

BS in Geological Sciences

Geologists and geophysicists explore for oil, natural gas and mineral resources. Geoscientists work in the environmental industry to protect wetlands and groundwater. The US government employs geoscientists to determine landslide risk, to analyze satellite imagery, and to working on Mars exploration. College and universities employ geologists and geophysicists as faculty and Many geologists teach in high school or community college.

Marketable Skills

1. Communication: The ability to present complex information and ideas to others in settings from one-on-one to large audiences in a way that they can understand and be convinced of your conclusions.
2. Critical thinking: The ability to deal with incomplete and ambiguous data to create plausible scenarios of varying probability.
3. Entrepreneurship: Develop, organize, and manage ideas and opportunities turning them into new products, services, firms, or industries
4. Problem-solving: Find solutions to difficult or complex issues
5. Teamwork: Participate as an effective, efficient member of a group in order to meet a common goal
6. Writing: Communicate using text in a clear and concise manner

Other marketable skills include GIS data analysis; 3-D computer modeling and visualization. Students with a concentration in education will also be able to gain presentation skills in front of groups.

Fast Track

The Fast-Track Program (<http://catalog.utep.edu/admissions/undergraduate/fast-track/#text>) enables outstanding undergraduate UTEP students to receive both undergraduate and graduate credit for up to 15 hours of UTEP course work as determined by participating Master's and Doctoral programs.

Not all undergraduate programs have elected to participate in the Fast Track option, so students should see their departmental graduate advisor for information about requirements and guidelines. A list of courses that have been approved for possible use at the graduate level is found here (<http://catalog.utep.edu/admissions/undergraduate/fast-track/#fasttrackcoursestext>).

M.B.A. - Master of Business Administration (<http://catalog.utep.edu/grad/college-of-business-administration/business-administration-deans-office/master-of-business-administration/>) / **B.S. in Geological Sciences**

Code	Title	Hours
ACCT 5304	Accounting Analysis	3
BLAW 5306	Business Law and Ethics	3
ECON 5311	Managerial Economics	3
FIN 5311	Financial Management	3
MGMT 5311	Organizational Mgmt Seminar	3
MKT 5311	Marketing Management	3
QMB 5311	Quantitative Methods-Business	3
OSCM 5308	Concepts of Production Mgmt	3

M.S. in Geological Sciences (<http://catalog.utep.edu/grad/college-of-science/earth-environmental-and-resource-sciences/geological-sciences-ms/>) / **B.S. in Geological Sciences**

Code	Title	Hours
GEOL 5101	Graduate Seminar	1
GEOL 5102		1
GEOL 5115	Selected Topics in Geol Scien	1
GEOL 5162	Directed Study in Geology	1
GEOL 5215	Selected Topics in Geol Scienc	2
GEOL 5262	Directed Study in Geology	2
GEOL 5289	Graduate Research in Geol Sci	2
GEOL 5303	Computer Appl in Earth Sci	3
GEOL 5307		3
GEOL 5308	Planetary Geology	3
GEOL 5309	Mineral Resrcs, Econ & Environ	3

