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UNIVERSITY OF CINCINNATI BULLETIN

Announcement

of



*Division of
Graduate Studies*

1969-1970

Published by the University of Cincinnati
Van Wormer Administration Building
Cincinnati, Ohio 45221
Telephone 513-475-8000

14-041-871. *Thesis Research.* Independent individual research in the preparation of the thesis for the M.A. degree. Offered ea. Qtr. Hours and credits to be arranged. Staff.

14-041-878. *Seminar: Growth of Geographic Thought.* Detailed analysis of contemporary methodological problems. 3 gr. cr. Aut. Qtr. W 4:00-6:30. Mr. Cooper.

14-041-971. *Dissertation Research.* Preparation of the Ph.D. dissertation. Offered ea. Qtr. Hours and credits to be arranged. Staff.

Courses Omitted in 1969-1970: 575, Geographics; 578, Political Geography; 778, Geographic Development; 781, Population Seminar; 788, Manufacturing; 791, Regional Concept.

Geology

Head: —————; Professors Caster (4A OT), Jenks (32 OT), Larsen (OT), Pryor (25 OT); Associate Professors Durrell (33 OT), Huff (36 OT), Koucky (35 OT), Sunderman (31 OT); Assistant Professors Powell (32 OT), Warren (9A OT); Curator Davis (OT).

The Department offers work leading to the degrees of Master of Science and Doctor of Philosophy.

A student admitted to graduate work in geology is expected to have satisfactorily passed one-year courses in physics and chemistry and an approved course in calculus or statistics. Biology is recommended as preparation for graduate work chiefly in paleontology. A summer field course in geology or its equivalent, such as a summer at a marine biological station for paleontology majors, is required before admission or early in the graduate program.

Interviews and early exploratory conferences are required to help determine the student's prior training and aptitude for advanced studies and independent research.

Laboratories for research in paleontology, mineralogy, petrology, geochemistry, and sedimentology afford modern facilities for study. The Geological Museum provides extensive research collections particularly with respect to Paleozoic biota.

A requirement for either graduate degree is the satisfactory completion of a thesis or dissertation describing the results of the student's research work. All candidates for the doctor's degree must demonstrate a reading knowledge of a foreign language.

By agreement between the Secretary of the Smithsonian Institution and the President of the University of Cincinnati, graduate students in paleontology may apply for summer internships at the United States National Museum, to work with specialists there on subjects of mutual interest. Such work is commonly related to the subject of the student's dissertation. Academic year fellowships at the Smithsonian are available to outstanding advanced students when the Language and Qualifying examinations at the University are satisfactorily completed. This affords the student opportunity to work under the joint supervision of University and Smithsonian paleontologists. Satisfactory research work under this program carries University graduate credit.

For Advanced Undergraduate and Graduate Students

15-040-037,038,039. *Geology Seminar.* Required of all graduate students majoring in geology. No credit. W 4:00-5:00. Staff.

15-040-521,522,523. *Investigation of fossils.* 3 gr. cr. ea. Qtr. or equivalent, or a full co

15-040-531,532,533. *Stratigraphic sedimentation.* Physical analysis, correlation, stratigraphy. Qtr. MW 11:00; M 1:00

15-040-572. *Physiography.* Mr. Durrell.

15-040-573. *Physiography.* Mr. Durrell.

15-040-574. *Glacial Geology.*

15-040-576. *Advanced Geology.* Summer of 1969. History of geology. 3 gr. cr. Aut. Qtr. Mr.

15-040-641,642. *Optical mineralogy.* for recognition of transparent minerals. cr. ea. Qtr. Aut., Win.

15-040-672. *Elements of structural geology.* folds, superposed folding, etc. Mr. Powell. Prereq.: C

15-040-673. *Advanced geology.* analysis to the interpretation of geological maps. 3 gr. cr. Spr. Qtr. MW

15-040-675. *Geology of Ohio.* Prereq.: Geol. 579 (or 675)

15-040-676. *Geology of Ohio.* Prereq.: Geol. 675 (or 676)

Primarily for Graduate Students

14-040-701,702,703. *Advanced geology.* A processes; dynamic relationships in continental, eolian, glacial, etc. 4 gr. cr. ea. Qtr. TTh

14-040-711. *Palynology.* with emphasis on spores. Th 2:00-5:00. Mr. Warren.

