CHINESE   CHS

101*.   **Elementary Chinese I**
     Fall. 4(4-1)

Pronunciation, writing system, and basic vocabulary and sentence patterns, with emphasis on conversation.
QA: CHS 101 CHS 102

102*.   **Elementary Chinese II**
     Spring. 4(4-1)
     P: CHS 101 or R: approval of department.
Further work on conversation, character writing, and comprehension, with increasing emphasis on vocabulary building and grammar.
QP: CHS 101   QA: CHS 102 CHS 103

201*.   **Second-Year Chinese I**
     Fall. 4(4-1)
     P: CHS 102 or R: approval of department.
Intermediate-level work on skills in conversation, comprehension, and grammar. Practice in composition.
QP: CHS 103   QA: CHS 201 CHS 202

202*.   **Second-Year Chinese II**
     Spring. 4(4-1)
     P: CHS 201 or R: approval of department.
Further intermediate-level work on skills in conversation, comprehension, and grammar. Continued practice in composition.
QP: CHS 201   QA: CHS 202 CHS 203

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.
QP: CHS 203   QA: CHS 301 CHS 302

302*.   **Third-Year Chinese II**
     Spring. 4(4-0)
     P: CHS 301.
Advanced-level work on speaking, listening comprehension, reading, and writing skills, based on materials of cultural interest.
QP: CHS 301 CHS 321   QA: CHS 302 AND CHS 303

350*.   **Studies in the Chinese language**
     Fall. 3(3-0)
     P: CHS 202.
Chinese phonology, morphology, and syntax.
QP: CHS 203

401*.   **Advanced Chinese I**
     Fall. 3(3-0)
     P: CHS 302
Reading, discussion and writing on original materials, including classical texts cultural interest.
QP: CHS 303 CHS 321   QA: CHS 401 CHS 431

402*.   **Advanced Chinese II**
     Spring. 3(3-0)
     P: CHS 401
Continuation of CHS 401. Reading, discussion and writing on advanced materials, including classical texts of broad cultural interest.
QP: CHS 303 CHS 321   QA: CHS 401 CHS 420

499*.   **Senior Thesis Research**
     Fall, Spring, Summer. 1 to 4 credits.
     May reenroll for a maximum of 4
     credits.
     R: Approval of the 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   CE

271.   **Engineering Surveying**
     Fall, Spring. 4(3-3)
     P: MTH 132.
Application of surveying and error analysis to civil engineering problems. Earth work. Calculations. Layout and management of construction sites.
QP: MTH 112   QA: CE 252 CE 251

280*.   **Introduction to Environmental Engineering**
     Fall, Spring. 3(3-0)
     P: CEM 141 or CEM 151, MTH 132, CPS 130 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.
QP: CEM 141 CEM 151 MTH 112 CPS 112
QA: CE 280

305*.   **Structural Analysis**
     Fall, Spring. 3(3-0)
     P: MMM 211, CE 390 or concurrently. R:
Open only to College of Engineering majors.
Determinate and indeterminate plane structures. Linearity, stability, determinacy. Virtual-work calculation of forces and displacements. Flexibility and stiffness methods in plane structures.
QP: MMM 211   QA: CE 305 CE 306

312*.   **Soil Mechanics**
     Fall, Spring, Summer. 3(2-3)
     P: MMM 211. R: Open only to Civil Engineering and Agricultural Engineering majors.
Engineering properties of soil and their measurement. Effective-stress concept. Permeability and seepage. Compaction. Consolidation, shear strength and stress-strain behavior.
QP: MMM 211   QA: CE 312

321*.   **Introduction to Fluid Mechanics**
     Fall, Spring. 4(3-2)
     P: MMM 306 or concurrently. R: Open only to Civil Engineering and Agricultural Engineering majors. Not open to students with credit in ME 332.
Fluid properties, fluid statics, fluids in motion. Conservation of mass, energy and momentum. Dimensional analysis and similitude. Internal and external flows. Applications.
QP: MTH 310 MMM 306   QA: CE 321

337*.   **Civil Engineering Materials I**
     Fall, Spring. 4(3-3)
     P: MMM 211 or concurrently. R: Open only to Civil Engineering majors.
Common civil engineering construction and paving materials: aggregates, inorganic cements, asphalts, concretes, wood and steel. Composition, structure, physical and mechanical properties, tests, and production mix design.
QP: MMM 211   QA: CE 308

