

UNIVERSITY OF CINCINNATI BULLETIN

ANNOUNCEMENT OF THE

Graduate School of Arts and Sciences



1947-1948

PUBLISHED BY THE UNIVERSITY OF CINCINNATI
VAN WORMER ADMINISTRATION BUILDING
CINCINNATI 21, OHIO

GEOLOGY AND GEOGRAPHY

Head of Department: Professor J. L. Rich, Room 29, Old Tech Building

Professors Case, Barbour, Coulter; Associate Professors von Schlichten, Rittenhouse; Assistant Professors Caster*, ———; Acting Assistant Professor Cross; Instructor Price

This Department offers work in geology leading to the degrees of Master of Arts, Master of Science, and Doctor of Philosophy, and work in geography leading to the degree of Master of Arts.

Not all students admitted to graduate courses are accepted as candidates for degrees. Personal acquaintance and preliminary examinations are required in order to determine their aptitude for self-directed effort. With an adequate basis of undergraduate study it may be possible to finish the work for a master's degree in one year, but the requirement cannot be stated in terms of time or credits. All graduate students will be required to participate in an annual three- or four-day field trip.

The thesis required for the master's degree may represent either original research or a compilation and analysis of the literature on the chosen subject, of such a nature as to demonstrate the student's ability to sum up existing knowledge and to organize and express it in an approved manner.

For Graduate and Advanced Undergraduate Students

†107. Mineralogy.—Tu., Th., 10:30-11:30; Tu., 1:30-4:30. Lectures and laboratory. Three credit hours each semester. 34 Old Tech.

Mr. von Schlichten

108. Invertebrate Paleontology.—Tu., Th., 11:30-12:30; F., 1:30-4:30; and one other laboratory to be arranged. Lectures, laboratory, and conferences. Four credit hours each semester. 38 Old Tech.

Mr. Cross

A systematic survey of the important groups of invertebrate fossils with special emphasis on their zoological character and importance as index fossils.

Prerequisites: Geology 1 or equivalent and a course in biology, zoology, or botany.

†109. Principles of Historical Geology and Paleontology.—Tu., Th., 8:30-9:30; S., 8:30-11:30; and one laboratory to be arranged. Four credit hours each semester. 38 Old Tech.

Mr. Cross

An introduction to paleontology and fundamental principles of the study of earth history with particular emphasis on the geologic history and principal fossil groups of North America.

Prerequisite: Geology 1 or equivalent.

*Absent on leave.

†Supplementary work is required of graduate students electing these courses.

111a. Principles of Geomorphology.—M., 1:30-3:30, and additional hours to be arranged. Three credit hours. 26 Old Tech. Mr. Barbour
The interpretation of landscapes, especially as governed by geologic conditions and climate. Reading of topographic maps and aerial photographs.

(Note: This course, followed by 118b, may be given as an alternative to Course 117 if the needs of the students in the Department so indicate.)

117. Physiography of North America.—M., 1:30-4:30, or at hours to be arranged. Three credit hours each semester. 26 Old Tech. Mr. Barbour
First semester: Eastern North America. Second semester: Western North America. May be entered in February with instructor's permission.

(See Note on Course 111a.)

118b. World Physiography.—M., 1:30-3:30, and additional hours to be arranged. Three credit hours. 26 Old Tech. Mr. Barbour
Study of selected regions in geomorphic terms.

(See Note on Course 111a.)

***121b, *122b, *123b. Geologic Demonstration Trips.**—Three credit hours. Mr. Rich
A two-weeks' field excursion, immediately after spring examinations and before summer school; generally in the Appalachian highland. Conferences once a week, during the following semester, and the preparation of a comprehensive report to be submitted at the end of the first semester. The three numbers designate different routes followed in successive years.

***148a. Common Minerals and Rocks.**—Tu., Th., 10:30-11:30; Th., 1:30-4:30. Three credit hours. 32 Old Tech. Mr. Rittenhouse
Common minerals and rocks and their mode of occurrence. Identification by means of hand lens.

157a. Sedimentation.—Tu., Th., 9:30-10:30; F., 8:30-11:30. Lectures and laboratory. Three credit hours. 34 Old Tech. Mr. Rittenhouse
Factors influencing the supply, transportation, and deposition of sediments.

170. Seminar.—Th., 4:30.
Expected of all advanced students in geology and geography.

***161a. Geography of South America.**—M., W., F., 11:30-12:30. Three credit hours. 30 Old Tech. Mr. Price
Land and peoples; displacement of native cultures by Europeans; economic development of the modern states.