14-040-712. *Micropaleontology.* geologic occurrence of microfossils. 5:00. Mr. Warren. P

14-040-713. *Micropaleontology.* occurrence of foraminifera. Prereq.: Geol. 521-2-3

14-040-771. *Research in geology.*

14-040-772. *Master's thesis.*

14-040-775. *Field Studies.* during Spring vacation

Candidate

15-040-521,522,523. *Invertebrate Paleontology*. Paleobiology of common invertebrate fossils. 3 gr. cr. ea. Qtr. TTh 9:30; W 1:00-4:00. Mr. Warren. Prereq.: Geol. 321-2-3, or equivalent, or a full course in biology, zoology, or botany.

15-040-531,532,533. *Stratigraphy and Sedimentation*. Principles of stratigraphy and sedimentation. Physical and biological processes, environmental interpretation, facies analysis, correlation, stratigraphic analysis, basin analysis, and tectonics. 3 gr. cr. ea. Qtr. MW 11:00; M 1:00-4:00. Mr. Pryor. Prereq.: Geol. 301-2-3; 321-2-3.

15-040-572. *Physiography of Western United States*. 3 gr. cr. Aut. Qtr. MWF 1:00. Mr. Durrell.

15-040-573. *Physiography of Eastern United States*. 3 gr. cr. Win. Qtr. MWF 1:00. Mr. Durrell.

15-040-574. *Glacial Geology*. 3 gr. cr. Aut. Qtr. MW 10:00; F 2:00-5:00. Mr. Durrell.

15-040-576. *Advanced Geology Field Trip*. A two weeks' field excursion during the Summer of 1969. Historical and regional geology. Conferences and report in Aut. Qtr. 3 gr. cr. Aut. Qtr. Mr. Pryor. Prereq.: Permission of instructor.

15-040-641,642. *Optical Mineralogy*. Crystal optics, use of the polarizing microscope for recognition of transparent substances in immersion media and thin sections. 4 gr. cr. ea. Qtr. Aut., Win. Qtrs. W 12:00-4:00; F 1:00-5:00. Mr. Sunderman.

15-040-672. *Elements of Structural Analysis*. Stereographic projections, geometry of folds, superposed folding and petrofabrics. 3 gr. cr. Win. Qtr. MW 10:00; F 2:00-5:00. Mr. Powell. Prereq.: Geol. 579.

15-040-673. *Advanced Structural Geology*. Application of the principles of structural analysis to the interpretation of deformed sedimentary, metamorphic and igneous rocks. 3 gr. cr. Spr. Qtr. MW 10:00; F 2:00-5:00. Mr. Powell. Prereq.: Geol. 672.

15-040-675. *Geology of Ore Deposits I*. Aut. Qtr. TTh 8:00; M 1:00-4:00. Mr. Jenks. Prereq.: Geol. 579 (or equivalent).

15-040-676. *Geology of Ore Deposits II*. Win. Qtr. TTh 8:00; M 1:00-4:00. Mr. Jenks. Prereq.: Geol. 675 (or equivalent).

Primarily for Graduate Students

14-040-701,702,703. *Advanced Sedimentation*. Laws and principles of sedimentary processes; dynamic relations between sedimentary processes and the resulting sediments in continental, eolian, marginal marine, shallow marine and deep marine environments. 4 gr. cr. ea. Qtr. TTh 8:00; Tu 1:00-4:00. Mr. Pryor.

14-040-711. *Palynology*. An introduction to the study of organic-walled microfossils, with emphasis on spores, pollen, and dinoflagellates. 3 gr. cr. Aut. Qtr. MW 8:00; Th 2:00-5:00. Mr. Warren. Prereq.: Geol. 521-2-3 (or equivalent).

