FORMAT 5

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PROGRAM/DEGREE REQUIREMENT CHANGE (MAJOR)

SUBMITTED BY:

Department	**Biology and Wildlife**	**College/School**	**CNSM**
Prepared by	**Diane Wagner**	**Phone**	**474-5227**
Email Contact	**Diane.wagner@alaska.edu**	**Faculty Contact**	

See http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/ for a complete description of the rules governing curriculum & course changes.

PROGRAM IDENTIFICATION:

DEGREE PROGRAM	**Biological Sciences**
Degree Level: (i.e., Certificate, A.A., A.A.S., B.A., B.S., M.A., M.S., Ph.D.)	**BA and BS**

A. CHANGE IN DEGREE REQUIREMENTS: (Brief statement of program/degree changes and objectives)

Two major changes are proposed.

1. A new concentration in Biomedical Science. The objective is to prepare students for employment or advanced study in the fields of human and animal health. The concentration provides prerequisites for medical, veterinary, and other professional degree programs in the health sciences and preparation for the MCAT and GRE exams.

2. An option for students to take computer science instead of physics. Some sub-disciplines of biology rely heavily on computational and computer skills and faculty report that students are generally lacking these skills. Rather than add requirements to the degree programs, we propose to allow BA students to choose either one semester of physics and computer science, and BS students to choose either 2 semesters of physics or 1 semester each of physics and computer science.

Minor changes to the program include deleting redundancies, deleting references to W and O requirements, adjusting disciplinary course lists, and adjusting capstone course lists to reflect new and dropped course offerings. For the BA program, we also propose to change the current requirement that the minor include 3 credits of upper division work to a recommendation. The requirement caused difficulties because some minors do not require upper division courses.

B. CURRENT REQUIREMENTS AS IT APPEARS IN THE CATALOG:

Please see the online catalog.

C. PROPOSED REQUIREMENTS AS IT WILL APPEAR IN THE CATALOG WITH THESE CHANGES:
(Underline new wording ~~strike through old wording~~ and use complete catalog format)

B.A., BIOLOGICAL SCIENCES

Minimum Requirements for Degree: 120 credits
~~Students must earn a C- grade or better in each course.~~

General University Requirements
Complete the general university requirements. (http://catalog.uaf.edu/bachelors)

General Education Requirements
Complete the general education requirements. (http://catalog.uaf.edu/bachelors/general-education-requirements)
As part of the general education requirements, complete:

CHEM F105X and CHEM F106X	General Chemistry I and General Chemistry II	8

B.A. Degree Requirements
Complete the B.A. Degree Requirements. (http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofartsandbacheloroffineartstext)
As part of the B.A. degree requirements, complete: [1]

STAT F200X	Elementary Probability and Statistics	3

Program Requirements

BIOL F115X	Fundamentals of Biology I	4
BIOL F116X	Fundamentals of Biology II	4
BIOL F260	Principles of Genetics	4

BIOL F481	Principles of Evolution	4
CHEM F321	Organic Chemistry I	4
PHYS F103X	College Physics I	3-4
or CS F103	Introduction to Computer Programming	
or CS F201	Computer Science I	
Biology Breadth Requirements		
Select two from the following:[2]		7-12
BIOL F360	Cell and Molecular Biology	
BIOL F371	Principles of Ecology	
BIOL F310	Animal Physiology	
or BIOL F342	Microbiology	
or BIOL F434	Structure and Function of Vascular Plants	
or BIOL F213X and BIOL F214X	Human Anatomy and Physiology I and Human Anatomy and Physiology II	
Electives		
Select three courses~~, at least one of which is designated a W course,~~ from the following: [3] [4]		9-12
Elective Course Lists A, B, C, ~~or~~ D, or E		
Capstone[5] [4]		
BIOL F400	Capstone Project	0
Satisfactory completion of a capstone research project which can be done either working individually with a faculty member or within one of the following courses:[6] [5]		0-4
~~BIOL F403~~	~~Metabolism and Biochemistry~~	
BIOL F434	Structure and Function of Vascular Plants	
BIOL F441	Animal Behavior	
~~BIOL F459~~	~~Wildlife Nutrition~~	
BIOL F466	Advanced Cell and Molecular Biology Laboratory	
BIOL F472	Community Ecology	
BIOL F473	Limnology	
Total Credits		~~51-63~~ 50-63

[1] As part of the humanities and social science requirement, take at least 9 credits of upper division course work. As part of the minor, ~~take~~ at least 3 credits of upper-division course work are recommended.

