

# Geophysics 337002BS

Attention students who were admitted to this program prior to Fall 2015, please refer to the curriculum guide found on page 5. The curriculum guide below on this page is for students admitted to this program for Fall 2015 or later.

The following information has official approval of the **Department of Geosciences**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Auditing Reporting System (DARS) which is definitive for graduation requirements. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your academic advisor.

\*\*Students are encouraged to visit the Geosciences Department their freshman year to obtain preliminary information regarding the program requirements and to learn more about on-campus opportunities available to Geology students.

*Italicized* courses fulfill General Education requirements. Unless a course is specified, refer to the General Education guide at [http://www.uakron.edu/advising/docs/General\\_Education\\_Guide.pdf](http://www.uakron.edu/advising/docs/General_Education_Guide.pdf)

## CURRICULUM GUIDE FOR STUDENTS ADMITTED TO THIS PROGRAM FOR FALL 2015 OR LATER:

1 <sup>st</sup> Year	Fall Semester	Credit Hours	Prerequisites
3370:101	<i>Intro to Physical Geology Lecture and Lab</i>	4	
3450:221	<i>Analytical Geometry/ Calculus I (Note a)</i>	4	Appropriate placement by advisor
	<i>English Composition I Requirement (Note b)</i>	3	Appropriate placement by advisor
	<i>Speech/Oral Communication Requirement</i>	3	
or	Beginning Language I (Note c)	4	Appropriate placement by advisor
7700:101	-OR- Beginning Sign Language	or 3	
<b>Total</b>		<b>17-18</b>	

1 <sup>st</sup> Year	Spring Semester	Credit Hours	Prerequisites
3370:102	<i>Intro to Historical Geology (Spring term only)</i>	4	3370:101
	<i>English Composition II Requirement (Note b)</i>	3	3300:111 or equivalent
	Beginning Language II	4	Beginning Language I
7700:102	-OR- American Sign Language II	or 3	or 7700:101
3450:222	<i>Analytical Geometry - Calculus II</i>	4	3450:221 with a C- or better
<b>Total</b>		<b>14-15</b>	

2 <sup>nd</sup> Year	Fall Semester	Credit Hours	Prerequisites
3400:210	<i>Humanities in the Western Tradition</i>	4	32 credits & 3300:112 or equivalent
or	-OR-		
3400:221	<i>Humanities in the World Since 1300</i>		32 credits & 3300:112 or equivalent
3450:223	<i>Analytical Geometry - Calculus III</i>	4	3450:222 with C- or better
3650:291	<i>Elementary Classical Physics I Lecture &amp; Lab</i>	4	3450:221 with C- or better
	Intermediate Language I	3	Beginning Language II
7700:201	-OR- American Sign Language III		or 7700:102
<b>Total</b>		<b>15</b>	

2 <sup>nd</sup> Year	Spring Semester	Credit Hours	Prerequisites
3650:292	<i>Elementary Classical Physics II Lecture &amp; Lab</i>	4	3650:291
3450:335	<i>Intro to Differential Equations</i>	3	3450:223 with C- or better
	<i>Social Science Requirement (Note d)</i>	3	
	Intermediate Language II	3	Intermediate Language I
	-OR-	or	or

7700:202	American Sign Language IV <b>AND</b>	3	7700:201
7700:222	Survey of Deaf Culture in America	2	Sign Language students <i>only</i>
<b>Total</b>		<b>13-15</b>	

<b>3<sup>rd</sup> Year Fall Semester</b>			
3370:350	Structural Geology	4	3370:101
3150:151	Principles of Chemistry I lecture and recitation	3	Placement in 3450:149 or higher
3150:152	Principles of Chemistry I laboratory	1	3150:151, prerequisite or corequisite
	<i>Area Studies/Cultural Diversity Requirement</i>	2	
	Free Electives (Notes f, g)	3	
<b>Total</b>		<b>13</b>	

