

# Course Schedule - Fall 2008

## Geology

100 **Planet Earth** credit: 3 hours.

Introduces non-science majors to physical aspects (earthquakes, volcanoes, floods, tsunamis, mountains, plate tectonics) and historical aspects (formation of earth and life, dinosaurs, ice age, evolution of climate) in earth science. Presents information on earth resources, natural hazards, and development of natural landscapes. Focuses on humanistic issues; provides context for understanding environmental change. Optional lab demonstrations and field trips with co-registration in GEOL 110. Credit is not given for both GEOL 100 and GEOL 101, GEOL 103, GEOL 107, or GEOL 111.

This course satisfies the General Education Criteria for a Physical Sciences course.

Students must register for one discussion and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor
37467	discussion-recitation	AD1	09:00 AM - 09:50 AM	T	room 241 Natural History Bldg	Long, A; Altaner, S
37467: Physical Sciences course.						
37469	discussion-recitation	AD2	10:00 AM - 10:50 AM	T	room 241 Natural History Bldg	Long, A; Altaner, S
37469: Physical Sciences course.						
37470	discussion-recitation	ADA	11:00 AM - 11:50 AM	T	room 241 Natural History Bldg	Long, A; Altaner, S; Chirienco, M
37470: Physical Sciences course.						
37471	discussion-recitation	ADB	12:00 PM - 12:50 PM	T	room 241 Natural History Bldg	Long, A; Altaner, S; Chirienco, M
37471: Physical Sciences course.						
37472	discussion-recitation	ADC	01:00 PM - 01:50 PM	T	room 241 Natural History Bldg	Long, A; Altaner, S; Jiang, M
37472: Physical Sciences course.						
37473	discussion-recitation	ADD	02:00 PM - 02:50 PM	T	room 241 Natural History Bldg	Long, A; Altaner, S; Jiang, M
37473: Physical Sciences course.						
37474	discussion-recitation	ADE	03:00 PM - 03:50 PM	T	room 241 Natural History Bldg	Long, A; Altaner, S; Basu, A
37474: Physical Sciences course.						
37475	discussion-recitation	ADF	04:00 PM - 04:50 PM	T	room 241 Natural History Bldg	Long, A; Altaner, S; Basu, A
37475: Physical Sciences course.						
37476	discussion-	ADG	09:00 AM - 09:50	W	room 241 Natural	Long, A; Altaner, S;

	recitation		AM		History Bldg	Palmer, J
37476: Physical Sciences course.						
37477	discussion-recitation	ADH	10:00 AM - 10:50 AM	W	room 241 Natural History Bldg	Long, A; Altaner, S; Palmer, J
37477: Physical Sciences course.						
37478	discussion-recitation	ADI	11:00 AM - 11:50 AM	W	room 241 Natural History Bldg	Long, A; Altaner, S; Palmer, J
37478: Physical Sciences course.						
37480	discussion-recitation	ADK	01:00 PM - 01:50 PM	W	room 241 Natural History Bldg	Long, A; Altaner, S
37480: Physical Sciences course.						
37481	discussion-recitation	ADL	02:00 PM - 02:50 PM	W	room 241 Natural History Bldg	Long, A; Altaner, S
37481: Physical Sciences course.						
37482	discussion-recitation	ADM	03:00 PM - 03:50 PM	W	room 241 Natural History Bldg	Long, A; Altaner, S
37482: Physical Sciences course.						
37484	discussion-recitation	ADO	10:00 AM - 10:50 AM	R	room 241 Natural History Bldg	Long, A; Altaner, S; Chirienco, M
37484: Physical Sciences course.						
37485	discussion-recitation	ADP	11:00 AM - 11:50 AM	R	room 241 Natural History Bldg	Long, A; Altaner, S; Chirienco, M
37485: Physical Sciences course.						
37486	discussion-recitation	ADQ	12:00 PM - 12:50 PM	R	room 241 Natural History Bldg	Long, A; Altaner, S; Jiang, M
37486: Physical Sciences course.						
37487	discussion-recitation	ADR	01:00 PM - 01:50 PM	R	room 241 Natural History Bldg	Long, A; Altaner, S
37487: Physical Sciences course.						
37489	discussion-recitation	ADS	02:00 PM - 02:50 PM	R	room 241 Natural History Bldg	Long, A; Altaner, S; Jiang, M
37489: Physical Sciences course.						
37490	discussion-recitation	ADT	03:00 PM - 03:50 PM	R	room 241 Natural History Bldg	Long, A; Altaner, S; Jiang, M
37490: Physical Sciences course.						
37491	discussion-recitation	ADU	09:00 AM - 09:50 AM	F	room 241 Natural History Bldg	Long, A; Altaner, S