***163b. Geography of Europe.**—M., W., F., 11:30-12:30. Three credit hours. 26 Old Tech. Mr. _____
The natural regions and political divisions are studied with regard to the social, political, and economic developments as related to geographic conditions.

*Supplementary work is required of graduate students electing these courses.

*164a. Geography of Asia.—M., W., F., 9:30-10:30. Three credit hours.
26 Old Tech. Mr. Coulter

A regional study of Asia with emphasis on the culture of the people and their ways of earning a living.

*164b. Geography of Australia, New Zealand, and the Pacific.—M., W., F., 9:30-10:30. Three credit hours. 26 Old Tech. Mr. Coulter
A continuation of Course 164a with similar emphasis. It deals also with the political geography of the Pacific.

*167. Geography of North America.—M., W., F., 2:30-3:30. Three credit hours each semester. 37 Old Tech. Mr. Case
The natural regions of North America; present economic development and future possibilities as related to climate, relief, and resources.

*169a. Meteorology.—Tu., Th., S., 10:30-11:30. Three credit hours. 26 Old Tech. Mr. Price
The basic physical laws pertaining to the atmosphere, and their application to observed weather phenomena.

172b. Climatology.—Tu., Th., S., 10:30-11:30. Three credit hours. 26 Old Tech. Mr. Price
The major climatic regions of the world. Description, explanation, and the distribution of each type.

Primarily for Graduate Students

212. Petrography.—M., W., 9:30-10:30; M., 1:30-4:30, and three additional hours of laboratory to be arranged. Four credit hours each semester. 32 Old Tech. Mr. von Schlichten
Principles of crystal optics. Rocks in thin sections; qualitative and quantitative classification.

213. Advanced Megascopic Paleontology.—Hours to be arranged. Three credit hours each semester. 38 Old Tech. Mr. Cross

227b. Groundwater.—M., W., 10:30-11:30; W., 1:30-4:30. Three credit hours. 34 Old Tech. Mr. Rittenhouse
Principles of groundwater movement; measurement of quantity and quality of supplies.
Prerequisite: Geology 157a, Physics 1, or equivalents.

249b. Advanced Crystallography.—Hours to be arranged. Three credit hours. 32 Old Tech. Mr. von Schlichten
Crystal morphology. Systematic derivation of crystal classes on basis of

*Supplementary work is required of graduate students electing these courses.

symmetry. Introduction to derivation of space groups. Crystal structure of important silicate minerals.

This course is given once in two years, alternating with Geology 251b, Petrology of Igneous Rocks.

256. Economic Geology.—M., W., 10:30-11:30; W., 1:30-4:30, and three additional hours of laboratory to be arranged. Four credit hours each semester. 32 Old Tech.

Mr. Rich

Two-weeks' field trip during spring recess. Mineral fuels, useful nonmetallics, and ore deposits.

This course is given once in two years, beginning in September of odd-numbered years and alternating with Geology 125a, Structural Geology, and Geology 226b, Metamorphism.

257b. Advanced Sedimentation.—Tu., 9:30-10:30, and two laboratory periods to be arranged. Three credit hours. 34 Old Tech. Mr. Rittenhouse
Advanced work on factors influencing the supply, transportation, and deposition of sediments.

Prerequisites: Geology 157a and 12 or their equivalents.

271. Individual Work in Geology.—Geology Staff
Credit depends on amount of work done. May be entered either semester.

273. Field Research in Geology.—
Summer work in the field under direction of the staff. One to six credit hours.

275. Individual Work in Geography.—Geography Staff
Credit depends on amount of work done. May be entered either semester.

Courses Omitted in 1947-1948

The following courses, offered in alternate years or at longer intervals, will not be given in 1947-1948: 110a, Ancient Life: Animals of the Past; 115, Stratigraphy; 125a, Structural Geology; 130b, Interpretation of Aerial Photographs; 152b, Glacial Geology; 162b, Geography of Africa; 165a, International Struggle for Raw Materials; 168b, Political Geography; 216, Advanced Physiography of the United States; 226b, Metamorphism; 251b, Petrology of Igneous Rocks; 167, Geography of North America.

Courses Offered in the Summer Session of 1947

s163b. Geography of Europe.—Mr. Price

s273. Field Research in Geology.—Geology Staff

s275. Individual Work in Geography.—Geography Staff

For further information, see the Summer Session Announcement.