14-040-712. *Micropaleontology*. Conodonts and Ostracods. Morphology, biology, and geologic occurrence of conodonts and ostracods. 3 gr. cr. Win. Qtr. MW 8:00; Th 2:00-5:00. Mr. Warren. Prereq.: Geol. 521-2-3 (or equivalent).

14-040-713. *Micropaleontology*. Foraminifera. Morphology, biology, and geologic occurrence of foraminifera. 3 gr. cr. Spr. Qtr. MW 8:00; Th 2:00-5:00. Mr. Warren. Prereq.: Geol. 521-2-3 (or equivalent).

14-040-771. *Research*. Credit to be arranged. Offered ea. Qtr. Staff.

14-040-772. *Master's Thesis Research*. Credit to be arranged. Offered ea. Qtr. Staff.

14-040-775. *Field Studies in Stratigraphy and Sedimentation*. 10- to 14-day field trip during Spring vacation or in June. Report. 2 gr. cr. Mr. Pryor.

14-040-776. *Field Studies in Igneous and Metamorphic Petrology.* 10- to 14-day field trip during Spring vacation or in June. Report. 2 gr. cr. Mr. Larsen.

14-040-777. *Field Studies in Mining Geology—Ore Deposits.* 10- to 14-day field trip to mining districts during Spring vacation. Spr. Qtr. Discussion meetings and report in Spr. Qtr. 2 gr. cr. Previous permission of instructor required. Mr. Jenks.

14-040-801,802,803. *Advanced Mineralogy I.* Advanced theory and techniques in crystallographic study of minerals; X-ray diffraction, optical goniometer, crystal structure analysis. 3 gr. cr. ea. Qtr. TTh 9:30-11:00; M 1:00-4:00. Mr. Koucky.

14-040-817,818,819. *Seminar in Petrology.* 3 gr. cr. ea. Qtr. MWF 11:00-12:00. Mr. Larsen.

14-040-821,822,823. *Seminar in Megascopic Paleontology.* Reading knowledge of German and French desirable. 3 gr. cr. ea. Qtr. MWF 9:00. Mr. Caster. Permission of instructor required.

14-040-873. *Seminar in Economic Geology.* 3 gr. cr. Spr. Qtr. TTh 9:30. Mr. Jenks.

14-040-874. *Universal Stage Microscope Studies.* 4 gr. cr. Spr. Qtr. W 12:00-4:00; F 1:00-5:00. Mr. Sunderman.

14-040-971. *Doctoral Dissertation Research.* Credits to be arranged. Offered ea. Qtr. Staff. Permission of adviser required.

Courses Omitted in 1969-1970: 561-2, Interpretation of Aerial Photographs; 575 and 577, Alternate Advanced Geology Field Trips; 580, Advanced Geomorphology; 581, World Physiography; 677, Regional Tectonics; 678, Geotectonics; 705-6-7, Advanced Petrology; 811-12-13, Geochemistry.

Germanic Languages and Literatures

Head: Professor Stern (228 McM); Professor Merkel (229 McM); Associate Professors Glenn (32 McM), Schlawe (32 McM), Slessarev (231 McM), Syring (230 McM); Assistant Professor Rudowski (226 Calhoun St.); Instructor Obrath (32 McM); Visiting Professor Richert (231 McM).

This Department offers work leading to the Degrees of Master of Arts and Doctor of Philosophy in Germanic Languages and Literatures.

Students electing work in this Department should have completed an undergraduate major in German or its equivalent. All candidates for any graduate degree are required to take Methods and Bibliography 771 and Advanced Stylistics 772. Methods of Foreign Language Teaching and Applied Linguistics 573 is recommended for all students planning to teach. All candidates must earn at least 6 gr. cr. in the literature and language before 1600. M.A. candidates must complete a pro-seminar; they may write a thesis in partial fulfillment of the M.A. requirement (and receive up to 9 cr. in Research 971 for doing so) or submit themselves to a written comprehensive examination. Candidates for the Ph.D. degree are required to take History of German Philology and Language 901-2-3, a course in Old High German and Middle High German (1 Qtr. ea.) and two seminars. The successful completion of a reading course in a second Germanic language is strongly urged by the Department and will satisfy simultaneously the department's requirement of a second foreign language (other than German) for the doctorate. A requirement for the Ph.D. degree is the satisfactory completion of a dissertation describing the results of the student's research work.

