#### MINOR PROGRAM CHANGE: CATALOG DESCRIPTION ONLY

#### **SUBMITTED BY:**

| Department  | Geosciences           | College/School | CNSM          |
|-------------|-----------------------|----------------|---------------|
| Prepared by | Paul J. McCarthy      | Phone          | 6894          |
| Email       | pjmcmarthy@alaska.edu | Faculty        | Paul McCarthy |
| Contact     |                       | Contact        |               |

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

#### PROGRAM IDENTIFICATION: [Note: Program Name changes are MAJOR changes.]

| DEGREE                  | Geoscience                                       |      |  |  |  |  |
|-------------------------|--|------|--|--|--|--|
| PROGRAM                 |  |      |  |  |  |  |
| Degree Level: (i.e., Ce | rtificate, A.A., A.A.S., B.A., B.S., M.A., M.S., | B.S. |  |  |  |  |
| <i>Ph.D.</i> )          |  |      |  |  |  |  |

#### 2. REASON FOR CHANGE: Indicate what is changing with an "X" or checkmark:

| TO CORRECT THE     | Example: Correct Catalog production errors such as typos to course numbers       |
|--------------------|--|
| TEXT               | or problems with layout.   |
|                    | Example: Add a new elective course that was approved the prior year but          |
| TO UPDATE THE TEXT | missed the March 1 catalog deadline. Program description updates <b>must not</b> |
|                    | affect degree requirements – otherwise use a Format 5 program change form.       |

| Other reaso | n (specify): | To update the O and W requirements for the BS Geoscience Degree | 1 |
|-------------|--------------|---|---|
|-------------|--------------|---|---|

## 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 DESCRIPTION AS IT APPEARS IN THE CATALOG:

| Concentratio         | ons                  |         |
|----------------------|----------------------|---------|
| 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 <sup>1,2</sup>  | 8       |
| GEOS F430  | Statistics and Data Analysis in Geology   | 3       |
| STAT F200X   | Elementary Probability and Statistics   | 3       |
| or STAT F300   | Statistics  |         |
| Complete 12 additional cre approved by the undergrad | edits of upper-division GEOS courses or other upper-division courses uate advisor | 12      |
| including one O (oral-inter                          | nsive) course from any department   |         |
| Total Credits  |   | 63      |
|  |   |         |
| Geospatial Sc  | iences  |         |
| ·  | Course List   |         |
| Code   | Title   | Credits |
| Program Requirements                                 | Titte   | Credits |
| CHEM F106X   | General Chemistry II  | 4       |
| PHYS F103X   | •   |         |
| PHYS F103X<br>PHYS F104X                             | College Physics I   | 4       |
|  | College Physics II  | 4       |
| GEOS F214  | Mineralogy  | 4       |
| GEOS F214  | Petrology and Petrography   | 4       |
| GEOS/GEOG F222                                       | Fundamentals of Geospatial Science  | 3       |
| GEOS F225  | Field and Computer Methods in Geology   | 2       |
| GEOS F304  | Geomorphology   | 3       |
| GEOS F314  | Structural Geology  | 4       |
| GEOS F322  | Stratigraphy and Sedimentation  | 4       |
| GEOS F351  | Field Geology <sup>1,2</sup>  | 8       |
| GEOS F430  | Statistics and Data Analysis in Geology   | 3       |
| STAT F200X   | Elementary Probability and Statistics   | 3       |
| or STAT F300   | Statistics  |         |
| Electives  |   |         |
| Remote sensing electives                             |   |         |
| Select at least two of the fo                        | •   | 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 fo                        | _   | 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 cred approved by the undergrad | lits of upper-division GEOS courses or other upper-division courses uate advisor  | 9       |
| including one O (oral-inter                          | nsive) course and one additional W (writing-intensive) course from any            |         |

department

Total Credits 69-73

1

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.