UNIVERSITY OF CINCINNATI
BULLETIN

ANNOUNCEMENT OF THE

McMICKEN COLLEGE OF LIBERAL ARTS



1947-1948

PUBLISHED BY THE UNIVERSITY OF CINCINNATI
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27b, Literature of the Restoration; 28, New England Writers from Emerson to Frost; 34, English Comedy; 41, Modern Prose; 43, Twentieth-Century Fiction; 48, Bibliography; 52b, Oral Interpretation of Literature; 70, Milton and His Age; 80, Journalism; 99, American Romanticism; 220, Main Currents in Literary Criticism; 260, Foreign Backgrounds of English Literature.

FINE ARTS

Associate Professor Coops (Woman's Building); Lecturer Adams
(Art Museum)

1. (3, 3) **Introduction to Art.**—Tu. 3:30-5:00; S 9:30-11:00. The Saturday meeting will be held at the Art Museum; the Tuesday meeting, on the University campus. A study of the principles underlying the arts of sculpture and painting, and their historic implications, with especial reference to the collections of the art museums of Cincinnati; collateral reading. Mr. Adams

2. (3, 3) **Music Appreciation.**—M W 2:30-4:00. 101 Wilson. General approaches to music and study of musical form and expression; trends in musical art; selected musical literature. Miss Coops

For statements regarding credit for work in the Art Academy of Cincinnati, the Cincinnati Conservatory of Music, and the College of Music of Cincinnati, see page 30.

GEOLOGY AND GEOGRAPHY

Professors Rich (Head of Department, 29 Old Tech), Case (25 Old Tech), Barbour (508 Library), Coulter (8 Old Tech); Associate Professors von Schlichten (33 Old Tech), Rittenhouse (31 Old Tech); Assistant Professors Caster*, ————; Acting Assistant Professor Cross (5 Old Tech); Instructors Price (23 Old Tech), ————; Museum Curator

Fields of concentration, leading to the degree of B.A. or B.S., are offered in geology and in geography. The beginning course in geology (Geology 1) is planned as a broad cultural survey of the earth and its history—the processes which shape its surface and mold its landscapes; minerals and rocks; some of the important mineral resources; and the history of development of life as revealed by the fossil record. It is also the basic course preliminary to the advanced courses in the Department.

The beginning semester of geography (Geography 60R a, b) deals with the basic principles of location, topography, and climate which are necessary for all further studies in that field. On its completion, the student is permitted to enter any of the other courses in geography except Geography 75.

A student wishing to major in geology shall present Geology 1, including laboratory, or its equivalent. A student wishing to major in geography shall

*Absent on leave.

present Geography 60a or Rb or its equivalent. Suggested sequences of courses following Geology 1 are:

- (a) For those interested in mineralogy and petrography: 7, 48a, 12;
- (b) For those interested in historical geology and paleontology: 9, 8;
- (c) For those interested in geomorphology: 48a, 11a, 17, 30b.

Among the nongeological courses recommended to students who will concentrate in geology are the following (preferences depending in part on fields of concentration): Chemistry 1; Physics 1; Zoology 1, 5, and 7; Botany 1, 22, 23, 52, 21; Geography 60 or 501; mathematics through calculus; Astronomy 1, 2; German 1, 2; Economics 1; Philosophy 2.

Among the nongeographical courses recommended to students who will concentrate in geography are the following: Geology 1, 11a, 17, 18, 30b; History 1, 2a, 10; Economics 1; Political Science 39; Botany 21a, 21b, 22a, 22b, 23; Sociology 3, 6, 7, 19b, 21.

Five-Year Co-ordinated Program in Geology.—Students looking toward a professional career in geology are urged to follow a special co-ordinated program (described on page 29) especially designed to meet their needs, particularly if they intend to seek work involving applications of geology to the search for oil and gas, to mining, or to engineering. In this program, a student receives training in geology, the fundamentals of mathematics through calculus, chemistry through quantitative analysis, physics, mechanics, mechanical drawing, and surveying. Some of the work will be chosen from the "Degree" courses in engineering offered by the Evening College. All courses have been so scheduled as to provide a logical sequence of subjects and produce a uniformly distributed load. A certain latitude of choice is possible, but changes should be made only after consultation with the Head of the Department of Geology. On the satisfactory completion of four years' work, the student will receive the degree of *Bachelor of Science in Geology*, and after an additional year of successful study in the Graduate School he will receive the degree of Master of Science. (See also page 29.) Students contemplating entering this course should consult in advance the Head of the Department of Geology and Geography who serves as their adviser throughout the course.