For Advanced Under

15-010-573. *Methods* of current psychology together with a pract. The course includes fr prospective high school student to Ed. 303. 3 gr.

15-010-601,602,603. Mr. Schlawe.

15-010-621,622,623. its philosophy, and li

14-010-701,702,703. Qtr. 750-1300; a brie German periods and German literature of tion. Spr. Qtr.: 1600 period and the perio

14-010-707,708,709. A study of philosop Mrs. Slessarev.

14-010-771. *Metho* into the techniques Schlawe.

14-010-772. *Advan* prose composition 3 gr. cr. Win. Qtr

15-010-671. *Advan* culture and institut

14-010-734,735,73 the M.A. reading 9:10. Mr. Glenn.

For Graduate Stu

14-010-887. *The* oral reports. In th

14-010-883. *The* written and oral 6:00. Mr. Glenn

14-010-946,947. Superman), and and oral reports M 4:00-6:00. M

14-010-956,957. his impact on la of a seminar. 4

14-010-973. *Ol* the developmer Qtr. TTh 2:00

Fri., Aug. 28

Summer Quarter ends

Tues., Mar. 10

Classes end

Thurs.-Tues., N^o r. 12-17
Tues., Mar. 1

Examinations
Winter Quarter ends

* Additional calendar items relating to a specific college schedule will be found in Part 2 of the Bulletin of that college.
* Schedules of the University College and the Summer School will be found in those Bulletins.

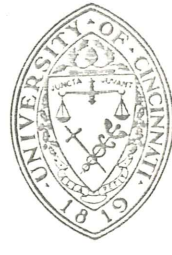
* See Part 3, pages 103-104 for specific registration regulations.

SUMMER SCHOOL (Terms—3½ weeks each)
First.....Mon., June 22-Tues., July 14
Second.....Wed., July 15-Thurs., Aug. 6
Third.....Fri., Aug. 7-Sat., Aug. 29
Summer Quarter-Term.....(dates same as Summer Quarter)
Summer Commencement.....Sat., Aug. 29

UNIVERSITY OF CINCINNATI BULLETIN

Announcement

of



McMicken College of Arts and Sciences

1969-1970

Published by the University of Cincinnati
Van Wormer Administration Building
Cincinnati, Ohio 45221
Telephone 513-475-8000

15-041-677. Greater Cincinnati Region. Spatial research at the local scale, stress on the dynamics of settlement origin, sequence, and planning, including changing relationships of site, forms, functions, and position. Field trips and field projects. 3 ug. cr. Aut. Qtr. S 9:00-12:00 and additional hours to be arranged. Mr. Corey.

15-041-678. History and Philosophy of Geography. Growth of geographic thought from Greco-Roman to German, French, British, Russian, and American Schools with emphasis on contemporary problems. 3 ug. cr. Win. Qtr. W 4:00-6:30. Mr. Cooper.

15-041-679. Field Work and Research Methods. Training in field study, methods, and techniques, including mapping, air photo use, interviewing, and report writing, with stress on urban areas. 3 ug. cr. Spr. Qtr. F 3:00-5:30. Mr. Roder.

15-041-680. Geographic Methods: Quantitative Techniques. Introduction to basic statistical analysis, including the collection of data and standard statistical techniques. 3 ug. cr. Aut. Qtr. MWF 1:00. Mr. Roder.

Courses Omitted in 1969-1970: 386, Soviet Union; 388, Middle East; 389, Eastern and Southern Asia; 481, Research Seminar; 531-2-3, Advanced Physical; 575, Geographics; 578, Political Geography.

