FORMAT 5A Submit originals to the Office of Admissions and the Registrar Send an electronic copy to the Faculty Senate Office

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Send an electronic copy to the Faculty Senate Offi

MINOR PROGRAM CHANGE: CATALOG DESCRIPTION ONLY					
SUBMITTED BY:					
Department	Geosci	ences		College/Schoo	CNSM
Prepared by	Paul J.	. McCa	arthy	Phone	6894
Email Contact	pjmem	arthy@	galaska.edu	Faculty Contact	Paul McCarthy
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: [Note: Program Name changes are MAJOR changes.] DEGREE PROGRAM Degree Level: (i.e., Certificate, A.A., A.A.S., B.A., B.S., M.A., M.S., Ph.D.) 2. REASON FOR CHANGE: Indicate what is changing with an "X" or checkmark: TO CORRECT THE TEXT Example: Correct Catalog production errors such as typos to course numbers or problems with layout. Example: Add a new elective course that was approved the prior year but missed the March 1 catalog deadline. Program description updates must not affect degree requirements – otherwise use a Format 5 program change form.					
Other reason (specify): To update the O and W requirements for the BS Geoscience Degree					
A. CHANGES: (Brief statement of scope, or a list, of requested changes) (1) Under #3 Complete one of the following concentrations: Geology To update the O and W requirements for this concentration for c. Geospatial Sciences To update the O and W requirements for this concentration for e. Geophysics To update the O and W requirements for this concentration for d. In addition to underlining the changes, we have bolded the changes.					
B. CURRENT L	ESCRIP Concent Geology	rations			
	Code		Cour	se List Title	Credits

Program Requirements		
CHEM F106X	General Chemistry II	4
PHYS F103X	College Physics I	4
PHYS F104X	College Physics II	4
GEOS F213	Mineralogy	4
GEOS F214	Petrology and Petrography	4
GEOS F225	Field and Computer Methods in Geology	2
GEOS F304	Geomorphology	3
GEOS F314	Structural Geology	4
GEOS F315	Paleobiology and Paleontology	4
GEOS F322	Stratigraphy and Sedimentation	4
GEOS F351	Field Geology 1.2	8
GEOS F430	Statistics and Data Analysis in Geology	3
STAT F200X	Elementary Probability and Statistics	3
or STAT F300	Statistics	
Complete 12 additional cred	its of upper-division GEOS courses or other upper-division courses	10
approved by the undergradua		12
including one O (oral-intensi	ive) course from any department	
Total Credits		63
Geospatial Scie	ences	
	Course List	
Code	Title	Credits
Program Requirements		
CHEM F106X	General Chemistry II	4
DUNG F102V	College Physics I	4
PHYS F103X		85.00
PHYS F104X		4
	College Physics II Mineralogy	
PHYS F104X	College Physics II	4
PHYS F104X GEOS F213	College Physics II Mineralogy	4 4
PHYS F104X GEOS F213 GEOS F214	College Physics II Mineralogy Petrology and Petrography	4 4 4
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science	4 4 4 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology	4 4 4 3 2
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology	4 4 4 3 2 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology	4 4 4 3 2 3 4
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F322	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation	4 4 4 3 2 3 4 4
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F322 GEOS F351	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology ^{1,2}	4 4 4 3 2 3 4 4 8
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F322 GEOS F351 GEOS F430	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology Statistics and Data Analysis in Geology	4 4 4 3 2 3 4 4 8 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F322 GEOS F351 GEOS F430 STAT F200X	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology 1.2 Statistics and Data Analysis in Geology Elementary Probability and Statistics	4 4 4 3 2 3 4 4 8 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F322 GEOS F351 GEOS F430 STAT F200X or STAT F300	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology 1.2 Statistics and Data Analysis in Geology Elementary Probability and Statistics	4 4 4 3 2 3 4 4 8 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology L2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics	4 4 4 3 2 3 4 4 8 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives Remote sensing electives	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology L2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics	4 4 4 3 2 3 4 4 8 3 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F350 STAT F200X or STAT F300 Electives Remote sensing electives Select at least two of the following the sensing elections	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology L2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics	4 4 4 3 2 3 4 4 8 3 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives Remote sensing electives Select at least two of the follogeos F408	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology I.2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics Statistics Iowing: Photogeology	4 4 4 3 2 3 4 4 8 3 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives Remote sensing electives Select at least two of the follogeos F408 GEOS F422	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology **Statistics** and Data Analysis in Geology Elementary Probability and Statistics Statistics lowing: Photogeology Geoscience Applications of Remote Sensing	4 4 4 3 2 3 4 4 8 3 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives Remote sensing electives Select at least two of the foll GEOS F408 GEOS F422 GEOS F488	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology L2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics lowing: Photogeology Geoscience Applications of Remote Sensing Undergraduate Research	4 4 4 3 2 3 4 4 8 3 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives Remote sensing electives Select at least two of the follogeos F408 GEOS F422 GEOS F488 NRM F641	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology Elementary Probability and Statistics Statistics Statistics Iowing: Photogeology Geoscience Applications of Remote Sensing Undergraduate Research Natural Resource Applications of Remote Sensing	4 4 4 3 2 3 4 4 8 3 3
PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F314 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives Remote sensing electives Select at least two of the follogeos F408 GEOS F422 GEOS F488 NRM F641 GIS electives	College Physics II Mineralogy Petrology and Petrography Fundamentals of Geospatial Science Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology Elementary Probability and Statistics Statistics Statistics Iowing: Photogeology Geoscience Applications of Remote Sensing Undergraduate Research Natural Resource Applications of Remote Sensing	4 4 4 3 2 3 4 4 8 3 3 3

