

Paleontology Option

The paleontology option focuses on understanding fossils within their geologic context, while Montana's geology provides the opportunity for hands-on fieldwork. The paleontology option in the Department of Earth Sciences is designed for those students who have a strong interest in either invertebrate or vertebrate fossils (evolution, biology of ancient organisms, the environment in which the organism lived, and the changes the fossil has undergone since death). Students who study paleontology find employment with colleges and universities (e.g., teaching paleontology, earth sciences, comparative anatomy), natural history museums (e.g. fossil preparation, collection, curation, exhibit design, education), as scientific illustrators, writers, paleontology consultants for energy resource companies, and resource specialists for local, state, and federal land-management agencies or parks. Because students who study this option are trained in core geology courses, employment may be found in areas outside paleontology that require geologic expertise. Graduate training beyond the bachelor's degree is recommended for those seeking careers in the paleontology (normally a master's degree) or in teaching and/or research (typically a doctorate). This option combines training in geology and paleontology. The paleontology option builds on courses that form the core of the traditional geology option, while providing strong background in paleontology through four required courses (in addition to the paleontology field course) and three elective courses. All of the paleontology courses offered through the department provide upper division credits. These courses prepare the student for a variety of jobs and/or graduate school. Internships and summer field research experience are available to some students.

Freshman Year	Credits
CHMY 141 - College Chemistry I & CHMY 142 - College Chemistry I Lab	4
CHMY 143 - College Chemistry II & CHMY 144 - College Chemistry II Lab	4
ERTH 101IN - Earth System Sciences	4
GEO 211 - Earth History and Evolution	3
M 171Q - Calculus I	4
M 172 - Calculus II	4
University Core and Electives	4
Year Total:	27
Sophomore Year	Credits
BIOB 170IN - Principles of Biological Diversity	4
GPHY 284 - Intro to GIS Science & Cartog	3
PHSX 205 - College Physics I	4
PHSX 207 - College Physics II	4
University Core and Electives	9
GEO 309 - Sedimentation and Stratigraphy	4
GEO 419 - Field Paleontology (Summer between SO & JR Year)	2
GEO 302 - Mineralogy and Optical Mineral	4
Year Total:	34
Junior Year	Credits
GEO 315 - Structural Geology	4
STAT 332 - Statistics for Scientists and Engineers	3
GEO 428 - Field Methods	3
GPHY 384 - Adv GIS and Spatial Analysis	3
University Core and Electives	8
ERTH 303 - Weather and Climate	3
Year Total:	24

Senior Year	Credits
GEO 429R - Field Geology (Summer between JR & SR Year)**	3
GEO 443 - Principles of Sedimentary Petrology	3
University Core and Electives	21
Year Total:	27
Total Program Credits:	112

Required Upper Division Paleontology Course Electives:

GEO 310	Invertebrate Paleontology	3
GEO 330	Paleontology Lab Techniques	2
GEO 411	Vertebrate Paleontology	3
GEO 417	Taphonomy: Fossil Preservation	3
GEO 419	Field Paleontology ***	2

** GEO 429R Should be taken SUMMER of either Junior or Senior year.

*** Taken during summer of Sophomore or Junior year

Required Elective Course Options:

Take TWO of the following required electives:		6
BIOO 310	Comparative Vertebrate Anatomy	
ERTH 307	Principles of Geomorphology	
GEO 305	Igneous & Metamorphic Petrology	
ERTH 484	Climates of the Past, Present and Future	
GEO 312	Dinosaur Paleontology	
MOR 301	Museum Practices	
GEO 413	Macroevolution/Fossil Record	
GEO 433	Tectonics	
GEO 439	Geophysics	
GEO 471	Geochronology and Thermochronology	
GEO 490R	Undergraduate Research	
GEO 491	Special Topics	
GEO 492	Independent Study	
GEO 498	Internship	
GPHY 411	Biogeography	
GEO 445	Glacial Geology	
GEO 440	Volcanology	
GPHY 426	Remote Sensing	
GPHY 484R	Applied GIS & Spatial Analysis	

Note:

Only GEO 491 courses that cover a specific paleontology topic are applicable.

A C- minimum is required in all curriculum courses to graduate by Regents' policy. This includes electives in the curriculum.

A minimum of 120 credits is required for graduation; 42 of these credits must be in courses numbered 300 or above.