[2] Because biology breadth courses for the B.A. degree serve as prerequisites for many upper-division biology electives, course choices should be made with consideration of the elective biology courses the student plans to complete

[3] BIOL 397 or BIOL F497 or BIOL F490, URSA F388 or URSA F488 courses may be substituted by petition for a maximum of two required elective courses in biology (3-4 credits of independent study or research per substituted course). The subject area of the independent study or research will determine which biological subject areas the credits satisfy.

~~[4] If possible, satisfy all UAF core requirements for W and O courses and the biology capstone requirement with these elective courses.~~

[5] [4] Fulfills the baccalaureate capstone requirement.

[6] [5] Students working individually with a faculty member may, for example, take BIOL F490, BIOL F497 or do so without course credits.

B.S., BIOLOGICAL SCIENCES WITHOUT CONCENTRATION

Minimum Requirements for Degree: 120 credits

~~Students must earn a C- grade or better in each course.~~

General University Requirements

Complete the general university requirements. (http://catalog.uaf.edu/bachelors)

General Education Requirements

Complete the general education requirements. (http://catalog.uaf.edu/bachelors/general-education-requirements)

As part of the general education requirements, complete:

MATH F230X	Calculus Essentials with Applications	3
or MATH F251X	Calculus I	
CHEM F105X and CHEM F106X	General Chemistry I and General Chemistry II	8

B.S. Degree Requirements

Complete the B.S. degree requirements. (http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext)

As part of the B.S. degree requirements, complete:

STAT F200X	Elementary Probability and Statistics	3
or STAT F300	Statistics	
BIOL F115X and F116X	Fundamentals of Biology I and Fundamentals of Biology II	8
~~Select one from the following PHYS sequences:~~		~~8~~
~~PHYS F103X and PHYS F104X~~	~~College Physics I and College Physics II~~	
~~PHYS F211X and PHYS F212X~~	~~General Physics I and General Physics II~~	

Program Requirements

~~BIOL F115X~~	~~Fundamentals of Biology I~~	~~4~~

~~BIOL F116X~~	~~Fundamentals of Biology II~~	~~4~~
BIOL F260	Principles of Genetics	4
BIOL F360	Cell and Molecular Biology	3
BIOL F371	Principles of Ecology	4
Select one from the following:		4-8
BIOL F310	Animal Physiology	
or BIOL F342	Microbiology	
or BIOL F213Xand BIOL F214X	Human Anatomy and Physiology I and Human Anatomy and Physiology II	
or BIOL F434	Structure and Function of Vascular Plants	
BIOL F481	Principles of Evolution	4
CHEM F321	Organic Chemistry I	4
CHEM F325	Organic Chemistry II	3-4
or CHEM F351	General Biochemistry: Metabolism	
PHYS F103	College Physics I	4
or PHYS 211X	General Physics I	
PHYS F104	College Physics II	3-4
or PHYS 212X	General Physics II	
or CS F103	Introduction to Computer Programming	
or CS F201	Computer Science I	
Electives ~~1,2~~ 1		
Organismal elective		
Select one additional course from the following:		3-4
List D		
Biology electives		
Select four additional courses at the 200 level or above, at least three of which must be from the following:		16-20
Lists A, B, C, ~~or~~ D, or E		
Capstone ~~3~~ 2		
BIOL F400	Capstone Project	0
Satisfactory completion of a capstone research project which can be done either working individually with a faculty member or within one of the following courses: ~~4~~ 3		
~~BIOL F403~~	~~Metabolism and Biochemistry~~	
BIOL F434	Structure and Function of Vascular Plants	
BIOL F441	Animal Behavior	
BIOL F466	Advanced Cell and Molecular Biology Laboratory	
BIOL F472	Community Ecology	
BIOL F473	Limnology	
Total Credits		~~75-85~~ 74-85

~~1 At least one must satisfy the W requirement.~~

~~2~~ 1 BIOL F397or BIOL F497 or BIOL F490, URSA F388 or URSA F488 courses may be substituted by petition for a maximum of two required elective courses in biology (3-4 credits of independent study or research per substituted course). The subject area of the independent study or research will determine which biological subject areas the credits satisfy

~~3~~ 2 Fulfills the baccalaureate capstone requirement.

~~4~~ 3 Students working individually with a faculty member may, for example, take BIOL F490, BIOL F497 or do so without course credits.