37491: Physical Sciences course.						
37492	discussion-recitation	ADV	10:00 AM - 10:50 AM	F	room 241 Natural History Bldg	Long, A; Altaner, S
37492: Physical Sciences course.						
37492: Transition Students Only						
37493	discussion-recitation	ADW	11:00 AM - 11:50 AM	F	room 241 Natural History Bldg	Long, A; Altaner, S; Chirienco, M
37493: Physical Sciences course.						
37498	discussion-recitation	ADX	12:00 PM - 12:50 PM	F	room 241 Natural History Bldg	Long, A; Altaner, S; Basu, A
37498: Physical Sciences course.						
37499	discussion-recitation	ADY	01:00 PM - 01:50 PM	F	room 241 Natural History Bldg	Long, A; Altaner, S; Basu, A
37499: Physical Sciences course.						
37501	discussion-recitation	ADZ	02:00 PM - 02:50 PM	F	room 241 Natural History Bldg	Long, A; Altaner, S; Basu, A
37501: Physical Sciences course.						
37465	lecture	AL1	10:00 AM - 10:50 AM	MW	room 228 Natural History Bldg	Altaner, S
37465: Physical Sciences course.						
37466	lecture	AL2	12:00 PM - 12:50 PM	MW	room 228 Natural History Bldg	Altaner, S
37466: Physical Sciences course.						

101 **Introductory Physical Geology** credit: 4 hours.

Focuses on physical features of our planet and their origin. Topics include: plate tectonics, mountain building, glaciers, earthquakes, volcanoes, coastlines, rivers, deserts, geologic structures, weathering, minerals, and rocks. Introduces fundamental methodology for observing and interpreting earth features. Intended for non-physical science majors. Credit is not given for both GEOL 101 and GEOL 100, GEOL 103, GEOL 107, or GEOL 111.

This course satisfies the General Education Criteria for a Physical Sciences course.

Intended for non-science students. Students must register for one lab-discussion and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor
37542	lecture	AL1	01:00 PM - 01:50 PM	MWF	room 1320 Digital Computer Laboratory	Herrstrom, E
37542: Physical Sciences course.						
37531	laboratory-discussion	AY1	10:00 AM - 11:50 AM	M	room 251 Natural History Bldg	Long, A; Herrstrom, E

37531: Physical Sciences course.						
37533	laboratory-discussion	AY2	02:00 PM - 03:50 PM	M	room 251 Natural History Bldg	Long, A; Herrstrom, E; Lindner, D
37533: Physical Sciences course.						
37534	laboratory-discussion	AY3	04:00 PM - 05:50 PM	M	room 251 Natural History Bldg	Long, A; Herrstrom, E; Lindner, D
37534: Physical Sciences course.						
37536	laboratory-discussion	AY4	09:00 AM - 10:50 AM	T	room 251 Natural History Bldg	Long, A; Herrstrom, E; Kyrias, M
37536: Physical Sciences course.						
37538	laboratory-discussion	AY6	01:00 PM - 02:50 PM	T	room 251 Natural History Bldg	Long, A; Herrstrom, E; Lindner, D
37538: Physical Sciences course.						
37540	laboratory-discussion	AY7	03:00 PM - 04:50 PM	T	room 251 Natural History Bldg	Long, A; Herrstrom, E; Kyrias, M
37540: Physical Sciences course.						

103 **Planet Earth QRII** credit: 3 hours.

