taphonomy, biostratigraphy, and fossil collection and preparation.

4131 Environmental Analysis (3) Prereq.: GEOl 3032. Basic environment of sediment deposition; sedimentological models and their relationships within depositional basins; analysis of fossil micropaleontological models and their comparison with modern and ancient sedimentary basins.

4164 Deltaic Geology (3) Prereq.: consent of instructor. 2 hrs. lecture; 2 hrs. lab. Processes of deltaic sedimentation and the nature of deltaic sediments; Mississippi River delta compared to other modern and ancient deltaic environments.

4165 Subsurface Geology (3) Prereq.: GEOl 1001, 1003, 1601, 1602; PETE 4088 strongly recommended. 2 hrs. lecture; 3 hrs. lab. Exploration processes of the earth; applications of borehole data, electric logs, and samples of rocks and fluids; construction of geological maps and sections showing sediment facies, geological structure, geotemperature, fluid pressure and water salinity analysis; full use of computer

4182 Physical Hydrogeology (3) S Prereq.: GEOl 3032 and MATH 1552 or permission of instructor. Subsurface fluid flow in geological materials; emphasis on geological controls of the origin and migration of pore water, including saline brines, in sedimentary basins; topics including crustal scale flow, petroleum migration, ore formation, and subsurface flow in limestone.

4666 Coastal Field Geology (4) Su only Prereq.: consent of instructor. Also offered as OCS 4766. Camp fee. Four-week field course in the coastal and offshore geology, operated by Loyola University.

4803 Encyclopedia of Earth Sciences (3) Summer Prereq.: GEOl 3071 or equivalent. 2 hrs. lecture; 2 hrs. lab. Physical processes involved in plate tectonics and other geodynamic provinces. Sediment delivery to sedimentary basins; fluvial sediments in depositional processes; river systems as conveyor belts for transport of sedimentary facies, stratigraphic sequences, and global cycles of sedimentary and igneous rocks.

4810 Paleoecology (3) Prereq.: GEOl 4081 or consent of instructor. May be taken for a max. of 6 hrs. of credit. Micropaleontology of modern seas and oceanic regions and geological systems, including non-marine environments and ancient continental seas; applications of carbonate microfacies and limestone petrofacies to the analysis of paleoecology, paleotemperatures, and palaeoenvironments.

7085 Paleoclimatology (3) Prereq.: GEOl 4081 or consent of instructor. May be taken for a max. of 6 hrs. of credit. Analysis of the high- and low-resolution records of climate change and paleoclimate reconstruction from ice cores, deep-sea sediments, and continental records; focus on the glacial-interglacial cycle and the Quaternary Epoch.

7111 Advanced Palaeomagnetology (3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit. Advanced topics in palaeomagnetism, including theoretical and experimental methods of paleomagnetic measurement; applications to tectonic and paleoceanographic studies.

7115 Paleoclimatology (3) Prereq.: GEOl 2061 and 3032; 2 hrs. lecture; 2 hrs. lab. Field trip. Diversity, structure, taphonomy, and fossilization of organisms; interpretation of biological assemblages and adaptations and functional morphology; organism-sediment relationships.

7171 Biostatistics (3) Prereq.: GEOl 2061 or equivalent. 2 hrs. lecture; 2 hrs. lab. Stratigraphic concepts; modern rules and procedures in interval and assemblage zonations; distribution of stratigraphically important fossil groups; event stratigraphy and chronostratigraphic modeling using computer techniques; applications to global and regional stratigraphy.

7210 Paleobiology (3) Prereq.: GEOl 3071 or equivalent. Patterns and processes of evolution as discerned from the fossil record; tempo and mode of evolution, hierarchy and macroevolution, mass extinctions, patterns of diversification; emphasis on development of theories and case studies.

7313 Petrology of Sandstones (3) 2 hrs. lecture; 3 hrs. lab. Petrology and petrography of terrigenous sands; applications of sediment mineralogy and texture to the analysis of provenance, deposition, and diagenesis; emphasis on the origin, interrelationships, and stratigraphic potential of sandstones.

