



Board of Regents Program Action Request
 Proposal to **Discontinue** a Program of Study
 University of Alaska

1a. UA University UAS	1b. School or College Arts and Sciences	1c. Department or Program Natural Sciences
2. Complete Program Title: Geography and Environmental Resources		
3. Type of Program:		
Undergraduate Certificate <input type="checkbox"/>	Associate <input type="checkbox"/>	Baccalaureate <input checked="" type="checkbox"/>
Master's <input type="checkbox"/>	Doctorate <input type="checkbox"/>	Post-Baccalaureate Certificate <input type="checkbox"/>
4. Type of Action: <input type="checkbox"/> Suspend Admissions		
Implementation Semester: Fall Year: 2020		
5. Other programs affected by the proposed action, including those at other campuses (please list):		
Program Affected	Anticipated Effect	
None		
Page number of attached summary where effects on other programs are discussed: _____		
6. Specialized accreditation or other external program certification needed or anticipated. List all that apply or 'none':		7. Aligns with University or campus mission, goals, core themes, and objectives (list):
		Page in attached summary where alignment is discussed: _____
8. Teachout Plan (attached) <input type="checkbox"/>	Students have already been moved to other programs.	
Submitted by: Karen Carey, Provost		
		Date: 03/15/2020
Consensus support of AC <input type="checkbox"/>	Not supported by AC <input type="checkbox"/>	
Recommend approval by VPASR _____		Date:
Recommend disapproval by VPASR _____		Date:

Degree Program Name	BA Social Science/Economics Emphasis	BA Geography, Environmental, and Outdoor Studies	BS Geography & Natural Resources
PROGRAM DEMOGRAPHICS			
FY19 Majors	4	23	8
FY19 Graduates	0	1	1
FY19 SCH from degree program	Economics Subject: 306 Total Enrolled Credits of Majors: 76	Geography Subject: 400 Environmental Science Subject: 553 Outdoor Studies Subject: 324 Geology Subject: 170 Total Enrolled Credits of Majors: 460	Geography Subject: 400 Geology Subject: 170 Total Enrolled Credits of Majors: 182
FY19 UGF allocated to the program	0	314618	454229
FY19 total program budget UGF/Major or SCH	n/a: budget per dept., not program	21,750	13527
STAFFING			
Tenure-track FTE faculty impacted by program Non-tenure track FTE faculty impacted by program deletion staff impacted by program deletion -- for each of these describe reduction phase-in during teachout	Currently there is no TT faculty in Potential adjuncts in Juneau/Ketchikan None	1 Tenure Track member in May need adjunct to meet some program needs with loss of TT position None Most requirements can be completed in redesigned Environmental Studies BA	None None None All Students can accomodated within the redesigned Environemntal Science degree with two concentrations (1 being Environmental Resources).
PROGRAM IMPACTS			
Potential for the program to obtain external funding Impacts on meeting state or workforce needs	some impact for economic oriented projects or interdisciplinary project with economic component some impact for economic training	Some impact on human geography research with loss of research (tripartite) tenure track faculty member None	None None
PROGRAM UNIQUENESS AND TEACH-OUT PLAN			
Is this program unique in the UA system? If no, describe duplicate or similar programs Are there other majors to which the students may transfer (at MAU and at other MAUs)? What reasonable options within your university do students have ?	Yes, the economics emphasis within a broader Bachelors of Social Science degree is unique Yes Other emphasis in BASS	Yes, some impact on human geography, but the redesigned Environmental Studies BA in broader and more interdisciplinary Yes New broader, interdisciplinary Environmental Science BA	Yes, but will be accomodated under new two track Environmental Science BS Yes New Environmental Science BS with a concentration in Environmental Resources

What reasonable options do students have across the UA System?	Distance courses for Economics	Some courses outside UAS	Some courses outside UAS
What reasonable options do students have for transfer to another university?			
What are the on-line options within UA for completion?	Distance courses for Economics but can't exceed the campus-based requirement	More options at UAS and some beyond (perhaps fewer at UAA with loss of Environment and Society program).	Options in the redesigned BS. opportunities for coursework at UAF, UAA (limited)
PROGRAM REDUCTION SAVINGS			
Total UGF savings following teachout	0	\$100,000	
Timeline for cost savings and faculty/staff reductions	None	Faculty notification June 2020 contract termination in June 2021	

