

## Geological Sciences—GLG

- 421 Environmental Geochemistry**  
Spring. 4(3-2) RB: (GLG 201) and (CEM 141 or CEM 151 or CEM 181H or LBS 171)

Natural and anthropogenic processes affecting environmental chemistry with emphasis on the water cycle. Chemical equilibria, kinetics, geochemical cycling, acid rain, carbon dioxide, heavy metals, toxic organics, global change and the greenhouse effect.

- 422 Aquatic and Marine Organic Geochemistry (W)**  
Fall. 3(3-0) P:M: (CEM 141 or CEM 142 or CEM 151 or CEM 152 or CEM 181H or CEM 182H or LBS 171) and completion of Tier I writing requirement. RB: (GLG 201 or GLG 304)

Organic geochemistry applied to global cycling of organic matter and diagenesis in aquatic and marine environments. Use of stable isotopes and molecular analyses to trace the fate of bulk organic matter and individual compounds in the environment.

- 426 Biogeochemistry**  
Summer. 3 credits. Summer: Given only at W.K. Kellogg Biological Station. Interdepartmental with Microbiology and Molecular Genetics; Crop and Soil Sciences; Zoology. Administered by Department of Microbiology and Molecular Genetics. RB: (BS 110 or LBS 144 or LBS 148H or BS 111 or LBS 145 or LBS 149H) and (CEM 143 or CEM 251) SA: MPH 426

Integration of the principles of ecology, microbiology, geochemistry, and environmental chemistry. Societal applications of research in aquatic and terrestrial habitats.

- 431 Sedimentology and Stratigraphy (W)**  
Spring. 4(3-2) P:M: (GLG 351) and completion of Tier I writing requirement.

Sediments, sedimentary rocks, sedimentary processes, and depositional environments through geologic time. Facies events correlation. Fossils as tools in stratigraphy and environmental analysis. Biostratigraphy, paleoecology and taphonomy.

- 433 Vertebrate Paleontology**  
Fall of even years. 4(3-2) Interdepartmental with Zoology. P:M: (ZOL 328)

Fossil vertebrates with emphasis on evolution and interrelationships of major groups. Modern techniques of identification and interpretation of fossils.

- 434 Evolutionary Paleobiology**  
Fall. 4(3-2) Interdepartmental with Zoology. RB: (BS 110 or GLG 304 or LBS 144 or LBS 148H)

Patterns and processes of evolution known from the fossil record including speciation, phylogeny, extinction, heterochrony and biogeography.

- 470 Principles of Modern Geophysics**  
Fall of odd years. 3(3-0) P:M: (GLG 201) and (MTH 234 or concurrently or MTH 254H or concurrently or LBS 220 or concurrently) and (PHY 183 or PHY 183B or PHY 193H or PHY 233B or LBS 271) SA: GLG 472

Theory of solid-earth geophysics including geochronology, geothermics, geomagnetism and paleomagnetism, geodesy and gravity, rheology, and travel-time seismology.

- 471 Applied Geophysics**  
Spring. 4(3-2) P:M: (MTH 133 or concurrently or LBS 119 or concurrently) and (PHY 184 or concurrently or PHY 184B or concurrently or PHY 232 or concurrently or PHY 232B or concurrently or PHY 232C or concurrently or PHY 294H or concurrently or LBS 272 or concurrently) R: Not open to freshmen or sophomores.

Application of seismic, gravity, magnetic, resistivity, and electromagnetic methods to problems related to engineering studies, mineral and oil exploration, groundwater, subsurface mapping, pollution, and hazardous waste.

- 481 Reservoirs and Aquifers**  
Spring of even years. 3(3-0) P:M: (GLG 431 or concurrently)

Principles of the origin and evolution of porous media. Porosity and permeability of sediments and sedimentary rocks. Computing techniques for evaluating reservoirs and aquifers.

- 491 Field Geology - Summer Camp (W)**  
Summer. 6 credits. Summer: Park City, Utah. P:M: (GLG 431) and completion of Tier I writing requirement. R: Open only to students in the Department of Geological Sciences. Approval of department.

Field analysis of rock types: igneous, metamorphic, sedimentary. Structural analysis. Preparation of stratigraphic sections, geologic maps and cross sections. Air photo analysis.

- 499 Independent Study in Geological Sciences**

Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to juniors or seniors in the Department of Geological Sciences. Approval of department; application required.