B.S., BIOLOGICAL SCIENCES WITH CONCENTRATION

Concentrations: Cell and Molecular Biology, Physiology, Ecology and Evolutionary Biology, and Biomedical Science

Minimum Requirements for Degree: 120 credits

~~Students must earn a C- grade or better in each course.~~

General University Requirements

Complete the general university requirements. (http://catalog.uaf.edu/bachelors)

General Education Requirements

Complete the general education requirements. (http://catalog.uaf.edu/bachelors/general-education-requirements)

As part of the general education requirements, complete:

MATH F230X	Calculus Essentials with Applications	3
or MATH F251X	Calculus I	
CHEM F105X and CHEM F106X	General Chemistry I and General Chemistry II	8

B.S. Degree Requirements

Complete the B.S. degree requirements. (http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext)

As part of the B.S. degree requirements, complete:

STAT F200X	Elementary Probability and Statistics	3
or STAT F300	Statistics	

BIOL F115X and BIOL F116X	Fundamentals of Biology I and Fundamentals of Biology I	8
~~Select one PHYS sequence:~~		~~8~~
~~PHYS F103Xand PHYS F104X~~	~~College Physics I and College Physics II~~	
~~PHYS F211Xand PHYS F212X~~	~~General Physics I and General Physics II~~	
Program Requirements		
~~BIOL F115X~~	~~Fundamentals of Biology I~~	~~4~~
~~BIOL F116X~~	~~Fundamentals of Biology II~~	~~4~~
BIOL F260	Principles of Genetics	4
Select one from the following:		4-8
BIOL F310	Animal Physiology	
BIOL F434	Structure and Function of Vascular Plants	
BIOL F342	Microbiology	
BIOL F213X and BIOL F214X	Human Anatomy and Physiology I and Human Anatomy and Physiology II	
BIOL F481	Principles of Evolution	4
CHEM F321	Organic Chemistry I	4
CHEM F325	Organic Chemistry II	3-4
or CHEM F351	General Biochemistry: Metabolism	
PHYS F103X	College Physics I	4
or PHYS 211X	General Physics I	
PHYS F104X	College Physics II	3-4
or PHYS 212X	General Physics II	
or CS F103	Introduction to Computer Programming	
or CS F201	Computer Science I	
Concentration		
Select one from the following concentrations: ~~1~~,~~2~~ 1		~~21-28~~ 21-30
Cell and Molecular Biology		
Physiology		
Ecology and Evolutionary Biology		
Biomedical Science		
Capstone ~~3~~ 2		
BIOL F400	Capstone Project	0
Satisfactory completion of a capstone research project which can be done either working individually with a faculty member or within one of the following courses: 4 3		
~~BIOL F403~~	~~Metabolism and Biochemistry~~	
BIOL F434	Structure and Function of Vascular Plants	
BIOL F441	Animal Behavior	
BIOL F466	Advanced Cell and Molecular Biology Laboratory	
BIOL F472	Community Ecology	
BIOL F473	Limnology	
Total Credits		21-27

Concentrations

Cell and Molecular Biology

As part of the Program Requirements, take:		
CHEM F325	Organic Chemistry II	
Complete the following:		
BIOL F360	Cell and Molecular Biology	3
CHEM F450	General Biochemistry: Macromolecules	3
CHEM F351	General Biochemistry: Metabolism	3
Cell and Molecular and Physiology Electives		
Select three additional courses from lists A or B, at least one of which must be from list A		9-12
Biology Breadth Elective		
Select one additional course from lists C or D		3-4
Total Credits		21-25

~~At least one of the courses above must satisfy the W requirement.~~

Physiology

BIOL F360	Cell and Molecular Biology	3
Physiology or Cell and Molecular Biology Electives		
Select four courses from list A or B, two of which must be from list B		12-16
Biology Breadth Elective		
Select one additional course from lists C or D		3-4
Biology Elective		
Select one additional course from lists A, B, C, ~~or~~ D, or E		3-4
Total Credits		21-27

~~At least one of the courses above must satisfy the W requirement.~~

Ecology or Evolutionary Biology

BIOL F371	Principles of Ecology	4
Ecology and Evolutionary Biology Electives		
Select two additional courses from list C		6-8
Organismal Elective		
Select one additional course from list D		3-4
Biology Breadth Elective		
Select one additional course from lists A, ~~or~~ B, or E		3-4
Biology Elective		
Select one additional course from lists A, B, C, ~~or~~ D, or E		3-4
STAT F401	Regression and Analysis of Variance	3-4
or STAT F402	Scientific Sampling	
Total Credits		22-28