Notes: 5:C = UAS does not map courses to programs

7:C = salaries of Richard, Forest, Kevin K., & 15/ Kevin M., plus 1/4 non-personal svcs (\$292,868 + 21,750 = \$314,618)

7:D = salaries of Eran, Sonia, Jason A., and Sanjay, plus 1/6 of the non-personal svcs (\$440,702 +13, 527 = \$454,229)

8:C = 1/4 non-personal services, \$21,750


8:D = 1/6 non-personal services, \$13,527

We budget by department, not program and these numbers are as close as we can get per degree program (6 degrees in BS, 4 degrees in BA)

MEMORANDUM

TO: President Jim Johnsen

CC: Vice President Paul Layer

FROM: Chancellor Rick Caulfield 

DATE: UPDATED--March 27, 2020

SUBJECT: UAS recommendations regarding expedited program reviews and FY21 budget

As requested, in this memo I'm providing recommendations about UAS expedited reviews of both academic and administrative programs that make clear how UAS can meet our FY21 budget target. I've also included information about our planning for addressing anticipated FY22 budget challenges (see Attachment A).

BACKGROUND:

Over the past year, the UAS Executive Cabinet has been reviewing information and data that informs our thinking about how to meet an anticipated FY21 budget reduction target estimated to be \$2.37M. Our review has focused on both academic and administrative reductions. Throughout this process, UAS has reviewed data from our Institutional Effectiveness office about program productivity such as numbers of majors and graduates over time, student-faculty ratios, and completion rates. We've invited input about proposed reductions from UAS deans and directors at all three UAS campuses, and offered all faculty and staff an opportunity to make suggestions. Moreover, we've employed our Strategic Planning and Budget Advisory Committee (SPBAC), which includes representatives of governance groups, to offer input about how proposed changes align with UA Board of Regents goals, our UAS mission, and our strategic priorities.

Throughout this review, UAS has sought to identify budget reduction strategies that minimize impact on student success. In student and graduate surveys, our students consistently express concern about having access to classes that allow them timely program completion. And as you know, UAS has had to make significant budget cuts over the past five years. We have deleted major programs such as our BA in Art and Masters in Business Administration. As the smallest university in the UA system, the number of degree and certificate programs is significantly smaller than what one finds at UAA and UAF. Moreover, UAS' small size means that our academic programs are commonly organized in broader interdisciplinary degree programs rather than separate departments. This makes it difficult to consider vertical cuts of complete programs without impacting related interdisciplinary programs serving a broad array of students. In addition to these considerations, our Executive Cabinet and SPBAC have also sought to build on UAS academic programs of excellence that capitalize on our interdisciplinary degree offerings (often fully online), our location in Southeast Alaska's coastal maritime environment, and our recognized leadership statewide in teacher preparation and educational leadership. Even as we consider budget cuts, we have sought to be even more strategic in supporting programs in these areas that are distinctive to our university.

ACADEMIC PROGRAM REVIEWS:

As you know, regular academic program reviews are a requirement of our recently-renewed institutional accreditation by the Northwest Commission on Colleges and Universities (NWCCU). At UAS, we've used this process annually to look carefully and critically at all academic programs and to make improvements as well as propose changes and deletions. This year, you asked that UA universities undertake expedited academic program reviews in light of the exceptionally severe cuts required by the Board of Regents \$70M budget reduction compact agreement with the Governor. With this in mind, UAS Provost Karen Carey requested that faculty in 17 programmatic areas complete expedited reviews and to consider ways that they could be enhanced, continued as currently offered, revised, subject to continued review, suspended, or deleted. Table 1 shows which programs were subject to that review, and the determination made about each of these.