7312 Dynamics of Sedimentation (3) 2 hrs. lecture; 3 hrs. lab. Fluid mechanics as applied to sedimentation, fluid-particle mechanics of sediment transport including fluid and sediment flows, deposition and the origin of primary structures, and hydrodynamic instability and pattern development. Computer activities.

7313 Sedimentary Petrology of Carbonates (3) 2 hrs. lecture; 3 hrs. lab. Principles governing formation, deposition, and diagenesis of carbonate rocks and sedimentary rocks; lab stresses textural, fabric, and mineral relationships and interpretation of depositional environments and mineral paragenesis of ancient carbonate environments.

7314 Clay Mineralogy (3) 2 hrs. lecture; 3 hrs. lab. Discussion. Mineralogy, geochemistry, and geology of clays; distribution of clay minerals; and clays in rocks.

7313 Physical Geochemistry of Burial Diagenesis (3) Prereq.: GEOl 4085 or equivalent. Quantitative techniques in thermodynamics, kinetics, and mass transport applied to problems of burial diagenesis of sedimentary minerals and fluids.

7195 Reservoir Characterization (3) Prereq.: GEOl 4182 or PETE 4051 or consent of instructor. 2 hrs. lecture; 2 hrs. lab. Also offered as PETE 7195. Origin, description, exploration, and development of oil and gas reservoirs; topics include accommodation space, reservoir occurrence, origin of petroleum, oil and gas properties, rock properties, drilling, exploitation, and reservoir fluid modeling and production engineering; emphasis on interpretation of geology, geophysics, and petroleum engineering.

7200 Scientific Communication and Visualization (3) Methods for written, oral, and visual communication with an emphasis on integrated use of scientific data analysis and presentation of scientific quantitative information.

7900 Special Topics in Geology and Geophysics (3) V Prereq.: consent of instructor. May be taken for a max. of 12 sem. hrs. of credit when topics vary. May be repeated for a max. of 9 sem. hrs. of credit when topics vary. General student-selected research topics and focused group research, including all topics in geology and geophysics.

7911 Seminar in Geology: Paleontology (2) May be repeated for credit.

7913 Seminar in Geology: Sedimentology (2) May be repeated for credit. Field course in faunal and carbonatesedimentology; spring semester: classic sedimentology and sedimentary environments.

7914 Seminar in Geology: Igneous and Metamorphic Petrology (2) May be repeated for credit.

7961 Seminar in Geology: Structural Geology (2) May be repeated for credit.

7966 Field Work (1-9)

7971 Seminar in Tectonics (3) Prereq.: consent of instructor. May be taken for a max. of 9 sem. hrs. of credit. Topics include tectonics, diapirism, isostasy, and the tectonics of specific areas.

7972 Seminar in Geophysics (3) Prereq.: consent of instructor. May be taken for a max. of 9 sem. hrs. of credit. Topics may include composition of the mantle; physical processes at ridges, trenches, and transform faults; dynamics of plate interiors; intraplate stresses of the earth and other terrestrial planets; physics of rock magnetism; and hydrodynamics of sedimentary basins.

7981 Seminar in Geochemistry (2) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit. Mineralogy, paragenesis, geochemistry, and natural occurrence of authigenic silica in sediments; other topics include hydrocarbons, isotope geochemistry, and the geochemistry of carbonates.

8000 Thesis Research (1-12 per sem.) S"P"U grading.

8001 Dissertation Research (1-12 per sem.) S"P"U grading.

GERMAN ★ GERM

Native speakers of German will not receive credit for courses marked with an asterisk (*).

*1101 Elementary German (4) Basic lexicon and structures of German; emphasis on communicative language use; supplementary work in language and computer laboratories.

*1102 Elementary German (4) Prereq.: GERM 1101 or equivalent. Continuation of GERM 1101. Basic lexicon and structures of German; emphasis on communicative language use. Supplementary work in language and computer laboratories.