Topics covered are very similar to those of GEOL 101. Emphasis is in the application of quantitative methods in deriving geological knowledge. A weekly computer laboratory is an essential component of the course. Credit is not given for both GEOL 103 and GEOL 100, GEOL 101, GEOL 107, or GEOL 111.

This course satisfies the General Education Criteria for a Physical Sciences, and Quant Reasoning II course.

Students must register for one lab and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor
32307	laboratory	AB1	10:00 AM - 10:50 AM	T	room G8A Foreign Languages Bldg	Stewart, M; Madhavan, V
32307: Physical Sciences, and Quant Reasoning II course.						
32308	laboratory	AB2	11:00 AM - 11:50 AM	T	room G8A Foreign Languages Bldg	Stewart, M; Madhavan, V
32308: Physical Sciences, and Quant Reasoning II course.						
32309	laboratory	AB3	01:00 PM - 01:50 PM	T	room G8A Foreign Languages Bldg	Stewart, M; Madhavan, V
32309: Physical Sciences, and Quant Reasoning II course.						
32310	laboratory	AB4	02:00 PM - 02:50 PM	T	room G8A Foreign Languages Bldg	Stewart, M; Madhavan, V

32310: Physical Sciences, and Quant Reasoning II course.						
32311	laboratory	AB5	03:00 PM - 03:50 PM	T	room G8A Foreign Languages Bldg	Stewart, M; Madhavan, V
32311: Physical Sciences, and Quant Reasoning II course.						
32312	lecture	AL1	01:00 PM - 01:50 PM	MW	room 160 English Bldg	Stewart, M
32312: Physical Sciences, and Quant Reasoning II course.						

104 **Geology of the National Parks** credit: 3 hours.

Develops geologic background, concepts, and principles through study of selected national parks and monuments. Examines the geologic framework and history, modern geologic processes, and factors influencing the present day landscape for each park area.

This course satisfies the General Education Criteria for a Physical Sciences course.

Students must register for one lab and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor
37543	laboratory	AB1	01:00 PM - 02:50 PM	W	room 259 Natural History Bldg	Chen, C; Xu, Z
37543: Physical Sciences course.						
37545	laboratory	AB2	03:00 PM - 04:50 PM	W	room 259 Natural History Bldg	Chen, C; Xu, Z
37545: Physical Sciences course.						
37546	laboratory	AB3	10:00 AM - 11:50 AM	R	room 259 Natural History Bldg	Chen, C; Xu, Z
37546: Physical Sciences course.						
37554	lecture	AL1	02:00 PM - 02:50 PM	TR	room 229 Natural History Bldg	Chen, C
37554: Physical Sciences course.						
37552	laboratory	BB1	10:00 AM - 11:50 AM	W	room 259 Natural History Bldg	Chen, C
37552: Discovery, and Physical Sciences course. Geology of the National Parks, 3 hours. The rocks and landscapes in our national parks tell remarkable stories for those who take time to listen and understand. Grand Canyon, for instance, has recorded more than 2000 million years of natural history in the making. First Year Discovery Program Course. Registration restricted to freshmen. Students should enroll in only one Discovery course.						
40605	lecture	BL1	10:00 AM - 10:50 AM	TR	room 258 Natural History Bldg	Chen, C
40605: Discovery, and Physical Sciences course. Geology of the National Parks, 3 hours. The rocks and landscapes in our national parks tell remarkable stories for those who take time to listen and understand. Grand Canyon, for instance, has recorded more than 2000 million years of natural history in the making. First Year						

Discovery Program Course. Registration restricted to freshmen. Students should enroll in only one Discovery course.

107 **Physical Geology** credit: 4 hours.

Introduces Earth phenomena and processes. Includes minerals and rocks, continental drift, plate tectonics, rock deformation, igneous and sedimentary processes, geologic time, landscape evolution, internal structure and composition of the earth, groundwater, seismology and earthquakes, and formation of natural resources. Emphasizes the chemical and physical aspects of the Earth, and the basis for geological inference. Field trip required for geology majors, optional for others. Intended for science and science-oriented students. Credit may not be received for both GEOL 107 and GEOL 100, GEOL 101, GEOL 103, or GEOL 111.

This course satisfies the General Education Criteria for a Physical Sciences course.