GEOS F458	Applications of GPS and GIS in Geophysics	
NRM F338	Introduction to Geographic Information Systems	
Complete 9 additional credits approved by the undergraduate	of upper-division GEOS courses or other upper-division courses e advisor	9
including one O (oral-intensiv department-	e) course and one additional W (writing-intensive) course from any	
Total Credits		69-73
Ī		

GEOS F351 is offered at UAF during the summer of odd-numbered years. Students may substitute a 6-credit field geology class at another institution. The geology and geophysics undergraduate advisor will assist students in placement in an approved field geology class.

Fulfills the baccalaureate capstone requirement.

Geophysics

	Course List	
Code	Title	Credits
Program Requirements		
GEOS F262	Rocks and Minerals	3
GEOS F406	Volcanology	3
GEOS F419	Solid Earth Geophysics	3
GEOS F431	Foundations of Geophysics	4
GEOS F475	Presentation Techniques in the Geosciences	2
GEOS F477	Ice in the Climate System	3
GEOS F488	Undergraduate Research 1	2
MATH F252X	Calculus II	4
MATH F253X	Calculus III	4
MATH F302	Differential Equations	3
MATH F314	Linear Algebra	3
PHYS F211X and PHYS F212X	General Physics I	8
	and General Physics II	4
PHYS F213X	Elementary Modern Physics	4
PHYS F220	Introduction to Computational Physics	9-12
	lowing science and engineering electives:	9-12
ES F331	Mechanics of Materials	
ES F341	Fluid Mechanics	
GEOS F314	Structural Geology	
GEOS F322	Stratigraphy and Sedimentation	
GEOS F422	Geoscience Applications of Remote Sensing	
ME F441	Heat and Mass Transfer	
PHYS F301	Introduction to Mathematical Physics	
PHYS F341	Classical Physics I: Particle Mechanics	
Additional upper-division GE undergraduate advisor	EOS credits or other upper-division courses as approved by the	3
Complete one W (writing-int	ensive) course approved by the undergraduate advisor	

Concentrations

Geology

	Course List	
Code	Title	Credits
Program Requirements		
CHEM F106X	General Chemistry II	4
PHYS F103X	College Physics I	4
PHYS F104X	College Physics II	4
GEOS F213	Mineralogy	4
GEOS F214	Petrology and Petrography	4
GEOS F225	Field and Computer Methods in Geology	2
GEOS F304	Geomorphology	3
GEOS F314	Structural Geology	4
GEOS F315	Paleobiology and Paleontology	4
GEOS F322	Stratigraphy and Sedimentation	4
GEOS F351	Field Geology 1,2	8
GEOS F430	Statistics and Data Analysis in Geology	3
STAT F200X	Elementary Probability and Statistics	3
or STAT F300	Statistics	
Complete 12 additional credit approved by the undergraduat	s of upper-division GEOS courses or other upper-division courses to advisor	12
	ve) course from any department the following list: GEOS F317, GEOS 427, GEOG F483, GEOG F490, GEOG F493	<u>S</u> _
Total Credits		63