GEOL 5310	Intro Entrepreneurial Geosci	3
GEOL 5311		3
GEOL 5315	Selected Topics-Geological Sci	3
GEOL 5317	Hydrogeology	3
GEOL 5318	Petroleum Geology	3
GEOL 5320	Environmental Tracers in Water	3
GEOL 5321	Introduction to GIST	3
GEOL 5322	Advanced GIST	3
GEOL 5323	Spat Analysis Earth/Env Sci	3
GEOL 5324	Geocomputation	3
GEOL 5343	Isotope Geology	3
GEOL 5344	Advanced Petrology	3
GEOL 5345		3
GEOL 5348		3
GEOL 5362	Directed Study in Geology	3
GEOL 5363	Sandstone Petrography	3
GEOL 5364	Sedimentary Depositional Envir	3
GEOL 5365	Basin Analysis	3
GEOL 5375	Quantit Techniq Geological Sci	3
GEOL 5376	Low Temperature Geochemistry	3
GEOL 5378	Global Biochemical Cycles	3
GEOL 5379		3
GEOL 5381	Paleoclimatology	3
GEOL 5384		3
GEOL 5387		3
GEOL 5389	Graduate Research in Geol Sci	3
GEOL 5392		3
GEOL 5397	Geol/Mineral Resources Mexico	3
GEOL 5401	Fundamentals of Earth Science	4
GEOL 5402	Fundmntls/Fld Meth in Earth Sci	4
GEOP 5163	Directed Study in Geophysics	1
GEOP 5263	Directed Study in Geophysics	2
GEOP 5306	Atmospheric Processes	3
GEOP 5335	Intro to Remote Sensing	3
GEOP 5336	Digital Image Processing	3
GEOP 5352	Geophysical Inverse Theory	3
GEOP 5353	Reflection Seismic Data Proces	3
GEOP 5354	Seismology	3
GEOP 5356	Topics in Geophysics	3
GEOP 5357	Well Logging	3
GEOP 5361	Plate Tectonics	3
GEOP 5362		3
GEOP 5363	Directed Study in Geophysics	3
GEOP 5364		3
GEOP 5460	Geop App-Digital Signal Proces	4

Degree Plan

BS in Geological Sciences

Required Credits: 120

Code	Title	Hours
Geology Major Requirements		
Supporting Math/Sci - Geol Sci (All courses require a grade of C or better.)		
Required Courses: ¹		
CHEM 1105	Laboratory for CHEM 1305	1
CHEM 1106	Laboratory for CHEM 1306	1
CHEM 1305	General Chemistry	3
CHEM 1306	General Chemistry	3
PHYS 2320 & PHYS 2120	Introductory Mechanics and Laboratory for PHYS 2320	4
PHYS 2321 & PHYS 2121	Introductory Electromagnetism and Laboratory for PHYS 2321	4
PHYS 2230	Thermal and Fluid Physics	2
MATH 1411	Calculus I	4
MATH 1312	Calculus II	3
University Core Curriculum		
Complete the University Core Curriculum requirements. (p. 5)		42
Geological Sciences Major		
Required Courses:		
Select one of the following:		3
GEOL 1313 & GEOL 1103	Intro to Physical Geology and Lab for GEOL 1313 ²	
GEOL 1211 & GEOL 1111	Principles of Earth Sciences and Principles of Earth Sci - Lab	
Select one of the following:		4
GEOL 1314 & GEOL 1104	Intro to Historical Geol and Lab for GEOL 1314 ²	
GEOL 1212 & GEOL 1112	Principles of Earth Science and Laboratory for Geology 1212	
Required:		3
GEOL 2309 & GEOL 2109	Mineralogy & Petrology and Mineralogy & Petrology Lab	4
GEOL 3215 & GEOL 3115	Igneous/Metamorphic Petrology and Igneous/Metamorphic Petr. Lab	3
GEOL 3312 & GEOL 3112	Geoscience Processes and Geoscience Processes Lab	4
GEOL 3323 & GEOL 3123	Structural Geology and Structural Geology Lab	4
GEOL 3326 & GEOL 3126	Sedimentology & Stratigraphy and Lab for Sedim & Stratigraphy	4
GEOL 4375 & GEOL 4376	Field Geology I and Field Geology II	6
Six upper-division hour in geology or geophysics ³		6
Geological Sciences Major Reqs		
Select an additional 23 hours in any subject, 10 of which must be upper-division		23
Total Hours		120

1

Although the UTEP choice in the University Core Curriculum is larger, these Math and Science choices satisfy the requirements of both the core and the major and are prerequisites for many upper division courses.

2

This course is preferred.

3

The Department may offer additional choices not reflected in this list.

4
A total of thirty-seven hours of upper division coursework is required for all Bachelor of Science degrees.

The requirement to obtain the BS in Geological Sciences consists of the general College of Science requirements plus the following specific requirements:

BS in Geological Sciences w/ Concentration in 7-12 Science

A UTEP overall and content area GPA must be at least 2.75 for admission to the Educator Preparation Program.

