Earth Sciences (BA/BS)

Students in the Department of Earth Sciences learn about the minerals, rocks, soils, and waters that make up the earth, and the processes that shape the earth from deep in its interior to the atmosphere. Earth science applies the basic sciences of physics, biology, chemistry, and mathematics to understanding processes that have shaped the earth and other planetary bodies. Earth scientists combine field investigations with laboratory experiments and theoretical studies to understand the physical, chemical and biological processes that govern the behavior and interactions of complex earth systems.

Earth science applications include natural hazards such as earthquakes, floods, landslides and volcanic eruptions that affect humans. Other subdisciplines investigate how humans alter the earth's environments, where we pollute rivers and ground water, cause rapid erosion, attempt to re-engineer rivers and shorelines, and alter the earth's atmosphere, oceans, and global climate. Earth science research also includes the study of the deep earth to understand processes that drive the motions of tectonic plates and generate the earth's magnetic field.

Environmental Geoscience Track Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate proficiency with modern quantitative tools that are used in the Earth sciences.
- When confronted with real-world Earth science problems, develop and test hypotheses in a systematic way while stating caveats and assumptions.
- Recognize, describe, and quantify dynamic processes that operate on the Earths surface environments, as well as the interaction of humans with these environments. \

Geology Track

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate proficiency with modern quantitative tools that are used in the Earth sciences.
- When confronted with real-world Earth science problems, develop and test hypotheses in a systematic way while stating caveats and assumptions.
- Use techniques from modern earth science disciplines to solve complex problems across a diversity of scales through time and space that require consistent geological reasoning.

Geophysics Track Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate proficiency with modern quantitative tools that are used in the Earth Sciences.
- When confronted with real-world Earth science problems, develop and test hypotheses in a systematic way while stating caveats and assumptions.

 Develop a foundation in mathematics and physics that enables them to quantitatively describe key aspects of fundamental Earth processes.

Paleontology Track Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate proficiency with modern quantitative tools that are used in the Earth sciences.
- When confronted with real-world Earth science problems, develop and test hypotheses in a systematic way while stating caveats and assumptions.
- Demonstrate proficiency with the tools and techniques necessary to recognize geological evidence and reconstruct geological history for biological processes that have driven the evolution of life, as preserved in fossils extracted from ancient rocks.
- Geology (p. 1)
- Geophysics (p. 2)
- Environmental Geoscience (p. 3)
- Paleontology (p. 4)

Earth Sciences Major - Geology Track

Code	Title	Credits
Core Courses		
ERTH 101 & ERTH 102 & ERTH 103	Exploring Planet Earth and Exploring Earth's Environment and Exploring Earth History ¹	12
or ERTH 201 & ERTH 202 & ERTH 203	Dynamic Planet Earth and Earth's Surface and Environment and History of Life	
PHYS 201-202	General Physics	8
or PHYS 251 & PHYS 252	Foundations of Physics I and Foundations of Physics I	
CH 221-222	General Chemistry	8
or CH 224H– 225H	Honors General Chemistry	
MATH 251-252	Calculus I-II	8
ERTH 315	Earth Physics	4
ERTH 316	Introduction to Hydrogeology	4
ERTH 318	Introduction to Field Methods	3
ERTH 418	Earth and Environmental Data Analysis	4
or MATH 253	Calculus III	
or MATH 343	Statistical Models and Methods	
or MATH 425	Statistical Methods I	
ERTH 363	Computational Tools for Earth Sciences	4
or CS 122	Introduction to Programming and Problem Solvi	ng
Additional Requ	irements	
ERTH 331	Mineralogy	5

ERTH 331	Mineralogy	5
ERTH 332	Introduction to Petrology	5
ERTH 334	Sedimentology and Stratigraphy	4

ERTH 350 & ERTH 351 & ERTH 352	Structural Geology and Structural Geology Problems and Structural Geology Laboratory and Field	5
Field Studies:		12
ERTH 406	Field Studies: [Topic]	
Electives		
See Electives ta	ble for choices	20
Total Credits		106

The 200-level sequence is recommended for majors; however, the 100-level sequence may be substituted if the courses are passed with grades of mid-B or better.

Electives

Code Biology	Title	Credits
Courses numbere	ed 306 or higher	
Chemistry	3 -	
CH 223	General Chemistry III	4
CH 226H	Advanced General Chemistry III	4
CH 227-229	General Chemistry Laboratory	6
or CH 237– 239	Advanced General Chemistry Laboratory	
CH 331	Organic Chemistry I	4
CH 335	Organic Chemistry II	4
CH 336	Organic Chemistry III	4
CH 411-413	Physical Chemistry	12
CH 431-433	Inorganic Chemistry	12
CH 445	Statistical Mechanics	4
Computer Scien	ce	
CS 210-212	Computer Science I-III	12
CS 315	Intermediate Algorithms	4
Geography		
GEOG 321	Climatology	4
GEOG 322	Geomorphology	4
GEOG 323	Biogeography	4
GEOG 360	Watershed Science and Policy	4
GEOG 361	Global Environmental Change	4
GEOG 421		4
GEOG 425	Hydrology and Water Resources	4
GEOG 427	Fluvial Geomorphology	4
GEOG 430	Long-Term Environmental Change	4
GEOG 481-482	GIScience I-II	8
GEOG 485-486	Remote Sensing I-II	8
GEOG 491	Advanced Geographic Information Systems	4
GEOG 495	Geographic Data Analysis	4
Earth Sciences		
Select from GEO	L 304–310	4
ERTH 353	Geologic Hazards	4
ERTH 363	Computational Tools for Earth Sciences	4
ERTH 401	Research: [Topic]	1-21
ERTH 403	Thesis	1-6