TABLE 1: List of UAS Expedited Program Reviews, AY19-20

PROGRAM	RECOMMENDATION
BS Mathematics	Continued review
BA Geography, Environmental, and Outdoor Studies	Name change: BA Environmental Studies
BS Geography and Environmental Resources	Deletion following teach-out
BS Environmental Science	Revision based on review
BLA Outdoor and Adventure Studies	Revision
Biology Pre-Major	Revision
BA English	Continued Review
BA Social Science/Economics Emphasis	Deletion following teach-out
OEC Financial Institutions	Continuation
OEC Small Business Management	Continuation
M.Ed. Mathematics Education*	Deletion following teach-out
Mathematics Education K-5 graduate certificate	Deletion
Mathematics Education K-8 graduate certificate	Deletion
Educational Technology graduate certificate	Deletion
Endorsement in Distance Teaching & eLearning	Deletion
M.Ed. Special Education	Revision
M.Ed. Reading	Revision

*Program deleted by BOR, February 2020

Based on these reviews by faculty, and recommendations from deans and our Provost, I am recommending that the following academic program in our School of Arts and Sciences be deleted following a teach-out of existing students:

BS Geography and Environmental Resources

I also recommend that the name of the BA Geography, Environmental, and Outdoor Studies be changed to the BA Environmental Studies. This name change, along with elimination of the BS Geography and Environmental Resources, is part of a substantive restructuring of our current Environmental Science and Environmental Studies programs (both BA and BS) which would incorporate elements of these two existing degree programs.

In the Alaska College of Education, I recommended deletion of the following:

- M.Ed. Mathematics Education
- Mathematics Education K-5 graduate certificate
- Mathematics Education K-8 graduate certificate
- Educational Technology graduate certificate
- Endorsement in Distance Teaching & eLearning

I note that the Board of Regents has already acted favorably (in February 2020) on our recommendation that the M.Ed. in Mathematics Education be deleted. Moreover, with authority delegated to me by University regulation, I have recently approved deletion of the listed graduate certificates and endorsement. All of these programs had low and declining enrollments and graduates.

PROPOSED FY21 BUDGET REDUCTIONS:

In addition to budget savings from elimination of the programs listed above, UAS anticipates a number of academic budget cuts that do not involve specific program deletions but instead focus on program streamlining and redesign. These proposed cuts are listed in Table 2.

TABLE 2: List of Proposed Academic Budget Reductions, FY21

PROGRAM AREA	PROPOSED ACTION
Arts and Sciences	Deletion of Associate Dean position
	Savings due to senior faculty retirements
	Savings from termination of term MPA faculty
	Elimination of Geography faculty position
	Savings from hiring entry level History faculty
	Savings from reduced BBA faculty workload
	Reduction in professional development funding
Career Education	Elimination of Health Sciences faculty position
	Savings from Certified Nurse Aide hire
Education	Reduction in Math Education faculty
	Reduction in rural practicum funding
	Savings from hiring entry level Elementary Ed faculty
Egan Library	Shift in funding source for Instructional Designer
Ketchikan Campus	Savings from faculty position vacancy
	Realignment of faculty workloads
	Reduction in library expenditures
Sitka Campus	Elimination of science lab assistant position
	Reductions in travel and contractual expenses
ANTICIPATED TOTAL	\$1.07M

In addition to the above academic program budget reductions, UAS has identified a number of administrative cuts at its three campuses that will also contribute to meeting our FY21 budget reduction target. These are shown in Table 3 below.

TABLE 3: List of Proposed Administrative Budget Reductions, FY21

CAMPUS	PROPOSED ACTION
UAS-wide	Use of centrally-pooled general funds
	Reduce administrative travel
	Reduce facilities maintenance and renewal
	Reduce commodities
Juneau Campus	Eliminate Development Operations Specialist position
	Reduce Chancellor's community partnership allocation
	Use grant funding for PITAAS scholarships
	Eliminate Research Analyst position

	Reduce Facilities Services grounds crew expenditures
	Reduce EMSA non-personnel and contract services
	Shift Res Life/FYE personnel to auxiliary
Ketchikan Campus	Eliminate Administrative & Recruitment Specialist
	Savings from reclassified Assistant Director
Sitka Campus	Eliminate Administrative Assistant position
ANTICIPATED TOTAL	\$1.30M

SUMMARY: FY 21 BUDGET REDUCTION PLAN

The proposed academic and administrative reductions listed above enable UAS to meet its estimated FY21 budget reduction target of \$2.37M. As noted above, these proposed reductions are based on extensive analysis of data and input by the Executive Cabinet and recommendations from deans and directors. Moreover, the specific actions were vetted by our UAS Strategic Planning and Budget Advisory Committee, most recently at the Committee’s meeting on March 17, 2020. In addition, as Chancellor I held a budget forum for all employees on March 19 that offered an opportunity for further input.