Required Credits: 120

Code	Title	Hours
Background Check Required		
A complete background check is required of all students who wish to receive teacher certification in the State of Texas. Students will be required to pass a background check before certification will be conferred by the State Board of Educator Certification (SBEC).		
Supporting Math/Sci - Geol Sci (All courses require a grade of C or better.)		
Required Courses: ¹		
CHEM 1105	Laboratory for CHEM 1305	1
CHEM 1106	Laboratory for CHEM 1306	1
CHEM 1305	General Chemistry	3
CHEM 1306	General Chemistry	3
PHYS 2320 & PHYS 2120	Introductory Mechanics and Laboratory for PHYS 2320	4
PHYS 2321 & PHYS 2121	Introductory Electromagnetism and Laboratory for PHYS 2321	4
PHYS 2230	Thermal and Fluid Physics	2
MATH 1312 & MATH 1411	Calculus II and Calculus I	7
University Core Curriculum		
Complete the University Core Curriculum requirements. (p. 5)		42
Geological Sciences Major		
Select one of the following:		1-3
GEOL 1313 & GEOL 1103	Intro to Physical Geology and Lab for GEOL 1313 ²	
GEOL 1211 & GEOL 1111	Principles of Earth Sciences and Principles of Earth Sci - Lab	
Select one of the following:		4
GEOL 1314 & GEOL 1104	Intro to Historical Geol and Lab for GEOL 1314 ²	
GEOL 1212 & GEOL 1112	Principles of Earth Science and Laboratory for Geology 1212	
Required:		3
GEOL 2309 & GEOL 2109	Mineralogy & Petrology and Mineralogy & Petrology Lab	
Required:		2
GEOL 3215 & GEOL 3115	Igneous/Metamorphic Petrology and Igneous/Metamorphic Petr. Lab	
Required:		3
GEOL 3312 & GEOL 3112	Geoscience Processes and Geoscience Processes Lab	
Required:		3
GEOL 3323 & GEOL 3123	Structural Geology and Structural Geology Lab	
Required:		3
GEOL 3326 & GEOL 3126	Sedimentology & Stratigraphy and Lab for Sedim & Stratigraphy	

Required Courses:

GEOL 4376	Field Geology II	3
GEOL 4375	Field Geology I	3

Secondary Education Minor

Required Courses:

EDPC 3300	Intro to Youth Dev & Spec Ed	3
RED 3342	Content Area Literacy	3
SCED 3311	Curriculum Plan-Secondary Schl	3
SCED 3317	Multicultural Ed in Sec School	3
SCED 4368	Teaching Science in Sec School	3
SCED 4691	Student Teaching in Sec School	6

Upper Division Requirement

Select a total of 37 hours of upper division course work. ³ 37

Total Hours 120

1

Although the UTEP choice in the University Core Curriculum is larger, these Math and Science choices satisfy the requirements of both the core and the major and are prerequisites for many upper division courses.

2

This course is preferred.

3

A total of thirty-seven hours of upper division coursework is required for all Bachelor of Science degrees.

University Core Curriculum

The department may make specific suggestions for courses which are most applicable towards your major.

All courses require a C or better

I. Communication (six hours)

Code	Title	Hours
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The objective of the communication component is to enable the student to communicate effectively in clear and correct prose or orally in a style appropriate to the subject, occasion, and audience.

Select six hours of the following: 6

For students whose secondary education was in English:

COMM 1611	Written and Oral Communication	
ENGL 1313	Writing About Literature	
RWS 1301	Rhetoric & Composition I	
RWS 1302	Rhetoric & Composition 2	
RWS 1601	Rhetoric, Composition & Comm	

For students whose secondary education was not in English:

ESOL 1311	Expos Engl Compos-Spkr Esl	
ESOL 1312	Res & Crit Writng Spkr Esl	

Total Hours 6

II. American History (six hours)

Code	Title	Hours
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The objectives of the history component are to expand students' knowledge of the origin and history of the U.S., their comprehension of the past and current role of the U.S. in the world, and their ability to critically evaluate and analyze historical evidence. U.S. history courses (three hours must be Texas history) include:

HIST 1301	History of U.S. to 1865	3
HIST 1302	History of U.S. Since 1865	3

Total Hours 6

III. Language, Philosophy & Culture (three hours)

Code	Title	Hours
The objective of the humanities component is to expand students' knowledge of the human condition and human cultures, especially in relation to behaviors, ideas, and values expressed in works of human imagination and thought. Through study in disciplines such as literature and philosophy, students engage in critical analysis and develop an appreciation of the humanities as fundamental to the health and survival of any society.		
Select one of the following:		3
AFST 2300	Intro-African Amer Studies	
CHIC 2302	Latina/o Presence in the U.S.	
ENGL 2311	English Literature	
ENGL 2312	English Literature	
ENGL 2313	Intro to American Fiction	
ENGL 2314	Intro to American Drama	
ENGL 2318	Intro to American Poetry	
FREN 2322	Making of the "Other" Americas	
HIST 2301	World History to 1500	
HIST 2302	World History Since 1500	
PHIL 1301	Introduction to Philosophy	
PHIL 2306	Ethics	
RS 1301	Introduct to Religious Studies	
SPAN 2340	Seeing & Naming: Conversations	
WS 2300	Introduction to Womens Studies	
WS 2350	Global Feminisms	
Total Hours		3

IV. Mathematics (three hours)

Code	Title	Hours
The objective of the mathematics component is to develop a quantitatively literate college graduate. Every college graduate should be able to apply basic mathematical tools in the solution of real-world problems.		
Select one of the following:		3
MATH 1309	College Algebra	
MATH 1310	Trigonometry and Conics	
MATH 1319	Math in the Modern World	
MATH 1320	Math for Social Sciences I	
MATH 1411	Calculus I	
MATH 1508	Precalculus ^{1,2}	
MATH 2301	Math for Social Sciences II	
STAT 1380	Statistical Literacy	
STAT 2480	Elementary Statistical Methods	
1 A higher-level course in the calculus sequence can be substituted.		
2 TCCN MATH 1314 will also satisfy this requirement.		
Total Hours		3

V. Life & Physical Sciences (six hours)

Code	Title	Hours
The objective of the study of the natural sciences is to enable the student to understand, construct, and evaluate relationships in the natural sciences, and to enable the student to understand the bases for building and testing theories. The courses listed are for non-majors; the major courses in the discipline can be substituted for the non-major sequence. A minimum of two semesters of lecture and one semester of laboratory associated with one of the courses, or two semesters of combined (3 credit) lecture-laboratory courses (Only six hours apply toward the required 42.):		
Select one of the following:		1-4
ASTR 1107	Astronomy Lab I	
ASTR 1307	Elem Astronomy-Solar System	

ASTR 1308	Elem Astr Stars & Galaxies
BIOL 1103	Introductory Biology Lab
BIOL 1104	Human Biology Laboratory
BIOL 1107	Topics in Study of Life I
BIOL 1108	Organismal Biology Laboratory
BIOL 1203	Introductory Biology
BIOL 1304	Human Biology
BIOL 1305	General Biology
BIOL 1306	Organismal Biology
BIOL 2111	Human Anat/Physio Lab I
BIOL 2113	Human Anat/Physio Lab II
BIOL 2311	Human Anat/Physiology I
BIOL 2313	Human Anat/Physiology II
CHEM 1105	Laboratory for CHEM 1305
CHEM 1106	Laboratory for CHEM 1306
CHEM 1107	Intro General Chemistry Lab
CHEM 1108	Intro Organic & Biochem Lab
CHEM 1305	General Chemistry
CHEM 1306	General Chemistry
CHEM 1307	Intro to General Chemistry
CHEM 1308	Intro Organic & Biochemistry
ESCI 1101	Environmental Sci. Lab
ESCI 1102	Non-major Lab for ESCI 1301
ESCI 1202	Intro to Environment Science 2
ESCI 1301	Intro to Environmental Sci
GEOG 1106	Laboratory for GEOG 1306
GEOG 1306	Physical Geography
GEOL 1103	Lab for GEOL 1313
GEOL 1104	Lab for GEOL 1314
GEOL 1111	Principles of Earth Sci - Lab
GEOL 1112	Laboratory for Geology 1212
GEOL 1211	Principles of Earth Sciences
GEOL 1212	Principles of Earth Science
GEOL 1230	The Blue Planet
GEOL 1231	Natural Hazards
GEOL 1313	Intro to Physical Geology
GEOL 1314	Intro to Historical Geol
HSCI 2302	Fundamentals of Nutrition
HSCI 2303	Wellness Dynamics
MICR 2330	Microorganisms and Disease
PHYS 1403	General Physics I
PHYS 1404	General Physics II
PHYS 2120	Laboratory for PHYS 2320
PHYS 2121	Laboratory for PHYS 2321
PHYS 2320	Introductory Mechanics
PHYS 2321	Introductory Electromagnetism