ERTH 410	Experimental Course: [Topic]	1-5
ERTH 407	Seminar: [Topic]	1-5
Courses higher th	nan 410	
Mathematics		
MATH 256	Introduction to Differential Equations	4
MATH 281-282	Several-Variable Calculus I-II	8
MATH 341-342	Elementary Linear Algebra	8
MATH 411-412	Functions of a Complex Variable I-II	8
MATH 421-422	Partial Differential Equations: Fourier Analysis I-II	8
MATH 425-426	Statistical Methods I-II	8
Physics		
PHYS 203	General Physics	4
or PHYS 253	Foundations of Physics I	
PHYS 204-206	Introductory Physics Laboratory	6
PHYS 290	Foundations of Physics Laboratory	1
PHYS 351-353	Foundations of Physics II	12
PHYS 411-413	Mechanics, Electricity, and Magnetism	12

Earth Sciences Major - Geophysics Track

Code	Title Cre	dits
ERTH 315	Earth Physics	4
ERTH 363	Computational Tools for Earth Sciences	4
or CS 122	Introduction to Programming and Problem Solving	
PHYS 251-253	Foundations of Physics I	12
MATH 251-253	Calculus I-III	12
CH 221-222	General Chemistry	8
or CH 224H– 225H	Honors General Chemistry	
ERTH 455	Mechanical Earth	4
Additional Requ	irements	
Select two of the	following:	7-8
ERTH 441	Hillslope Geomorphology	
ERTH 451	Hydrogeology	
ERTH 452	Neotectonics and Quaternary Geology	
ERTH 453	Tectonics	
ERTH 454	Fluid Dynamics	
ERTH 462	Environmental Geomechanics	
ERTH 463	Computational Earth Science	
ERTH 466	Geodynamics	
ERTH 467	Fault Mechanics	
ERTH 468	Introduction to Seismology	
MATH 256	Introduction to Differential Equations	4
MATH 281-282	Several-Variable Calculus I-II	12
& MATH 256	and Introduction to Differential Equations	
PHYS 351-353	Foundations of Physics II	12
or PHYS 411– 413	Mechanics, Electricity, and Magnetism	
Electives		
See Electives tab	le for choices	28
Total Credits:		104

Electives

Code	Title	Credits
Chemistry		
CH 223	General Chemistry III	4
CH 226H	Advanced General Chemistry III	4
CH 411	Physical Chemistry	4
Earth Sciences		
Select from GEO	L 101–310	8
ERTH 311	Earth Materials	5
ERTH 316	Introduction to Hydrogeology	4
ERTH 318	Introduction to Field Methods	3
ERTH 334	Sedimentology and Stratigraphy	4
ERTH 350	Structural Geology	3
ERTH 351	Structural Geology Problems	1
ERTH 352	Structural Geology Laboratory and Field	1
ERTH 353	Geologic Hazards	4
ERTH 363	Computational Tools for Earth Sciences	4
ERTH 401	Research: [Topic]	1-21
ERTH 403	Thesis	1-6
ERTH 407	Seminar: [Topic]	1-5
Courses numbere	ed 408 or higher	
Mathematics		
MATH 341-342	Elementary Linear Algebra	8
or MATH 421- 422	Partial Differential Equations: Fourier Analysis I-	4I

Earth Sciences Major - Environmental Geoscience Track

Code	Title	redits
Core Requireme	ents (60 or 65 credits)	
ERTH 101 & ERTH 102 & ERTH 103	Exploring Planet Earth and Exploring Earth's Environment and Exploring Earth History ¹	12
or ERTH 201 & ERTH 202 & ERTH 203	Dynamic Planet Earth and Earth's Surface and Environment and History of Life	
ERTH 311	Earth Materials	5
or ERTH 331 & ERTH 332	Mineralogy and Introduction to Petrology	
ERTH 315	Earth Physics	4
ERTH 316	Introduction to Hydrogeology	4
ERTH 318	Introduction to Field Methods	3
ERTH 363	Computational Tools for Earth Sciences	4
or CS 122	Introduction to Programming and Problem Solvin	ng
PHYS 201 & PHYS 202	General Physics and General Physics	8
or PHYS 251 & PHYS 252	Foundations of Physics I and Foundations of Physics I	
CH 221-222	General Chemistry	8
or CH 224H & CH 225H	Advanced General Chemistry I and Advanced General Chemistry II	
MATH 251-252	Calculus I-II	8

Total Credits		104
See Electives tab	le for choices	44
Electives		
or MATH 425	Statistical Methods I	
or MATH 343	Statistical Models and Methods	
or MATH 253	Calculus III	
ERTH 418	Earth and Environmental Data Analysis	4
or MATH 246 & MATH 247	Calculus for the Biological Sciences I and Calculus for the Biological Sciences II	

The 200-level sequence is recommended for majors; however, the 100-level sequence may be substituted if the courses are passed with grades of mid-B or better.

