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 Email electronic copy (with scanned signatures) to [jbharvie@alaska.edu](mailto:jbharvie@alaska.edu)

**REQUEST FOR A NEW MINOR**

**SUBMITTED BY:**

Department	<b>Geology and Geophysics</b>	College/School	<b>CNSM</b>
Prepared by	<b>Patrick Druckenmiller</b>	Phone	<b>474-6954</b>
Email Contact	<b>psdruckenmiller@alaska.edu</b>	Faculty Contact	<b>Patrick Druckenmiller</b>

See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

**PROGRAM IDENTIFICATION:**

<b>TITLE OF MINOR:</b>	<b>Paleontology</b>	
	<b>*Number of credits required for completion (minimum is 15):</b>	<b>16-20</b>
<p>**Unless otherwise specified by the appropriate academic unit, a course may be used more than once toward fulfilling degree, certificate, major and minor requirements. Credit hours for these courses count only once toward total credits required for the degree or certificate. Certifying that [the student has] met all major and minor requirements is the responsibility of [the student's] department faculty, who notify the Registrar's Office." From the General University Requirements section of "How to Earn a Bachelor's Degree" in the UAF Catalog.</p>		
<b>Do all the required courses currently exist?</b>		<b>No</b>
<b>If not, list the corresponding New Course paperwork associated with this request:</b>		

Two new courses, GEOS F3170 (Paleontological Research and Laboratory Methods) and GEOS F485 (Mass Extinctions, Neocatastrophism and the History of Life) are being proposed as part of the new Paleontology Concentration in the Department of Geology and Geophysics. New course forms are being processed in conjunction with this request.

**A. DESCRIPTION OF THE PROPOSED MINOR. Include reasons justifying its creation; objectives of the minor and relationship of the required courses to those objectives.**

Paleontology is an interdisciplinary field; graduate paleontology programs may be housed within geology or biology departments. We regularly receive inquiries from students of biology and anthropology who are interested in taking paleontology courses, and the recent addition of a vertebrate paleontologist to our faculty has added new breadth and expertise to our paleontology curriculum. The current Geology minor provides a flexible option for students, but does not provide a clear path for students interested in fossil organisms. The proposed Paleontology minor is designed to provide a customized emphasis for interested BA students, Anthropology majors, or Biological Sciences majors who wish to add breadth to focus on a topic of lifelong interest, add breadth to their degree program, or pursue graduate studies in paleontology, respectively. The foundation courses will provide students with a solid grounding in geological concepts and practices. The electives allow students to strengthen their understanding of sedimentary environments and biostratigraphy (GEOS 322), investigate the morphology and evolution of a particular group (invertebrates GEOS 315W; vertebrates GEOS 486, or plants GEOS 453), master fossil preparation and curation skills (GEOS 317O) or explore the classic and current paleontological literature (GEOS 485).

**RECEIVED**

Governance  
10/7/11 KQ

**B. PROPOSED MINOR REQUIREMENTS AS THEY WILL APPEAR IN THE CATALOG:**

**SEP 26 2011**

See samples provided on page 3 of this form.

<b>Paleontology</b>	<b>Dean's Office</b> College of Natural Science & Mathematics
<p>1. Complete the following foundation courses:</p> <p>    GEOS F101X--The Dynamic Earth.....4 credits</p> <p>    GEOS F112X--The History of Earth and Life.....4 credits</p> <p>2. Complete three of the following Paleontology electives:</p>	

GEOS F315W--Paleobiology and Paleontology.....	4 credits
GEOS F322--Stratigraphy and Sedimentation.....	4 credits
GEOS F317O--Paleontological Research and Laboratory Methods.....	2 credits
GEOS 453--Palynology and Paleopalynology.....	4 credits
GEOS F486--Vertebrate Paleontology.....	3 credits
GEOS F485--Mass Extinctions, Neocatastrophism and the History of Life.....	3 credits
3. Minimum credits required.....	16-20 credits

**C. ESTIMATED IMPACT**

<i>WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.</i>
<p>Most of the courses in the Paleontology minor are already part of faculty workloads. GEOS 317O and GEOS 485 are new courses that are part of the proposed Paleontology Option, a new addition to the BS degree in Geoscience (see associated new course and program change paperwork). One of these courses (GEOS 317O) is being developed to fill the workload of a relatively new faculty member. The other (GEOS 485) will be co-taught to prevent (Whalen) or minimize (Fowell) teaching overloads.</p> <p>Whereas we hope that the new minor will increase enrollment in, and add diversity to, current and proposed courses in paleontology, we expect that most of the students in these classes will be Geoscience majors. Thus the main purpose of adding the minor is not to bolster enrollments, which are already healthy, but to provide interested students with a well-defined concentration in paleontology. We do not anticipate attracting more than a few BA students and a few science majors annually, and therefore we do not foresee a need for larger classrooms purely as a result of the minor. One of the new courses (GEOS 317O) will be offered in the UA Museum classroom, so only GEOS 485 will place additional demands on space and scheduling. On the one hand, this is a rigorous capstone course that requires students to read and analyze current books and journal articles. On the other hand, it is centered around a very popular theme, offered alternate years, and may draw students pursuing other Geoscience degree options. Therefore it is difficult to project enrollments for GEOS 485, but we do not expect to need a classroom that seats more than 20 students.</p> <p>Some costs will be associated with GEOS 317O (Paleontological Research and Laboratory Methods). We have proposed an associated course fee to cover these costs (see new course proposal for GEOS 317O).</p>

