inherent interest, and career prospects) will result in a number of students choosing the EES major.

In addition, WSU Global Campus ensures that all courses and programs meet ADA requirements for access to individuals with disabilities.

3. Procedures used in arriving at the decision to change (e.g., consultation with advisory boards, input from industry or employers, commissioned studies, faculty task force, etc.).

School of the Environment was approached by Global Campus, and after analysis of the market research, evaluating the resources in the department, and consulting with faculty, the department determined that it would be advantageous to launch the degree online.

WSU GC commissioned a market research report on the need for a degree in Environmental Science from research partner EAB. Employer demand for environmental and ecosystem sciences and earth science or geology skills have followed similar growth curves since H1 2010. This past year, national employers posted approximately 19,500 jobs that require environmental and ecosystem sciences skills and 16,000 jobs that require earth science or geology skills. Combined, job postings that requested environmental and ecosystem sciences skills or earth science/geology skills represent approximately seven percent of total job postings that required a bachelor's degrees from December 2013 to November 2014.*

The U.S. Bureau of Labor Statistics predicts that employment for Environmental Scientists and Specialists (who hold at least a bachelor's degree in a natural science or science-related field) will grow 15 percent from 2012 to 2022, a higher-than-average growth rate. The Bureau of Labor Statistics predicts a similarly high rate of growth for Environmental Engineers in the same time period.

4. Organizational arrangements required within the institution to accommodate the change.

The Global Campus is prepared to fully support course development, student services, advising, recruiting, marketing, and faculty development within their existing infrastructure. The School of the Environment is prepared to engage our faculty at all of our campuses, including WSU Pullman, Vancouver, Tri Cities, Puyallup, and Wenatchee, in the instruction of online courses as appropriate and as instructional loads require.

Likewise, the School of the Environment is prepared to manage assessment, instruction, innovation, and coordination of the online degree in concert with their existing campus-based degree. The School of the Environment is already offering a number of online courses during the academic year. The School has engaged all faculty in the GC development process and is prepared to manage as practical, an equitable distribution of GC AAFTE across our multi-campus system.

5. Lay out a three-year timetable for implementation, including hiring plans, partnership contracts if needed, facilities modification, recruiting, and other elements of implementation. Provide dates for each step.

2019-2020	Course development (see course development schedule, Exhibit C) Begin offering the online major Marketing/recruitment
2020-2021	Hire clinical faculty as demand for courses exceeds the teaching load of current temporary and full-time faculty. Continue marketing/recruitment Course update according to schedule

2021-2022	Monitor enrollment in individual courses; revise frequency of offerings as indicated Begin assessment Continue marketing Course update according to schedule

Budget:

☒ Attach the Financial Worksheet with five-year FTE, revenue, and expenditure projections. Fully account for costs such as staff support, training, library, facilities, and so on.

Please describe the funding picture narratively, including funding sources, department, college, and/or campus commitments, investments already made, one-time costs, facilities costs (labs, classrooms, offices, telecom, etc.), and library costs.
The School of the Environment is committed to allocating any and all available resources to the Global Campus Environmental and Ecosystems Sciences offering at WSU. With the projected program growth and popularity, the School of the Environment anticipates the need for course development efforts in the first academic year of the program offering at approximate cost of $4,500, in addition to a new course development in Year 2 (two) and Year 3 (three) for a total cost of $13,500 in the first three years. In considering the current growth trend in the School's enrollment, additional instructional support is needed in academic years 2 (two) and 3 (three) to deliver new developed courses. Anticipated cost of instructional support for Year 1 (one) is approximately $17,460, and includes support for one Graduate Assistant (step 47). In years 2 (two) and 3 (three) we anticipate the need for a faculty coordinator stipend of approximately $15,000 per year; this stipend is to include summer salary. Please note that the School of the Environment's efforts to launch our Global Campus degree offerings has been well supported by the College of Arts and Sciences and the College of Agricultural, Human, and Natural Resources Science. It is through the evident support that we are able to offer several courses that are proven successful in offering outstanding educational value and excellence in design and delivery. The dean of the College of Arts and Sciences and the dean of the College of Agricultural, Human, and Natural Resource Sciences have approved of this proposal and provided a letter of financial support (see Exhibit E).

Student Services:

Describe the capacity of student support services to accommodate the change at this location. Include a description of admissions, financial aid, advising, library, tutoring, and other services specific to this request.
The Global Campus provides comprehensive student services, often in collaboration and cooperation with the centralized units, to ensure student success. Included are dedicated recruiters and advisors, transfer credit evaluation, career counseling, financial aid, e-tutoring, student involvement, and tech support for online students. The Global Campus is also skilled in working with students to match their goals with the programs and services offered by WSU.

Additionally, WSU Global Campus personnel are the experts on adult and contemporary distance learners, and provide specialized services to meet the needs of these unique students.

WSU Global Campus creates opportunities for meaningful student engagement through unique student involvement activities offered virtually and face-to-face. The Global Campus encourages and mentors students into research opportunities and creates pathways for students to transition into graduate school.

Describe the implications of the change for services to the rest of the student body.

Adding online courses and creating access to a new degree program adds opportunity and options for student success, potential for better time-to-degree outcomes, and flexibility that accommodates students' needs.

Physical Facilities and Equipment:

Outline the provision/s made for physical facilities and equipment at the proposed location that will support the program and its projected growth. Include videoconferencing and other technologies that support course delivery as well as classrooms, labs, and office space.

None. All online courses are fully supported by AOI and the Global Campus through the Learning Management System.

Library and Information Resources:

Using the Library Analysis form, describe the availability and adequacy of library and information resources for this degree, degree level, and location. Note plans to address gaps.

The lead librarian for EES major has confirmed there will be little or no resource impact on the Libraries should this proposal move forward and has provided a letter of support (see Exhibit F).

Faculty:

List the educational and professional qualifications of the faculty relative to their individual teaching assignments.

List the anticipated sources or plans to secure qualified faculty and staff.

All faculty teaching online are held to the same qualifications as faculty on the physical campuses. Deans and Directors are directly responsible for the hiring of all teaching faculty and ensure credentials are appropriate for the program, and will hire faculty using normal hiring processes.

