

*PROGRAM/DEGREE REQUIREMENT CHANGE (MAJOR/MINOR)*

**SUBMITTED BY:**






## MS Degree

Concentrations: Solid-Earth Geophysics; Snow, Ice and Permafrost Geophysics; Remote Sensing Geophysics

1. Complete the following admission requirements:
  - a. Submit GRE scores.
  - b. Complete a background at least to the level of a BS concentration in geology, geophysics or an appropriate physical science or engineering.
  - ~~c. Complete MATH F302, MATH F314, MATH F421 and PHYS F220 or equivalent.~~
  - c. Complete MATH 302 (Differential Equations).
  - d. Recommended: MATH F314 (Linear Algebra), MATH F421 (Applied Analysis), PHYS 220 (Introduction to Computational Physics)
2. Complete the general university requirements (page 202).
3. Complete the master's degree requirements (page 206).
  - a. Complete 6 – 12 thesis credits.
  - b. Complete any deficiencies concurrently with this degree.
4. Submit a written thesis proposal and pass an oral comprehensive examination centered on this proposal.
5. Complete and submit a written thesis and pass an oral defense of thesis.
6. Complete the following geophysics core requirements:

GEOS F631—Foundations of Geophysics.....	4
GEOS F682—Geoscience Seminar (fall semester).....	1
7. Complete 6 credits from relevant graduate-level courses agreed by the advisory committee, or choose one of the following concentrations:  
**Solid-Earth Geophysics**  
Complete 6 credits from the following:

GEOS F604—Seismology.....	3
GEOS F605—Geochronology.....	3
GEOS F626—Applied Seismology.....	3
GEOS F613—Global Tectonics.....	3
GEOS F655—Tectonic Geodesy.....	3

## PhD Degree

1. Complete the following admission requirement:

a. Submit GRE scores.

2. Complete a master's degree in geology, geophysics or an appropriate field of physical science or engineering.

3. Complete the general university requirements (page 202).

4. Complete the MS requirements 6 and 7 above (11 credits). ~~the requirements for the MS (see requirements 6 and 7 listed above).~~

5. Complete 3 credits each in two of the following advanced skills categories (total 6 credits):

a. Digital signal analysis and remote sensing

GEOS F654—Visible and Infrared Remote Sensing.....3

GEOS F657—Microwave Remote Sensing.....3

GEOS F622—Digital Image Processing in the Geosciences.....3

PHYS F628—Digital Time Series Analysis.....3

b. Statistics and parameter estimation

~~ATM F693—Analysis Methods in Meteorology and Climate.....3~~

GEOS F627—Inverse Problems and Parameter Estimation.....3

STAT F401—Regression and Analysis of Variance.....3

STAT F461—Applied Multivariate Statistics.....3

~~ATM F693—Analysis Methods in Meteorology and Climate.....3~~

c. ~~Numerical~~ Mathematical methods

~~MATH F421—Applied Analysis.....4~~

~~MATH F694~~F614—Numerical Linear Algebra.....3

~~MATH F615—Applied Numerical Analysis of Differential Equations .....3~~

MATH F661—Optimization.....3

ME F601—Finite Element Analysis in Engineering.....3

d. One graduate-level advanced skills course approved by the student's advisory committee

6. Complete the PhD degree requirements (page 207).

7. As part of the PhD degree requirements, complete the following:

a. Complete and pass a written and oral comprehensive examination.

b. Complete and submit a written thesis proposal for approval.

c. Complete a research program as arranged with the graduate advisory committee.

d. Complete 18 credits of thesis, write a thesis and pass an oral defense of thesis.

~~8. Minimum credits required.....18~~

8. The minimum credits required is 35. This includes 18 thesis credits and 17 credits from coursework (11 from MS, 6 from PhD).

After admission, MS candidates may, in exceptional cases, petition for conversion to the PhD program if they satisfy one of the above criteria. Such petitions must be approved both by the student's current (MS) and proposed (PhD) advisory committee and the department director or designee.

***D. ESTIMATED IMPACT***

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Date

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