346*.   **Transportation**
     Fall, Spring. 3(3-0)
     P: MTH 133. R: Open only to Civil Engineering, Engineering Arts, and Urban Planning students.
Planning, design, and evaluation of transportation systems. Transportation demand, capacity, delay, and service quality. Elements of geometric design.
QP: MTH 113   QA: CE 346

370*.   **Engineering Economics**
     Fall, Spring. 3(3-0)
     P: MTH 133. R: Open only to College of Engineering students.
Economic decision making in the context of evaluation of engineering projects. Net present worth and related methods of analysis. Depreciation. Before- and after-tax analysis. Sensitivity analysis, inflation, expected value.
QP: MTH 113   QA: CE 370

373.   **Construction Estimating and Scheduling**
     Fall. 3(3-0)
     R: Open only to College of Engineering and Building Construction Management majors.
Estimating quantities and costs for construction projects. Optimal scheduling of personnel and equipment subject to constraints and uncertainty.
QA: CE 372 CE 471

390*.   **Civil Engineering Analysis**
     Fall, Spring. 3(3-0)
     P: CPS 130 or CPS 131, MTH 235, MMM 211 or concurrently R: Engineering majors
Application of numerical methods and computing to civil engineering problems. Problem solving methods. Report preparation. Random variables in civil engineering.
QP: CPS 112 MTH 310 MMM 211   QA: CE 390

400*.   **Structural Mechanics**
     Fall. 3(3-0)
     P: CE 305, CE 390. R: Open only to Civil Engineering majors.
Matrix methods of structural analysis. Flexibility method. Direct stiffness method for plane structures. Elastic supports, inclined supports, member releases and non-prismatic members. Application software.
QP: CE 306 CE 390   QA: CE 400 CE 410

405*.   **Design of Steel Structures**
     Fall, Spring. 3(3-0)
     P: CE 305. R: Open only to Civil Engineering majors.
Design of steel beams, columns, tension members and connections. Stability and plastic strength.
QP: CE 306 CE 390   QA: CE 405

406*.   **Design of Concrete Structures**
     Fall, Spring. 3(3-0)
     P: CE 305, CE 337. R: Open only to Civil Engineering majors.
Design of reinforced concrete beams, slabs, columns and footings.
QP: CE 306 CE 308 CE 390   QA: CE 406

407*.   **Structural System Design**
     Spring. 3(3-0)
     P: CE 405 or concurrently; CE 406. R: Open only to Civil Engineering majors.
Building or bridge design using steel, concrete, wood, or other materials. Approximate methods. Wind and earthquake forces.
QP: CE 405 CE 406   QA: CE 407

418*.   **Geotechnical Engineering**
     Fall. 4(4-0)
     P: CE 312, CE 390. R: Open only to Civil Engineering majors.
Shallow foundation design including bearing capacity, stress distribution, and settlement analysis. Pile foundations. Design of retaining structures including rigid walls, braced excavations, and sheet-pile walls. Stability of slopes and embankments.
QP: CE 312 CE 390   QA: CE 418 CE 419

421*.   **Engineering Hydrology**
     Fall. 3(3-0)
     P: STT 351; CE 321 or concurrently. R: Open only to College of Engineering, College of natural Science, and Crop and Soil Sciences majors.
Hydrologic cycle, streamflow, precipitation, evapotranspiration, infiltration, groundwater. Quantitative methods of analysis: probability, unit hydrograph, routing, and flow nets. Groundwater supply development, well flows.
QP: CE 321 STT 351   QA: CE 421

422*.   Applied Hydraulics
        Spring. 3(2-2)
        P: CE 321 or ME 332; CE 390 or ME 391.
R: Open only to Civil Engineering, Mechanical Engineering, and Agricultural Engineering majors.
Fundamentals of open-channel flow. Rapidly and gradually varied nonuniform flow analysis. Confined flows past submerged bodies, in pipe networks, and in turbo machinery. Design applications.
QP: CE 321   CE 390   QA: CE 422   CE 423