Impact on Other Locations/Programs:

Briefly describe any impacts on other WSU programs and locations, and how you came to these conclusions (who was consulted?). If there are potential adverse impacts, describe how these will be addressed. Consider such things as: reallocation of faculty time, reallocation of AMS courses, impact of blended courses, internal competition, "cannibalization" of other programs, curricular effects for other degrees, and effects on recruitment markets for other campuses. Indicate how such problems will be addressed for each campus or department affected.
We anticipate very few impacts on other WSU programs or locations. The School of the Environment has faculty and a major in Pullman, Tri Cities, and Vancouver. Because the primary market for the online major is place-bound students, and because of the policy which prohibits non-Global Campus students from enrolling in Global Campus courses in Fall and Spring semesters, the online program is unlikely to attract large numbers of physical campus-based students during the academic year. We have found that during the summer, students are increasingly taking courses online rather than face-to-face. This trend has had impacts on Pullman and Vancouver summer enrollments. Both campuses recognize that the addition of the online major increases the need for us to coordinate offerings across the Pullman, Vancouver, Tri Cities, and Global campuses, and we are putting in place procedures for doing so in a systematic way. We anticipate that the addition of the online major will allow us to use our resources more efficiently in order to serve students on the four campuses, and instruction may originate from any campus which houses School of the Environment faculty.

Sustainability

What are the plans for continuing the program past 5 years if the goals for enrollment are not met, or other circumstances prevent the execution of the plan described here?
All new online degree programs will be evaluated continuously for enrollment and financial metrics. Under-performing degrees will be sunset once the college, department, and Global Campus have explored all reasonable efforts to increase enrollments and revenue through marketing, partnerships, and innovation. However, prior to sunsetting (phasing out a degree for non-enrollment performance) a degree, the need for the courses that are provided online will also be analyzed to ensure little to no impact on other departments and programs that rely on those courses. Any sunsetted degree will include an appropriate teach-out plan and students will be supported to graduation.

External Reviews

If this program is new to the Washington State University system, please provide the names and addresses of 2-3 external experts from similar institutions who could be contacted to provide reviews of this program.

Name	Contact Information (email, phone, address)

Attachments:

- ☒ Financial Worksheet
- ☒ Four-Year Degree Plan (undergraduate); curriculum overview (graduate and professional)
- ☒ Curriculum Map (undergraduate)
- ☒ Assessment Plan
- ☒ Letters of financial commitment
- ☐ Contracts or MOUs if applicable

Send in Word format to: provost.deg.changes@wsu.edu

EXHIBIT A

Environmental and Ecosystem Sciences (120 Hours)

First Year

First Term	*Hours*
BIOLOGY 106	4
HISTORY 105 [ROOT]	3
MATH 106 or electives[1]	3
SOE 110 [BSCI]	4

Second Term	*Hours*
CHEM 101 [PSCI] or 105 [PSCI]	4
Creative & Professional Arts [ARTS]	3
ENGLISH 101 [WRTG]	3
MATH 108 or electives[1]	2
SOE 101 or 102	4

Second Year

First Term	*Hours*
BIOLOGY 107	4
ECONS 101 [SSCI]	3
SOE 210 or 250[2]	3 or 4
Foreign Language, if needed[3]	0 - 4
200-level Required Electives[4]	2 or 3

Second Term	*Hours*
CHEM 102 or 106	4
Humanities [HUM]	3
SOE 300 or BIOLOGY 372[2]	3 or 4
STAT 212 [QUAN], MATH 140 [QUAN], or 171 [QUAN]	4
Foreign Language, if needed[3]	0 - 4
Complete Writing Portfolio	

Third Year

First Term	*Hours*
COM 102 [COMM] or H D 205 [COMM]	3 or 4
Creative & Professional Arts [ARTS], Humanities [HUM], or Social Sciences [SSCI]	3
SOIL SCI 368	3
Professional Electives[5]	7

Second Term	*Hours*
Diversity [DIVR], if needed, or Electives[6]	3
SOE 312 [DIVR] or POL S 430[6]	3
SOE 315 or 461	3
SOE Experiential Requirement or Electives[7]	3
Professional Electives[5]	4

Fourth Year

First Term	*Hours*
SOE 403, STAT 360, 370, or 412 [8]	3
SOE 404 [CAPS] [M] or 454 [CAPS] [M]	3
Writing in the Major [M][9]	3
Professional Electives[5]	7

Second Term	*Hours*
Writing in the Major [M] or Electives[9]	3
Professional Electives[5]	13
Exit Survey[10]	

Footnotes

[1] MATH 106 and 108 are required courses. However, if students have tested into or taken MATH 140, 171, 172 or ALEKS with an 80% or better, MATH 106 and 108 will be waived. If waived, students may need to take additional credits to meet the University minimum of 120 credits.

[2] Students who take SOE 250 must also take BIOLOGY 372.

[3] Two years of high school foreign language or at least two semesters of college-level foreign language are required by the College of Arts and Sciences for graduation.

[4] Approved 200-level required electives include SOE 204, 230, 250, 275, 285. Not all courses available on all campuses.

[5] Environmental and Ecosystem Sciences Professional Electives (31 credits) are courses selected by students in concert with their advisor and pertain to their major and/or to a specific sub-discipline of interest. Professional electives may also include courses from outside of their major as needed to complete a minor in another field of study. Approved courses include but are not limited to: ECONS 330, or any 300-400-level SOE or SOIL SCI course, or as approved by advisor.

[6] SOE 312 satisfies both the DIVR and the Society and Environmental Management requirements for the Pullman campus.

[7] SOE Experiential Requirement: Certified students in the School of the Environment are required to fulfill the SOE Experiential Requirement before graduation. This requirement is designed to give students experience they will not receive in the traditional classroom oriented course, and to better prepare them for a successful career after graduation. Students may choose 3 credits of coursework from SOE 492 or 495, or as approved by advisor. As an alternative to coursework, students may meet the requirement by documenting at least 135 hours of relevant practical experience. Students choosing the practical experience option may need an additional 3 credits of electives to meet the University requirement of 120 total credits.

[8] MATH 172 is a prerequisite for STAT 360 and 370.