ANTICIPATING FY22 BUDGET REDUCTIONS:

You have asked each UA university to provide an overview of budget planning for FY22 that takes into account the UA system’s anticipated \$20M general fund reduction under the current compact with the Governor. Attachment A provides a FY22 Budget Reduction Model that anticipates the need to cut another \$1.86M at UAS (base reduction of \$1.7M plus specific market compensation increases totaling \$160K) along with an internal reallocation of \$250K for general market compensation increases.

Attachment A presents anticipated reductions in broad categories at this stage. Each of these categories are based on substantive discussions and analysis by our Executive Cabinet and input from deans and directors. However, we have not yet had further consultation with governance groups and other stakeholders given that these reductions would be implemented almost two years out and there remains significant uncertainty about factors that would influence our final recommendations, including enrollments, tuition rates, and the impact of the current COVID pandemic. It may also be that additional expedited academic program reviews will be needed that build on those recently completed. Having said this, I note that UAS has consistently met its budget reduction targets in past years, and anticipates that we will be able to do so again as further assessment, analysis, and consultation takes place.

* * *

Thank you for this opportunity to present our UAS plan for FY21 based on outcomes from expedited program reviews and a thorough and inclusive process for considering budget cuts in both administrative and academic areas.

ATTACHMENT: Preliminary UAS FY22 Budget Reduction Model

Expedited Program Review Geography, Environmental Studies, Outdoor Studies, Environmental Science

An Expedited Program Review was requested for the BA Geography, Environmental, and Outdoor Studies, the BLA Outdoor and Adventure Studies, the BS Environmental Science, and the BS Geography and Environmental Resources. We were asked to consider the feasibility of consolidating the four degrees into two degrees: one BA and one BS.

Specifically we were asked to address the following:

1. Significant decreasing numbers across the BLA Outdoor and Adventure Studies and the BS Geography and Environmental Resources.
2. Small degree attainment over the past five years (n=8 per year) across all degrees
3. Thirty-five faculty members across UAS who teach in these programs with a student:faculty ratio of 10.5. Please address how this is viable from a budget perspective.

The faculty on this expedited review from the degree programs listed above have met and discussed the feasibility of streamlining the degrees and addressing the three specific points. We have agreed on a plan to revise the degrees that we feel will improve our offerings to students, create clear paths from entering UAS to graduation, and be marketable in a way that will attract students.

In the following sections we (1) present a plan for establishing an Environmental Studies program, which consists of two BS degrees and one BA degree, (2) address the specific concerns listed above, (3) layout similarities and differences between the BS Environmental Science and BS Environmental Resources (formerly BS Geography and Environmental Resources), and (4) discuss tracking of enrollment in the proposed Environmental Studies program.

These suggestions would require longer discussions with and approval from the larger body of faculty across all three departments (Humanities, Social Sciences, and Natural Sciences) that would be affected by these changes.

1. Environmental Studies Program

Our central idea is to bring the several geography and environmentally related degrees into a single interdisciplinary Environmental Studies program that will directly address UAS's mission of studying "the cultures and environment of Southeast Alaska". The program will serve as an umbrella for the BS Environmental Science, BS Environmental Resources, and BA Environmental Studies (proposed name change to the BA Geography, Environmental, and

Outdoor Studies). All students in the program will complete a core set of courses and some upper division/capstone courses.

The basic program structure and core would look as follows:

Environmental Studies Program				
Environmental Science BS	Environmental Resources BS	Environmental Studies BA		
		Cultural Geography Emphasis	Environmental Studies Emphasis	Outdoor Studies Emphasis
Shared Core: ENST S100 – A Sense of Place ENST S101 – Culture and Environment ENVS S102 – Earth and Environment				
Potential Shared Upper Division Courses (TBD): GEOG S313 – Sustainable Resource Management GEOG S350 – Interdisciplinary Perspectives on Climate Change Choose one of ENST S490 – Environmental Studies Seminar or ODS S445 - Outdoor Studies Emphasis Capstone				

Treating these three degrees as part of a single Environmental Studies program will achieve several important objectives: it will (i) build program cohesion by bringing together students and faculty across these degrees, who will now see themselves as part of a broader Environmental Studies program, (ii) reduce administrative overhead since the degrees will have a single program coordinator and be evaluated as a single program, which would also eliminate most of the issues associated with evaluating our interdisciplinary degrees, and (iii) be marketable as a group.