Electives

Code	Title	Credits
Group A		24
ERTH 310	Earth Resources and the Environment	4
ERTH 334	Sedimentology and Stratigraphy	4
ERTH 353	Geologic Hazards	4
ERTH 410	Experimental Course: [Topic] (Physical Oceanography)	1-5
ERTH 410	Experimental Course: [Topic] (Soil and Environmental Chemistry)	1-5
ERTH 438	Geobiology	4
ERTH 441	Hillslope Geomorphology	4
ERTH 451	Hydrogeology	4
ERTH 455	Mechanical Earth	4
ERTH 462	Environmental Geomechanics	4
ENVS 477	Soil Science	4
Group B		20
Group A elective	courses beyond 24 credits	
Earth Sciences		
ERTH 301 to ERT	ΓH 309 (up to 4 credits)	4
ERTH 350	Structural Geology	3
ERTH 351	Structural Geology Problems	1
ERTH 352	Structural Geology Laboratory and Field	1
ERTH 401	Research: [Topic]	1-21
ERTH 403	Thesis	1-6
ERTH 406	Field Studies: [Topic]	1-6
ERTH 407	Seminar: [Topic]	1-5
ERTH 410 and al	pove if not taken as a Group A elective	4
Biology		
BI 212	General Biology II: Organisms	5
BI 213	General Biology III: Ecology and Evolution	5
BI 214	General Biology IV: Biochemistry and Genetics	5
Chemistry		
CH 223	General Chemistry III	4
CH 227	General Chemistry Laboratory	2
CH 228	General Chemistry Laboratory	2
CH 229	General Chemistry Laboratory	2
CH 237	Advanced General Chemistry Laboratory	2

Earth Sciences (BA/BS)

CH 238	Advanced General Chemistry Laboratory	2
CH 239	Advanced General Chemistry Laboratory	2
CH 331	Organic Chemistry I	4
Any Chemistry co	ourse from 331 to 499	
Computer Science	ce	
CS 210	Computer Science I	4
CS 211	Computer Science II	4
CS 212	Computer Science III	4
Environmental So	cience	
ENVS 350	Ecological Footprint of Energy Generation	4
ENVS 465	Wetland Ecology and Management	4
Geography		
GEOG 321	Climatology	4
GEOG 322	Geomorphology	4
GEOG 323	Biogeography	4
GEOG 360	Watershed Science and Policy	4
GEOG 361	Global Environmental Change	4
GEOG 421		4
GEOG 425	Hydrology and Water Resources	4
GEOG 427	Fluvial Geomorphology	4
GEOG 430	Long-Term Environmental Change	4
GEOG 433	Fire and Natural Disturbances	4
GEOG 481	GIScience I	4
GEOG 482	GIScience II	4
GEOG 485	Remote Sensing I	4
GEOG 486	Remote Sensing II	4
GEOG 490	GIScience: [Topic]	4
GEOG 491	Advanced Geographic Information Systems	4
GEOG 494	Spatial Analysis	4
GEOG 495	Geographic Data Analysis	4
Mathematics		
MATH 256	Introduction to Differential Equations	4
MATH 282	Several-Variable Calculus II	4
MATH 341	Elementary Linear Algebra	4
MATH 342	Elementary Linear Algebra	4
MATH 411	Functions of a Complex Variable I	4
MATH 412	Functions of a Complex Variable II	4
MATH 422	Partial Differential Equations: Fourier	4
	Analysis II	

Earth Sciences - Paleontology Track

Code	Title	Credits
ERTH 101 & ERTH 102 & ERTH 103	Exploring Planet Earth and Exploring Earth's Environment and Exploring Earth History ¹	12
or ERTH 201 & ERTH 202 & ERTH 203	Dynamic Planet Earth and Earth's Surface and Environment and History of Life	
erth 311 or erth 331 or erth 332	Earth Materials Mineralogy Introduction to Petrology	5
ERTH 315	Earth Physics	4

To	otal Credits		107
Se	ee Electives tab	le for choices	16
EI	ectives		
	ERTH 435	Paleopedology	
	ERTH 434	Vertebrate Paleontology	
	ERTH 433	Paleobotany	
Se	elect two of the	following:	8
	ERTH 406	Field Studies: [Topic]	
Fi	eld Studies:		12
&	RTH 350 ERTH 351 ERTH 352	Structural Geology and Structural Geology Problems and Structural Geology Laboratory and Field	5
EF	RTH 334	Sedimentology and Stratigraphy	4
A	dditional Requ	irements	
	or PHYS 251	Foundations of Physics I	
Pł	HYS 201	General Physics	4
	or MATH 251– 252	· ·	
M	ATH 246–247	Calculus for the Biological Sciences I-II	8
-	or CH 224H & CH 225H	Advanced General Chemistry I and Advanced General Chemistry II	
CI	H 221–222	General Chemistry	8
וט	or BI 213	General Biology III: Ecology and Evolution	J
	212	General Biology II: Organisms	5
RI	or MATH 425	Statistical Methods I General Biology I: Cells	5
	or MATH 253 or MATH 343	Calculus III Statistical Models and Methods	
E	RTH 418	Earth and Environmental Data Analysis	4
	or CS 122	Introduction to Programming and Problem Solving	
EF	RTH 363	Computational Tools for Earth Sciences	4
EF	RTH 318	Introduction to Field Methods	3

The 200-level sequence is recommended for majors; however, the 100-level sequence may be substituted if the courses are passed with grades of mid-B or better.