[9] The School of the Environment requires students to complete 3 [M] courses. Check with advisor for course recommendation.

[10] Students must complete a School of the Environment exit survey, administered during the final semester.

EXHIBIT B

Environmental & Ecosystem Sciences

Available Pullman, Tri-Cities, Vancouver

WASHINGTON STATE UNIVERSITY

School of the Environment
B.S. in Earth & Environmental Sciences
Advising Sheet • Fall – 2018

Student Name _____ ID# _____

Email _____ Advisor: _____

Academic Coordinators Contact Information – Pullman: 509-335-6166 or 509-335-8538; Webster 1227 and 1229

BASIC REQUIREMENTS:

54 Credit minimum required (no more than three, three credit courses within the major)

First Year Experience (3 Cr.)	Cr	Term	Offered
Roots of Contemporary Issues (HISTORY 105)	3		F,S,SS
Foundational Competencies (10 Cr..)			
Written Communication			
ENGLISH 101: Intro Writing [WRTG]	3		F,S,SS
Communication			
HD 205 or COM 102 [COMM]	3-4		F,S,SS
Quantitative Reasoning			
STAT 212, MATH 140 [QUAN] or MATH 171 [QUAN]	4		F,S,SS
Ways of Knowing (20 Cr.)			
Inquiry in the Social Sciences (3)			
ECONS 101 [SSCI]	3		F,S,SS
Inquiry in the Humanities (3)			
Elective [HUM]	3		F,S,SS
Additional Inquiry (3)			
Elective [HUM, ARTS or SSCI]	3		F,S, S
Inquiry in Creative and Professional Arts (3)			
Elective [ARTS]	3		F,S,SS
Inquiry in the Natural Sciences (7 min.)			
BIOLOGY 106 Intro to Organismal [BSCI]	4		F,S,SS
CHEM 101 Intro to Chem *OR* [PSCI] CHEM 105 Principles of Chem I [PSCI]	4		F,S,SS
Integrative & Applied Learn –Included in EES Core			
Global Diversity (3)			
Non-major elective or SOE 312 [DIVR]	0-3		
Integrative Capstone (3)			
SOE 454 [M] [CAPS] or SOE 404 [CAPS]			
Other Required Courses (21 Cr.)			
SOE 110 Environ. & Human	4		F,S
SOE 101 Introduction to Geology *OR* SOE 102 Physical Geology	4 4		F, S, SS F, S
MATH 106 College Algebra	3		F,S,SS
MATH 108 Trigonometry	2		F,S,SS
BIOLOGY 107 Cell Biology & Genetics	4		F,S,SS
CHEM 102 Chemistry Related to Life Sci. *OR* CHEM 106 Principles of Chem II	4		S F,S,SS

Note: To certify in the major you must have at least 24 credits and a 2.0 cum GPA.

F = Fall; S = Spring; SS = Summer Session;
FAYO = Fall Alt. Yr. Odd; FAYE = Fall Alt. Yr. Even;
SAYO = Spring Alt. Yr. Odd; SAYE = Spring Alt. Yr. Even

CHECKLIST:

Basic Requirements (53 - 56Cr.)

EES Common Core (18-23 Cr.)

Required Lower Div. & Statistics Electives (5-6 Cr. Min.)

Professional Electives (27-40 Cr. minimum @ 200-400 Level)

TOTAL (at least 120 credits with 40 in upper division courses

EARTH & ENVIRONMENTAL SCIENCE COMMON CORE REQUIREMENTS: (18-23 Cr.)

Advanced Writing/Communications				
ENGLISH 301 Writing & Rhetorical Conv. ENGLISH 402 [M] Technical & Prof Writing Third Writing in the Major Course [M]		3		F,S F,S,SS
Ecology	**Cr**			**Term offered**
SOE 300 Natural Resources Ecology *OR* BIOL 372 General Ecology [M]		3 4		F,S F,S,SS
Spatial Analysis				
SOIL SCI 368 Intro to GIS		3		F
Earth Systems				
SOE 210 Earth History & Evolution SOE*OR* SOE 250 Intro to Earth System Science		4 3		F,S
Society & Environment				
SOE 312 Nat Res & Society [DIVR] *OR* 3 POL_S 430 The Politics of Natural Resource & Environmental Policy 3				S F
Water Science				
SOE 315 Water & Earth *OR* SOE 460 Watershed Management		3 3		S S
Integrated Capstone (UCORE Requirement)				
SOE 454 [M] *OR* [CAPS] SOE 404 [M]		3 3		F F
Experiential				
SOE 479 NRS Mgmt Internship *OR* SOE 495 Undergraduate Internship *OR* SOE 499 Special Topics *OR* 135 hours of advisor approved work experience		3 3 3 0		F,S,SS F,S,SS F, S, SS

Environmental & Ecosystem Sciences Required Electives (RE)

100-200-Level Electives (2-3 Cr. min.)	Cr	Term	Offered
SOE 204 Nat Res Measurements	2		F,S
SOE 230 Intro to Oceanography	3		F
SOE 250 Into to Earth System Science	3		FAYO
SOE 275 Rivers:Forms,Function&Mgmt	3		F S
SOE 285 Climate Change: Planning for..	3		F
Advanced Statistics Elective (300-400-level)	Cr	Term	Offered
STAT 412, 360, or SOE 404			

4/26/16

Environmental & Ecosystem Sciences

Available Pullman, Tri-Cities, Vancouver

ENVIRONMENTAL & ECOSYSTEM SCIENCES MAJOR

First Year

First Term	*Hours*
BIOLOGY 106	4
SOE 110	4
HISTORY 105 [ROOT]	3
MATH 106 or elective [1]	3
Foreign Language, if needed [2]	0-4

Second Term	*Hours*
CHEM 101 [PSCI] or 105 [PSCI]	4
ENGLISH 101 [WRTG]	3
Arts [ARTS]	3
Math 108 or elective [1]	2
SOE 101 or 102	4

Second Year

First Term	*Hours*
BIOLOGY 107 [BSCI]	4
ECONS 101 [SSCI]	3
SOE 210 or SOE 250	3-4
200-level Required Elective	2-3
Foreign Language, if needed [2]	0-4