We imagine marketing taglines or page headings such as “Come to UAS to Study the Environment.” The UAS website would have a page dedicated to the Environmental Studies program, with descriptions of these three related degrees. We feel that this will allow us to do a better job of attracting students than we have done in the past. Bringing the degrees together under a single program will also allow our students to relate to each other and to identify as Environmental Studies students. We hope that continuing to foster the identity of the program will help with retention and degree completion.

The offerings and faculty will support all three degrees. The programs will be designed so that students will be able to move between the BS and BA degrees. The three emphases within the BA Environmental Studies will allow students to specialize but will also be flexible enough to allow them to move between them and between BA Environmental Studies and the BLA where appropriate (the emphases will be organized in a way that is similar to the UAS English Degree which has emphases in Creative Writing, Literature, and Literature and the Environment). Additionally, note that the B.S. Environmental Resources is undergoing some curriculum changes to both better align it with the BS Environmental Science and to clarify the differences between the two BS degrees. For reasons that we discuss in Section 3, we find it difficult to consolidate these degrees into a single BS.

We will create an Environmental Studies course designator: ENST. This new designator will replace the current GEOG, HUM, and ODS designators on some select courses. We want students and faculty to see the BS and BA degrees, and the tracks within them, as part of the same program. An ENST course designator will help with this. To clarify differences and similarities in the degrees and to simplify administrative tasks, we will also stop using the GEOG designator on courses that are currently cross-listed with ENVS.

The program core and shared upper division courses will be important in creating program identity. We plan to replace our current GEOG S101 – Introduction to Geography with ENST S101 – Culture and Environment. We will continue to offer our current ENVS S102 – Earth and Environment. We also propose that the Environmental Studies program take over HUM S120 – A Sense of Place and repackage it as ENST S100 – A Sense of Place. We can support and offer this course as an interdisciplinary introductory seminar course that all incoming Environmental Studies students take. Ideally this would be co-taught by faculty from different departments that serve Environmental Studies, as has been done with HUM S120. The shared upper division courses require additional discussion, but some potential candidates are listed in the table above.

2. Specific Concerns

1. Decreasing numbers in the BLA and in the BS Geography and Environmental Resources.

The declining numbers in the Outdoor and Adventure Studies BLA and in the BS in Geography and Environmental Resources are concerning. According to the data received for the 2017-18 ODS Assessment Report, there were 5 students enrolled in the BLA option. While there were a few more students in the program in prior years, the BLA option has been less attractive to our students than the ODS Certificate or the BA Geography, Environmental, and Outdoor Studies.

Even so, after consulting with the BLA Coordinator, at this juncture we do not recommend removing the Outdoor and Adventure Studies emphasis in the BLA. The BLA degree as a whole

has seen a decrease in enrollment; removing ODS students from the degree will reduce its numbers further. Revisions to the BLA in the past year have streamlined the degree for students and may help with enrollments. The BLA in Outdoor and Adventure Studies continues to be a very good option for humanities-oriented students who wish to pursue outdoor studies. Given that it does not require us to offer additional courses, we recommend leaving it in place as an option for BLA students, but will continue to work to make it accessible to more BLA students. .

The BS in Geography and Environmental Resources has had small but relatively steady numbers. Our hope is that the visibility gained by associating the degree with the Environmental Studies program will lead to increased enrollments.

2. Degree Attainment

We also agree that degree attainment could be improved. It is our hope that revising our programs and building flexibility into them will help to provide students paths to graduation. This may, in some cases, require students to move between emphases in the degrees.

As well, we hope that creating a unified Environmental Studies program will improve our ability to retain students.

It is worth noting that the graduation rate in the ODS certificate program is very high. In fact, according to the data packet, the ODS program had more graduates than majors in each of the past two years, resulting in a graduation rate of over 100%.