Electives

Code Anthropology	Title	Credits
ANTH 361	Human Evolution	4
ANTH 366	Human Osteology Laboratory	4
ANTH 462	Primate Evolution	4
ANTH 467	Paleoecology and Human Evolution	4
ANTH 471	Zooarchaeology: [Topic]	4
ANTH 479	Taphonomy: Bones, Bugs, and Burials	4
Biology		
Courses number	ed 306 or higher	
Chemistry		
CH 227-229	General Chemistry Laboratory	6
or CH 237– 239	Advanced General Chemistry Laboratory	

CH 223	General Chemistry III	4
CH 331	Organic Chemistry I	4
CH 335	Organic Chemistry II	4
CH 336	Organic Chemistry III	4
CH 411-413	Physical Chemistry	12
CH 431-433	Inorganic Chemistry	12
CH 445	Statistical Mechanics	4
Computer Scien	ce	
CS 210-212	Computer Science I-III	12
CS 315	Intermediate Algorithms	4
Geography		
GEOG 321	Climatology	4
GEOG 322	Geomorphology	4
GEOG 323	Biogeography	4
GEOG 360	Watershed Science and Policy	4
GEOG 361	Global Environmental Change	4
GEOG 421		4
GEOG 425	Hydrology and Water Resources	4
GEOG 427	Fluvial Geomorphology	4
GEOG 430	Long-Term Environmental Change	4
GEOG 481–482	GIScience I-II	8
GEOG 495	Geographic Data Analysis	4
Earth Sciences		
One from ERTH:	304 - ERTH 310	4
ERTH 315	Earth Physics	4
ERTH 316	Introduction to Hydrogeology	4
ERTH 353	Geologic Hazards	4
ERTH 401	Research: [Topic]	1-21
ERTH 403	Thesis	1-6
ERTH 407	Seminar: [Topic]	1-5
ERTH 410	Experimental Course: [Topic]	1-5
Courses higher th	nan 410	
Mathematics		
MATH 256	Introduction to Differential Equations	4
MATH 281–282	Several-Variable Calculus I-II	8
MATH 341-342	Elementary Linear Algebra	8
MATH 411-412	Functions of a Complex Variable I-II	8
MATH 425-426	Statistical Methods I-II	8
Physics		
PHYS 202	General Physics	4
PHYS 203	General Physics	4
PHYS 204	Introductory Physics Laboratory	2
PHYS 205	Introductory Physics Laboratory	2
PHYS 206	Introductory Physics Laboratory	2
PHYS 253	Foundations of Physics I	4
PHYS 290	Foundations of Physics Laboratory	1
PHYS 351-353	Foundations of Physics II	12
PHYS 411-413	Mechanics, Electricity, and Magnetism	12

Undergraduate Research

As many as 4 credits of research can be counted toward electives in any of the tracks. To receive such credit, students must

- submit a short letter, approved by the faculty research advisor and addressed to the head undergraduate advisor in earth sciences, stating the nature of the research and asserting that there is faculty supervision
- submit a final written report to the faculty advisor describing the results of the research

Students may earn credit in this category by registering for any of the following:

Code	Title	Credits
ERTH 401	Research: [Topic]	1-21
ERTH 406	Field Studies: [Topic]	1-6
ERTH 408	Laboratory Projects: [Topic]	1-6

Students who complete an honors thesis may not apply this option toward elective credits.

Grade Options and Standards

Undergraduate majors must take for letter grades (the pass/no pass option is not acceptable) all the courses required in their degree program. Required courses must be completed with grades of C- or better. Exceptions for honors students are noted under Honors in Earth Sciences.

Honors in Earth Sciences

Application for graduation with honors in earth sciences must be made no later than spring term of the student's junior year. To be eligible for graduation with honors, a student must

- maintain a grade point average (GPA) of 3.50 or better in geological sciences courses or a 3.00 or better in all science courses
- submit and orally present an acceptable honors thesis written under the supervision of a department faculty member and evaluated by a committee consisting of three faculty members including the supervisor. The thesis should be presented no later than three weeks before final examinations during the term the student plans to graduate

Honors students may register for 3 credits of Research: [Topic] (ERTH 401) the term before they intend to graduate, and 3 credits of Thesis (ERTH 403) the term of graduation. These credits may be applied toward electives.

Four-Year Degree Plan

The degree plan shown is only a sample of how students may complete their degrees in four years. There are alternative ways. Students should consult their advisor to determine the best path for them.

- Geology Track
- Geophysics Track
- Environmental Geoscience Track
- Paleontology Track