2

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 <sup>1</sup>                           | 2       |
| MATH F252X   | Calculus II   | 4       |
| MATH F253X   | Calculus III  | 4       |
| MATH F302  | Differential Equations  | 3       |
| MATH F314  | Linear Algebra  | 3       |
| PHYS F211X<br>and PHYS F212X                       | General Physics I<br>and General Physics II                   | 8       |
| PHYS F213X   | Elementary Modern Physics                                     | 4       |
| PHYS F220  | Introduction to Computational Physics                         | 4       |
| Select at least three of the foll                  | owing 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 | OS credits or other upper-division courses as approved by the | 3       |
| Complete one W (writing-inte                       | ensive) course approved by the undergraduate <u>advisor</u>   |         |

# C. CORRECTED DESCRIPTION AS IT WILL APPEAR IN THE CATALOG WITH THESE CHANGES: (<u>Underline new wording strike through old wording</u> and use complete catalog format)

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 <sup>1,2</sup>  | 8   |  |  |
| GEOS F430  | Statistics and Data Analysis in Geology   | 3   |  |  |
| STAT F200X   | Elementary Probability and Statistics   | 3   |  |  |
| or STAT F300   | Statistics  |   |  |  |
| approved by the undergrad  |   | 12  |  |  |
|  | nsive) course from any department the following list: GEOS F317, GEOS   | <u>S</u>  |  |  |
|  | <u>G F427,GEOG F483, GEOG F490, GEOG F493</u>   |   |  |  |
| Total Credits  |   | 63  |  |  |
|  |   |   |  |  |
| Geospatial So  | ciences   |   |  |  |
|  | Course List   |   |  |  |
|  |   |   |  |  |
| Code   | Title   | Credits   |  |  |
| Program Requirements   | Title   |   |  |  |
| Program Requirements CHEM F106X  | Title  General Chemistry II   | 4   |  |  |
| Program Requirements CHEM F106X PHYS F103X   | Title  General Chemistry II  College Physics I  | 4   |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X  | Title  General Chemistry II  College Physics I  College Physics II  | 4<br>4<br>4   |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213  | Title  General Chemistry II  College Physics I  College Physics II  Mineralogy  | 4<br>4<br>4<br>4  |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X  | Title  General Chemistry II  College Physics I  College Physics II  | 4<br>4<br>4   |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213  | Title  General Chemistry II  College Physics I  College Physics II  Mineralogy  Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by  | 4<br>4<br>4<br>4  |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214  | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor   | 4<br>4<br>4<br>4  |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222   | Title  General Chemistry II  College Physics I  College Physics II  Mineralogy  Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by  | 4<br>4<br>4<br>4<br>4<br>3                                    |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225   | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology   | 4<br>4<br>4<br>4<br>4<br>3                                    |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304   | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology  | 4<br>4<br>4<br>4<br>4<br>3<br>2<br>3                          |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314   | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology   | 4<br>4<br>4<br>4<br>4<br>3<br>2<br>3<br>4                     |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F322   | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation   | 4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4                     |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F322 GEOS F351   | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology 1,2   | 4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4<br>8                |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214  GEOS/GEOG F222  GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F430   | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology  Statistics and Data Analysis in Geology  | 4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4<br>8<br>3           |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F225 GEOS F304 GEOS F314 GEOS F322 GEOS F351 GEOS F430 STAT F200X  | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology  Statistics and Data Analysis in Geology Elementary Probability and Statistics                                  | 4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4<br>8<br>3           |  |  |
| Program Requirements CHEM F106X PHYS F103X 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   | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Stratigraphy and Sedimentation Field Geology  Statistics and Data Analysis in Geology Elementary Probability and Statistics                                  | 4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4<br>8<br>3           |  |  |
| Program Requirements CHEM F106X PHYS F103X 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   | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Structural Geology Stratigraphy and Sedimentation Field Geology I.2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics | 4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4<br>8<br>3           |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214 GEOS/GEOG F222 GEOS F304 GEOS F314 GEOS F322 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives Remote sensing electives  | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Structural Geology Stratigraphy and Sedimentation Field Geology I.2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics | 4<br>4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4<br>8<br>3<br>3 |  |  |
| Program Requirements CHEM F106X PHYS F103X PHYS F104X GEOS F213 GEOS F214  GEOS/GEOG F222  GEOS F225 GEOS F304 GEOS F314 GEOS F312 GEOS F351 GEOS F351 GEOS F430 STAT F200X or STAT F300 Electives Remote sensing electives Select at least two of the fet | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Structural Geology Stratigraphy and Sedimentation Field Geology I,2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics | 4<br>4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4<br>8<br>3<br>3 |  |  |
| Program Requirements CHEM F106X PHYS F103X 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 forms         | General Chemistry II College Physics I College Physics II Mineralogy Petrology and Petrography  Fundamentals of Geospatial Science or equivalent course approved by undergraduate advisor Field and Computer Methods in Geology Geomorphology Structural Geology Structural Geology Stratigraphy and Sedimentation Field Geology I,2 Statistics and Data Analysis in Geology Elementary Probability and Statistics Statistics | 4<br>4<br>4<br>4<br>4<br>3<br>2<br>3<br>4<br>4<br>8<br>3<br>3 |  |  |