Geology

Professors ——— (Head, 20 OT), Caster (4A OT), Jenks (32 OT), Larsen (OT), Pryor (25 OT); Associate Professors Durrell (33 OT), Huff (36 OT), Koucky (35 OT), Sunderman (31 OT); Assistant Professors Davis (OT), Powell (32 OT), Warren (9A OT).

Entering Freshmen intending to major in Geology may apply for the W. H. Bucher Scholarship (see page 19).

The student may choose a concentration leading to the B.A. or B.S. in geology.

Geol. 101-2-3 and 111-2-3 taken together are preliminary to all advanced courses in geology. Students who have completed 104-5-6 and wish to major in geology must take 111-2-3.

To qualify for the B.A. degree in geology a student shall have completed Geol. 037-8-9, 301-2-3, 271 (or 272 or 273), 321-2-3, 437-8-9, and 9 additional credits in geology, plus at least 27 credits in three of the following disciplines: chemistry, physics, biology, and mathematics.

To qualify for the B.S. degree in geology a student shall include in his program Geol. 037-8-9, 271 (or 272 or 273), 301-2-3, 321-2-3, 401-2-3, 404-5-6, 437-8-9; Chem. 101-2-3, 111-2-3, 9 to 14 credits of Calculus and 9 to 15 credits of physics or biology. In addition to the basic core of geology courses listed above, at least 18 credits in advanced courses in geology must be elected and should include 521-2-3 and 531-2-3 where feasible. A reading knowledge of German, French, or Russian is required prior to the senior year.

Both the B.A. and the B.S. majors may lead to graduate work in geology, usually considered essential for a professional career. A properly planned program may lead to the M.S. degree one year after obtaining the B.S. Typical programs may be obtained from the adviser.

For all B.S. candidates and all students planning geology as a profession, a six to eight weeks' summer field course or its equivalent is required. Alternative acceptable field training may be obtained by summer work at a marine biological station or with one of the geological surveys, or by summer field employment by a mining or oil company, with the approval of the staff.

Each autumn all students majoring in geology are expected to attend a four-day field trip and should anticipate the cost, about \$40.

