



DEPARTMENT OF GEOLOGY & GEOPHYSICS

COLLEGE OF MINES AND EARTH SCIENCES | THE UNIVERSITY OF UTAH

COURSE REQUIREMENTS BACHELOR OF SCIENCE IN GEOSCIENCE-GEOPHYSICS

Required Courses

Complete all of the following:

Geoscience Core:	<u>Credits</u>	<u>Semester</u>	<u>Prerequisites</u>
• GEO 1100 Evolving Earth	3	Fall/Spring	None
• GEO 2100 Reactive Earth	3	Fall/Spring	CHEM 1210, GEO 1100
• GEO 2500 Wasatch in the Field	3	Fall	None
• GEO 3100 Dynamic Earth	3	Fall/Spring	PHYS 2210; GEO 2100
• GEO 4500 Field Methods	3	Spring	GEO 2500, 3100

Geophysics Capstone:

Complete 1 of the following:

- Earn at least 3 credits from the following:
 - GEO 3900 Undergrad Res 3 All None

**GEO 3900 must be completed with one of the Geophysics faculty (see list below)*
**GEO 3900 is best completed after taking GEO 5210 or GEO 5240*
- OR complete the following:
 - GEO 4510 Field Geol (Pt. 1) 2 Summer GEO 4500
 - GEO 4520 Field Geol (Pt. 2) 2 Summer GEO 4510

Electives:

- Complete at least 12 credits from the following types of courses:
3000-5999 in GEO, MET E, ATMOS, MG EN, BIOL, MATH, CHEM, PHYS, BIOEN, CH EN, CS, CVEEN, ECE, ME EN, MSE

Emphasis Required Courses

Complete all of the following:

Introductory Geophysics:

- GEO 3010 Geophysics 3 Spring PHYS 2220

Numerical Methods:

Complete at least 1 of the following:

- GEO 3400 Comp & Num Methods 3 Fall MATH 1210

Seismology:

Complete the following:

- GEO 5210 Seismology I 3 Fall GEO 3010, MATH 2210

Potential Fields:

Complete the following:

- GEO 5240 Electromag Methods 3 Spring PHYS 2220

Geophysics:

Complete at least 2 of the following:

- | | | | |
|-----------------------------------|---|----------------|----------------------|
| • GEO 5060 Global Geophysics | 3 | Spring | PHYS 2220, MATH 2250 |
| • GEO 5220 Seismology II | 3 | Spring | GEO 5210 |
| • GEO 5250 Inversion Theory & App | 3 | Fall | PHYS 2220 |
| • GEO 5320 Signal Processing | 3 | Fall | MATH 2250 |
| • GEO 5330 Seismic Sources | 3 | Fall Odd Years | GEO 5210 |

Allied Science

Complete all of the following:

- | | | | |
|------------------------------------|---|-----|-------------------------------|
| • CHEM 1210 General Chemistry I | 4 | All | MATH 1050 |
| • MATH 1210 Calculus I | 4 | All | MATH 1050 & 1060 or MATH 1080 |
| • MATH 1220 Calculus II | 4 | All | MATH 1210 |
| • MATH 2210 Calculus III | 3 | All | MATH 1220 |
| • MATH 2250 Diff Equat & Lin Alb | 4 | All | MATH 2210 |
| • MATH 3150 PDEs for Engineers | 2 | All | MATH 2250 |
| • MATH 3160 Applied Complex Var | 2 | All | MATH 2250 |
| • PHYS 2210 Physics for Sci&Eng I | 4 | All | MATH 1210 |
| • PHYS 2220 Physics for Sci&Eng II | 4 | All | PHYS 2210, MATH 1220 |

Other Requirements

University of Utah General Education Requirements

The University of Utah requires a total of 122 college level credits to complete a Bachelor's degree. Additional elective courses may need to be completed to fulfill the total of 122 credits. Check with your academic advisor with any questions or concerns.

Academic Advisor

Michelle Tuitupou

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801-581-6553

383 FASB

Geophysics Faculty:

Fan-Chi Lin

Michael Zhdanov

Jamie Farrell

Michael Thorne

Keith Koper

Kris Pankow

Lowell Miyagi

Amir Allam

James Pechmann



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SAMPLE SCHEDULE BACHELOR OF SCIENCE IN GEOSCIENCE-GEOPHYSICS

Fall Semester

MATH 1210	4
CHEM 1210	4
GEO 1100	3
GEO 2500	<u>3</u>
Total:	14

Spring Semester

MATH 1220	4
PHYS 2210	4
GEO 2100	3
WRTG 2010 (WR)	<u>3</u>
Total:	14

Fall Semester

MATH 2210	3
PHYS 2220	4
GEO 3100 (QI)	3
(AD)	<u>3</u>
Total:	13

Spring Semester

MATH 2250	4
GEO 3010 (QI)	3
(FF)	3
(HF)	<u>3</u>
Total:	13

Fall Semester

MATH 3150	2
GEO 3400 ³	3
GEO 5210	3
(FF)	3
(HF)	<u>3</u>
Total:	14

Spring Semester

MATH 3160	2
GEO 5240	3
Elective ¹	3
(BF)	3
(DV)	<u>3</u>
Total:	14

Fall Semester

GEO 3900 ⁵	3
Geophysics Elective ²	3
Elective ¹	3
Elective ¹	3
(BF)	<u>3</u>
Total:	15

Spring Semester

GEO 4500 (CW)	3
Geophysics Elective ²	3
Elective ¹	3
(IR)	<u>3</u>
Total:	12

Summer⁴

GEO 4510	2
GEO 4520	<u>2</u>
Total:	4

¹Elective: Completed at least 12 credits from the following types of courses: 3000 - 5999 in GEO, MET E, ATMOS, MG EN , BIOL, MATH, CHEM, PHYS, BIOEN, CH EN, CS, CVEEN, ECE, ME EN, MSE

²Geophysics Elective: Completed at least 2 of the following: [GEO 5250](#) - Inversion Theory and Applications (3), [GEO 5060](#) - Global Geophysics (3), [GEO 5220](#) - Seismology II: Seismic Imaging (3), [GEO 5320](#) - Signal Processing in the Geosciences (3), [GEO 5330](#) - Seismic Sources (3)

³Can also take [GEO 5560](#) – Numerical Methods in the Geosciences when available.

⁴If [GEO 3900](#) – Undergraduate Research is not taken, student must complete GEO 4510 & GEO 4520 – Field Camp Parts I & II.

⁵[GEO 3900](#) – Undergraduate Research Should be taken during the regular semester but MUST be completed with one of the Geophysics faculty. Best completed after taking GEO 5210 or GEO 5240. Geophysics faculty: Fan-Chi Lin, Michael Thorne, Lowell Miyagi, Michael Zhdanov, Keith Koper, Amir Allam, Jamie Farrell, Kris Pankow, James Pechmann.

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