| NRM F641   | Natural Resource Applications of Remote Sensing                                 |          |
|--|---|----------|
| GIS electives  |   |          |
| Select at least two of the fol                         | llowing:  | 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 | its of upper-division GEOS courses or other upper-division courses nate advisor | 9        |
| Č ,  | sive) course from the following list: GEOS F317, GEOS F375, GEOG                |          |
|  | F483, GEOG F490, GEOG F493 and one additional <del>W (writing-intensive)</del>  |          |
| course from <del>any departmen</del>                   | the following list: GEOS F309, GEOS F315, GEOG F483                             |          |
| Total Credits  |   | 69-73    |
| 1  |   |          |
| CEOS E251 is offered at I                              | UAE during the summer of odd numbered years. Students may substitute a          | 6 gradit |

<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.

2

Fulfills the baccalaureate capstone requirement.

# Geophysics

|                                 | Course List   |               |
|---------------------------------|---|---------------|
| Code                            | Title   | Credits       |
| Program Requirements            |   |               |
| GEOS F262<br>GEOS F375          | Rocks and Minerals Oral Communication Skills for Geoscientists        | 3<br><u>1</u> |
| GEOS F406                       | Volcanology   | 3             |
| GEOS F419                       | Solid Earth Geophysics  | 3             |
| GEOS F431                       | Foundations of Geophysics   | 4             |
| <del>GEOS F475</del>            | Presentation Techniques in the Geosciences                            | 2             |
|                                 |   |               |
| <u>GEOG F483</u>                | Research Design   | <u>2</u>      |
| GEOS F477                       | Ice in the Climate System   | 3             |
| GEOS F488                       | Undergraduate Research <sup>1</sup>                                   | 2             |
| MATH F252X                      | Calculus II   | 4             |
| MATH F253X                      | Calculus III  | 4             |
| MATH F302                       | Differential Equations  | 3             |
| MATH F314                       | Linear Algebra  | 3             |
| PHYS F211X<br>and PHYS F212X    | General Physics I<br>and General Physics II                           | 8             |
| PHYS F213X                      | Elementary Modern Physics   | 4             |
| PHYS F220                       | Introduction to Computational Physics                                 | 4             |
|                                 | ollowing science and engineering electives (or approved substitute by | <u>6-8</u>    |
| <u>undergraduate advisor)</u> : |   | <u>0-0</u>    |
| ES F331                         | Mechanics of Materials  |               |
| ES F341                         | Fluid Mechanics   |               |
| GEOS F314                       | Structural Geology  |               |
| GEOS F322                       | Stratigraphy and Sedimentation  |               |