	of Science in Earth Scien	ces:	Winter	0 18 :	
Geology	Track		PHYS 202 or	General Physics or Foundations of Physics I	4
Course	Title	Credits Milestones		•	
First Year			ERTH 315	Earth Physics	4
Fall			ERTH 332	Introduction to Petrology	5
	Precalculus I: Functions	4	General-educ	ation, multicultural, or other group-	4
WR 121Z	Composition I	4	satisfying cou	rse	
OH 221 or CH 224H	General Chemistry I or Advanced General Chemistry I	4	Spring	Credits	17
ERTH 101	Exploring Planet Earth	4	PHYS 203	General Physics	4
or ERTH 201	or Dynamic Planet Earth		or PHYS 253 or CH 223	•	
	Credits	16	or	or maraness seneral snermeny in	
Winter			CH 226H		
ERTH 102	Exploring Earth's Environment	4	ERTH 318	Introduction to Field Methods	3
or	or Earth's Surface and Environment		ERTH 316	Introduction to Hydrogeology	4
ERTH 202			General-educ	ation, multicultural, or other group-	4
MATH 112Z	Precalculus II: Trigonometry	4	satisfying cou	rse	
CH 222	General Chemistry II	4		Credits	15
or CH 225H	or Advanced General Chemistry II			Total Credits	49
General-educ satisfying cou	ation, multicultural, or other group- rse	4	Course Third Year	Title	Credits Milestone
	Credits	16	Fall		
Spring ERTH 103 or ERTH 203	Exploring Earth History or History of Life	4	erth 418 or MATH 253 or	Earth and Environmental Data Analysis or Calculus III or Statistical Models and Methods or Statistical Methods I	4
WR 122Z or WR 123	Composition II or College Composition III	4	MATH 343 or		
MATH 246 or MATH 251	Calculus for the Biological Sciences I or Calculus I	4	MATH 425 or PHYS 481		
	ation, multicultural, or other group-	4	General-educ satisfying cou	ation, multicultural, or other group- rses	8
, <u>3</u>	Credits	16	Geology elect	tive	4
	Total Credits	48	Winter	Credits	16
Course Second Year	Title	Credits Milestones	General-educ satisfying cou	ation, multicultural, or other group- rses	8
Fall			Geology elect		4
PHYS 201	General Physics	4		Credits	12
or PHYS 251	or Foundations of Physics I		Spring ERTH 334	Sedimentology and Stratigraphy	4
MATH 247	Calculus for the Biological Sciences II	4	ERTH 350	Structural Geology	3
or	or Calculus II				3
MATH 252			ERTH 351 ERTH 352	Structural Geology Problems Structural Geology Laboratory and	1
ERTH 331	Mineralogy	5	LK П 302	Structural Geology Laboratory and Field	ı
	ation, multicultural, or other group-	4	General-educ	ation, multicultural, or other group-	4
satisfying cou	ise		satisfying cou	***	

Summer			MATH 246	Calculus for the Biological Sciences I	4
ERTH 406	Field Studies: [Topic] (12 Credits)	1-6	or MATH 251	or Calculus I	
	Credits	1-6		ation, multicultural, or other group-	4
	Total Credits	42-47	satisfying cou	rse	
Course	Title	Credits Milestones		Credits	12
Fourth Year				Total Credits	44
Fall			Course	Title	Credits Milestor
	eation, multicultural, or other group-	8	Second Year		Credits Milestor
satisfying cou			Fall		
Geology or ot	ther science elective	4	PHYS 251	Foundations of Physics I	4
Winter	Credits	12	MATH 252	Calculus II	4
	eation, multicultural, or other group-	8	ERTH 318	Introduction to Field Methods	3
satisfying cou		0	General-educ	ation, multicultural, or other group-	4
	her science elective	4	satisfying cou	rse	
- 37 01	Credits	12		Credits	15
Spring			Winter		
	eation, multicultural, or other group-	8	PHYS 252	Foundations of Physics I	4
satisfying cou			MATH 253	Calculus III	4
Geology or ot	her science elective	4	ERTH 315	Earth Physics	4
	Credits	12		ation, multicultural, or other group-	4
			satisfying cou	rse	
	Total Credits r of Science in Earth Scien sics Track Title	36 Ces: Credits Milestones	Spring PHYS 253 ERTH 311	Credits Foundations of Physics I Earth Materials	16 4 5
Geophys	r of Science in Earth Scien sics Track	ces:	PHYS 253 ERTH 311 ERTH 316 General-educ	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group-	4
Geophys Course First Year Fall ERTH 101 or	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment	ces:	PHYS 253 ERTH 311 ERTH 316	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group-	4 5 4
Geophys Course First Year Fall ERTH 101 or ERTH 102	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment	Ces: Credits Milestones	PHYS 253 ERTH 311 ERTH 316 General-educ	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits	4 5 4 4 17 48
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions	Credits Milestones 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits	4 5 4 4
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I	Ces: Credits Milestones 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits	4 5 4 4 17 48
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions	Credits Milestones 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title	4 5 4 4 4 4 T7 48 Credits Mileston
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I	Ces: Credits Milestones 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations	4 5 4 4 17 48
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I	Ces: Credits Milestones 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II	4 5 4 4 4 4 4
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or	er of Science in Earth Scientsics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits	Ces: Credits Milestones 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group-	4 5 4 4 4 4 T7 48 Credits Mileston
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or	er of Science in Earth Scientsics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment	Ces: Credits Milestones 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group-	4 5 4 4 4 4 4
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 102 or ERTH 202	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment	Ces: Credits Milestones 4 4 4 4 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ satisfying cou	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group- rse	4 5 4 4 4 4 4
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment Precalculus II: Trigonometry	Credits Milestones 4 4 4 4 16	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ satisfying cou Winter	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group- rse Credits	4 4 4 4 4 12
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202 MATH 112Z	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment	Ces: Credits Milestones 4 4 4 4 4 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ satisfying cou Winter MATH 281	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group- rse Credits Several-Variable Calculus I	4 4 4 17 48 Credits Milestor 4 4 4 4 4
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202 MATH 112Z CH 222	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment Precalculus II: Trigonometry General Chemistry II	Ces: Credits Milestones 4 4 4 4 4 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ satisfying cou Winter MATH 281 PHYS 352	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group- rse Credits Several-Variable Calculus I Foundations of Physics II	4 4 17 48 Credits Milestor 4 4 4 4 4 4 4 4 4 4 4
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202 MATH 112Z CH 222 or CH 225H General-educ	exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment Precalculus II: Trigonometry General Chemistry II or Advanced General Chemistry II ation, multicultural, or other group-	Ces: Credits Milestones 4 4 4 4 4 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ satisfying cou Winter MATH 281 PHYS 352	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group- rse Credits Several-Variable Calculus I Foundations of Physics II Mechanical Earth	4 4 17 48 Credits Milestor 4 4 4 4 4 4 4 4 4 4
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202 MATH 112Z CH 222 or CH 225H	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment Precalculus II: Trigonometry General Chemistry II or Advanced General Chemistry II eation, multicultural, or other group-	Ces: Credits Milestones 4 4 4 4 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ satisfying cou Winter MATH 281 PHYS 352 ERTH 455	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group- rse Credits Several-Variable Calculus I Foundations of Physics II Mechanical Earth	4 4 17 48 Credits Milestor 4 4 4 4 4 4 4 4 4 4
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202 MATH 112Z CH 222 or CH 225H General-educ satisfying cour	exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment Precalculus II: Trigonometry General Chemistry II or Advanced General Chemistry II ation, multicultural, or other group-	Ces: Credits Milestones 4 4 4 4 4 4 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ satisfying cou Winter MATH 281 PHYS 352 ERTH 455 Spring	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group- rse Credits Several-Variable Calculus I Foundations of Physics II Mechanical Earth Credits	4 4 17 48 Credits Milestor 4 4 4 4 12
Geophys Course First Year Fall ERTH 101 or ERTH 102 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202 MATH 112Z CH 222 or CH 225H General-educ	r of Science in Earth Sciensics Track Title Exploring Planet Earth or Exploring Earth's Environment Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment Precalculus II: Trigonometry General Chemistry II or Advanced General Chemistry II eation, multicultural, or other group-	Ces: Credits Milestones 4 4 4 4 4 4 4 4	PHYS 253 ERTH 311 ERTH 316 General-educ satisfying cou Course Third Year Fall MATH 256 PHYS 351 General-educ satisfying cou Winter MATH 281 PHYS 352 ERTH 455 Spring MATH 282 PHYS 353	Foundations of Physics I Earth Materials Introduction to Hydrogeology ation, multicultural, or other group- rse Credits Total Credits Title Introduction to Differential Equations Foundations of Physics II ation, multicultural, or other group- rse Credits Several-Variable Calculus I Foundations of Physics II Mechanical Earth Credits Several-Variable Calculus II	4 5 4 4 17 48 Credits Milestor 4 4 4 4 12 4 12