Geospatial Sciences

Course List Code Title Credits **Program Requirements** CHEM F106X 4 General Chemistry II College Physics I 4 PHYS F103X PHYS F104X College Physics II 4 GEOS F213 Mineralogy 4 Petrology and Petrography GEOS F214 GEOS/GEOG F222 Fundamentals of Geospatial Science or equivalent course approved by 3 undergraduate advisor 2 GEOS F225 Field and Computer Methods in Geology 3 GEOS F304 Geomorphology GEOS F314 Structural Geology 4 GEOS F322 Stratigraphy and Sedimentation 4 8 Field Geology 1.2 GEOS F351 GEOS F430 Statistics and Data Analysis in Geology 3 3 STAT F200X Elementary Probability and Statistics or STAT F300 Statistics Electives Remote sensing electives

Select at least two of the fol	lowing:	4-7
GEOS F408	Photogeology	
GEOS F422	Geoscience Applications of Remote Sensing	
GEOS F488	Undergraduate Research	
NRM F641	Natural Resource Applications of Remote Sensing	
GIS electives		
Select at least two of the fol	lowing:	6-7
GEOG F309	Digital Cartography and Geo-Visualization	
GEOG F435	GIS Analysis	
GEOS F458	Applications of GPS and GIS in Geophysics	
NRM F338	Introduction to Geographic Information Systems	
Complete 9 additional credi approved by the undergradu	ts of upper-division GEOS courses or other upper-division courses nate advisor	9
	sive) course from the following list: GEOS F317, GEOS F375, GEOG (483, GEOG F490, GEOG F493 and one additional W (writing-intensive)	
	the following list: GEOS F309, GEOS F315, GEOG F483	
Total Credits		69-73
1		

<u>GEOS F351</u> is offered at UAF during the summer of odd-numbered years. Students may substitute a 6-credit field geology class at another institution. The geology and geophysics undergraduate advisor will assist students in placement in an approved field geology class.

Fulfills the baccalaureate capstone requirement.

Geophysics

	Course List	
Code	Title	Credits
Program Requirements		
GEOS F262	Rocks and Minerals	3
GEOS F375	Oral Communication Skills for Geoscientists	<u>1</u>
GEOS F406	Volcanology	3
GEOS F419	Solid Earth Geophysics	3
GEOS F431	Foundations of Geophysics	4
GEOS F475	Presentation Techniques in the Geosciences	2
GEOS F375	Oral Communication Skills for Geoscientists	1
GEOG F483	Research Design	<u>2</u>
GEOS F477	Ice in the Climate System	3
GEOS F488	Undergraduate Research ¹	2
MATH F252X	Calculus II	4
MATH F253X	Calculus III	4
MATH F302	Differential Equations	3
MATH F314	Linear Algebra	3
PHYS F211X	General Physics I	8
and PHYS F212X	and General Physics II	O
PHYS F213X	Elementary Modern Physics	4
PHYS F220	Introduction to Computational Physics	4
Select-at least three two of the foundergraduate advisor):	llowing science and engineering electives (or approved substitute by	6
ES F331	Mechanics of Materials	

ES F341	Fluid Mechanics	
GEOS F314	Structural Geology	
GEOS F322	Stratigraphy and Sedimentation	
GEOS F422	Geoscience Applications of Remote Sensing	
ME F441	Heat and Mass Transfer	
PHYS F301	Introduction to Mathematical Physics	
PHYS F341	Classical Physics I: Particle Mechanics	
approved by the undergradua division courses as approved by	sive) courses approved by the undergraduate from the following list:	3 <u>6</u>

APPROVALS:

Your approval indicates that NO DEGREE REQUIREMENTS are being changed by the minor changes to this program, and no program name is being changed. Only catalog updates and corrections are being accomplished by means of this form.

Allegathy	Date	2/10/17
Signature, Chair, Program/Department of: Geosciences		, , ,
DocuSigned by:	_	
Patricia Doak	Date	February 14, 2017
Signature Chair College/School Curriculum Council for: CN CNSM		
DecuSigned by:		
Laste Layer	Date	February 14, 2017
Signature Dean College/School of: CNSM		
ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION	го тне	REGISTRAR'S OFFICE
	Date	
Received Registrar's Office		