For interdepartmental programs including work in geography, see page 26.

Geology

1. (5, 5) **Introduction to Geology.**—Lectures, M W F 8:30. 6 Old Tech. Laboratory, 24, 26 Old Tech.

Sec. I: M W 1:30-4:30.

Secs. II and III: T Th 1:30-4:30.

This is the beginning course in geology for all who are intending to major in the subject and for all students who plan to complete the liberal arts science requirement with one ten-credit course. It is prerequisite to all other geology courses except Courses 7 and 10. It is not required for any geography courses,

but is required of geography majors. With the permission of the instructor, students who do not offer geology in fulfillment of the science requirement may omit the laboratory. For such students, and for transfer students who may be taking only the laboratory, the lectures alone count 3 credits each semester, the laboratory alone 2 credits each semester.

Mr. Rich and assistants

3. (3, 3) **Elementary Geology.**—M W 8:30. 30 Old Tech; F 1:30-4:30. 26 Old Tech. An elementary course for general students not expecting to do further work in the subject; fulfills the liberal arts science requirement only if taken in combination with an elementary course in another science.

Mr. Barbour

7. (3, 3) **Mineralogy.**—T Th 10:30; T 1:30-4:30. 34 Old Tech. Prerequisite: High-school or elementary college chemistry. Mr. von Schlichten

8. (4, 4) **Invertebrate Paleontology.**—T Th 11:30; F 1:30-4:30 and one other laboratory to be arranged. 38 Old Tech. A systematic survey of the important groups of invertebrate fossils with special emphasis on their zoological character and importance as index fossils. Prerequisites: Geology 1 or equivalent and a course in biology, zoology, or botany.

Mr. Cross

9. (4, 4) **Principles of Historical Geology and Paleontology.**—T Th 8:30; S 8:30-11:30 and one laboratory to be arranged. 38 Old Tech. An introduction to the fundamental principles of the study of earth history and of paleontology with particular emphasis on the geologic history and principal fossil groups of North America. Prerequisite: Geology 1 or equivalent.

Mr. Cross

11a. (3) **Principles of Geomorphology.**—M 1:30-3:30 and additional hours to be arranged. 26 Old Tech. The interpretation of landscapes, especially as governed by geologic conditions and climate. Reading of topographic maps and aerial photographs. Prerequisite: Geology 1 or equivalent. Mr. Barbour

(Note: This course, followed by 18b, may be given as an alternative to 17 if the needs of the students in the Department so indicate.)

12. (4, 4) **Petrography.**—M W 9:30; M 1:30-4:30 and three additional hours of laboratory to be arranged. 32 Old Tech. Principles of crystal optics. Rocks in thin sections; qualitative and quantitative classification. Prerequisite: Geology 7 or equivalent. Mr. von Schlichten

13. (3, 3) **Advanced Megascopic Paleontology.**—Three hours a week to be arranged. 38 Old Tech. Prerequisite: Geology 8 or a course in zoology. By permission of the instructor. Mr. Cross

17. (3, 3) **Physiography of North America.**—M 1:30-4:30 or at hours to be arranged. 26 Old Tech. First semester: Eastern North America. Second semester: Western North America. May be entered in February with permission of the instructor. Prerequisite: Geology 1 or its equivalent. (See Note on 11a). Mr. Barbour

18b. (3) World Physiography.—M 1:30-3:30 and additional hours to be arranged. 26 Old Tech. Study of selected regions in geomorphic terms. Prerequisite: Geology 1 or its equivalent. (See Note on 11a.) Mr. Barbour

21b, 22b, 23b. (3) Geologic Demonstration Trips.—A two-week field excursion, immediately after spring examinations and before summer school, generally in the Appalachian highland. Conferences once a week during the following semester and the preparation of a comprehensive report to be submitted at the end of the first semester. Special work required for graduate credit. The three numbers designate different routes followed in successive years. Prerequisite: Geology 1 or equivalent. Mr. Rich

27b. (3) Ground Water.—M W 10:30; W 1:30-4:30. 34 Old Tech. Principles of ground water movement; measurement of quantity and quality of supplies. Primarily for graduate students. Open to advanced undergraduates only in special cases with the instructor's permission. Prerequisite: Geology 57a, Physics 1, or equivalents. Mr. Rittenhouse