Total Hours**6****VI. Political Science (six hours)**

Code	Title	Hours
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The objectives of the political science component are to expand students' knowledge of the origin and evolution of the U.S. and Texas political systems, focusing on the growth of political institutions, and on the constitutions of Texas and the United States; and to enhance their understanding of federalism, states rights, and individual civil liberties, rights, and responsibilities.

Required Courses:

POLS 2310	Introduction to Politics	3
POLS 2311	American Gover & Politics	3
Total Hours		6

VII. Social and Behavioral Sciences (three hours)

Code	Title	Hours
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The objective of the social and behavioral science component is to increase students' knowledge of how social and behavioral scientists discover, describe, and explain the behaviors and interactions among individuals, groups, institutions, events, and ideas. Such knowledge will better equip students to understand themselves and the roles they play in addressing the issues facing humanity.

Select one of the following: 3

ANTH 1301	Intro-Phys Anth/Archeolog	
ANTH 1302	Intro-Cultural Anthropology	
ANTH 1310	Cultural Geography	
ANTH 2320	Intro to Linguistics	
CE 2326	Econ for Engrs & Scientists	
ASIA 2300	Asian American Studies	
COMM 2350	Interpersonal Communication	
COMM 2372	Mass Media and Society	
ECON 2303	Principles of Macroeconomics	
ECON 2304	Principles of Microeconomics	
EDPC 1301	Introduction to Ed Psychology	
EDU 1342	Action Research in Classrooms	
ENGL 2320	Introduction to Linguistics	
GEOG 1310	Cultural Geography	
LEAD 2300	Community Service	
LING 2320	An Intro. to Linguistics	
LING 2340	Lang. Inside & Out: Sel Topics	
PSYC 1301	Introduction to Psychology	
SOCI 1301	Introduction to Sociology	
SOCI 1310	Cultural Geography	

Total Hours 3

VIII. Creative Arts (three hours)

Code	Title	Hours
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The objective of the visual and performing arts component is to expand students' knowledge and appreciation of the human imagination as expressed through works of visual art, dance, music, theatre and film. Through study in these disciplines, students will form aesthetic judgments and develop an appreciation of the arts as fundamental to the health and survival of any society.

Select one of the following: 3

ART 1300	Art Appreciation	
ARTH 1305	History of Art I	
ARTH 1306	History of Art II	
CHIC 1311	Chicana/o Fine Arts Appreciat	
DANC 1304	Dance Appreciation	
FILM 1390	Intro-Art of Motion Pict.	
MUSL 1324	Music Appreciation	
MUSL 1327	Jazz to Rock	
MUSL 2321	Music, Culture, and Society	
THEA 1313	Introduction to Theatre	

Total Hours 3

IX. Component Area Option (six hours)

Code	Title	Hours
The objective of the institutionally designated option component is to develop the critical thinking skills and academic tools required to be an effective learner. Special emphasis is placed on the use of technology in problem-solving, communications, and knowledge acquisition.		
Select two of the following:		6
BUSN 1301	Intro to Global Business	
COMM 1301	Public Speaking	
COMM 1302	Business/Profession Comm	
CS 1310	Intro-Computational Thinking	
CS 1320	Computer Programming Sci/Engr	
EL 1301	Eng Innovation and Leadership	
LEAD 1300	Introduction to Leadership	
SCI 1301	Inquiry in Math & Science	
UNIV 1301	Seminar/Critical Inquiry	
Total Hours		6