Advanced individual study of special topics in the geological sciences.

## GERMAN

## GRM

### Department of Linguistics and Germanic, Slavic, Asian and African Languages College of Arts and Letters

- 101 Elementary German I**  
Fall, Spring, Summer. 4(4-1) R: No previous experience in German or designated score on German Placement Test. Not open to students with credit in GRM 150.

German language, civilization, and culture for beginning students. Work on all language skills with emphasis on speaking.

- 102 Elementary German II**  
Fall, Spring, Summer. 4(4-1) P:M: (GRM 101) or designated score on German placement test. Not open to students with credit in GRM 150.

Further study of German language, civilization, and culture for beginning students. Continued work on all language skills with emphasis on speaking.

- 103 Self-Paced Elementary German I**  
Fall, Spring, Summer. 2 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. RB: Some German coursework in High School. Not open to students with credit in GRM 101.

Self-paced introduction to German language, civilization and culture including web-based activities.

- 104 Self-Paced Elementary German II**  
Fall, Spring, Summer. 2 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. P:M: (GRM 101 or GRM 103) or designated score on German placement test. RB: Some German coursework in High School. Not open to students with credit in GRM 102.

Further self-paced study of German language, civilization, and culture for beginning students including web-based activities.

- 200 Second-Year German I with Review**  
Fall. 4(4-1) P:M: (GRM 102) or designated score on German placement test. Not open to students with credit in GRM 102 or GRM 201.

Rapid review and strengthening of vocabulary, grammar, and communication skills for incoming freshmen and transfer students. Reading, viewing, and discussion of a broad range of cultural texts and materials from the German-speaking world.

- 201 Second-Year German I**  
Fall, Spring. 4(4-0) P:M: (GRM 102) or designated score on German placement test. Not open to students with credit in GRM 200.

Intermediate-level development of all language skills. Reading, viewing, and discussion of a broad range of cultural materials from the German-speaking world.

- 202 Second-Year German II**  
Fall, Spring. 4(4-0) P:M: (GRM 201) or designated score on German placement test.

Further intermediate-level work on all language skills, based on topics such as popular music, literature, film, current events, and culture. Transition course to advanced work in German studies.

- 290 Independent Study**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Approval of department.

Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

- 301 Advanced German Language and Culture I**  
Fall, Spring. 3(3-0) P:M: (GRM 202) or designated score on German placement test.

Work on advanced speaking, listening comprehension, reading, and writing skills through intensive work with authentic texts dealing with contemporary issues relating to the German-speaking world. Selected review of grammar and syntax.

- 302 Advanced German Language and Culture II**  
Fall, Spring. 3(3-0) P:M: (GRM 301)

Further work on advanced speaking, listening comprehension, reading and writing skills, through intensive work with original texts dealing with contemporary issues relating to the German-speaking world.

- 311 Advanced German: Business Emphasis I**  
Fall. 3(3-0) P:M: (GRM 202) or designated score on German placement test. R: Not open to freshmen.

Development of proficiency through readings, discussions, and assignments based on materials dealing with the German economic system and Germany in world trade. Taught in German.

- 312 Advanced German: Business Emphasis II**  
Spring. 3(3-0) P:M: (GRM 311) R: Not open to freshmen.

Further readings, discussions, and assignments based on materials dealing with key areas of German business such as management and corporate hierarchies. Taught in German. Research paper required.

- 340 German Life and Literature: Contemporary Period**  
Fall, Spring. 3(3-0) P:M: (GRM 202) or designated score on German placement test.

Post-World War II Germany through analysis of selected literary texts, documentary material, and film. Topics such as problems of recovery and prosperity, partition and re-unification, and Germany in Europe.

- 341 German Life and Literature: Historical Perspectives**  
Fall, Spring. 3(3-0) P:M: (GRM 202) or designated score on German placement test.

Historical, social, and cultural developments in the German-speaking world as revealed in textual material in German, including literature, essays, and film. Focus on at least three historical epochs prior to 1945.

- 400 Reading German for Graduate Students**  
Spring of even years. 5(5-0) R: Open only to graduate students or approval of department.

German grammar and syntax, with emphasis on reading and translation in specialized fields.

- 420 Language through Media in Contemporary Germany (W)**  
Fall. 4(4-0) P:M: (GRM 302 or GRM 312) and completion of Tier I writing requirement.

Written and oral analysis of relevant issues in contemporary Germany as depicted in German media. Major writing project.