48a. (3) Common Minerals and Rocks.—T Th 10:30; Th 1:30-4:30. 32 Old Tech. Common minerals and rocks and their mode of occurrence. Identification by means of hand lens. Primarily a cultural study for non-professional students. Prerequisite: Geology 1. Mr. Rittenhouse

49b. (3) Advanced Crystallography.—Hours to be arranged. 32 Old Tech. Crystal morphology. Systematic derivation of crystal classes on basis of symmetry. Introduction to derivation of space groups. Crystal structure of important silicate minerals. Prerequisite: Geology 7 or equivalent. This course is given once in two years, alternating with Geology 51b, Petrology of Igneous Rocks. Mr. von Schlichten

56. (4, 4) Economic Geology.—M W 10:30; W 1:30-4:30; and three additional hours of laboratory to be arranged. 32 Old Tech. Two-week field trip during spring recess. Mineral fuels, useful nonmetallics, and ore deposits. Prerequisite: Geology 12 or equivalent. This course is given once in two years, beginning in September of odd-numbered years and alternating with Geology 25a, Structural Geology, and Geology 26b, Metamorphism. Mr. Rich

57a. (3) Sedimentation.—Lectures and laboratory. T Th 9:30; F 8:30-11:30. 34 Old Tech. Factors influencing the supply, transportation, and deposition of sediments. Prerequisite: Geology 1 or equivalent. Mr. Rittenhouse

57b. (3) Advanced Sedimentation.—Tu 9:30 and two laboratory periods to be arranged. 34 Old Tech. Advanced work on factors influencing the supply, transportation, and deposition of sediments. Prerequisites: Geology 57a and 12 or their equivalents. Mr. Rittenhouse

50. (3, 3) Readings for Seniors.—Required of all seniors majoring in geology; not open to other students.

70. Seminar.—Th 4:30. Expected of all majors in geology and geography.

71. Individual Work in Geology.—Credit depends on amount of work done. May be entered either semester. Geology Staff

Omitted during 1947-1948: 2a, Geology of Mineral Resources; 5b, Topographic Mapping; 6, Geology of Cincinnati; 10a, Ancient Life: Animals of the Past; 15, Stratigraphy; 16, Advanced Physiography of the United States; 25a, Structural Geology; 26b, Metamorphism; 30b, Interpretation of Aerial Photographs; 51b, Petrology of Igneous Rocks; 52b, Glacial Geology.

Geography

The following year-courses may be entered in February with permission of the instructor: 67, 75.

60R a, b. (3) Fundamentals of Geography.—

60a: M W F 11:30. 6 Old Tech.

Mr. Coulter

60Rb: M W F 2:30. 6 Old Tech.

Mr. Price

A survey of topography, climate, and location as they affect human activities. This course is offered each semester. It is prerequisite for all other courses in geography except Course 69a.

60b. (3) World Geography.—M W F 11:30. 6 Old Tech. Introductory course in human geography with emphasis on the regions of the continents. Prerequisite: Geography 60a or Rb or equivalent. Mr. Coulter

61a. (3) Geography of South America.—M W F 11:30. 30 Old Tech. Land and peoples; displacement of native cultures by Europeans; economic development of the modern states. Prerequisites: Geography 60a or Rb or equivalent. Mr. Price

63b. (3) Geography of Europe.—M W F 11:30. 26 Old Tech. The natural regions and political divisions are studied with regard to the social, political, and economic developments as related to geographic conditions. Prerequisite: Geography 60a or Rb or equivalent. Mr. Case

64a. (3) Geography of Asia.—M W F 9:30. 26 Old Tech. A regional study of eastern Asia with emphasis on the culture of the people and their ways of earning a living. Prerequisite: Geography 60a or Rb or equivalent. Mr. Coulter

64b. (3) Geography of Australia, New Zealand, and the Pacific.—M W F 9:30. 26 Old Tech. A continuation of 64a with similar emphasis. It deals also with the political geography of the Pacific. Prerequisite: Geography 60a or Rb or equivalent. Mr. Coulter

66a. (3) Economic Geography and International Trade.—M W F 11:30. 26 Old Tech. The distribution of the important raw materials; industry; the principles of world trade. Prerequisite: Geography 60a or Rb or equivalent. Mr. Case