Second Term	*Hours*
CHEM 102 or 106	4
Humanities [HUM]	3
SOE 300 or BIOLOGY 372 [M][3]	3-4
STAT 212 [QUAN], Math 140 [QUAN] or 171 [QUAN]	4
Complete Writing Portfolio	

Third Year

First Term	*Hours*
SOIL SCI 368	3
Professional Electives [4]	6
Additional [ARTS, HUM or SSCI]	3
COM 102 [COMM] or HD 205 [COMM]	3-4

Second Term	*Hours*
SOE 312 [DIVR] or POL S 430 [5]	3
SOE 315 or SOE 460	3
Professional Electives [4]	10
Diversity [DIVR] *(if NATRS 312 not taken)*[5]	0-3

Fourth Year

First Term	*Hours*
SOE 454 [M] [CAPS] or SOE 404 [M] [CAPS] Writing in the Major [M][3]	3
	3
STAT 360, 370, 412 or NATRS 404	3
Professional Electives [4]	7

Second Term	*Hours*
Experiential Elective [6]	3
Professional Electives [4]	13
ENGL 402 or Writing in the Major [M] *(if BIOL 372 not taken)*	0-3
Total Hours Minimum	**120**

F = Fall; S = Spring; SS = Summer Session;
FAYO = Fall Alt. Yr. Odd; FAYE = Fall Alt. Yr. Even;
SAYO = Spring Alt. Yr. Odd; SAYE = Spring Alt. Yr. Even

PROFESSIONAL ELECTIVES (27 to 40 Cr., including 9 cr. of 200 level; *Including credits of academic minor.*

(Suggested minors could be: Political Sciences; this option can also be tailored to have a focus in Policy, Criminal Justice, Geospatial Analysis (GIS); Earth Sciences; Wildlife Ecology and Conservation Sciences.)

Writing in the major requirement: 1)__________ 2)__________

Writing Portfolio/Writing Exam □ Yes □ No

2-years of high school foreign language *OR* Yes ____
at least **2-semesters at college level**
(required to graduate) Yes ____

FOOTNOTES

[1] MATH 106 and 108 are required courses. However, if students have tested into or taken MATH 140, 171, 172 or ALEKS with an 80% or better, MATH 106 and 108 will be waived. If waived, students would need to take 3-5 additional credits.

[2] 2-years of high school foreign language or at least 2 semesters of college-level foreign language are required by the College of Arts and Sciences for graduation.

[3] Alternative to SOE 300 is BIOLOGY 372. BIOL 372[M] counts for one of the 3 required [M] courses.

[4] Professional electives are courses selected by students in consultation with their advisor and pertain to their major and/or to a specific subconcentration/discipline of interest. Approved courses include but are not limited to: ECONS 330, any 300-400-level SOE course, SOE 230 or any 300-400-level GEOLOGY course, or any 300-400-level SOE course, any 300-400-level SOIL SCI course, minors in Sociology, Political Science, Criminal Justice and Geospatial Analysis, or as approved by advisor.

[5] SOE 312 satisfies both the [DIVR] and the Society and Environment requirements for Pullman campus..

[6] Certified students in the School of the Environment are required to fulfill the Experiential Requirement before graduation. This requirement is designed to give students experience that they will not receive in the traditional classroom oriented course, and to better prepare them for a successful career after graduation. There are various ways to complete this requirement, and students are encouraged to choose an experience of interest to them. Approved courses include SOE 492, 495, 499; or as approved by advisor. In lieu of a course, students can complete a milestone of 135 hours of relevant practical experience, but may need to complete another 3rd elective.

4/26/16

Environmental & Ecosystem Sciences

Available Pullman, Tri-Cities, Vancouver

Advising Recommendations
PULLMAN CAMPUS ONLY
If no minor, recommended course distribution)

		Cr	Term	Offered
SOE 450 [M] Conservation Biology Climate Change Biology (online)	*OR*	3		S
SOE 311 Modeling the Environment *OR* SOE 441 Population Ecology & Conserv.		3 3		F
SOE 302 Arid Land Plants & Ecosystems		3		S
SOE 435 Wildlife Ecology *OR* SOE 446 [M] Wildlife Habitat Ecology		3 3		S S
SOE 305 Silviculture SOE 464 [M] Landscape Ecology *OR* BIOL 462 Community Ecology	*OR* *OR*	3 3 3		F S S FAYE?
SOE 445 Hazardous Waste Mgmt SOE 303 Environmental Geology SOE 390 Global Climate & Earth History	*OR* *OR*	3 3 3		F S ?
SOE 411 [M] Limn/Aquatic Eco Mgmt *OR* SOE 460 Watershed Management *OR* BIOL 410 Marine Ecology ?????		3 3		F S
SOE 438 Nat Res Policy & Law *OR* SOE 444 Environ. Assessment *OR* Senior Seminar/Special Topics		3 4 -		S F,S,SS

Other Suggested School Electives:

	Cr	Term	Offered
SOE 310 Methods in Wildlife Ecology	4		F
SOE 411 [M] Limnology and Aquatic Ecosystems Management	3		F
SOE 419 Topics in Natural Resources	V		F,S,SS
SOE 430 Intro to Wildland Fire	3		FAYE
SOE 431 Wildlife Nutrition	3		S
SOE 441 Population Ecology	4		S
SOE 479 NRS Mgmt Internship	V		F,S,SS
ENVR SCI 406 Intro to Radiological Science	2		
ENVR SCI 410 [M] Global Biogeochemistry	3		
ENVR SCI 445 Hazardous Waste Mgmt	3		
ENVR SCI 464 Intro Physical Oceanography	3		
ENVR SCI 463 Water in the Environment	3		
ENVR SCI 465 Aquatic Microbial Ecology	2		
ENVR SCI 491 Senior Seminar	1		S
ENVR SCI 492 Special Topics	V		F,S,SS
ENVR SCI 495 Undergraduate Internship	V		F,S,SS
ENVR SCI 499 Special Problems	V		F,S,SS