- 440 German Life and Literature: Cultural Differences**  
Fall. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (GRM 340 or GRM 341) and (HST 205 or HST 206)

Values and beliefs of marginalized groups in German society including religious minorities and foreign workers, and of youth and women. German immigrants in the United States as seen through their writings. Influence of historical and cultural developments.

- 441 German Life and Literature: Mainstream Culture**  
Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (GRM 340 or GRM 341) and (HST 205 or HST 206)

Values and beliefs of mainstream German cultural and political figures, as seen through the writings of religious and political leaders, educators, writers, and philosophers. Influence of historical and cultural developments.

- 450 The Study of German Literature**  
Fall of odd years. Spring of odd years. 3(3-0) P:M: (GRM 340 and GRM 341)

Issues relevant to the study of German literature. Periodization, canon formation, interpretative approaches, and genre, selected authors in the context of German literature since 800.

- 460 Contrastive Analysis of German and English**  
Fall of even years. Spring of even years. 3(3-0) P:M: (GRM 302 or GRM 312)

Grammatical, lexical, and phonological differences between English and German. Cross-cultural awareness. Major writing assignment.

- 461 Teaching German Language and Culture**  
Fall of even years. Spring of even years. 2(2-0) P:M: (GRM 302 or GRM 312) R: Open only to students with a teacher certification option in German. C: GRM 460 concurrently.

Didactic treatment of linguistic and cultural material introduced in GRM 460.

- 490 Independent Study**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Not open to freshmen. Approval of department.

Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

- 491 Special Topics in German Studies**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.

Special topics supplementing regular course offerings proposed by faculty on a group study basis.

- 492 Senior Seminar (W)**  
Spring. 4(4-0) P:M: Completion of Tier I writing requirement. RB: Two 400-level GRM courses.

Capstone seminar. Integration of literary and cultural themes. Synthesis of the student's academic experiences in German studies. Major writing project.

- 493 Overseas Internship**  
Fall, Spring, Summer. 1 to 4 credits. Fall: Germany, Austria, Switzerland. Spring: Germany, Austria, Switzerland. A student may earn a maximum of 4 credits in all enrollments for this course. P:M: (GRM 102) R: Not open to freshmen or sophomores. Approval of department.

Experience of German life and language through participation in an approved overseas internship program. Capstone experience integrating work in German.

- 499 Senior Thesis Research**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Approval of department.

An individual research project supervised by a faculty member that demonstrates the student's ability to do independent research and submit or present a major paper.

## GREEK

## GRK

**Department of French,  
Classics, and Italian  
College of Arts and Letters**

- 101 Elementary Classical Greek I**  
Fall of even years. 4(4-0)  
Fundamentals of orthography, pronunciation, vocabulary, grammar, and syntax. Translation of elementary readings.

- 102 Elementary Classical Greek II**  
Spring of odd years. 4(4-0) P:M: (GRK 101)  
Fundamentals of vocabulary, grammar, and syntax. Translation of elementary readings.

- 290 Independent Study**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Approval of department.

Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

- 301 Homer and the Archaic Age**  
Fall of odd years. 3(3-0) P:M: (GRK 102)  
Homeric and Archaic Greek literature. Homer, Hesiod, Archilochos, Sappho, Alcman and others.

- 302 Greek Poetry**  
Spring of even years. 3(3-0) P:M: (GRK 102) R: Approval of department.  
Classical Greek poetry. Aeschylus, Sophocles, Euripides, Aristophanes and others.

- 401 Greek Prose**  
Fall of even years. 3(3-0) P:M: (GRK 301 and GRK 302)  
Classical Greek prose literature; Aristotle, Plato, Lysias, Demosthenes, Isocrates, and others.

- 402 Hellenistic Literature**  
Spring of odd years. 3(3-0) P:M: (GRK 301 and GRK 302)  
Literature of the Hellenistic period through the second sophistic. Theocritus, Callimachus, Apollonius, Longus and others.

- 490 Independent Study**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Not open to freshmen or sophomores. Approval of department.  
Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

## HEBREW

## HEB

**Department of Linguistics and  
Germanic, Slavic, Asian  
and African Languages  
College of Arts and Letters**

- 101 Elementary Hebrew I**  
Fall. 4(4-1)  
Spoken and written Hebrew for conversation, reading, and research. Basic grammatical analysis of modern Hebrew.