**D. IMPACTS ON PROGRAMS/DEPTS:**

<i>What programs/departments will be affected by this proposed action? Include information on the Programs/Departments contacted (e.g., email, memo)</i>
<p>We do not foresee the addition of a minor in Paleontology as having a significant impact on any other department, beyond providing an additional option to BA students and providing a focused option for BS students seeking to add breadth to their major program. Because paleontology lies at the intersection of geology and biology, many graduate programs in paleontology are housed within biology departments. Thus, the minor is not intended to recruit students interested in biology, but to provide biology majors with a background that will facilitate acceptance to and success in graduate studies of paleontology.</p>

**F. PERSONNEL DIRECTLY INVOLVED WITH THE MINOR:**

<i>List faculty currently teaching the required and elective (if any) courses, with a brief statement of duties and qualifications.</i>
<p>Dr. Sarah Fowell – Associate Professor of Geology and Chair (a micropaleontologist), Department of Geology and Geophysics; GEOS F112X, GEOS F315W, GEOS F453, GEOS F485  Dr. Patrick Druckenmiller – Earth Science Curator and Assistant Professor of Geology (a vertebrate palontologist); GEOS F317O, GEOS F486.  Dr. Michael Whalen – Associate Professor of Geology (a carbonate geologist); GEOS F322, GEOS F485  Dr. Rainer Newberry – Professor of Geology (an economic geologist); GEOS 101  Dr. Paul McCarthy – Professor of Geology (a fluvial sedimentologist); GEOS 101  Dr. Elisabeth Nadin – Assistant Professor of Geology (a tectonic geologist); GEOS 101</p>

**G. RELATIONSHIP OF THE PROPOSED MINOR'S OBJECTIVES TO THE "PURPOSES OF THE UNIVERSITY".**

Include additional justifying information to support creation of the minor such as projected and present enrollments; need or public demand for the minor; support of other programs by the minor's creation, etc.

Paleontology is an exciting area of current research in Alaska and an area of growing expertise in the Dept. of Geology and Geophysics. UAF paleontologists Druckenmiller and Fowell receive regular inquiries from students who would like to study paleontology, conduct undergraduate research or volunteer at the UA Museum. Because of the interdisciplinary nature of the field, students often have difficulty figuring out which department offers paleontology courses. Many students search for a "paleontology department" and are confused not to find one. The proposed paleontology minor will help students to locate paleontology courses, expose students to results from ongoing research projects, connect faculty with interested undergraduate researchers and volunteers, and provide a conduit for disseminating new discoveries in Alaskan paleontology.

The proposed minor highlights the diversity of topics housed beneath the Geoscience umbrella and provides students with a clear path to a concentration in paleontology. Because the minor consists of courses required for all Geoscience students (GEOS 101 and GEOS 112) and elective courses that are central to the Geology (GEOS 322) and Paleontology Options (all other courses), the minor places no additional demands on faculty workloads. Unless the Paleontology minor attracts upwards of 5 students per year, we do not foresee a need for additional space. Therefore, while we expect a small increase in enrollments within the Geoscience degree program, the minor provides a service to students at little cost to the department or college.

In short, the proposed Paleontology minor will Educate, exposing students to current and classical research in the field of paleontology; Prepare students for graduate studies, biostratigraphy positions in the petroleum industry or jobs as museum technicians; Connect active researchers with an interested undergraduate population; Engage students from other BS and BA programs through active learning and student-driven projects; and Discover, offering research and field opportunities to talented undergraduates.

**APPROVALS:**

*Sarah Fowell* Date 9/25/11  
Signature, Chair, Program/Department of: Geology + Geophysics

*[Signature]* Date 10/5/11  
Signature, Chair, College/School Curriculum Council for: CNSM

*[Signature]* Date Oct 7, 2011  
Signature, Dean, College/School of: CNSM

**ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE**

\_\_\_\_\_  
Signature, Chair, UAF Faculty Senate Curriculum Review Committee Date \_\_\_\_\_

Final approval will be at the level of the Chancellor or Chancellor's Designee, following vote of approval by the Faculty Senate.