<b>3<sup>rd</sup> Year Spring Semester</b>			
3150:153	Principles of Chemistry II lecture & recitation	3	3150:151
3370:231	Silicates (Required for Field Camp)	4	
3370:3xx /4xx	Upper Level Geology Elective (Note f)	3	
	<i>Social Science Requirement (Not from Geography Set)</i>	3	
<b>Total</b>		<b>13</b>	

<b>Summer Junior Year</b>			
3370:453	Geology Field Camp I	3	3370:101 and 3370:102 and permission
3370:454	Geology Field Camp II	3	3370:231, 350, 453, or permission
<b>Total</b>		<b>6</b>	

<b>4<sup>th</sup> Year Fall Semester</b>			
3370:446	Exploration Geophysics	3	3450:223, 3650:292 or permission
	<i>Humanities Requirement</i>	3	
3650/3460	Science elective (Note d)	2	
3370:3xx/ 4xx	Upper Level Geology Elective (Note f)	3	
	Free Electives (Notes f, g)	2	
<b>Total</b>		<b>13</b>	

<b>4<sup>th</sup> Year Spring Semester</b>			
3650/3460	Science elective (Note e)	3	
3370:441	Fundamentals of Geophysics	3	3450:223 or permission and 3650:292
	<i>Physical Education/Wellness Requirement</i>	1	
	<i>Humanities Requirement</i>	3	
	<i>Area Studies/Cultural Diversity Requirement</i>	2	
	Free Electives (Notes f, g)	2	
<b>Total</b>		<b>14</b>	

	<b>Minimum Total Credits for Degree</b>	<b>120</b>	
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**ALERT: 1) By the end of your first 48 credit hours attempted, you should have completed your General Education English, Math, and Oral Communication (Speech) requirements; 2) By the end of your first 48 credit hours attempted, you should have declared a major and transferred to (been accepted by) a degree granting college at The University of Akron.**

**NOTES:**

a. All geophysics majors should take the Math Placement Test. A student who qualifies will begin with 3450:221; Analytic Geometry-Calculus I. A geophysics major must complete the math sequence through 3450:235; Differential Equations.

b. For English Composition I, 3300:111 (English Composition I) or 3300:113 (African-American Language and Culture I) are the recommended classes to meet the General Education English requirement. 2020:121 (English) fulfills the English Composition I requirement. For English Composition II, 3300:112 (English Composition II) or 3300:114 (African-

American Language and Culture II) are the recommended classes to meet the General Education English requirement. 2020:222 (Technical Report Writing) fulfills the English Composition II requirement.

- c. Demonstration of ability to use another language by completion of the second year of a foreign language or sign language is required. See your advisor for placement. Please note that all four semesters must be completed in the SAME language and it's recommended you begin your first language class as soon as possible.
- d. 3350:100; Introduction to Geography is recommended for ½ of the general education Social Science requirement.
- e. Science electives 9 credits. At least three science courses approved by the Geosciences adviser. Recommended courses are: 3460:209; Computer Science I, 3650:322; Int. Laboratory I, 3650:323; Int. Laboratory II, 3650:350, Modeling and Simulation, 3650:431; Mechanics I, or 3650:436; Electromagnetism I.
- f. Please contact a Department of Geosciences advisor to discuss alternatives and necessity.
- g. Free electives can be any course not already required by your major and upper level electives can be any course (300/400 level) in or outside the student's major, excluding workshops. Please consult with the University of Akron website, the Undergraduate Bulletin, and your Academic Advisor about possible minor options.

**GEOSCIENCES CONTACT:** Ms. Elaine Butcher, 114 Crouse Hall, 330-972-7630, [butch@uakron.edu](mailto:butch@uakron.edu)

### **IN GENERAL:**

The Bachelor of Science in Geophysics is intended for a student who plans to seek employment as a professional geophysicist, or who plans to enter graduate studies in geophysics or a related field.

### **OPPORTUNITIES:**

Professional geologists and geophysicists follow a variety of careers within the general scope of geology. The search for petroleum, metallic and non-metallic mineral deposits, water supplies, and the investigation of environmental pollution, all come within the domain of the geologist and geophysicist. Petroleum companies, the mining industry, environmental consulting firms, U.S. Geological Survey, and the various state geological surveys are a few of the organizations that employ geologists and geophysicists.