Intended for Science and Science-Oriented students. Field Trip Fee of \$15 required.

CRN	Type	Section	Time	Days	Location	Instructor
32315	lecture	AL1	11:00 AM - 11:50 AM	MWF	room 112 Chemistry Annex	Anders, A
32315: Physical Sciences course.						
32313	laboratory-discussion	AY1	08:00 AM - 09:50 AM	M	room 259 Natural History Bldg	Herrstrom, E; Anders, A
32313: Physical Sciences course.						
43017	laboratory-discussion	AY3	01:00 PM - 02:50 PM	M	room 259 Natural History Bldg	Herrstrom, E; Hellwig, J; Anders, A
43017: Physical Sciences course.						
43018	laboratory-discussion	AY4	03:00 PM - 04:50 PM	M	room 259 Natural History Bldg	Herrstrom, E; Hellwig, J; Anders, A
43018: Physical Sciences course.						
43019	laboratory-discussion	AY5	08:00 AM - 09:50 AM	T	room 259 Natural History Bldg	Herrstrom, E; Anders, A; Perillo, M
43019: Physical Sciences course.						
44249	laboratory-discussion	AY6	10:00 AM - 11:50 AM	T	room 259 Natural History Bldg	Herrstrom, E; Anders, A; Perillo, M
44249: Physical Sciences course.						
43021	laboratory-discussion	AY7	01:00 PM - 02:50 PM	T	room 259 Natural History Bldg	Herrstrom, E; Hellwig, J; Anders, A
43021: Physical Sciences course.						
43022	laboratory-discussion	AY8	03:00 PM - 04:50 PM	T	room 259 Natural History Bldg	Herrstrom, E; Anders, A; Perillo, M
43022: Physical Sciences course.						

110 **Exploring Geology in the Field** credit: 1 hours.

Introduces practical techniques for identification of rocks, minerals, and fossils; interpretation of geologic maps and cross-sections; appreciation of Midwestern geologic history and geologic features and landforms in the field. Two field trips are required (a 1-day and a 3-day trip).

Additional Field Trip Fee Required.

CRN	Type	Section	Time	Days	Location	Instructor
32316	laboratory	1	10:00 AM - 10:50 AM	T	room G24 Foreign Languages Bldg	Altaner, S; Palmer, J; Kyrias, M
32316: Lab 1 and 2: Meet approximately half of the weeks during the term. Two Field trips required.						
32317	laboratory	2	11:00 AM - 11:50 AM	T	room G24 Foreign Languages Bldg	Altaner, S; Palmer, J; Kyrias, M
32317: Lab 1 and 2: Meet approximately half of the weeks during the term. Two Field trips required.						

117 **The Oceans** credit: 3 hours.

Integrated introduction to oceanography and marine geology and geophysics. Topics include ocean-basin formation and evolution (in the context of plate tectonics), ocean ecology, the hydrologic cycle, water chemistry, currents and waves, the interaction of oceans with climate, coastal hazards, resources, pollution, and the Law of the Sea. Course is oriented toward students not majoring in science.

This course satisfies the General Education Criteria for a Physical Sciences course.

CRN	Type	Section	Time	Days	Location	Instructor
30375	lecture	B	12:00 PM - 12:50 PM	MWF	room 314 Altgeld Hall	Stewart, M
30375: Physical Sciences course.						

118 **Natural Disasters** credit: 3 hours.

Introduces the nature, causes, risks, effects, and prediction of natural disasters including earthquakes, volcanoes, landslides, subsidence, global climate change, severe weather, coastal erosion, floods, mass extinctions, and meteorite impacts; covers geologic principles and case histories of natural disasters as well as human responses (societal impact, mitigation strategies, and public policy). Same as ENVS 180 and GBLB 118.

This course satisfies the General Education Criteria for a Physical Sciences course.

CRN	Type	Section	Time	Days	Location	Instructor
30379	lecture	A	02:00 PM - 02:50 PM	MWF	room 114 Smith Memorial Hall	Altaner, S; Bopp, C
30379: Physical Sciences course.						
51455	lecture	CHP	02:00 PM - 02:50 PM	MWF	room 258 Natural History Bldg	Chen, C

51455: Camp Honors/Chanc Schol, and Physical Sciences course. For Chancellors Scholars only; others may enroll only with the permission of the instructor and the Campus Honors Program.