2101 German for Travelers (3) German for travelers is not applicable towards a major or minor in German and does not fulfill foreign language requirements for many graduate programs. The course, using German communication patterns, focuses on practical everyday vocabulary through exercises, role-playing, and situational activities.

2075 German Civilization (3) Knowledge of German not required. Also offered as HIST 2075. Development of the German nation; German styles and forms from7the Middle Ages to the Enlightenment, Weimar Classicism, and Romanticism. Readings from, and a historical overview of, the Middle Ages, the Renaissance, the Reformation, and the Baroque periods.

2101 Intermediate German (3) Prereq.: GERM 1102 or equivalent. Reading, conversation, composition; emphasis on lexis and syntax of spoken German; supplementary work in language and computer laboratories.

*2102 Intermediate German (3) Prereq.: GERM 2101 or equivalent. Continuation of GERM 2101. Reading, conversation, composition; emphasis on lexis and syntax of spoken German; supplementary work in language and computer laboratories.

*2102 Intermediate German (3) Prereq.: GERM 2102 or equivalent. Analysis of literary texts, expansion of lexicon, comprehension, and composition skills.

2060 General German for Business (3) Prereq.: GERM 2102 or equivalent. Introduction to German in a business environment: focus on linguistic structures and vocabulary, forms of business communication, reading of business text, and social customs.

2061 General German for Science (3) Prereq.: GERM 2102 or equivalent. Introduction to German in a business environment: focus on linguistic structures and vocabulary, forms of business communication, reading of business text, and social customs.

2062 German for Business (3) Prereq.: GERM 2102 or equivalent. Introduction to German in a business environment: focus on linguistic structures and vocabulary, forms of business communication, reading of business text, and social customs.

281 Survey of German Literature and Culture: Beginning 1700 (3) Prereq.: GERM 2155 or equivalent. Readings from, and an historical overview of, the Middle Ages, the Renaissance, the Reformation, and the Baroque periods.

282 Survey of German Literature and Culture: 1700-1830 (3) Prereq.: GERM 2155 or equivalent. Readings from, and an overview of, the Enlightenment, Storm and Stress, Weimar Classicism, and Romanticism.


2890 Friedrich Nietzsche (3) Knowledge of German not required. Also offered as HIST 2890. Also offered as ENGL 2890. Readings from, and a historical overview of, Nietzsche studied in the context of the three periods of productivity and evolution of his thought.

2891 Special Topics in German Literature and Culture (3) Knowledge of German not required. May
General education courses are marked with stars (★).

1001 Elementary Greek (4) Introduction to the core vocabulary and grammar for reading and writing Ancient Greek; basic readings in Classical and Biblical Greek.

1002 HONORS: Elementary Greek (4) Same as GREK 1001, with special honors emphasis for qualified students. Homic dial, grammar, and meter, while reading basic passages from Homer’s Iliad.

2051 Intermediate Greek (4) Prereq.: GREK 1001 or equivalent. Reading, writing, and comprehension of intermediate vocabulary and grammar for reading and writing Ancient Greek; basic readings in Classical and Biblical Greek.

2052 HONORS: Intermediate Greek (4) Prereq.: GREK 1001. Same as GREK 2051, with special honors emphasis for qualified students. Continued study of Homer, Odysseus, Aristophanes, and writing.

2061 Attic Oratory (3) Prereq.: GREK 2053 or equivalent. Lectures on Greek oratory, Aristotle, and Demosthenes. Assignments and readings.

2023 Special Topics in Greek Poetry (3) May be taken for a max. of 6 hrs. of credit. Readings and studies in one or more of the following: Homer, Thucydides, the Pre-Socratics, the orators, Plato, Aristotle, and Socrates.

2015 Independent Study (1-3) May be taken for a max. of 6 hrs. sem. hrs. of credit. Permission of department required. Readings in Greek literature directed by a senior faculty member.

3003 Seminar in Greek Literature (3) May be taken for a max. of 15 hrs. of credit as topics vary.