***"EES" COURSES** with Prerequisites*

BIOL 372 (F/S/SS)	BIOL 106 and CHEM 102 or 105
Or **SOE 300 (F/S)**	No prereq's
SOE 275 (F)	SOE 101
SOE 285 (F) SOE 303 (S) SOE 315 (SAYO)	SOE 101 SOE 101 or 102 SOE 101, 102, PHYS 101 or 201; CHEM 102 or 106; MATH 108, 140 or 171
SOE 204 (F/S)	MATH 106/108 or 108 c// if 106 taken, or 140, 171
SOE 310 (F)	BIOL 106 and 107
SOE 301 (F)	SOE 300 or c//
SOE 302 (S)	SOE 301
SOE 430 (FAYE)	SOE 301
SOE 435 (F)	BIOL 372 or SOE 300 and STAT 212 or 412
SOE 438 (S)	Junior standing or permission of instructor. Recommended SOE 312
SOE 441 (S)	SOE 300 or BIOL 372 and STAT 212 or 412
SOE 450 (S)	Junior standing
SOE 454 (F)	Senior standing
SOE 455 (F)	BIOL 107
SOE 460 (S)	Recommended SOE 204 or sufficient background in spreadsheets
SOE 464 (S)	Junior standing and recommended Soils 368
STATS 412 (F/S)	STATS 212, MATH 140 or 171

- S = Spring; F = Fall, SS = Summer
- c// = concurrent

BIOL 107: *CHEM 101,102,105,106 **or** concurrent*

BIOL 372: *enrollment BIOL 106 and CHEM 102 or 105*

CHEM 101: *(SOE 300 – has no prerequisite) enrollment into MATH 105, 106, 107, 108, 140, 171, 172. Aleks score of 45% **or** placement/concurrent*

CHEM 105: *MATH 106 or c// or ALEKS score 70% or higher or MATH 107, 108, 140, 171, 172…*

PHYSICS 101: *MATH 107 or 108 w/grade of C or better, ALEKS placement score 80% or higher or passing MATH 140, 171, 202 or 206.*

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Other Areas of Emphasis

Policy

	Cr	Term	Offered
SOE 419 Topics in NRS	V		F,S,SS
SOC 424 Sociology and Public Policy	3		S
ENVR SCI 444 Environmental Assessment	4		F
POL S 101 American National	3		F,S
POL S 316 American Public	3		F
POL S 340 Intro to Public	3		F
POL S 418 Human Issues in Intern't	3		S
POL S 420 Political Parties & Interest	3		S
POL S 430 The Politics of Nat Res & Environmental Policy	S		S
POL S 443 Admin Jurisprudence	S		S
POL S 446 Public Budgeting	S		S
POL S 448 Urban Politics and Policy	S		S

Wetland/Aquatic Resources

SOE 411 [M] Limnology and Aquatic Ecosystems Management	3		S
FISH 418 Fisheries Mgmt (UI)	4		F
FISH 422 Concepts in Aquaculture (UI)	3		S
FISH 424 Fish Health Management (UI)	4		S
SOE 419 Topics in Natural Resources	3		F,S,SS
SOE 460 Watershed Management	3		S
Soil Sci 368 Intro to GIS	3		S
Soil Sci 468 ArcGIS & Geospatial Analysis	4		F
BIOL 412 Biology & Mgmt of Fishes	3		FAYE
BIOL 432 Biology of Amphibians & Reptiles	4		SAYE

Other Suggested Professional Electives:

Biol 469 Ecosystem Ecology & Global Change	3		
C E 341 Intro to Environmental Engineering	3		
C E 401 Climate Change Science & Eng.	3		
C E 402 Applied Meterology	3		
C E 415 Environmental Measurements	3		
C E 456 Sustainable Develop. in Water Resources	3		
EconS 330 Nat Res Economics	3		F
EconS 326 Aspects of Sustainable Devleop.	3		
EconS 430 Managing the Global Environment	3		
EconS 431 Economic Analysis of Envr. Policy	3		
EconS 432 Natural Resource Economics & Policy	3		
Psych 466 Environmental Psychology	3		
Soil Sci 201 [B] Soil: A Living Sys	3		
Soil Sci 368 Intro to GIS	3		F,S
Soil Sci 374 Remote Sensing & Airphoto Inter p	3		S
Soil Sci 413 Soils & Environmental Physics	3		
Soil Sci 414 Environmental Biophysics	2		
Soil Sci 415 Environmental Biophysics Lab	1		
Soil Sci 468 ArcGIS & Geospatial Analy	4		S

4/26/16

Exhibit C
Development / Delivery Schedule

Delivery schedule subject to expected enrollments for at least 2019-2020 AY due to requirements for faculty have enough students for courses to go. Also of note as we bring in students or face scheduling challenges we have the flexibility to shift multiple courses between Pullman and Vancouver. We are fully coordinating between the campuses to equitably share the AAFTE and teaching responsibilities.

School of the Environment course development and delivery - Global Campus draft schedule

	Faculty member	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020	Summer 2020	Fall 2020	Spring 2021
Pullman	Whitman	SOE 110	SOE 110	SOE 110, SOE 444	SOE 110		SOE 110, 444	SOE 110	
	Kahn	SOE 210 (core)	SOE 210 (core)	SOE 210 (core)	SOE 210 (core)		SOE 210 (core)	SOE 210 (core)	
	Menard			SOE 103			SOE 103		
	Vervoort		Develop SOE 230						
	instructor tbd			SOE 285? Will it fill?		SOE 230	SOE 285		SOE 230
Vancouver	Steve Henderson - Develop			Develop SOE 315					
	Marc Kramer	SOE 390		Develop SOE 101, 404					
	instructor tbd				SOE 390			SOE 390	
	instructor tbd					SOE 101	SOE 101		SOE 101
	instructor tbd					SOE 404 CAPS			SOE 404 CAPS
	instructor tbd				SOE 315 (core) or wait until fa 2020?			SOE 315 (core)	
Wenatchee	Marcia Ostrom	SOE 312 (core)			SOE 312 (core)			SOE 312 (core)	

Exhibit D

Assessment Plan & Report

SCHOOL OF THE ENVIRONMENT: BS in Earth Environmental Sciences
Undergraduate Program Assessment of Student Learning & Curriculum Activities & Timeline for Academic Year 2018-2019 (*Updated 9/14/18)*

Campuses: Pullman, Vancouver, Tri-Cities, Global
2018-19 Overview. Fall: develop rubric and small testdrive; in Spring: refine rubric & process, to pilot w/more fac.