143 **History of Life** credit: 3 hours.

Evolution of life from its beginning, illustrating changing faunas and floras through time; the invasion of land and of the skies; the effects of a changing atmosphere, changing climates, and continental drift. Emphasis on dinosaur evolution, ecology, and extinction; also other vertebrates, including mammal-like reptiles, mammals, and the emergence of humans, as well as plants and invertebrates.

This course satisfies the General Education Criteria for a Life Sciences course.

Students must register for one lab and one lecture section.

CRN	Type	Section	Time	Days	Location	Instructor
37557	laboratory	AB2	10:00 AM - 11:50 AM	T	room 120 Natural History Bldg	Fouke, B; Hill, C
37557: Life Sciences course.						
37558	laboratory	AB3	01:00 PM - 02:50 PM	T	room 120 Natural History Bldg	Fouke, B; Miller, P
37558: Life Sciences course.						
37560	laboratory	AB4	03:00 PM - 04:50 PM	T	room 120 Natural History Bldg	Fouke, B; Vescogni, H
37560: Life Sciences course.						
48936	laboratory	AB6	10:00 AM - 11:50 AM	W	room 120 Natural History Bldg	Fouke, B; Vescogni, H
48936: Life Sciences course.						
48935	laboratory	AB7	03:00 PM - 04:50 PM	W	room 120 Natural History Bldg	Fouke, B; Vescogni, H
48935: Life Sciences course.						
37562	laboratory	AB8	08:00 AM - 09:50 AM	R	room 120 Natural History Bldg	Fouke, B; Hill, C
37562: Life Sciences course.						
37564	laboratory	AB9	10:00 AM - 11:50 AM	R	room 120 Natural History Bldg	Fouke, B; Hill, C
37564: Life Sciences course.						
37565	laboratory	ABA	01:00 PM - 02:50 PM	R	room 120 Natural History Bldg	Fouke, B; Miller, P
37565: Life Sciences course.						
37573	laboratory	ABB	03:00 PM - 04:50 PM	R	room 120 Natural History Bldg	Fouke, B; Miller, P
37573: Life Sciences course.						

37574	lecture	AL1	02:00 PM - 02:50 PM	MW	room 116 Roger Adams Laboratory	Fouke, B
37574: Life Sciences course.						

199 **Undergraduate Open Seminar** credit: 1 to 5 hours.  
May be repeated.

CRN	Type	Section	Time	Days	Location	Instructor
10244	independent study		ARRANGED			
10244: Instructor Approval Required						

390 **Individual Study** credit: 1 to 4 hours.  
Research and individual study in geology. May be repeated. A maximum of 8 hours of GEOL 390 plus GEOL 391 may be counted toward graduation. Prerequisite: GEOL 208 or equivalent; consent of supervising faculty member.

CRN	Type	Section	Time	Days	Location	Instructor
10245	independent study		ARRANGED			
10245: Instructor Approval Required						

391 **Individual Honors Study** credit: 1 to 4 hours.  
Research and individual study in geology for honors credit. May be repeated. A maximum of 8 hours of GEOL 390 plus GEOL 391 may be counted toward graduation. Prerequisite: GEOL 208 or equivalent; consent of supervising faculty member and of departmental honors advisor.

CRN	Type	Section	Time	Days	Location	Instructor
10248	independent study		ARRANGED			
10248: Instructor Approval Required						

406 **Fluvial Geomorphology** credit: 4 hours.  
Same as GEOG 406 and NRES 406. See GEOG 406.

CRN	Type	Section	Time	Days	Location	Instructor
-----	------	---------	------	------	----------	------------

47128	lecture-discussion	A1	09:00 AM - 10:50 AM	MW	room 260 Mechanical Engineering Bldg	Rhoads, B
-------	--------------------	----	---------------------	----	--------------------------------------	-----------

411 **Structural Geol and Tectonics** credit: 4 hours.