431*.   Pavement Design and Analysis I
        Fall. 3(3-0)
        P: CE 337. R: Open only to Civil Engineering majors.
Highway and airfield pavement structural design. Performance measures. Failure mechanisms, popular thickness design procedures, and design considerations for surface friction, pavement joints, and drainage.
QP: CE 308   QA: CE 494

**433*.   Rehabilitation of Highway and
        Airfield Pavements**
        Spring of even-numbered years. 3(3-0)
        P: CE 431 R: Open only to Civil Engineering majors.
Distress mechanisms. Developing and conducting quantitative surveys for structural and functional evaluation. Development of maintenance and rehabilitation strategies. Predictive performance models.
QP: CE 494   QA: CE 842

441*.   Highway Operations
        Fall. 3(3-0)
        P: STT 351, CE 346. R: Open only to Civil Engineering majors.
Driver and vehicle characteristics affecting traffic flow. Traffic flow density, highway speed and capacity. Signal control of intersections and networks. Risk management and liability.
QP: STT 351 CE 346   QA: CE 441

442*.   Airport Planning and Design
        Spring. 3(3-0)
        P: CE 346. R: Open only to Civil Engineering majors.
Components of the airport system including ground access facilities, aircraft characteristics, air traffic control, airport configuration, capacity analysis.
QP: CE 346   QA: CE 442

448*.   Transportation Planning
        Spring. 3(3-0)
        P: CE 346, STT 351. R: Open only to Civil Engineering majors.
Transportation planning process and procedures. Estimation of travel demand using traditional models of trip generation, trip distribution, modal split, and traffic assignment. Use of "quick-response" procedures. Traffic impact of new facilities.
QP: CE 346 STT 351   QA: CE 448

449*.   Highway Design
        Fall, Spring. 4(3-3)
        P: CE 271, CE 346. R: Open only to Civil Engineering majors.
Geometric design of highways as related to operation, capacity and safety. Alignment, drainage and pavement design. The use of CAD systems in preparing contract plans.
QP: CE 346 CE 252   QA: CE 347

474.   Contracts and Ethics
        Spring. 3(3-0)
        R: Open only to College of Engineering and Building Construction Management seniors and graduate students.
Contract and specification preparation. Concepts of liability. Case studies in professional ethics.
QA: CE 374

**481*.   Environmental Engineering
        Chemistry**
        Fall. 4(3-3)
        P: CEM 361, CHE 201, CE 280. R: Open only to College of Engineering majors.
Chemistry of environmental processes, including alkalinity, precipitation-dissolution reactions, chemical complexation and redox reactions. Engineering applications to processing plants for water and wastewater.
QP: CEM 361 CHE 300   QA: CE 481

483*.   Water and Wastewater Treatment
        Spring. 3(3-0)
        P: CE 280, CE 321. R: Open only to Civil Engineering majors.
Distribution of water and collection of sewage. Theory and design of water treatment processes.
QP: CE 280 CE 321   QA: CE 483

**485*.   Solid and Hazardous Waste
        Management**
        Spring. 3(3-0)
        P: CE 280. R: Open only to College of Engineering majors.
Design of solid waste collection and disposal systems. Definition of hazardous waste problems and selection of treatment alternatives.
QP: CE 280   QA: ENE 832 ENE 816

**487*.   Microbiology for Environmental
        Health Engineering**
        Fall. 3(2-3)
        P: CEM 361, CHE 201 R: Engineering majors.
Use and control of microorganisms for the protection of public health and the environment. Thermodynamics of microbial populations and microbial transformations.
QP: CEM 361 CHE 300

490*.   Independent Study
        Fall, Spring, Summer. 1 to 3 credits.
        *May reenroll for a maximum of 6
        credits.*
        R: Open only to Civil Engineering majors.
Approval of department.
Civil engineering problem of specific interest to the student and a faculty member. May be analysis or design.
QA: CE 499

491*.   Civil Engineering Design Project
        *Fall, Spring. 3(3-0) May reenroll for
        a maximum of 6 credits.*
        R: Open only to Civil Engineering majors.
Approval of department.
Planning, specification, and design of a civil engineering project or facility.
QA: CE 494

**801*.   Experimental Methods for CE
        Structures & Materials**
        Fall of odd-numbered years. 3(3-2)
        P: CE 305
Principles of instrumentation and experimental measurement techniques for civil engineering materials and structural systems; statistical methods for design and analysis of experiments on civil engineering materials; laboratory experiments.
QP: CE 308   QA: CE 801