- ✓15-040-101,102,103. *Introduction to Geology*. A survey of physical and historical geology. 3 ug. cr. ea. Qtr. Sec. I, TTh 9:30-11:00; Sec. II, MWF 1:00. Mr. Huff. Coreq.: Geol. 111-2-3 with which it satisfies the science requirement.
- ✓15-040-111,112,113. *Introduction to Geology Laboratory*. Designed to accompany 101-2-3. Emphasis on field trips, rock and mineral study, topographic and geologic maps and aerial photographs. 2 ug. cr. ea. Qtr. Sec. I, MW 1:00-4:00; Sec. II, TTh 2:00-5:00. Mr. Huff and assistants.
- ✓15-040-104,105,106. *General Geology*. An elementary course for students and teachers not expecting to major in earth sciences. Designed to fulfill the B.A. science requirement when taken with an elementary course in another science. 3 ug. cr. ea. Qtr. Lect., MW 8:00. Two-hour lab., Sec. 1, M 10:00; Sec. 2, M 1:00; Sec. 3, M 3:00; Sec. 4, Tu 8:00; Sec. 5, Tu 10:00; Sec. 6, Tu 2:00; Sec. 7, W 10:00; Sec. 8, W 1:00; Sec. 9, W 3:00; Sec. 10, Th 8:00; Sec. 11, Th 10:00; Sec. 12, Th 2:00; Sec. 13, F 10:00; Sec. 14, F 1:00; Sec. 15, F 3:00. Mr. Powell and Staff.
- ✓15-040-181,182,183. *Introduction to Geology*. (Honors). Departmental approval required. 3 ug. cr. ea. Qtr. Hours to be arranged. Mr. Huff.
- ✓15-040-191,192,193. *Introduction to Geology Laboratory*. (Honors). Departmental approval required. 2 ug. cr. ea. Qtr. Hours to be arranged. Mr. Huff.
- ✓15-040-199. *Geology Honors Colloquium*. The development of Geological thought as illustrated in the geologic setting of the Cincinnati region. Readings in classical literature, discussions leading to the frontiers of modern Geology. Limited to McMicken scholars. 3 ug. cr. Spr. Qtr. M 2:00-5:00. Mr. Durrell and Staff.
- ✓15-040-271. *Geologic Demonstration Trip*. A two-weeks field excursion east across the Appalachian Mountains and Coastal Plain to Virginia Beach during September 1969. One-hour conference weekly during the Autumn Quarter and a report at the end of the Quarter. 3 ug. cr. Aut. Qtr. M 12:00. Mr. Koucky.
- ✓15-040-301,302,303. *Mineralogy*. Crystallography, crystal chemistry, atomic structures, geochemistry, and systematics of the common minerals. 3 ug. cr. ea. Qtr. TTh 11:00; Th 2:00-5:00. Mr. Koucky. Prereq.: College chemistry or permission of instructor.
- ✓15-040-321,322,323. *Historical Geology*. The physical and biological history of the earth with particular emphasis on North America. Field trips. 4 ug. cr. ea. Qtr. TTh 8:00; Tu 2:00-5:00; S 9:00-12:00. Mr. Caster. Prereq.: Geol. 101-2-3, 111-2-3 or 104-5-6.
- ✓15-040-401,402,403. *Elementary Petrology*. Aut. Qtr.: The rock cycle, hand lens petrography; Win. Qtr.: Introduction to the polarizing microscope; Spr. Qtr.: Thin section studies of igneous, sedimentary and metamorphic rocks. 3 ug. cr. ea. Qtr. Tu 11:00, TTh 2:00-5:00. Messrs. Larsen, Sunderman. Prereq.: Geol. 303.
- ✓15-040-404. *Elementary Structural Geology*. Introductory survey covering principles of deformation, faults, folds, lineations, foliation and tectonic significance of structures. 3 ug. cr. Aut. Qtr. MW 10:00, F 2:00-5:00. Prereq.: Geol. 403. Mr. Powell.
- ✓15-040-405. *Principles of Geomorphology*. Fundamental concepts in the interpretation of world landscapes. The significance of land forms in terms of lithology, structure and geologic history. 3 ug. cr. Win. Qtr. MW 10:00, F 2:00-5:00. Prereq.: Geol. 404 or permission of instructor. Mr. Durrell.
- ✓15-040-406. *Major Problems in Geology*. A study of current major problems relating to the interpretation of the origin of the earth's crust such as continental drift, sea floor spreading, crust-mantle petrology, isostasy and geochemical distribution of the elements. 3 ug. cr. Spr. Qtr., MW 10:00, F 2:00-5:00. Staff.

✓15-040-037,038,039. C
in geology. No credit.

✓15-040-437,438,439. S
geology; not open to

✓15-040-521,522,523. F
fossils. 3 ug. cr. ea. C
or equivalent, or a ful

15-040-531,532,533. S
sedimentation. Physic
analysis, correlation, s
Qtr. MW 11:00; M 1

15-040-572. Physiogr
western U.S.A., Alask

15-040-573. Physiogr
U.S.A. 3 ug. cr. Win

15-040-574. Glacial C
with emphasis on the
MW 10:00, F 2:00-5:0

15-040-576. Advance
tember 1969. Confer
Permission of instruct

15-040-641,642. Opti
recognition of transp
ea. Qtr. Aut., Win. C

15-040-672. Elements
folds, superposed fol
Mr. Powell. Prereq.:

15-040-673. Advance
analysis to the interp
3 ug. cr. Spr. Qtr. M

15-040-675. Geology
Prereq.: Geol. 579 or

15-040-676. Geology
Prereq.: Geol. 675 or

Courses Omitted in
Trip; 561-2 Interpret
Field Trips; 580 Ad
Tectonics; 678 Geote

Professors Stern (H
(231 McM); Associa
(231 McM), Syring
Assistant Professor

✓15-040-037,038,039. *Geology Seminar*. Required of all juniors and seniors majoring in geology. No credit. W 4:00. Staff.

