

A: Division: INSTRUCTIONAL

 DATE: 21 January 1998

 B: Department: SCIENCE & TECHNOLOGY

 New Course: X

Revision of Course Information form: _____

DATED: _____

 C: GEOL 320
 Subject & Course No.

 D: Paleontology: Life Through Time
 Descriptive Title

 E: 4
 Semester Credit

F: Calendar Description: This course investigates the nature and interpretation of the fossil record. Students will learn how fossils are used to indicate evolutionary changes, the structure of ancient populations, and the nature of ancient environments. A wide variety of invertebrate, vertebrate, and plant fossils will be examined in the lab to show how they are identified, named, and classified, and how the lifestyles of the original organisms are reconstructed. Field trips may be required.

Summary of Revisions:
 (Enter date & section)
 Ex: Section C,E,F, &R

G: Type of Instruction:	Hours Per Week/	Per Semester
Lecture	<u>2</u>	Hrs.
Laboratory	<u>2</u>	Hrs.
Seminar	<u>2</u>	Hrs.
Clinical Experience	_____	Hrs.
Field Experience	_____	Hrs.
Practicum	_____	Hrs.
Shop	_____	Hrs.
Studio	_____	Hrs.
Student Directed Learning	_____	Hrs.
Other	_____	Hrs.
TOTAL	<u>6</u>	HOURS

H: Course Prerequisites:
 Geol 120 or Geol 121, Biol 110 or permission of instructor.

I: Course Corequisites:
 none

J: Course for which this course is a pre-requisite
 none

K: Maximum Class Size:
 36; lab 18

M: Transfer Credit:
 Requested X
 Granted _____

Specify Course Equivalents or Unassigned Credit as Appropriate

U.B.C. GEOL 3
 S.F.U. EASC 203
 U. Vic. EOS 1.5
 OTHER:

L: College Credit Transfer X
 College Credit Non-Transfer _____

Michael Wilson
 Course Designer(s)

Deborah Wilson
 Dean

[Signature]
 Vice-President - Instruction

[Signature]
 Registrar

N: Textbooks and materials to be purchased by students
(Use Bibliographic Form):

Stearn, Colin W. and Robert L. Carroll (1989) *Paleontology: The Record of Life*. John Wiley & Sons, Inc., New York.

Complete Form with Entries Under the Following Headings:

- O. Course Objectives; P. Course Content; Q. Method of Instruction;
R. Course Evaluation

O. Course Objectives:

Upon successful completion of this course the student should be able to:

1. Use a variety of means to identify and classify a wide variety of fossils.
2. Describe and provide examples of taphonomic theory.
3. Describe the major changes in life through geologic time and the evidence used to support the interpretation(s) of the fossil record.
4. Show an understanding of how the principles of Biostratigraphy are used to reconstruct ancient environments.
5. Show an understanding of the mechanisms of evolution.
6. Show an understanding of how fossils can be used to reconstruct tectonic plate boundaries.
7. Describe the uses of trace fossils and be able to identify a variety of trace fossils.

P. Course content:

1. Defining fossils
 - a. Fossilization types
 - b. Taxonomy, classification and systematics
 - c. Taphonomic theory and examples
 - d. Individuals and populations
2. The fossil record
 - a. Precambrian organisms
 - b. The rise of animals with hard parts
 - c. Marine invertebrates of the Paleozoic
 - d. Land plants and their origins
 - e. Paleozoic vertebrates
 - f. Marine invertebrates of the Mesozoic and Cenozoic
 - g. Mesozoic vertebrates
 - h. Cenozoic vertebrates
3. What we learn from the record
 - a. Biostratigraphy
 - b. Reconstructing lifestyles: form and function
 - c. The mechanisms of evolution
 - d. The record of evolution

- e. Paleoenvironmental reconstruction
- f. Paleobiogeography
- g. Fossils and sedimentary rocks
- h. Trace fossils

Q. Method of instruction:

The course will involve 2 hours/week of direct lectures; 2 hours of lab in which students will directly examine fossil samples or work with specific interpretive problems; and 2 hours of seminar in which instructor and students will discuss key topics, view slide or film presentations, or work on individual projects. Field trips will be scheduled when appropriate. Readings will be assigned to supplement the lectures.

R. Course evaluation:

The evaluation for this course will consist of:

Mid-term exam	25%
Lab paper/project	20%
Lab exercises (5,biweekly)	25%
Final exam	30%
	100%