Introduction to principles of rock deformation, stress, and strain; description and interpretation of geologic structures; study of methods for structural analysis; outline of geotectonic processes; three hours of lecture and a three-hour lab per week. Required four-day field trip. Prerequisite: GEOL 107 or consent of instructor.

Additional Field Trip Fee Required.

CRN	Type	Section	Time	Days	Location	Instructor
32324	laboratory	AB1	01:00 PM - 03:50 PM	W	room 251 Natural History Bldg	Marshak, S; Sen, P
32325	laboratory	AB2	02:00 PM - 04:50 PM	R	room 251 Natural History Bldg	Marshak, S; Sen, P
32326	lecture	AL1	10:00 AM - 10:50 AM	MWF	room 258 Natural History Bldg	Marshak, S
32326: LAS Field Trip 100.00 dollars.						

432 **Mineralogy and Mineral Optics** credit: 4 hours.

Introduction to: crystallography; crystal optics; structure, composition, properties, stability and geological occurrences of minerals; and mineral identification. Credit is not given for both GEOL 333 and GEOL 432. Prerequisite: GEOL 208 and CHEM 104 and CHEM 105.

CRN	Type	Section	Time	Days	Location	Instructor
30384	laboratory	AB1	02:00 PM - 04:50 PM	T	room 109 Natural History Bldg	Li, J; Bartov, G
30386	lecture	AL1	11:00 AM - 11:50 AM	TR	room 258 Natural History Bldg	Li, J

452 **Introduction to Geophysics** credit: 4 hours.

Introduces basic concepts related to the physics of the Earth's interior. Topics include formation of the Earth; its composition, gravity, shape, internal temperature, and magnetism; seismology; plate tectonics; and geodynamics. Same as ASTR 452. Credit is not given for both GEOL 452 and GEOL 450. Prerequisite: MATH 241 and PHYS 212.

CRN	Type	Section	Time	Days	Location	Instructor
47539	lecture	AL1	09:00 AM - 09:50 AM	MWF	room 258 Natural History Bldg	Song, X

470 **Introduction to Hydrogeology** credit: 4 hours.

Introduction to environmental and economic aspects of the occurrence and movement of groundwater through the earth's crust; topics include the hydrologic cycle, groundwater contamination, petroleum migration, formation of mineral resources, and groundwater chemistry. Prerequisite: MATH 220 or MATH 221; concurrent registration in either (i) CHEM 104 and CHEM 105 or (ii) CHEM 203 and CHEM 204; or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30394	lecture	C	11:00 AM - 11:50 AM	MWF	room 258 Natural History Bldg	Bethke, C

481 **Earth Systems Modeling** credit: 4 hours.

Same as ATMS 421, GEOG 421, and NRES 422. See ATMS 421.

CRN	Type	Section	Time	Days	Location	Instructor
37121	lecture-discussion	A	05:00 PM - 07:50 PM	W	room 22 ACES Lib, Info and Alum Ctr	Hurst, S; Wuebbles, D; Hannon, B; Gertner, G

492 **Senior Thesis** credit: 2 to 8 hours.

Research in geology, with thesis; a thesis must be submitted for credit to be received. No graduate credit. May be repeated. A maximum of 10 hours of GEOL 492 plus GEOL 493 may be counted toward graduation. Prerequisite: Consent of supervising faculty member.

CRN	Type	Section	Time	Days	Location	Instructor
10249	independent study		ARRANGED			
10249: Instructor Approval Required						

493 **Honors Senior Thesis** credit: 2 to 8 hours.

Research in geology with honors thesis; a thesis must be submitted for credit to be received. No graduate credit. May be repeated. A maximum of 10 hours of GEOL 492 plus GEOL 493 may be counted toward graduation. Prerequisite: Consent of supervising faculty member and of departmental honors advisor.

CRN	Type	Section	Time	Days	Location	Instructor
10252	independent study		ARRANGED			
10252: Instructor Approval Required						

497 **Special Topics in Geology** credit: 1 to 4 hours.