Employment may be anywhere in the world. It may be of office type, all outside work, or a combination of both. It may be practical or research-oriented and it may require either much or little travel.

Salaries compare favorably with other scientists and engineers.

### **PLACEMENT:**

A student is encouraged to check with his/her major department and with the Career Center, Student Union 211, (330) 972-7747, regarding employment opportunities in the field.

**TRANSFER TO COLLEGE OF ARTS & SCIENCES:** Students should apply to the college upon the attainment of:

- ✓ a cumulative GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)
- ✓ a major GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)
- ✓ 30 credits completed including both required English composition courses and 3 credits of mathematics or statistics that meets the General Education requirement

A student can arrange their inter-college transfer through an appointment with his/her advisor in the Center for Academic Advising & Student Success, Simmons 205, (330) 972-7430, or Center for Academic Advising & Student Success, Simmons 301, (330) 972-5723 or College of Applied Science and Technology, Polsky 301, (330) 972-7220, depending upon the advising office in which they reside.

### **COLLEGE OF ARTS & SCIENCES:**

Degree requirements in Arts and Sciences include the demonstration of ability to use another language by completion of the second year of a foreign language or sign language and a minimum of 40 credits of 300/400 level courses (excluding workshops) consisting of either:

- Upper level (300/400) courses both in and outside the student's major
- Any courses outside the major department as specified in and approved by the student's major department chair (permission should be obtained prior to enrollment) except workshops

### **GEOLOGY WEBSITES:**

For careers in Geoscience visit: <http://www.earthscienceworld.org>

Ask-a-Geologist at <http://walrus.wr.usgs.gov/ask-a-geologist/>

U.S. Geological Survey at <http://www.usgs.gov>

Association of American State Geologists at <http://www.kgs.ukans.edu/AASG/AASG.html>

Link to other geology websites: <http://www.uakron.edu/colleges/artsci/depts/geology/links.php>

# Geophysics 337002BS

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\*\*Students are encouraged to visit the Geosciences Department their freshman year to obtain preliminary information regarding the program requirements and to learn more about on-campus opportunities available to Geology students.

*Italicized* courses fulfill General Education requirements. Unless a course is specified, refer to the General Education guide at [http://www.uakron.edu/advising/docs/General\\_Education\\_Guide.pdf](http://www.uakron.edu/advising/docs/General_Education_Guide.pdf)

## CURRICULUM GUIDE FOR STUDENTS ADMITTED TO THIS PROGRAM PRIOR TO FALL 2015:

1 <sup>st</sup> Year	Fall Semester	Credit Hours	Prerequisites
3370:101	<i>Intro to Physical Geology Lecture and Lab</i>	4	
3450:221	<i>Analytical Geometry/ Calculus I (Note a)</i>	4	Appropriate placement by advisor
	<i>English Composition I Requirement (Note b)</i>	3	Appropriate placement by advisor
	<i>Speech/Oral Communication Requirement</i>	3	
or	Beginning Language I (Note c)	4	Appropriate placement by advisor
7700:101	-OR- Beginning Sign Language	or 3	
<b>Total</b>		<b>17-18</b>	

1 <sup>st</sup> Year	Spring Semester	Credit Hours	Prerequisites
3370:102	<i>Intro to Historical Geology (Spring term only)</i>	4	3370:101
	<i>English Composition II Requirement (Note b)</i>	3	3300:111 or equivalent
	Beginning Language II	4	Beginning Language I
7700:102	-OR- American Sign Language II	or 3	or 7700:101
3450:222	Analytical Geometry - Calculus II	4	3450:221 with a C- or better
<b>Total</b>		<b>14-15</b>	

2 <sup>nd</sup> Year	Fall Semester	Credit Hours	Prerequisites
3400:210	<i>Humanities in the Western Tradition</i>	4	32 credits & 3300:112 or equivalent
or	-OR-		
3400:221	<i>Humanities in the World Since 1300</i>		32 credits & 3300:112 or equivalent
3450:223	Analytical Geometry - Calculus III	4	3450:222 with C- or better
3650:291	<i>Elementary Classical Physics I Lecture &amp; Lab</i>	4	3450:221 with C- or better
	Intermediate Language I	3	Beginning Language II
7700:201	-OR- American Sign Language III		or 7700:102
<b>Total</b>		<b>15</b>	