~~At least one of the courses above must satisfy the W requirement.~~

Biomedical Science

As part of the general education requirements, the following courses are recommended:

PSY F101X	Introduction to Psychology
SOC 100X	Individual, Society, and Culture
ECON 100X	Political Economy
or ECON 201X	Principles of Economics I: Microeconomics
or ECON 202X	Principles of Economics II: Macroeconomics

As part of the program requirements, complete:

BIOL F213X and BIOL F214X	Human Anatomy and Physiology I and II	
or BIOL F310	Animal Physiology	
CHEM F325	Organic Chemistry II	
PHYS F104X	College Physics II	
or PHYS F212X	General Physics II	

Complete the following:

BIOL F342	Microbiology	4
BIOL F360	Cell and Molecular Biology	3
CHEM F351	General Biochemistry: Metabolism	3
Biomedical Electives		
Select at least three additional courses from list E		12-16
Biology Breadth Elective		
Select one additional course from lists C or D		3-4
Total Credits		25 - 30

Biology Elective Course Lists

Courses that satisfy upper-division elective credit may require prerequisites in addition to the required biology course.

List A - Cell and Molecular Biology

BIOL F342	Microbiology	4
BIOL F360	Cell and Molecular Biology	3
BIOL F403	Metabolism and Biochemistry	4
BIOL F417	Neurobiology	3
BIOL F435	Introduction to Biology of Cancer	3
BIOL F460	Principles of Virology	3
BIOL F462	~~Concepts of~~ Infectious Diseases	3
BIOL F465	Immunology	3
BIOL F466	Advanced Cell and Molecular Laboratory	3
BIOL F494	The Human Microbiome	4
CHEM F325	Organic Chemistry II	4
CHEM F450	General Biochemistry: Macromolecules	3
CHEM F351	General Biochemistry: Metabolism	3
CHEM F470	Cellular and Molecular Neuroscience	3
CHEM F474	Neurochemistry	3

List B - Physiology

BIOL F310	Animal Physiology	4
BIOL F312	Medical Physiology	3
BIOL F335	Principles of Epidemiology	3
BIOL F342	Microbiology	4
BIOL F394	Behavioral Neuroscience Research	3

BIOL F412	Exercise Physiology	3
BIOL F417	Neurobiology	3
BIOL F434	Structure and Function of Vascular Plants	4
BIOL F441	Animal Behavior	3
BIOL F455	Environmental Toxicology	3
BIOL F457	Environmental Microbiology	3
BIOL F458	Vertebrate Endocrinology	3
BIOL F459	Wildlife Nutrition	4
BIOL F462	~~Concepts of~~ Infectious Diseases	3
BIOL F465	Immunology	3

List C - Ecology and Evolutionary Biology

BIOL F371	Principles of Ecology	4
BIOL F418	Biogeography	3
BIOL F433	Conservation Genetics	3
BIOL F441	Animal Behavior	3
BIOL F457	Environmental Microbiology	3
BIOL F469	Landscape Ecology and Wildlife Habitat	3
BIOL F471	Population Ecology	3
BIOL F472	Community Ecology	3
BIOL F473	Limnology	3
BIOL F474	Plant Ecology	4
BIOL F476	Ecosystem Ecology	3
BIOL F483	Stream Ecology	3
BIOL F485	Global Change Biology	3
BIOL F486	Vertebrate Paleontology	3
BIOL F487	Conceptual Issues in Evolutionary Biology	3
BIOL F488	Arctic Vegetation Ecology: Geobotany	3
BIOL F489	Vegetation Description and Analysis	3
WLF F301	Design of Wildlife Studies	3
~~WLF F410~~	~~Wildlife Populations and Their Management~~	~~3~~

List D - Organismal Biology

BIOL F239	Introduction to Plant Biology	4
BIOL F301	Biology of Fishes	4
BIOL F331	Systematic Botany	4
BIOL F305	Invertebrate Zoology	4
BIOL F406	Entomology	4
BIOL F418	Biogeography	3
BIOL F425	Mammalogy	3
BIOL F426	Ornithology	3
BIOL F427	Ichthyology	4
BIOL F486	Vertebrate Paleontology	3
BIOL F489	Vegetation Description and Analysis	3