802*.   Structural Dynamics
        Fall. 3(3-0)
        P: CE 400 or concurrently
Dynamic loads and dynamic characteristics of structures; steady and transient behavior; numerical solutions and method of normal modes; applications, e.g. earthquake engineering. Computer use.
QP: CE 405 CE 406DEPT APP   QA: CE 802

804*.   Advanced Structural Mechanics I
        Fall. 3(3-0)
        P: CE 400
Advanced linear structural mechanics; potential energy principle; finite element formulations; applications to space frames; plates and shell structures. Computer use.
QP: CE 400   QA: CE 804

**805*.   Advanced Design of Steel
        Structures**
        Fall. 3(3-0)
        P: CE 405
Flexural and torsional instability of columns and beams; slender cross-sectional elements; torsion; design of beam-columns. Topics chosen from: plastic design; plate girders; composite steel-concrete construction; connections.
QP: CE 405   QA: CE 906

**806*.   Advanced Design of Reinforced
        Concrete**
        Fall of even-numbered years. 3(3-0)
        P: CE 406 or concurrently
Analysis and design of reinforced concrete components under multiaxial loads; modeling; analysis and design of continuous reinforced concrete systems.
QP: CE 406   QA: CE 805

**807*.   Concrete Materials and
        Technology**
        Summer. 3(3-0)
        P: CE 377 R: Seniors and graduate students
Properties   and   production   of   concrete; structure-property relations in concrete; advances in concrete technology; special engineering applications.
QP: CE 308   QA: CE 890   CE 803

808*.   Prestressed Concrete Structures
        Fall of even-numbered years. 3(3-0)
        P: CE 406 or concurrently
Introduction to prestressing principles; methods and materials; fundamental concepts of analysis and design of prestressed concrete elements and structures.
QP: CE 406   QA: CE 806

**810*.   Reliability-Based Design in Civil
        Engineering**
        Fall. 3(3-0)
        P: STT 351, CE 406, CE 418
Probabilistic treatment of live and dead loads: earthquakes, floods, material properties and capacity; reliability basis of design specifications; reliability index; probability of failure; design for reliability; reliability of engineering systems.
QP: STT 351 CE 406CE 418   QA: CE 890

812*.   Mechanical Properties of Soils
        Fall. 3(2-3)
        P: CE 418
Permeability; consolidation theory; stress-strain behavior; conditions of failure; shear strength. Laboratory determination of soil properties including interpretation of experimental data for use in practice.
QP: CE 418 CE 419   QA: CE 817

815*.   Geotechnical Engineering Topics
        *Spring. 3(3-0) May reenroll for a
        maximum of 12 credits.*
        P: CE 418
Selected topics in Geotechnical Engineering related to soil stabilization, highway and airport soils, and frozen ground engineering.
QP: CE 418   QA: CE 815   CE 819 CE 820

818*.   Advanced Geotechnical Design
        Spring. 3(3-0)
        P: CE 418
Foundations and earth retaining structures; bearing capacity, settlement, and lateral resistance of deep foundations; advanced design of retaining structures; use of in-situ test data in design; numerical solution of geotechnical problems.
QP: CE 418 CE 419   QA: CE 818

821*. **Groundwater Hydraulics**
Fall. 3(3-0)
P: CE 321 and CE 421
Physical properties of porous media; equations of flow in saturated media; flow nets; well flow and parameter measurement; transport processes and the advective-dispersion equation for conservative contaminants.
QP: CE 321 CE 421   QA: CE 821

822*. **Experimental Fluid Mechanics in Civil Engineering**
Fall of even-numbered years. 3(1-6)
P: CE 422 or ME 431
Design and conduct laboratory experiments in fluid mechanics related to civil and environmental engineering; computer-based data acquisition; interpretation and analysis of experimental data.
QP: CE 422

826*. **Environmental Fluid Mechanics**
Spring. 3(3-0)
P: CE 422 or ME 431
Fundamentals of pollutant dispersion: mixing phenomena; molecular diffusion; turbulent dispersion; shear flow dispersion; the convective-diffusion equation; analytical solutions; simplified solutions; momentum, mass and heat transport.
QP: CE 321 CE 423   QA: CE 826