3. Student/Faculty Ratio

While 35 faculty contribute to the geography and environmental studies programs, many of them contribute only a small part of their workload and many of these faculty are not in the degree programs (for example, Biology, Chemistry, Math, and Statistics courses are counted in these numbers). In the most recent Program Review for Outdoor Studies, the instructional FTE, including full and part-time faculty, ranged from 1.5-1.7 over a 5-year period. Similarly, the instructional FTE for Environmental Science has ranged from 1.7-2.4 over the past five years. This is also the case for the geography degrees.

More importantly, we agree that a 10.5 student:faculty ratio could be improved. According to the data packets, all of the programs seem to be in a similar position in regard to this ratio. It is likely that the only way to improve it is to better coordinate our course offerings so that they match student enrollment targets. Having a more unified program will help with this. Of course, simply having more students in our programs will also help in this regard. We suggest that, if we can implement our new program organization, we can set an early target of a student:faculty ratio of 12. If we achieve that, we can look at possible new options.

A number of issues have caused difficulties when evaluating our interdisciplinary degrees. Some of these issues (such as eliminating the cross-listing of ENVS/GEOG courses) will be resolved by evaluating the degrees as part of a single program. In Section 4 we propose a method for evaluating the Environmental Studies program.

3. Comparison of BS Environmental Science and BS Environmental Resources

During summer 2019, in response to the Environmental Science 5-year review, we attempted to consolidate the B.S. Environmental Science and B.S. Geography and Environmental Resources into a single B.S. degree. We found that this was challenging due to some key differences in their degree requirements. Essentially, the Environmental Science degree has a more stringent set of core science requirements, whereas the Geography and Environmental Resources degree requires more social science and humanities courses related to human interactions with the environment. Nonetheless, in order to better align these degrees and to clarify their similarities and differences we submitted to the curriculum committee several proposed changes for the Geography and Environmental Resources degree, and we anticipate additional changes next year resulting from our attempts to build a more cohesive and inclusive Environmental Studies program. The key changes that we have proposed thus far are to (i) change the degree name to simply Environmental Resources and (ii) switch to using the ENVS designator for all cross-listed courses that are used in the Environmental Resources degree.

In the following table we outline the similarities and differences between the degrees, assuming that the changes that we recently proposed are approved. Below we discuss the challenges with combining these degrees into one.

B.S. Environmental Resources		B.S. Environmental Science	
Minimum Credit Hours	120	Minimum Credit Hours	120
General Education Requirements	36	General Education Requirements	36
Alaska Native Knowledge Graduation Req.	3	Alaska Native Knowledge Graduation Req.	3
Major Requirements	56	Major Requirements	64
Electives	28	Electives	20
General Education Requirements		General Education Requirements	
Complete all General Education Requirements which must include the following:	36	Complete all General Education Requirements which must include the following:	36
<u>MATH S251</u> Calculus I		<u>BIOL S105</u> Fundamentals of Biology I	
One of the following Science sequences:		<u>ENVS S102</u> Earth and Environment	
<u>BIOL S105</u> Fundamentals of Biology I & <u>BIOL S106</u> Fundamentals of Biology II		<u>MATH S251</u> Calculus I	
<u>CHEM S105</u> General Chemistry I			

