998. Physical Chemistry Seminar  
Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course.  
R: Open only to graduate students in Chemistry.  
Advances in physical chemistry reported by graduate students.

999. Doctoral Dissertation Research  
Fall, Spring, Summer. 1 to 20 credits. A student may earn a maximum of 99 credits in all enrollments for this course.  
R: Open only to doctoral students in Chemistry and Chemical Physics.

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

101. Elementary Chinese I  
Fall. 5(5-0) 
Pronunciation, writing system, and basic vocabulary and sentence patterns, with emphasis on conversation.

102. Elementary Chinese II  
Spring, 5(5-0)  
P: CHS 101 or approval of department. Further work on conversation, character writing, and comprehension, with increasing emphasis on vocabulary building and grammar.

201. Second-Year Chinese I  
Fall. 5(5-1)  
P: CHS 102 or approval of department. Intermediate-level work on skills in conversation, comprehension, and grammar. Practice in composition.

202. Second-Year Chinese II  
Spring, 5(5-0)  
P: CHS 201 or approval of department. Further intermediate-level work on skills in conversation, comprehension, and grammar. Continued practice in composition.

301. Third-Year Chinese I  
Fall. 4(4-0)  
P: CHS 202. Advanced-level work on speaking, listening comprehension, reading, and writing skills, based on materials of cultural interest.

302. Third-Year Chinese II  
Spring, 4(4-4)  
P: CHS 201. Advanced-level work on speaking, listening comprehension, reading, and writing skills, based on materials of cultural interest.

350. Studies in the Chinese Language  
Spring, 3(3-0)  
P: CHS 201 or approval of department. Grammatical structures of modern Chinese. Grammar review, sound system, word formation, sentence and discourse structures, historical evolution of the Chinese language, dialects, sociolinguistics.

401. Fourth-Year Chinese I  
Fall, 3(3-0)  
P: CHS 302. Reading, discussion, and writing of advanced materials, including classical texts of broad cultural interest.

402. Fourth-Year Chinese II  
Spring, 3(3-0)  
P: CHS 401. Further reading, discussion and writing based on original materials, including classical texts of broad cultural interest.

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.

CIVIL ENGINEERING  
Department of Civil and Environmental Engineering  
College of Engineering

271. Engineering Surveying  
Fall. 4(3-3)  
P: MTH 120. Application of surveying and error analysis to civil engineering problems. Earth work calculations. Layout and management of construction sites.

290. Introduction to Environmental Engineering  
Fall. 3(3-0)  
P: CEM 141 or CEM 151, MTH 132, CPS 101 or CPS 131. Elements of hydrology. Groundwater and surface water supply and contamination. Treatment systems for drinking water, wastewater, air, and solid and hazardous waste. Introduction to noise and radiation pollution.

390. Structural Analysis  
Fall. 3(3-3)  
P: MSM 211. R: Open only to Civil Engineering majors. Determinate and indeterminate plane structures. Linearity, stability, determinacy. Virtual-work calculation of forces and displacements. Flexibility and stiffness methods in plane structures.

392. Soil Mechanics  
Fall, Spring, 3(2-3)  

321. Introduction to Fluid Mechanics  
Fall, Spring, 4(3-2)  

337. Civil Engineering Materials I  
Fall, Spring, 3(3-3)  
P: MSM 211 or concurrently. R: Open only to Civil Engineering and Biosystems Engineering majors. Common civil engineering construction and paving materials: aggregates, inorganic cements, asphaltic concretes, wood and steel. Composition, structure, physical and mechanical properties, tests, and production mix design.

400. Structural Mechanics  
Fall, 3(3-0)  