2 <sup>nd</sup> Year	Spring Semester	Credit Hours	Prerequisites
3650:292	Elementary Classical Physics II Lecture & Lab	4	3650:291
3450:335	Intro to Differential Equations	3	3450:223 with C- or better
	<i>Social Science Requirement (Note d)</i>	3	
	Intermediate Language II	3	Intermediate Language I
	-OR-	or	or

7700:202	American Sign Language IV <b>AND</b>	3	7700:201
7700:222	Survey of Deaf Culture in America	2	Sign Language students <i>only</i>
<b>Total</b>		<b>13-15</b>	

<b>3<sup>rd</sup> Year</b>		<b>Fall Semester</b>	
3370:350	Structural Geology	4	3370:101
3150:151	Principles of Chemistry I lecture and recitation	3	Placement in 3450:149 or higher
3150:152	Principles of Chemistry I laboratory	1	3150:151, prerequisite or corequisite
3650/3460	Science elective (Note e)	3	
	<i>Area Studies/Cultural Diversity Requirement</i>	2	
	Free Electives (Notes f, g)	3	
<b>Total</b>		<b>16</b>	

<b>3<sup>rd</sup> Year</b>		<b>Spring Semester</b>	
3150:153	Principles of Chemistry II lecture & recitation	3	3150:151
3370:231	Silicates (Required for Field Camp)	4	
3370:3xx/4xx	Upper Level Geology Elective (Note f)	3	
	<i>Social Science Requirement (Not from Geography Set)</i>	3	
	Free Electives (Notes f, g)	3	
<b>Total</b>		<b>16</b>	

<b>Summer</b>		<b>Junior Year</b>	
3370:453	Geology Field Camp I	3	3370:101 and 3370:102 and permission
3370:454	Geology Field Camp II	3	3370:231, 350, 453, or permission
<b>Total</b>		<b>6</b>	

<b>4<sup>th</sup> Year</b>		<b>Fall Semester</b>	
3370:446	Exploration Geophysics	3	3450:223, 3650:292 or permission
	<i>Humanities Requirement</i>	3	
3650/3460	Science elective (Note d)	3	
3370:3xx/4xx	Upper Level Geology Elective (Note f)	3	
	Free Electives (Notes f, g)	3	
<b>Total</b>		<b>15</b>	

<b>4<sup>th</sup> Year</b>		<b>Spring Semester</b>	
3650/3460	Science elective (Note e)	3	
3370:441	Fundamentals of Geophysics	3	3450:223 or permission and 3650:292
	<i>Physical Education/Wellness Requirement</i>	1	
	<i>Humanities Requirement</i>	3	
	<i>Area Studies/Cultural Diversity Requirement</i>	2	
	Free Electives (Notes f, g)	2	
<b>Total</b>		<b>14</b>	

	<b>Minimum Total Credits for Degree</b>	<b>128</b>	
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### **COLLEGE OF ARTS & SCIENCES:**

Degree requirements in Arts and Sciences include the demonstration of ability to use another language by completion of the second year of a foreign language or sign language and a minimum of 47 credits of 300/400 level courses (excluding workshops and General Education courses) consisting of either:

- Upper level (300/400) courses both in and outside the student's major

- Any courses outside the major department as specified in and approved by the student's major department chair (permission should be obtained prior to enrollment) except workshops and General Education courses

**GEOLOGY WEBSITES:**

For careers in Geoscience visit: <http://www.earthscienceworld.org>

Ask-a-Geologist at <http://walrus.wr.usgs.gov/ask-a-geologist/>

U.S. Geological Survey at <http://www.usgs.gov>

Association of American State Geologists at <http://www.kgs.ukans.edu/AASG/AASG.html>

Link to other geology websites: <http://www.uakron.edu/colleges/artsci/depts/geology/links.php>