Course	Title	Credits Milestones	General-educ	eation, multicultural, or other group-	4
Fourth Year			satisfying cou		·
Fall				Credits	16
General-educ satisfying cou	ation, multicultural, or other group- rses	4		Total Credits	48
Geology or ot	her science elective	8	Course	Title	Credits Milestones
	Credits	12	Second Year		
Winter			Fall		
General-educ	ation, multicultural, or other group-	8	PHYS 201	General Physics	4
satisfying cou	rses		or PHYS 251	or Foundations of Physics I	
Geology or ot	her science elective	4	MATH 247	Calculus for the Biological Sciences II	1
	Credits	12	or	or Calculus II	4
Spring			MATH 252		
	ation, multicultural, or other group-	8	ERTH 311	Earth Materials	5
satisfying cou			Geology elect	tive	4
Geology or ot	her science elective	4		Credits	17
	Credits	12	Winter		
	Total Credits	36	PHYS 202	General Physics	4
Bacholor	of Science in Earth Scien	coe:	or BI 211	or General Biology I: Cells	
	nental Geoscience Track	Jes.	ERTH 315	Earth Physics	4
Environi	nental Geoscience Track		ERTH 332	Introduction to Petrology	5
Course	Title	Credits Milestones		eation, multicultural, or other group-	4
First Year			satisfying cou		
Fall				Credits	17
ERTH 101	Exploring Planet Earth	4	Spring		
or ERTH 102	or Exploring Earth's Environment		PHYS 203	General Physics	4
	Precalculus I: Functions	4	or PHYS 253	or Foundations of Physics I or General Biology II: Organisms	
MATH 111Z WR 121Z	Composition I	4	or BI 212	or General Biology III: Ecology and	
CH 221	General Chemistry I	4	or BI 213	Evolution	
Or 221	or Advanced General Chemistry I	4	or CH 223	or General Chemistry III	
CH 224H	or Advanced Centeral Chemicky		or	or Advanced General Chemistry III	
	Credits	16	CH 226H		_
Winter			ERTH 311	Earth Materials	5
ERTH 102	Exploring Earth's Environment	4	ERTH 316	Introduction to Hydrogeology	4
or	or Earth's Surface and Environment		General-educ satisfying cou	eation, multicultural, or other group-	4
ERTH 202			Satisfying Cou	Credits	17
MATH 112Z	Precalculus II: Trigonometry	4			
CH 222	General Chemistry II	4		Total Credits	51
or	or Advanced General Chemistry II		Course	Title	Credits Milestones
CH 225H	atian and the state of the stat	4	Third Year		
satisfying cou	ation, multicultural, or other group-	4	Fall		
Satistying cou	Credits	16	ERTH 310	Earth Resources and the Environment	4
Spring	oreans	10	ERTH 318	Introduction to Field Methods	3
ERTH 103	Exploring Earth History	4	General-educ	eation, multicultural, or other group-	8
or	or History of Life	4	satisfying cou	irses	
ERTH 203	5			Credits	15
WR 122Z	Composition II	4	Winter		
or WR 123			ERTH 353	Geologic Hazards	4
MATH 246	Calculus for the Biological Sciences I	4	ERTH 451	Hydrogeology	4
or	or Calculus I		ERTH 418	Earth and Environmental Data Analysis	4
MATH 251				·	