<p>/ <u>S105L</u> General Chemistry I Laboratory & <u>CHEM S106</u> General Chemistry II / <u>S106L</u></p> <p><u>PHYS S123</u> College Physics I & <u>PHYS S124</u> College Physics II</p> <p><u>PHYS S211</u> General Physics I & <u>PHYS S212</u> General Physics II</p>	
<p>Major Requirements</p> <p><u>ENVS S102</u> Earth and Environment 4 <u>ENVS S338</u> Introduction to GIS 3 <u>ENVS S492</u> Environmental Science Seminar 1 <u>GEOG S101</u> Introduction to Geography 3 <u>GEOG S312</u> Humans and the Environment 3 <u>GEOG S313</u> Sustainable Resource Management 3 <u>GEOG S490</u> Geography Seminar 2</p>	<p>Major Requirements</p> <p><u>BIOL S271</u> Ecology 4 <u>ENVS S422</u> Earth's Climate System 3 <u>CHEM S105</u> General Chemistry I 3 <u>CHEM S105L</u> General Chemistry I Laboratory 1 <u>CHEM S106</u> General Chemistry II 3 <u>CHEM S106L</u> General Chemistry II Laboratory 1 <u>GEOL S104</u> Physical Geology 4 <u>GEOL S302</u> Hydrology 4 <u>STAT S200</u> Elementary Statistics 3</p> <p>Select one of the following Physics sequences: 8 <u>PHYS S123</u> College Physics I & <u>PHYS S124</u> College Physics II</p> <p><u>PHYS S211</u> General Physics I & <u>PHYS S212</u> General Physics II</p>
	<p>Capstone Courses</p> <p><u>ENVS S375</u> Current Topics in Earth and Ecosystem Research 2 <u>ENVS S492</u> Environmental Science Seminar 1</p> <p>Select at least one of the following: 1 <u>ENVS S491</u> Environmental Science Internship <u>ENVS S498</u> Research in Environmental Science</p>
<p>Environmental Systems and Earth Processes Select twenty-one credits of the following: 21</p> <p><u>BIOL S271</u> Ecology <u>BIOL S373</u> Conservation Biology <u>BIOL S480</u> Aquatic Pollution <u>CHEM S350</u> Environmental Chemistry <u>ENVS S302</u> Glaciology</p>	<p>Concentration Areas Select twelve credits from primary concentration and six credits from either concentration: 18</p> <p><i>Forests and Ecosystems</i> <u>CHEM S350</u> Environmental Chemistry <u>ENVS S414</u> Biogeochemistry <u>ENVS S416</u> Biogeography & Landscape Ecology</p>

<p> <u>ENVS S407</u> Snow Hydrology <u>ENVS S414</u> Biogeochemistry <u>ENVS S416</u> Biogeography & Landscape Ecology <u>ENVS S422</u> Earth's Climate System <u>GEOG S210</u> Temperate Rainforest Ecosystems <u>GEOL S301</u> Geomorphology <u>GEOL S302</u> Hydrology <u>GEOL S320</u> Mineral, Energy, & Renewable Resources </p>	<p> <u>ENVS S430</u> Forest Ecosystems <u>ENVS S431</u> Forest Field Ecology Laboratory <u>ENVS S475</u> Field Studies in Environmental Science <u>GEOG S210</u> Temperate Rainforest Ecosystems <u>GEOG S313</u> Sustainable Resource Management <i>Earth Systems and Climate Change</i> <u>ENVS S213</u> Natural Hazards <u>ENVS S302</u> Glaciology <u>ENVS S407</u> Snow Hydrology <u>ENVS S414</u> Biogeochemistry <u>ENVS S475</u> Field Studies in Environmental Science <u>ENVS S496</u> Juneau Icefield Research Program <u>GEOG S350</u> Interdisciplinary Perspectives on Climate Change <u>GEOL S301</u> Geomorphology <u>GEOL S320</u> Mineral, Energy, & Renewable Resources </p>
<p> <i>Human Dimensions of Environmental Resources</i> Select two of the following: 6 <u>ANS S320</u> AK Native Ecological Knowledge <u>ANTH S342</u> Arctic Anthropology <u>ANTH S408</u> Ethnobiology <u>ECON S435</u> Natural Resource/ Environmental Economics <u>ENGL S303</u> Literature and the Environment <u>ENVS S213</u> Natural Hazards <u>GEOG S350</u> Interdisciplinary Perspectives on Climate Change <u>PHIL S371</u> Perspectives on the Natural World <u>PS S458</u> Environmental Politics <u>SOC S404</u> Environmental Sociology </p>	
<p> <i>Quantitative and Spatial Analysis</i> Select ten credits of the following: 10 <u>ENVS S111</u> Introduction to Differential GPS <u>ENVS S309</u> Mobile GIS Technology & Applications <u>ENVS S406</u> Remote Sensing <u>ENVS S409</u> GIS Jam: Projects in GIS and Remote Sensing </p>	<p> <i>Quantitative and Spatial Analysis</i> Select eight credits of the following: 8 <u>BIOL S355</u> Experimental Design and Data Analysis <u>ENVS S111</u> Introduction to Differential GPS <u>ENVS S309</u> Mobile GIS Technology & Applications <u>ENVS S338</u> Introduction to GIS </p>