15-040-437,438,439. *Senior Readings and Research*. Required of seniors majoring in geology; not open to other students. 2 ug. cr. ea. Qtr. Hours to be arranged. Staff.

✓15-040-521,522,523. *Invertebrate Paleontology*. Paleobiology of common invertebrate fossils. 3 ug. cr. ea. Qtr. TTh 9:30; W 1:00-4:00. Mr. Warren. Prereq.: Geol. 323 or equivalent, or a full course in biology, zoology, or botany.

15-040-531,532,533. *Stratigraphy and Sedimentation*. Principles of stratigraphy and sedimentation. Physical and biological processes, environmental interpretation, facies analysis, correlation, stratigraphic analysis, and tectonics. 3 ug. cr. ea. Qtr. MW 11:00; M 1:00-4:00. Mr. Pryor. Prereq.: Geol. 303; 323.

15-040-572. *Physiography of Western United States*. Regional geomorphology of western U.S.A., Alaska, and Hawaii. 3 ug. cr. Aut. Qtr. MWF 1:00. Mr. Durrell.

15-040-573. *Physiography of Eastern United States*. Regional geomorphology of eastern U.S.A. 3 ug. cr. Win. Qtr. MWF 1:00. Mr. Durrell.

15-040-574. *Glacial Geology*. Glaciers and glaciation, their relation to climatic changes with emphasis on the Pleistocene history of Cincinnati region. 3 ug. cr. Aut. Qtr. MW 10:00, F 2:00-5:00. Prereq.: Geol. 401, 405 or permission of instructor. Mr. Durrell.

15-040-576. *Advanced Geology Field Trip*. A two weeks' field excursion during September 1969. Conferences and report in Autumn Quarter. 3 ug. cr. Aut. Qtr. Prereq.: Permission of instructor. Mr. Pryor.

15-040-641,642. *Optic Mineralogy*. Crystal optics, use of the polarizing microscope for recognition of transparent substances in immersion media and thin sections. 4 ug. cr. ea. Qtr. Aut., Win. Qtrs. W 12:00-4:00; F 1:00-5:00. Mr. Sunderman.

15-040-672. *Elements of Structural Analysis*. Stereographic projections, geometry of folds, superposed folding and petrofabrics. 3 ug. cr. Win. Qtr. MW 10:00; F 2:00-5:00. Mr. Powell. Prereq.: Geol. 579.

15-040-673. *Advanced Structural Geology*. Application of the principles of structural analysis to the interpretation of deformed sedimentary, metamorphic and igneous rocks. 3 ug. cr. Spr. Qtr. MW 10:00; F 2:00-5:00. Prereq.: Geol. 672. Mr. Powell.

15-040-675. *Geology of Ore Deposits I*. Aut. Qtr. 3 ug. cr. TTh 8:00; M 1:00-4:00. Prereq.: Geol. 579 or equivalent. Mr. Jenks.

15-040-676. *Geology of Ore Deposits II*. Win. Qtr. 3 ug. cr. TTh 8:00; M 1:00-4:00. Prereq.: Geol. 675 or equivalent. Mr. Jenks.

Courses Omitted in 1969-1970: 271-3 Alternate Routes Geologic Demonstration Field Trip; 561-2 Interpretation of Aerial Photographs; 575-7 Alternate Advanced Geology Field Trips; 580 Advanced Geomorphology; 581 World Physiography; 677 Regional Tectonics; 678 Geotectonics.

Germanic Languages and Literatures

Professors Stern (Head, 228 McM), Merkel (229 McM); Visiting Professor Richert (231 McM); Associate Professors Glenn (32 McM), Schlawe (32 McM), H. Slessarev (231 McM), Syring (230 McM); Assistant Professor Rudowski (226 Calhoun St.); Assistant Professor Harris (32 McM); Instructors Cobbs, Obrath (32 McM).