|                       | GEOS F422   | Geoscien                             | nce Applications          | s of Remote Ser | nsing            |            |                  |            |
|-----------------------|---|--------------------------------------|---------------------------|-----------------|------------------|------------|------------------|------------|
| N                     | ME F441   | Heat and                             | Mass Transfer             |                 |                  |            |                  |            |
| P                     | PHYS F301   | Introduction to Mathematical Physics |                           |                 |                  |            |                  |            |
| P                     | PHYS F341   | Classical                            | l Physics I: Parti        | icle Mechanics  |                  |            |                  |            |
|                       | Complete 6 additional credits of  |                                      |                           |                 |                  |            |                  | <u> </u>   |
|                       | approved by the undergraduat  |                                      |                           | er division GEC | OS credits       | or other   | <del>upper</del> | <u> 36</u> |
|                       | livision courses as approved by   | the undergr                          | <del>aduate advisor</del> |                 |                  |            |                  |            |
| Γ                     | Total Credits   |                                      |                           |                 |                  |            |                  | 63-65      |
|                       | approval indicates that NO DE   | GREE REC                             | OHIDEMENTS                | , , , ,         | 7 7              | L a        | chana            | an to thin |
| rogra                 | am, and no program name is be<br>s of this form.  |                                      |                           |                 |                  |            |                  |            |
| rogra                 | am, and no program name is be   |                                      |                           |                 | correction       |            |                  |            |
| rogra<br>nean:        | am, and no program name is be   | eing change                          |                           | g updates and o |                  |            |                  |            |
| rogra<br>nean:        | am, and no program name is be<br>s of this form.  | eing change                          | ed. Only catalog          | g updates and o | correction       |            |                  |            |
| rogra<br>nean:        | am, and no program name is be<br>s of this form.  | eing change                          | ed. Only catalog          | g updates and o | Date             |            |                  |            |
| rogra<br>neans<br>Sig | am, and no program name is be<br>s of this form.  | nent of:                             | Geosciences               | g updates and o | correction       |            |                  |            |
| rogra<br>neans<br>Sig | am, and no program name is be<br>s of this form.<br>gnature, Chair, Program/Departn   | nent of:                             | Geosciences               | g updates and o | Date             |            |                  |            |
| rogra<br>neans<br>Sig | am, and no program name is be<br>s of this form.<br>gnature, Chair, Program/Departn   | nent of:                             | Geosciences               | g updates and o | Date  Date       |            |                  |            |
| Sig                   | gnature, Chair, College/School C  | eing change                          | Geosciences  Council for: | g updates and o | Date             |            |                  |            |
| Sig                   | am, and no program name is be<br>s of this form.<br>gnature, Chair, Program/Departn   | eing change                          | Geosciences               | g updates and o | Date  Date       |            |                  |            |
| Sig                   | gnature, Chair, College/School C  | eing change                          | Geosciences  Council for: | g updates and o | Date  Date       |            |                  |            |
| Sig Sig               | gnature, Chair, College/School C  | nent of:                             | Geosciences  Council for: | S CNSM          | Date  Date  Date | as are bei | ng acco          | omplished  |
| Sig<br>Sig            | gnature, Chair, College/School Construction, | nent of:                             | Geosciences  Council for: | S CNSM          | Date  Date  Date | as are bei | ng acco          | omplished  |

Received Registrar's Office

| 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<br>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.

| Allegather   | 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 |
| Signatives Deany College/School of:  CNSM                                      |      |                   |
|  |      |                   |
| ALL CICNATURES MUST BE OPTAINED BRIOR TO SURMISSION TO THE RESISTED AND OFFICE |      |                   |
| ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE REGISTRAR'S OFFICE  |      |                   |
|  |      |                   |
|  | Date |                   |
| Received Registrar's Office  |      |                   |