828*. **Free Surface Flow**
Fall of odd-numbered years. 3(3-0)
P: CE 422
Steady and unsteady open-channel flow: profile synthesis, surge and wave phenomena, computer modeling. Introduction to coastal engineering: wave theory, wave statistics, breakwater design.
QP: CE 422   QA: CE 828 CE 824

829*. **Fluid Transients**
Fall of odd-numbered years. 3(3-0)
P: CE 422 or ME 431
Application of unsteady flow concepts and wave mechanics to hydraulic engineering: method of characteristics; surges and water hammer in piping systems; resonance phenomena.
QP: CE 321   QA: CE 829

831*. **Pavement Design and Analysis II**
Spring. 3(3-0)
P: CE 431
Theoretical models for the analysis of pavement systems; evaluation and application of current design practices as related to elastic and plastic theory; formulation of improved design procedures.
QP: CE 494   QA: CE 840

835*. **Engineering Management of Transportation Networks**
Fall of odd-numbered years. 3(3-0)
P: CE 433
Engineering monitoring, and theoretical and statistical analysis of pavement networks to determine distress mechanisms, causes of distress, and possible engineering actions; prioritization and optimizations of the engineering actions.
QA: CE 890

837*. **Transportation Materials Engineering**
Fall of odd-numbered years. 3(3-0)
P: CE 312; CE 431
Engineering characteristics of soils and materials commonly used in transportation facilities. Relationships of material engineering properties to pavement design and performance. Material behavior under cyclic loading.
QP: CE 418   QA: CE 815

838*. **Selected Topics in Highway and Airfield Engineering**
Fall of odd-numbered years. 1 to 4 credits. May reenroll for a maximum of 6 credits.
P: Approval of department
Selected topics in pavement engineering including: nondestructive deflection testing and back calculation of layer moduli, advanced application of finite element theory in slab design, and fracture mechanics analyses of joint and crack performance.
QP: CE 494

839*. **Stabilizing Unbound Granular Materials**
Fall of even-numbered years. 3(3-0)
P: CE 312, CE 431 R: Seniors and graduate students
Improving performance and engineering properties of various granular materials through the use of mechanical processes, and chemical/mineralogical additives; characterization of engineering properties of stabilized materials.
QP: CE 418   QA: CE 819

841*. **Traffic Flow Theory**
Spring. 3(3-0)
P: STT 351
Microscopic and macroscopic traffic flow models; queueing theory application to traffic flow analysis; gap acceptance; simulation models for network analysis; intelligent vehicle highway systems.
QP: STT 351   QA: CE 843

842*. **Advanced Airport Systems Design**
Fall of odd-numbered years. 3(3-0)
P: CE 442
Analysis and design of airport systems using computer models; design parameters; demand analysis; runway orientation and capacity; airside delay; vehicle processing; passenger processing.
QP: CE 442

843*. **Simulation and Optimization of Urban Traffic Flow**
Fall of even-numbered years. 3(3-0)
P: STT 351, CE 449, CE 441
Statistical analysis of highway geometric designs and operational-control strategies with respect to the optimal flow of traffic; intersection, arterial, network design and control models; traffic simulation; system management and optimization.
QP: CE 441 CE 449   QA: CE 841

844*. **Highway and Traffic Safety**
Fall of odd-numbered years. 3(3-0)
P: CE 449, STT 422
Analysis of highway geometric design alternatives and operational-control strategies with respect to the probabilities of traffic crashes; statistical methods of pattern identification; countermeasure selection and evaluation methodology; risk management
QP: CE 843   QA: CE 844

845*. **Public Transportation System Planning**
Fall of odd-numbered years. 3(3-0)
P: CE 448
Planning and operating urban and rural transportation systems; system technology; budgeting and programming transportation services; transportation system management; environmental impact statements; paratransit and demand-responsive systems.
QP: CE 346   QA: CE 845 CE 941

846*. **Statewide Transportation Network Evaluation**
Fall of even-numbered years. 3(3-0)
P: CE 346
Transportation system measures; needs studies; sufficiency ratings; cost allocation models; programming and budget constraints; corridor analysis; transportation economics; demand elasticity.
QP: CE 346   QA: CE 846

