



# 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:

<b>Geoscience Core:</b>	<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
- GEO 5560 Numerical Methods 3 Fall Odd Years None

#### **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 <sup>3</sup>	3
GEO 5210	3
(FF)	3
(HF)	<u>3</u>
Total:	14

### Spring Semester

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

### Fall Semester

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

### Spring Semester

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

### Summer<sup>4</sup>

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

<sup>1</sup>Elective: 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

<sup>2</sup>Geophysics 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)

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

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

<sup>5</sup>[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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