satisfying cou	cation, multicultural, or other group- urse	4	satisfying cou	ation, multicultural, or other group- rse	4
	Credits	16		Credits	16
Spring	0.04.10		Spring	0.03.00	
ERTH 334	Sedimentology and Stratigraphy	4	ERTH 103	Exploring Earth History	4
GEOG 323	Biogeography	4	or	or History of Life	•
	cation, multicultural, or other group-	4	ERTH 203	•	
satisfying cou	•	·	WR 122Z	Composition II	4
Geology elec		4	or WR 123	or College Composition III	
	Credits	16	CH 223	General Chemistry III	4
	Total Credits	47	or CH 226H	or Advanced General Chemistry III	
			MΔTH 251	Calculus I	4
Course	Title	Credits Milestones	1007 (1111 201	Credits	16
Fourth Year					
Fall				Total Credits	48
	cation, multicultural, or other group-	8	Course	Title	Credits Milestone
satisfying cou		•	Second Year		
Geology or o	ther science elective	8	Fall		
	Credits	16	PHYS 201	General Physics	4
Winter			or	or Foundations of Physics I	
	cation, multicultural, or other group-	8	PHYS 251		
satisfying cou		0	BI 211	General Biology I: Cells	5
Secretly or o	ther science elective	8	MATH 252	Calculus II	4
Carina	Credits	16	ERTH 331	Mineralogy	5
Spring		40		Credits	18
General-educ satisfying cou	cation, multicultural, or other group-	12	Winter		
	ther science elective	4	PHYS 202	General Physics	4
ocology of o	Credits	16	ERTH 315	Earth Physics	4
	Oreans	10	ERTH 332	Introduction to Petrology	_
	Total Cradita	40	EK I II 332	introduction to retrology	5
	Total Credits	48	General-educ	ation, multicultural, or other group-	4
Bachelo	Total Credits r of Science in Earth Scien			ation, multicultural, or other group- rse	4
	r of Science in Earth Scien		General-educ	ation, multicultural, or other group-	
Paleonto	r of Science in Earth Scien blogy Track	ces:	General-educ satisfying cou	ation, multicultural, or other group- rse Credits	4
Paleonto	r of Science in Earth Scien		General-educ satisfying cou Spring PHYS 203	ation, multicultural, or other group- rse Credits General Physics	4
Paleonto Course First Year	r of Science in Earth Scien blogy Track	ces:	General-educ satisfying cou Spring PHYS 203 ERTH 318	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods	4 17 4 3
Paleonto Course First Year Fall	r of Science in Earth Scien blogy Track	Ces: Credits Milestones	Spring PHYS 203 ERTH 318 General-educ	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group-	4 17 4
Paleonto Course First Year Fall ERTH 101	r of Science in Earth Scien blogy Track Title Exploring Planet Earth	ces:	General-educ satisfying cou Spring PHYS 203 ERTH 318	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse	4 17 4 3 8
Paleonto Course First Year Fall ERTH 101 or	r of Science in Earth Science logy Track Title Exploring Planet Earth or Dynamic Planet Earth	Ces: Credits Milestones	Spring PHYS 203 ERTH 318 General-educ	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits	4 17 4 3 8
Paleonto Course First Year Fall ERTH 101	r of Science in Earth Science logy Track Title Exploring Planet Earth or Dynamic Planet Earth	Ces: Credits Milestones	Spring PHYS 203 ERTH 318 General-educ	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse	4 17 4 3 8
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions	Credits Milestones 4	Spring PHYS 203 ERTH 318 General-educ satisfying cou	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits	4 17 4 3 8 15 50
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I	Ces: Credits Milestones	Spring PHYS 203 ERTH 318 General-educ satisfying cou	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits	4 17 4 3 8 15 50
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions	Credits Milestones 4 4 4	General-educ satisfying cou Spring PHYS 203 ERTH 318 General-educ satisfying cou	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits	4 17 4 3 8
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z CH 221	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I General Chemistry I	Credits Milestones 4 4 4	General-educ satisfying cou Spring PHYS 203 ERTH 318 General-educ satisfying cou Course Third Year Fall	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits Title	4 17 4 3 8 15 50
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z CH 221 or	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I General Chemistry I	Credits Milestones 4 4 4	General-educ satisfying cou Spring PHYS 203 ERTH 318 General-educ satisfying cou Course Third Year Fall	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits Title rom the following:	4 17 4 3 8 15 50
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z CH 221 or CH 224H	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I	Credits Milestones 4 4 4 4	Spring PHYS 203 ERTH 318 General-educ satisfying cou Course Third Year Fall Choose one file ERTH 433	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits Title rom the following: Paleobotany	4 17 4 3 8 15 50 Credits Milestone
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z CH 221 or CH 224H Winter	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment	Credits Milestones 4 4 4 4	General-educ satisfying cou Spring PHYS 203 ERTH 318 General-educ satisfying cou Course Third Year Fall Choose one fi ERTH 433 ERTH 434	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits Title rom the following: Paleobotany Vertebrate Paleontology	4 17 4 3 8 50 Credits Milestone 4 4
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment	Ces: Credits Milestones 4 4 4 4 16	General-educ satisfying cou Spring PHYS 203 ERTH 318 General-educ satisfying cou Course Third Year Fall Choose one fi ERTH 433 ERTH 434 ERTH 435	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits Title rom the following: Paleobotany Vertebrate Paleontology Paleopedology	4 17 4 3 8 15 50 Credits Milestone
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment	Credits Milestones 4 4 4 4 4 4 4 4	General-educ satisfying cou Spring PHYS 203 ERTH 318 General-educ satisfying cou Course Third Year Fall Choose one fi ERTH 433 ERTH 434 ERTH 435	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits Title rom the following: Paleobotany Vertebrate Paleontology Paleopedology ation, multicultural, or other group-	4 17 4 3 8 15 50 Credits Milestone
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202 MATH 112Z	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment	Ces: Credits Milestones 4 4 4 4 16	Spring PHYS 203 ERTH 318 General-educ satisfying cou Course Third Year Fall Choose one fi ERTH 433 ERTH 434 ERTH 435 General-educ satisfying cou	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits Title rom the following: Paleobotany Vertebrate Paleontology Paleopedology ation, multicultural, or other group- rses	4 17 4 3 8 15 50 Credits Milestone
Paleonto Course First Year Fall ERTH 101 or ERTH 201 MATH 111Z WR 121Z CH 221 or CH 224H Winter ERTH 102 or ERTH 202	r of Science in Earth Science Diogy Track Title Exploring Planet Earth or Dynamic Planet Earth Precalculus I: Functions Composition I General Chemistry I or Advanced General Chemistry I Credits Exploring Earth's Environment or Earth's Surface and Environment	Credits Milestones 4 4 4 4 4 4 4 4	Spring PHYS 203 ERTH 318 General-educ satisfying cou Course Third Year Fall Choose one fi ERTH 433 ERTH 434 ERTH 435 General-educ satisfying cou Geology or ot	ation, multicultural, or other group- rse Credits General Physics Introduction to Field Methods ation, multicultural, or other group- rse Credits Total Credits Title rom the following: Paleobotany Vertebrate Paleontology Paleopedology ation, multicultural, or other group-	4 17 4 3 8 50 Credits Milestone 4 4 4 4 4 4 4