4-Year Sample Degree Plan**BS Geological Sciences (Starting with Calculus)**

Code	Title	Hours
BS GEOLOGICAL SCIENCES		
FRESHMAN		
Fall		
GEOL 1313 & GEOL 1103	Intro to Physical Geology and Lab for GEOL 1313	4
HIST 1301	History of U.S. to 1865	3
MATH 1411	Calculus I	4
RWS 1301	Rhetoric & Composition I	3
SCI 1301	Inquiry in Math & Science	3
Spring		
CHEM 1305 & CHEM 1105	General Chemistry and Laboratory for CHEM 1305	4
COMM 1301	Public Speaking	3
GEOL 1314 & GEOL 1104	Intro to Historical Geol and Lab for GEOL 1314	4
HIST 1302	History of U.S. Since 1865	3
MATH 1312	Calculus II	3
SOPHOMORE		
Fall		
CHEM 1306 & CHEM 1106	General Chemistry and Laboratory for CHEM 1306	4
GEOL 2309 & GEOL 2109	Mineralogy & Petrology and Mineralogy & Petrology Lab	4
GEOL 3312 & GEOL 3112	Geoscience Processes and Geoscience Processes Lab	4
RWS 1302	Rhetoric & Composition 2	3
Spring		
GEOL 3215 & GEOL 3115	Igneous/Metamorphic Petrology and Igneous/Metamorphic Petr. Lab	3
POLS 2310	Introduction to Politics	3
Language, Philosophy, and Culture		3
Creative Arts		3
JUNIOR		
Fall		

GEOL 3323 & GEOL 3123	Structural Geology and Structural Geology Lab	4
PHYS 2320 & PHYS 2120	Introductory Mechanics and Laboratory for PHYS 2320	4
POLS 2311	American Gover & Politics	3
Elective		2
Social & Behavioral Sciences		3
Spring		
GEOL 3326 & GEOL 3126	Sedimentology & Stratigraphy and Lab for Sedim & Stratigraphy	4
PHYS 2321 & PHYS 2121	Introductory Electromagnetism and Laboratory for PHYS 2321	4
Upper-Division Course		3
Elective		3
SENIOR		
Fall		
PHYS 2230	Thermal and Fluid Physics	2
Upper-Division GEOL or GEOP Course		3
Upper-Division GEOL or GEOP Course		3
Upper-Division Elective		3
Upper-Division Elective		3
Spring		
GEOL 4375	Field Geology I	3
GEOL 4376	Field Geology II	3
Upper-Division Elective		3
Elective		3
Elective		3
Total Hours		120

BS Geological Sciences (Starting with Pre-Calculus)

Code	Title	Hours
BS GEOLOGICAL SCIENCES		
FRESHMAN		
Fall		
GEOL 1313 & GEOL 1103	Intro to Physical Geology and Lab for GEOL 1313	4
MATH 1508	Precalculus	5
RWS 1301	Rhetoric & Composition I	3
SCI 1301	Inquiry in Math & Science	3
Spring		
CHEM 1305 & CHEM 1105	General Chemistry and Laboratory for CHEM 1305	4
COMM 1301	Public Speaking	3
GEOL 1314 & GEOL 1104	Intro to Historical Geol and Lab for GEOL 1314	4
MATH 1411	Calculus I	4
RWS 1302	Rhetoric & Composition 2	3
SOPHOMORE		
Fall		
GEOL 2309 & GEOL 2109	Mineralogy & Petrology and Mineralogy & Petrology Lab	4
GEOL 3312 & GEOL 3112	Geoscience Processes and Geoscience Processes Lab	4
HIST 1301	History of U.S. to 1865	3