<u>ENVS S410</u> Advanced Geographic Information Systems <u>MATH S460</u> Mathematical Modeling <u>STAT S200</u> Elementary Statistics <u>STAT S401</u> Regression and Analysis of Variance	<u>ENVS S406</u> Remote Sensing <u>ENVS S410</u> Advanced Geographic Information Systems <u>MATH S252</u> Calculus II <u>STAT S400</u> Statistical Computing with R <u>STAT S401</u> Regression and Analysis of Variance
Electives Select 28 credits of electives in consultation with an advisor, including a minimum of 12 credits of upper division courses.	Electives Select 20 credits of electives as needed to meet 42 upper division credits required for the degree.
Total Credits 120	Total Credits 120

The B.S. Environmental Science (ENVS) and B.S. Environmental Resources (ENVR) differ in several ways. Some of these differences are difficult to reconcile in a single degree, whereas others could be addressed pretty easily.

1. The ENVS degree is more prescriptive than the ENVR degree, particularly for the lower division requirements. In particular, the ENVS degree requires a broader and more quantitative background in the natural sciences.
2. The ENVS degree contains required *Capstone Courses*. Program faculty are considering adding a similar series of courses to the ENVR degree (in addition to the changes proposed in Section 1).
3. The ENVS degree has *Concentration Areas* that contain many of the same courses that are found in the *Environmental Systems and Earth Processes* portion of the ENVR degree. These two sections are essentially equivalent.
4. Both degrees have *Quantitative and Spatial Analysis* sections that are very similar. The slight differences are related to differences in major requirements and the desire to make the ENVS degree more quantitative.
5. The ENVR degree has a section *Human Dimensions of Environmental Resources* that is not present in the ENVS degree. The ENVR degree currently requires 6 credits from this section, although program faculty are in favor of increasing the number to 9 credits. Adding a similar requirement to the ENVS degree would make it overly prescriptive.

The ENVS and ENVR degrees share a lot of similarities. However, it is difficult to combine the degrees without reducing the quantitative nature of the ENVS degree (which has been the more popular of the two degrees) or making it overly prescriptive. Additionally, increasing the major requirements of the ENVR degree will result in the loss of students who are less quantitatively inclined and that are more focused on careers in resource management. Similarly, eliminating the ENVR degree will not reduce the number of courses that we offer, as all of the courses in the degree are required either by the ENVS degree or other degrees at UAS. We do feel, however, that better synergy between the degrees could be created by making some small modifications to both degrees beyond what we have already proposed. We recommend adding *Capstone Courses* to the ENVR degree and eliminating the concentration areas in the ENVS degree and renaming that section of the degree *Environmental Systems and Earth Processes*.

These two degrees should be evaluated together, either under the umbrella of the proposed Environmental Studies program or independently.

4. Program Tracking

When evaluating the Environmental Studies program, we propose breaking the evaluation into three parts: program courses, “independent” courses, and service courses. The exact details of what courses to include will require additional discussions between program faculty and IE, and will likely evolve as the programs continue to be refined.

Program courses are courses that are required by the degrees within the program and that primarily serve these degrees. When counting “program courses” for the Environmental Studies program, we propose

- only counting courses that are required for any of the three degrees *and* that have the ENVS, ENST, GEOG, GEOL, and ODS designators,
- excluding Independent Study, Directed Research, and Internship courses, as these courses have an enrollment of 1, may be for multiple credits, and generally contribute very little to faculty teaching workloads, and
- excluding ENVS S496 – Juneau Icefield Research Program, which is also generally taken by just 1 student from UAS and does not affect faculty teaching workloads.

“Independent” courses are those that are taken by one student and contribute very little to faculty workloads, such as independent studies, directed research, and internships. These courses provide unique opportunities to our students and should be valued and tracked accordingly. We propose tracking the total number and total credit hours of these courses.

Service courses are courses that are delivered by program faculty that either have a large percentage of students that are not in the Environmental Studies program (such as the introductory physics track) or that are not requirements for any of the program degrees (such as GEOL S105 – Geological History of Life). The courses should be evaluated by student credit hours and student:faculty ratio in order to highlight the impact of Environmental Studies faculty on other degree programs across UAS.

The most challenging of the three degrees to evaluate is probably the BA Environmental Studies since it includes a number of courses that primarily serve other degrees (such as the BA Social Sciences). We recommend excluding those courses as part of the program evaluation.