Issues remaining from Spring 2018
1. Need to develop an additional CAPS for the Pullman campus – course will be designed with embedded assessment built in.

Fall 2018:

1. Update assessment plan for new AY and discuss with Undergraduate committee. (Reminder: Proposing extension of Earth-EnvironEco (EES) major to Global, begin F2019.)
2. Undergraduate committee decides which courses should be used for direct measures of student work (see draft curriculum map for EES major).
3. Discuss use of embedded assessment in multiple courses with faculty
4. Develop an embedded assessment program rubric with faculty to be used while they are grading assessment courses. This process will give the School data about student strengths and weaknesses, showing where the courses and curricula are more effective and where they might benefit from changes.
5. Testdrive rubric as embedded assessment (direct measures), in a small number of assignments from several courses/instructors. Determine timeframe and process for testdrive. Rubric may cover 2-3 SLOs (to be determined by Undergraduate committee) per year on a rotating basis.
6. Review Senior Exit Survey and revise if necessary.
7. Update curriculum maps for each major that indicate key courses that may be assessed for Introducing, Developing, and Advancing programmatic learning outcomes.

Spring 2019 Assessment Activities

1. Run new CAPS course as special topics SOE 492 with embedded assessment designed into course.
2. Review results from fall rubric testdrive, and input from participating faculty. As needed, refine rubric and process (e.g., instructions to faculty, choice of assignments, numbers of students to include/any sampling, campuses, logistics to collect scores).
3. Pilot rubric assessment of student work in SOE 492 and selected other courses. (Afterwards, request input from instructors to further refine rubric or process for next AY, when more courses and faculty may participate.)
4. Share updated curriculum maps with faculty for discussion. Request that instructors confirm or correct entries for specific courses. Request faculty approve the updated maps for each major. Share approved maps with all instructors.
5. Optional: Feb-May, help promote the National Survey of Student Engagement (NSSE) to all senior majors. (WSU participates and, with sufficient response rate, SOE can get disaggregated results for senior majors on all campuses.)

SCHOOL OF THE ENVIRONMENT: BS in Earth Environmental Sciences
Undergraduate Program Assessment of Student Learning & Curriculum Activities & Timeline for Academic Year 2018-2019 (*Updoted 9/14/18)*

Overview: Assessment Framework and Faculty Participation

Framework: The School of the Environment has been evolving since the merger that resulted in the School. We now have the structure in place to evaluate our curriculum on a regular basis. Combining the three former prefixes was a major school wide effort that has resulted in a strengthened program.

Our assessment activities have led us to fully reevaluate our curriculum, and how we deliver curriculum (e.g. across campuses via AMS, Global) during the 2017-2018 academic year. This has been with full involvement of all faculty system wide. This process will continue into the coming year with formal curriculum mapping for all majors and areas of emphasis.

Once the new maps are established the Undergraduate Studies Committee will formalize a process for regularly assessing work from a sample of students using a faculty-developed embedded program rubric, assessing for the program while they are grading for their courses. This regular, efficient process will give the School data about student strengths and weaknesses, showing where the courses and curriculum are strong or need revising.

Our School will look at student performance at all campuses, across all seven of our learning outcomes at key points in the curriculum as advised by the curriculum mapping exercise. Our assessment activities are intended to show student development at key points in the curriculum, so that faculty may use these results to inform changes to courses and the curriculum. Our process and tools are in development, and will be responsive system wide to changes in faculty composition. Curricular and program assessment changes are discussed and voted on by faculty across all campuses.

Faculty Participation: Selected faculty, instructors, and TAs will provide assessment data from their courses each semester. Results of assessment will be reviewed by the Undergraduate Studies Committee and then are shared annually with faculty and the chair, for discussion and use.

Coordination: The Director of Undergraduate Studies coordinates assessment, handles logistics, analyzes data, prepare results for discussion by faculty, and reports annually to the chair and WSU/ATL.

SCHOOL OF THE ENVIRONMENT: BS in Earth Environmental Sciences
Undergraduate Program Assessment of Student Learning & Curriculum Activities & Timeline for Academic Year 2018-2019 (*Updated 9/14/18)*

Program Goals *The program will teach/train...*	**Student Learning Outcomes** *Majors will be able to . . .*	**Curriculum Components**	**Potential Assessment Measures**	
			Direct Measures (student work assessed w/program rubric) **(DRAFT COURSE LIST 09.12.18)**	**Indirect Measures** (student perspective or other indicators)
1. Fundamental knowledge of global change	Use critical thinking and creative problem-solving to understand, formulate, or apply ethical responses to contemporary issues and challenges associated with global change and life on a dynamic Earth.	Core requirements	SOE 285 SOE 210 SOE 300 SOE 312 SOE 315/460	
2. Fundamental knowledge of contemporary issues	Use scientific methods, quantitative and symbolic reasoning, and decision-making processes as individuals or teams to explore complex global and environmental issues and to analyze problems in the natural and social sciences.	Core requirements	SOE 285 SOE 454 SOE 4xx CAPS Program Rubric *(D)*	
3. Fundamental knowledge of science and the scientific process	Understand the foundations of contemporary science, including the scientific method, hypothesis formation and testing, uncertainty, objectivity, and peer review and evaluation.	Core requirements	SOE 285 SOE 210 SOE 300 SOE 444 SOE 454 SOE 4xx CAPS Program Rubric *(D)*	
4. Fundamental knowledge of scientific problem analysis and reporting	Locate, interpret, synthesize, and apply relevant scientific information sources to address information needs for problem analysis and reporting.	Core requirements [CAPS]	SOE 408, 454, 404 SOE 4XX (in development) Program rubric *(D)*	
5. Successful communication	Use technical media as needed and communicate clearly in verbal and written modes as appropriate for public or professional science audiences.	Core requirements	[M] courses SOE 444 Program rubric *(D)*	Writing portfolio score *NSSE spr 2017, spr 2019*
6. Awareness of diverse value systems inherent to use of natural resources	Expand awareness of self in a global society and effectively engage diverse perspectives, values, and cultures, ranging from local to global, in dealing with global, environmental, and social issues.	Professional electives SOE 312, 335 SOE 444	SOE 312 (other? 444) pre and post exam? Program Rubric *(D)*	
7. Personal and career development.	Achieve entry-level expertise in a professional specialty or academic field in the natural sciences while retaining the ability to effectively engage in broader, cross-disciplinary and cross-cultural activities.	Majors have many options for developing advanced skills in select content areas within the discipline. Milestone SOE 492, 495, 499	Milestone reports *(D)*	Senior exit survey *NSSE spr 2017, spr 2019*