these course	sor or department office for scheduling of s.	
	Credits	24
Winter		
Choose one	from the following:	4
ERTH 433	Paleobotany	4
ERTH 434	Vertebrate Paleontology	4
ERTH 435	Paleopedology	4
General-educ	cation, multicultural, or other group-	4
Geology or o	ther science course	4
	es are typically offered in alternate years, t is necessary in the third or fourth year availability.	
Contact advis these course	sor or department office for scheduling of s.	
	Credits	24
Spring		
ERTH 334	Sedimentology and Stratigraphy	4
ERTH 350	Structural Geology	3
ERTH 351	Structural Geology Problems	1
ERTH 352	Structural Geology Laboratory and Field	1
General-educ	cation, multicultural, or other group- urse	4
	Credits	13
Summer		
-a		
ERTH 406	Field Studies: [Topic] (12 credits)	1-6
	Field Studies: [Topic] (12 credits) Credits	1-6 1-6
	Credits	1-6
ERTH 406	Credits Total Credits	1-6 62-67
Course	Credits Total Credits	1-6 62-67
Course Fourth Year	Credits Total Credits Title cation, multicultural, or other group-	1-6 62-67
Course Fourth Year Fall General-educ satisfying cou	Credits Total Credits Title cation, multicultural, or other group-	1-6 62-67 Credits Milestone
Course Fourth Year Fall General-educ satisfying cou	Credits Total Credits Title cation, multicultural, or other group-	1-6 62-67 Credits Milestone
Course Fourth Year Fall General-educ satisfying cou	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective	1-6 62-67 Credits Milestone 8
Course Fourth Year Fall General-educ satisfying coo Geology or o	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other group-	1-6 62-67 Credits Milestone 8
Course Fourth Year Fall General-educ satisfying coo Geology or o Winter General-educ satisfying cool	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other group-	1-6 62-67 Credits Milestone 8 8
Course Fourth Year Fall General-educ satisfying coo Geology or o Winter General-educ satisfying cool	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses	1-6 62-67 Credits Milestone 8 8 16
Course Fourth Year Fall General-educ satisfying coo Geology or o Winter General-educ satisfying coo Geology or o	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective	1-6 62-67 Credits Milestone 8 8 16
Course Fourth Year Fall General-educ satisfying coo Geology or o Winter General-educ satisfying coo Geology or o Spring	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other group-	1-6 62-67 Credits Milestone 8 8 16
Course Fourth Year Fall General-educ satisfying cor Geology or o Winter General-educ satisfying cor Geology or o Spring General-educ satisfying cor	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses	1-6 62-67 Credits Milestone 8 8 16
Course Fourth Year Fall General-educ satisfying cor Geology or o Winter General-educ satisfying cor Geology or o Spring General-educ satisfying cor	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other group-	1-6 62-67 Credits Milestone 8 16 8 16
Course Fourth Year Fall General-educ satisfying coo Geology or o	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits	1-6 62-67 Credits Milesto 8 8
Course Fourth Year Fall General-educ satisfying cor Geology or o Winter General-educ satisfying cor Geology or o Spring General-educ satisfying cor	Credits Total Credits Title cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective Credits cation, multicultural, or other groupurses ther science elective credits cation, multicultural, or other groupurses ther science elective ther science elective	1-6 62-67 Credits Milestone 8 16 16 12