MATH 1312	Calculus II	3
Creative Arts		3
Spring		
CHEM 1306 & CHEM 1106	General Chemistry and Laboratory for CHEM 1306	4
GEOL 3215 & GEOL 3115	Igneous/Metamorphic Petrology and Igneous/Metamorphic Petr. Lab	3
HIST 1302	History of U.S. Since 1865	3
Language, Philosophy, and Culture		3
JUNIOR		
Fall		
GEOL 3323 & GEOL 3123	Structural Geology and Structural Geology Lab	4
GEOL 3326 & GEOL 3126	Sedimentology & Stratigraphy and Lab for Sedim & Stratigraphy	4
PHYS 2320 & PHYS 2120	Introductory Mechanics and Laboratory for PHYS 2320	4
POLS 2310	Introduction to Politics	3
Elective		3
Spring		
GEOL 4375	Field Geology I	3
GEOL 4376	Field Geology II	3
PHYS 2321 & PHYS 2121	Introductory Electromagnetism and Laboratory for PHYS 2321	4
POLS 2311	American Gover & Politics	3
Upper-Division Geology Course		3
SENIOR		
Fall		
Upper-Division Geology Course		3
Upper-Division Elective		3
Upper-Division Elective		3
Upper-Division Elective		3
Social & Behavioral Sciences		3
Spring		
GEOL 4389	Research in Geological Science	3
PHYS 2230	Thermal and Fluid Physics	2
Upper-Division Elective		3
Upper-Division Elective		3
Upper-Division Elective		3
Total Hours		126

BS Geological Sciences- Secondary Education-Science 7-12 Certification (Starting with Pre-Calculus)

Code	Title	Hours
BS GEOLOGICAL SCIENCES- SECONDARY EDUCATION- SCIENCE 7-12 CERTIFICATION		
FRESHMAN		
Fall		
MATH 1508	Precalculus	5
GEOL 1211 & GEOL 1111	Principles of Earth Sciences and Principles of Earth Sci - Lab	3
RWS 1301	Rhetoric & Composition I	3
SCI 1301	Inquiry in Math & Science	3
Spring		
COMM 1301	Public Speaking	3

GEOL 1212 & GEOL 1112	Principles of Earth Science and Laboratory for Geology 1212	3
HIST 1301	History of U.S. to 1865	3
MATH 1411	Calculus I	4
RWS 1302	Rhetoric & Composition 2	3
SOPHOMORE		
Fall		
CHEM 1305 & CHEM 1105	General Chemistry and Laboratory for CHEM 1305	4
HIST 1302	History of U.S. Since 1865	3
MATH 1312	Calculus II	3
PHIL 2306	Ethics	3
PHYS 2320 & PHYS 2120	Introductory Mechanics and Laboratory for PHYS 2320	4
Spring		
CHEM 1306 & CHEM 1106	General Chemistry and Laboratory for CHEM 1306	4
GEOL 2309 & GEOL 2109	Mineralogy & Petrology and Mineralogy & Petrology Lab	4
PHYS 2321 & PHYS 2121	Introductory Electromagnetism and Laboratory for PHYS 2321	4
Elective		3
Elective		3
JUNIOR		
Fall		
GEOL 3312 & GEOL 3112	Geoscience Processes and Geoscience Processes Lab	4
GEOL 3323 & GEOL 3123	Structural Geology and Structural Geology Lab	4
PHYS 2230	Thermal and Fluid Physics	2
PSYC 1301	Introduction to Psychology	3
POLS 2310	Introduction to Politics	3
Spring		
EDPC 3300	Intro to Youth Dev & Spec Ed	3
GEOL 3215 & GEOL 3115	Igneous/Metamorphic Petrology and Igneous/Metamorphic Petr. Lab	3
GEOL 4375	Field Geology I	3
SCED 3311	Curriculum Plan-Secondary Schl	3
SCED 3317	Multicultural Ed in Sec School	3
POLS 2311	American Gover & Politics	3
SENIOR		
Fall		
ART 1300	Art Appreciation	3
GEOL 3326 & GEOL 3126	Sedimentology & Stratigraphy and Lab for Sedim & Stratigraphy	4
GEOL 4376	Field Geology II	3
RED 3342	Content Area Literacy	3
SCED 4368	Teaching Science in Sec School	3
Spring		
SCED 4691	Student Teaching in Sec School	6

Total Hours**121**