List E - Biomedical Science*

BIOL F312	Medical Physiology	
BIOL F335	Principles of Epidemiology	3
BIOL F394	Behavioral Neuroscience Research	3
BIOL F402	Biomedical Research Ethics	3
BIOL F403	Metabolism and Biochemistry	4
BIOL F412	Exercise Physiology	3
BIOL F417	Neurobiology	3
BIOL F435	Introduction to Biology of Cancer	3
BIOL F455	Environmental Toxicology	3
BIOL F460	Principles of Virology	3
BIOL F462	Infectious Diseases	3
BIOL F465	Immunology	3
BIOL F466	Advanced Cell and Molecular Laboratory	3
BIOL F494	The Human Microbiome	4
WLF F305	Wildlife Diseases	3
CHEM F450	General Biochemistry: Macromolecules	3
CHEM F351	General Biochemistry: Metabolism	3
CHEM F470	Cellular and Molecular Neuroscience	3
CHEM F474	Neurochemistry	3

D. ESTIMATED IMPACT

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

1. The proposed concentration in Biomedical Science will have no negative impacts on budget, facilities, space, or faculty because it utilizes established courses that are already incorporated in faculty workloads. The number of students enrolled in the Cell and Molecular Biology and Physiology concentrations will likely decrease when Biomedical Science becomes available, but this will cause no administrative impact because those concentrations share "core" biology courses and many elective options. Positive impacts may result from increased student retention and recruitment to UAF. We anticipate the concentration will be popular with students. Approximately half of Biological Sciences majors report that they plan a career in human or animal health, and student polling has indicated that a health-related concentration is in high demand.

2. The option to take computer science rather than physics will have no impact on the Biology and Wildlife budget or administration, but will impact other departments (see below).

E. IMPACTS ON PROGRAMS/DEPTS:

What programs/departments will be affected by this proposed action?
Include information on the Programs/Departments contacted (e.g., email, memo)

1. The concentration in Biomedical Science is unlikely to have a strong impact other departments or programs. We expect the distribution of students enrolled in the Biological Sciences concentration options to shift when Biomedical Sciences becomes available, resulting in fewer students in the Cell and Molecular Biology and Physiology concentrations. The Chemistry department may see a small drop in enrollment in CHEM F450 if enough students shift from Cell and Molecular Biology, which requires CHEM F450, to Biomedical Sciences, which does not require the course but treats it as an disciplinary elective. The Physiology concentration, currently the largest of the concentrations, has the same chemistry requirements as Biomedical Sciences. Tom Green, chair of Chemistry and Biochemistry, was provided with a draft of the Biomedical Sciences curriculum in August 2016 and has not objected to the plan.

2. The proposed computer science option will impact the Physics and Computer Science Departments. Diane Wagner, on behalf of Biology and Wildlife, has communicated with Renate Wackerbauer, chair of Physics, and Jon Genetti, chair of Computer Science, and neither raised objections to the plan. Chairs were provided with rough estimates of the expected impact on their courses, summarized below, but we will conduct polling later this year to generate better estimates of impact.

We expect a minority of our majors to take advantage of the computer science option. About half of Biological Sciences majors in both the BA and BS programs report plans to pursue a career in the health sciences requiring additional education, and many of the programs they target (e.g. medical, veterinary, dentistry, physical therapy programs) require at least one, and usually two, semesters of physics; these students are unlikely to opt for computer science over physics. However, a portion of students headed for other careers in biology will take advantage of the option. Students matriculate into the BA program at a rate of approximately 10-15 per year. BA students currently take PHYS F103, but under the proposed curriculum could opt for CS F103 or CS F201 instead. If 30% of each year's class chooses computer science, that would result in 3-5 fewer students per year in PHYS F103. About 50-60 students per year matriculate into the BS program. BS students currently take a full year of physics (either PHYS F103 & F104 or PHYS F211 & F212; the majority take F103 & F104). Under the proposed curriculum, they would be required to take at least one semester of physics but could replace the second semester with one of the two CS courses named above. If 30% of BS students choose computer science, we expect 15-18 fewer students per year in PHYS F104 and F212 (mostly F104). In total, we expect an increase of roughly 20 students per year in computer science, spread across CS F103 and F201.

Because Biological Sciences majors have a full plate of other courses during freshman and sophomore years, most do not attempt to complete the physics requirement until the junior year. Therefore CS and PHYS courses are unlikely to experience significant changes in enrollment until 2018-19 at the earliest.

F. IF MAJOR CHANGE - ASSESSMENT OF THE PROGRAM:

Description of the student learning outcomes assessment process.)