Exhibit E

WASHINGTON STATE UNIVERSITY

Office of the Dean
COLLEGE OF AGRICULTURAL, HUMAN, AND NATURAL RESOURCE SCIENCES

To: Kelly Newell, Director, Program and partner Development, AOI

From: Dr. Andre-Denis Wright, Dean, CAHNRS

Date: I March 2019

Subject: Environmental and Ecosystem Science online degree

I am in favor of proceeding with the online offering of the Environmental and Ecosystem Science degree through the School of the Environment and Global Campus. I understand that offering this degree program with be revenue neutral for the College of Agricultural, Human, and Natural Resource Sciences and that funds needed to initiate it are available and that continued support and growth will be provided by enrollment in the program. I look forward to its success.

Cc: M. Jockers
K. Keller
R. Zack

421 Hulbert Hall, PO Box 646242, Pullman, WA 99164-6242
509-335-4561 | Fax: 509-335-1065 | cahnrs.wsu.edu

WASHINGTON STATE UNIVERSITY | College of Arts and Sciences

MEMORANDUM

TO: Kent Keller, Director
School of the Environment

Cc: André-Denis Wright, Dean
College of Agricultural, Human, and Natural Resource Sciences

Kelly Newell, Director
Program and Partner Development

Nancy Lira, Area Finance Officer
College of Arts and Sciences

FROM: Matthew L. Jockers, Dean
College of Arts and Sciences

DATE: March 1, 2019

SUBJECT: Support for Bachelor of Science in Earth and Environmental Sciences through Global Campus

I offer my strong support for the proposal submitted by the School of the Environment to launch online the Bachelor of Science degree in Earth and Environmental Sciences through Global Campus.

The College of Arts and Sciences is committed to provide funding that will support oversight of the online program, development of new and updated courses, and the teaching of online courses for the major in Earth and Environmental Sciences. Financial commitments from the college will include the following:

- Up to $17,460 in years one to three in ongoing or new funds for a teaching assistant to support CAS listed SOE courses; however, if warranted by greater than expected enrollments additional funds for instructional support may be provided.

- Up to $4500/course for the development of CAS listed courses, including design and implementation, that will support the online major. We currently provide these funds through application to the College on a course-by-course basis.

All new online degree programs will be evaluated annually for effectiveness in meeting learning outcomes and for achieving sustainable enrollments. At the end of three years, we will review with the School of the Environment and Global Campus the success of the online major in meeting learning and enrollment goals to evaluate renewal of our commitment to instructional support.

I thank you and the faculty of the School of the Environment for your commitment to providing educational opportunities that meet the needs of diverse students, especially for students who may not be able to access one of our physical campuses.

PO Box 642630, Pullman, WA 99164-2630
509-335-4581 | Fax: 509-335-8986 | cas@wsu.edu | cas.wsu.edu

Exhibit F
Letter of support from Libraries

Statement of Library Support

I am writing to state that the existing collections and services of the WSU Libraries can fully support the proposed extension of the BS in Environmental and Ecosystem Sciences degree to the Global Campus. As the extension offers WSU Global students access to courses that already exist and are supported by the libraries, the impact of the on WSU Libraries' collections, services and personnel should be minimal.

Almost all online library resources used by environment students are already available to students on all WSU campuses, including the Global Campus. The current library journal and database subscriptions will support students on the Global Campus.

The Libraries have a well-established service in place for mailing print books and physical media items to WSU Global students who need them (for more information, see the Library Services for WSU Global Campus website, here: http://libguides.libraries.wsu.edu/global). While offering the Environmental and Ecosystem Sciences BS through the WSU Global Campus may involve some increased demand for these services, the increase would be minor and should not result in any negative impact on existing personnel and services.

The WSU Libraries can fully support the expansion of the Environmental and Ecosystem Sciences BS to the Global Campus.

Betty Galbraith
Librarian for Environmental Sciences
Owen Science and Engineering Library
Washington State University, Pullman
509.335.7930
bettyg@wsu.edu

Use Table 1 to report enrollment projections						
Students	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year N***
Headcount	10	20	30	40	50	50
AAFTE	6	12	18	24	30	30

Note on Year "N": Please replace the letter "N" with the year in which you expect the program to reach full enrollment.

Use the FTE Calculator below to convert Headcount to Annual Average FTE for each year represented.

FTE Calculator				
Credit Hours Per Student	Fall Headcount	Spring Headcount	Total Headcount	Total Credits
20			0	0
19			0	0
18			0	0
17			0	0
16			0	0
15			0	0
14			0	0
13			0	0
12			0	0
11			0	0
10			0	0
9	50	50	100	900
8			0	0
7			0	0
6			0	0
5			0	0
4			0	0
3			0	0
2			0	0
Total	50	50	100	900
Divide by 2 to get annual average				2

Annual average credits	450
Divide by 15 for undergrads or 10 for grad students. Enter 15 or 10 >	15
Annual average FTE	30