Seminar or lectures in subjects not covered by regular course offerings; for advanced undergraduates and graduate students. 1 to 4 graduate hours. May be repeated. Prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
10260	independent study		ARRANGED			
10260: Instructor Approval Required						

516 **Continental Lithosphere** credit: 3 hours.

Crustal composition and evolution, physical properties of the lithospheric mantle and effects of temperature, petrology and texture, the isopycnic (tectosphere) hypothesis, rock mechanics and rheology, seismic anisotropy and petro-fabrics, and mechanisms of uplift. Prerequisite: Equivalent of GEOL 411, GEOL 450 or GEOL 452, and GEOL 436 or GEOL 460, or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
51535	lecture	A	03:00 PM - 04:20 PM	TR	room 258 Natural History Bldg	Chen, W

540 **Petroleum Geology** credit: 4 hours.

Application of geoscience to understanding the nature and occurrence of hydrocarbon resources. Emphasizes: source-rock geology and geochemistry, process of petroleum migration, nature of reservoirs and traps, exploration and drilling procedures, interpretation of seismic-reflection profiles, cross-section and sub-surface map construction, classification and tectonics of petroleum-bearing sedimentary basins, application of sequence stratigraphy to exploration, and petroleum-related environmental issues. Prerequisite: GEOL 411 and GEOL 440, or equivalent.

CRN	Type	Section	Time	Days	Location	Instructor
39234	lecture	A	04:00 PM - 05:50 PM	MW	room 258 Natural History Bldg	Leetaru, H

562 **Isotope Geology** credit: 4 hours.

Introduction to the theoretical basis for isotopic fractionation in nature; survey of isotopic variations in natural materials; and application of isotopic variations to problems of geological and environmental significance. prerequisite: Consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
39233	lecture	A	12:00 PM - 01:50 PM	TR	room 258 Natural History Bldg	Johnson, T

591 **Current Research in Geoscience** credit: 1 hours.

Brings students up-to-date with current research over a broad spectrum of geoscience; improves students' oral presentation skills by practice and example. Required for all graduate students in Geology. Approved for S/U grading only. May be repeated to a maximum of 12 hours. Prerequisite: Graduate standing in Department of Geology or consent of instructor.

CRN	Type	Section	Time	Days	Location	Instructor
30405	lecture-discussion	A	12:00 PM - 12:50 PM	W	room 258 Natural History Bldg	Tomkin, J
	lecture-discussion	A	04:00 PM - 04:50 PM	F	room 229 Natural History Bldg	Tomkin, J

593 **Advanced Studies in Geology** credit: 1 to 8 hours.

Work may be taken in the following fields: (a) general geology; (b) engineering geology; (c) geomorphology and glacial geology; (d) clay mineralogy; (e) ground-water geology; (f) geomicrobiology; (g) geological fluid dynamics; (h) mineralogy and crystallography; (i) paleontology; (j) geochemistry; (k) geophysics; (l) petrography and petrology; (m) sedimentology; (n) stratigraphy; (o) oceanography; (p) submarine geology; (q) structural geology and geotectonics; (r) mathematical geology; (s) sedimentary petrography; (t) petroleum geology; (u) coal geology; (v) isotope geology and geochronology; (w) electron beam analysis; (x) vulcanology; (y) environmental geology; and (z) planetology. Approved for S/U grading only. May be repeated.

CRN	Type	Section	Time	Days	Location	Instructor
10267	independent study		ARRANGED			
10267: Instructor Approval Required						
51451	lecture-discussion	A1	07:00 PM - 08:20 PM	TR	room 258 Natural History Bldg	Lundstrom, C
51451: 3 hours Integrated Grad Earth Science						
51453	lecture-discussion	C2	08:30 AM - 09:50 AM	TR	room 258 Natural History Bldg	Tomkin, J
51453: 3 hours Tectonic Geomorphology						

599 **Thesis Research** credit: 0 to 16 hours.

Individual research under supervision of members of the faculty in their respective fields. Approved for S/U grading only. May be repeated.

CRN	Type	Section	Time	Days	Location	Instructor
10271	independent study		ARRANGED			
10271: Instructor Approval Required						

41983	independent study		ARRANGED			
41983: Instructor Approval Required						