1. Biomedical Science concentration - Our major assessment tool in the biological sciences programs is the ETS Major Field Test in Biology (MFT-B), delivered to all undergraduate majors in the senior year. The test provides an estimate of student performance in the major sub-disciplines of biology (e.g. cell biology, ecology, etc.) as well as an overall performance measure. Once the Biomedical Science concentration has produced sufficient seniors to purse an analysis, we will compare sub-disciplinary MFT-B scores across concentrations to assess depth and breadth of knowledge.

2. Computer science option - The MFT-B provides an assessment of analytical skills, which might provide the means to compare the effects of course choices on quantitative problem-solving.

The most meaningful assessment of both of these changes, and of the program as a whole, would be to track our students' subsequent education, employment, and career satisfaction post-graduation, but we lack the administrative resources to do this within the department.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize program/degree change applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. If you drop a course, is it because the material is covered elsewhere? Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the program is not compromised as a result.

1. Biomedical concentration

Many UAF students plan a career in health science and the opportunity to focus their education on this discipline, with validation on the transcript, is poplar among biology majors. When our department first investigated the feasibility of adopting concentrations in 2011-12, polling revealed strong support among students for a health-related concentration (nearly 40% of 92 respondents chose that option). However, at the time the department had few biomedical faculty and few appropriate courses, and faculty voted to forego a health concentration. In 2016 we have 7 biomedical teaching faculty and more who teach courses relevant to the discipline. These faculty have developed a rich set of courses that covers a wide range of topics in biomedicine. The department is now equipped to deliver an excellent biomedical curriculum, and the faculty recently voted to formalize this concentration track. The addition of a concentration will cost nothing, because the courses are already established, and may help to recruit students to UAF.

2. Computer science option

Technical advances in genetic sequencing have created a new challenge in biology: making sense of the large, multivariate data sets that we can now produce with speed and efficiency. As a result, there is a growing need for expertise in bioinformatics. To encourage biology majors to develop competency in computation, biology faculty propose that basic computer science be integrated into the baccalaureate curricula. Adding an additional course requirement was not an attractive option, but faculty found the idea of letting students choose between physics and computer sciences to be acceptable. While BA students may graduate without taking physics under this proposal, BS students will still have exposure to basic physics because they will be required to take at least one semester. Students targeting disciplines in which a year of physics is advisable (e.g. Biomedical Science) are instructed to complete a year of physics within the concentration requirements.

APPROVALS: SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

DocuSigned by: Diane Wagner	Date	September 29, 2016	
Signature, Chair, Program/Department of:	Biology and Wildlife		
	Date	9-29-16	
Signature, Chair, College/School Curriculum Council for:	CNSM		
	Date	9/30/16	
Signature, Dean, College/School of:	CNSM		

CHAIR SIGNATURE OBTAINED FOLLOWING APPROVAL BY FACULTY SENATE COMMITTEE

	Date	

Signature, Chair, UAF Faculty Senate
___Curriculum Review Committee

___Graduate Academic and Advisory Committee

COLLEGE OF NATURAL SCIENCE & MATHEMATICS

University of Alaska Fairbanks
P.O. Box 7555940, Fairbanks, Alaska 99775-5940

Paul W. Layer, Dean
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907-474-5101 fax
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www.uaf.edu

September 30, 2016

To: UAF Curriculum Committee

From: Paul Layer, Dean, CNSM

Re: Biology BA/BS modifications

This note is intended to supplement the Biological Sciences BA/BS program changes from the Department of Biology and Wildlife. These proposed changes have been approved by a majority vote of the department and by the CNSM curriculum council.

I completely support the modifications to incorporate a Biomedical concentration. This proposal has been discussed by all of our 'biomedical' departments (Chemistry and Biochemistry, Veterinary Medicine and Biology and Wildlife) and has also been presented to the UAA health science programs for their endorsement. This change is an effective way to provide pathways for students interested in biomedicine and will feed into programs such as our DVM program or WWAMI.

I am less supportive of the change to reduce the physics requirement in the BA and BS through substitution with CS courses. The physics requirement was instituted only a few years ago as a way to ensure that our graduates will meet the requirements of professional schools, and also to ensure that students will have a good understanding of areas such as biophysics. This change will have a negative impact on CNSM enrollments, and an increase on CS enrollments as well. This proposal leaves physics as an option, so it is possible that students will continue to enroll in physics courses.

It is important that these changes to the concentrations be implemented for the next catalog. Because of this, and because it was the will of the majority of the faculty, I am willing to go along with the proposed changes to the physics requirement.