Use Table 2 to report program costs and revenues

Environmental and Ecosystem Sciences

3/4/2019

		1st FTE	2nd FTE	Nth* FTE	1st Academic Year	2nd Academic Year	5th Academic Year
Total Student HDC					10	20	50
Total Student AAFTE					6	12	30
					↑Enrollment values linked to Table 1↑		
Personnel							
Faculty		*↓Insert employee FTE by job title↓*			*↓Insert annual salaries by job title↓*		
Instructor							
TT Faculty							
Faculty coordinator (Stipend)		0.00	0.00	0.00	-	15,000	15,000
	Subtotal	0.00	0.00	0.00	-	15,000	15,000
Exempt							
<Insert Job Title>		0.00	0.00	0.00	-	-	-
	Subtotal	0.00	0.00	0.00	-	-	-
Classified							
<Insert Job Title>		0.00	0.00	0.00	-	-	-
	Subtotal	0.00	0.00	0.00	-	-	-
Graduate							
TA		100%	100%	100%	17,460	17,460	17,460
TA		0%	0%	0%	-	-	-
	Subtotal	1.00	1.00	1.00	17,460	17,460	17,460
Total Personnel		1.00	1.00	1.00	17,460	32,460	32,460
Benefits					*↓Insert benefits based on current benefit rates↓*		
Faculty					-	4,305	4,305
Exempt					-	-	-
Classified					-	-	-

	Graduate			419	779	779
	Total Benefits			419	5,084	5,084
	Link to current benefits model rates					
Goods and Services				4,500	4,500	4,500
Travel				-	-	-
Equipment (laptops, cameras, software)				1,000	1,000	1,000
	Total Direct Costs			23,379	43,044	43,044
	Total Indirect Costs	35 %		9,627	20,216	20,216
	Total Costs			**33,006**	**63,260**	**63,260**
	One-Time Costs (Course dev)		*User inputs one-time costs→*	*5,500*	*5,500*	*5,500*
	Recurring Costs		*Formula calculates recurring costs→*	*27,506*	*57,760*	*57,760*
	Total Costs			***33,006***	***63,260***	***63,260***
			Calculated total cost per student AAFTE:	**5,501**	**5,272**	**2,109**
			Calculated direct cost per student AAFTE:	**3,897**	**3,587**	**1,435**
Revenue						
	Internal Departmental /Area Reallocation			(3,621)	(10,955.96)	(91,955.96)
	Enrollment Funding			27,000	54,000	135,000
	New State Funds			-	-	-
	WSU Allocation (Institutional reallocation)			-	-	-
	Indirect Allocation (Central reallocation for support services)			9,627	20,216	20,216
	Other <Insert Description>			-	-	-

Total Revenue	**33,006**	**63,260**	**63,260**
	TRUE	TRUE	TRUE
	↑Total costs must equal total revenue↑		

**Note on Year "N": Please replace the letter "N" with the year in which you expect the program to reach full enrollment.*

Use Table 2 to report program costs and revenues

Environmental and Ecosystem Sciences

4/19/2019

		1st FTE	2nd FTE	Nth* FTE	1st Academic Year	2nd Academic Year	5th Academic Year
Total Student HDC					10	20	50
Total Student AAFTE					6	12	30
					↑Enrollment values linked to Table 1↑		
Personnel							
Faculty		*↓Insert employee FTE by job title↓*			*↓Insert annual salaries by job title↓*		
Instructor							
TT Faculty							
Faculty coordinator (Stipend)		0.00	0.00	0.00	-	15,000	15,000
	Subtotal	0.00	0.00	0.00	-	15,000	15,000
Exempt							
<Insert Job Title>		0.00	0.00	0.00	-	-	-
	Subtotal	0.00	0.00	0.00	-	-	-
Classified							
<Insert Job Title>		0.00	0.00	0.00	-	-	-
	Subtotal	0.00	0.00	0.00	-	-	-
Graduate							
TA		100%	100%	100%	17,460	17,460	17,460
TA		0%	0%	0%	-	-	-
	Subtotal	1.00	1.00	1.00	17,460	17,460	17,460
Total Personnel		1.00	1.00	1.00	17,460	32,460	32,460
Benefits					*↓Insert benefits based on current benefit rates↓*		
Faculty					-	4,305	4,305
Exempt					-	-	-
Classified					-	-	-
Graduate					419	779	779
Total Benefits					419	5,084	5,084
Link to current benefits model rates							
Goods and Services					4,500	4,500	4,500
Travel					-	-	-
Equipment (laptops, cameras, software)					1,000	1,000	1,000
Total Direct Costs					23,379	43,044	43,044
Total Indirect Costs	35%				9,627	20,216	20,216
Total Costs					**33,006**	**63,260**	**63,260**
One-Time Costs (Course dev)			*User inputs one-time costs →*		*5,500*	*5,500*	*5,500*
Recurring Costs			*Formula calculates recurring costs→*		*27,506*	*57,760*	*57,760*
Total Costs					***33,006***	***63,260***	***63,260***
		Calculated total cost per student AAFTE:			**5,501**	**5,272**	**2,109**
		Calculated direct cost per student AAFTE:			**3,897**	**3,587**	**1,435**
Revenue							
Internal Departmental /Area Reallocation					(621)	(4,955.96)	(76,955.96)
Enrollment Funding					24,000	48,000	120,000
New State Funds					-	-	-
WSU Allocation (Institutional reallocation)					-	-	-
Indirect Allocation (Central reallocation for support services)					9,627	20,216	20,216
Other <Insert Description>					-	-	-
Total Revenue					**33,006**	**63,260**	**63,260**
					TRUE	TRUE	TRUE
					↑Total costs must equal total revenue↑		

**Note on Year "N": Please replace the letter "N" with the year in which you expect the program to reach full enrollment.*

Use Table 1 to report enrollment projections						
Students	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year N***
Headcount	10	20	30	40	50	50
AAFTE	6	12	18	24	30	30

Note on Year "N": Please replace the letter "N" with the year in which you expect the program to reach full enrollment.

Use the FTE Calculator below to convert Headcount to Annual Average FTE for each year represented.

FTE Calculator				
Credit Hours Per Student	Fall Headcount	Spring Headcount	Total Headcount	otal Credits
20			0	0
19			0	0
18			0	0
17			0	0
16			0	0
15			0	0
14			0	0
13			0	0
12			0	0
11			0	0
10			0	0
9	50	50	100	900
8			0	0
7			0	0
6			0	0
5			0	0
4			0	0
3			0	0
2			0	0
Total	50	50	100	900
Divide by 2 to get annual average				2
Annual average credits				450
Divide by 15 for undergrads or 10 for grad students. Enter 15 or 10 >				15
Annual average FTE				30