

**ACADEMIC ROADMAP: Earth Sciences, Geology Concentration (BS)**

*(Recommended courses in italics – these courses will greatly improve your performance in the major and are expected of any student planning to apply to graduate school.)*

**Freshman Year**

FIRST SEMESTER (Fall) (17 cr.)			SECOND SEMESTER (Spring) (16 cr.)		
Course Title	Catalog Number	Prerequisite(s)	Course Title	Catalog Number	Prerequisite(s)
Introductory Geology	GES 101	None	Historical Geology	GES 102	None
Introductory Geology Laboratory (1 cr)	GES 103	Co-registration with GES 101	Introductory Astronomy	GES 131	None
Oceanography	GES 111	None			
College Writing I	CWP 101		College Writing II	CWP 102	CWP 101
<i>Applied Calculus I (4cr)</i> or Appropriate MAT by advisement	<i>MAT 126</i>	4 years Regents High School Math	<i>Applied Calculus II (4cr)</i>	<i>MAT 127</i>	<i>MAT 126</i>
Intellectual Foundations course			Intellectual Foundations course		

Freshmen should satisfy the following IF 14 requirements as soon as possible: complete CWP 101 and 102; take MAT 114, MAT 124, MAT 126 or MAT 161 to fulfill the Mathematics & Quantitative Reasoning requirement; fulfill the Global Engagement requirement (two years of high school fulfill foreign language are equivalent to the 102-level). It is important to balance some courses in the major with IF 14 courses (e.g., Arts, Humanities, Social Science, and Natural Science) each semester to ensure timely degree completion.

**Sophomore Year**

THIRD SEMESTER (15 cr.)			FOURTH SEMESTER (17 cr.)		
Course Title	Catalog Number	Prerequisite(s)	Course Title	Catalog Number	Prerequisite(s)
Invertebrate Paleontology (4 cr)	GES 302	GES 102	Geomorphology (4 cr)	GES 307	GES 101, GES 103
Sedimentology and Stratigraphy (4 cr)	GES 306	GES 101, GES 103	<i>Fundamentals of Chemistry II (3/1 cr.)</i>	<i>CHE 112/ CHE 114</i>	<i>CHE 111</i>
			Intellectual Foundations course		
<i>Fundamentals of Chemistry I (4 cr)</i>	<i>CHE 111</i>		Intellectual Foundations course		
Intellectual Foundations course			Intellectual Foundations course or all-college elective		

**Junior Year**

FIFTH SEMESTER (15 – 18 cr.)			SIXTH SEMESTER (15 – 18 cr.)		
Course Title	Catalog Number	Prerequisite(s)	Course Title	Catalog Number	Prerequisite(s)
Mineralogy and Petrology (4 cr)	GES 303	GES 101, GES 103	Structural Geology (4 cr)	GES 408	GES 101, GES 103
† <i>Undergraduate research</i>	<i>GES 499</i>		‡ <i>Maps and Mapmaking</i>	<i>GEG 325</i>	
<i>General Physics I (4 cr)</i> or <i>University Physics I (5 cr)</i>	<i>PHY 107 PHY 111</i>		<i>General Physics II (4 cr)</i> or <i>University Physics II (5 cr)</i>	PHY 108 PHY 112	<i>PHY 107 PHY 111</i>
Intellectual Foundations course					
Intellectual Foundations course or all-college elective			Intellectual Foundations course or all-college elective		

**Senior Year**

SEVENTH SEMESTER (15 – 18 cr.)			EIGHTH SEMESTER (15 – 18 cr.)		
Course Title	Catalog Number	Prerequisite(s)	Course Title	Catalog Number	Prerequisite(s)
Field Geology	GES 450	GES 303, GES 408	GES Elective by advisement*		
GES Elective: Glacial Geology or Geology of North America	GES 403 GES 405	GES 307 GES 101, GES 103	GES Elective by advisement*		
‡ <i>Fundamentals of GIS</i>	<i>GEG 425</i>	<i>GES 325</i>	‡ <i>Advanced Topics in GIS</i>	<i>GEG 429</i>	<i>GEG 425</i>
* Upper division all college elective			* Upper division all college elective		

\* 33 credits worth of upper division coursework (courses at the 300 and 400 level) is required for all SUNY Buffalo State degrees.

† All students are strongly encouraged to pursue undergraduate research.

‡ A minor in GIS is also strongly encouraged. It requires the three listed courses as well as three additional courses selected from a list of options. It is important to meet with an advisor to help with planning your schedule.