848*. **Travel Demand Analysis**
Fall of even-numbered years. 3(3-0)
P: CE 448
Advanced topics in travel demand modeling; disaggregate and behavioral models, error analysis, and model sensitivity; economic investment and analysis in demand context; activity modeling.
QP: CE 448   QA: CE 848

849*. **Transportation Research Methods**
Spring. 3(3-0)
P: STT 351 or 1 STT course at 400 level
Quantitative methods and experiment design for transportation research; emphasis is on application and interpretation of methods including ANOVA, non-parametric, discriminary analysis, factor analysis, multivariate regression; SPSS.
QP: CE 351   QA: CE 849

880*. **Special Problems in Civil Engineering**
Fall, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 9 credits.
P: Approval of department
Research problems of limited scope not pertaining to thesis accomplished under CE 899 or CE 999.
QA: CE 880

890*. **Special Topics in Civil Engineering**
Fall, Spring, Summer. 2 to 4 credits. May reenroll for a maximum of 9 credits.
P: Approval of department
Selected topics in new or developing areas of civil engineering.
QA: CE 890

899*. **Master's Thesis Research**
Fall, Spring, Summer. 1 to 8 credits. May reenroll for a maximum of 0 credits.
P: Approval of department
Master's thesis research
QA: CE 899

902*. **Random Vibration of Structural and Mechanical Systems**
Spring of odd-numbered years. 3(3-0)
Interdepartmental with the Department(s) of Mechanical Engineering, Metallurgy, Mechanics, and Materials Science,.
P: CE 802 or ME 860, CE 810 or STT 351 or STT 421 recommended
Probabilistic modeling of random excitations (e.g., earthquake, aerodynamic and ocean wave loadings); response of single and multiple degree-of-freedom systems to random excitation; designing against failure; nonstationary and nonlinear problems.
QP: CE 802 ME 823STT 351STT 441   QA: CE 807

904*. **Advanced Structural Mechanics II**
Spring. 3(3-0)
P: CE 804
Complementary energy; hybrid finite element; elements of theory of plasticity; nonlinear analysis of frames; nonlinear finite elements; computer implementation.
QP: CE 804   QA: CE 890

906*. **Advanced Theory of Concrete Composites and Structures**
Spring of odd-numbered years. 3(3-0)
P: CE 806
Applications of fracture mechanics and plastic theories to modeling the mechanical behavior of concrete composites and structures; fiber reinforced concrete.
QP: CE 406   QA: CE 905 CE 803

915*. **Earth Structures**
Fall of odd-numbered years. 3(3-0)
P: CE 812
Design of earth dams and embankments; natural and cut slopes; slope stability analysis; embankments on soft foundations; seepage analysis; instrumentation; earth reinforcement.
QP: CE 817   QA: CE 915

916*. **Soil Dynamics**
Spring. 3(3-0)
P: CE 812
Vibration fundamentals; wave propagation in soil media; dynamic soil properties; theory and design of foundations for vibratory loads; characteristics of ground motion during earthquakes; soil liquefaction, settlement under transient and repeated loads.
QP: CE 817   QA: CE 916

921*. **Advanced Topics in Groundwater**
Spring of even-numbered years. 3(3-0)
P: CE 821
Topics in the formulation and use of numerical simulation to understand the physics of flow and contaminant transport in complex settings and/or the mechanics of immiscible fluids in porous media.
QP: CE 821   QA: CE 921

929*. **Selected Topics in Hydraulics**
Spring of odd-numbered years. 1 to 3 credits. May reenroll for a maximum of 6 credits.
P: Permission of department
Selected topics in advanced fluid mechanics and hydraulics related to civil and environmental engineering.

999*. **Doctoral Dissertation Research**
Fall, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 0 credits.

Doctoral dissertation research
QA: CE 999

CLASSICAL STUDIES   CLA

120*. **English from Latin and Greek Roots**
Fall of odd-numbered years. 3(3-0)

Prefixes, suffixes, and roots of English vocabulary from Greek and Latin word elements.
QA: CLA 220

121*. **Medical Terminology**
Spring of even-numbered years. 3(3-0)

Basic Greek and Latin word elements used in the formation of prefixes, suffixes, and roots.
QA: CLA 221

300*. **Greek Civilization**
Fall of even-numbered years. 3(3-0)
R: Not open to freshmen.
Political, social, religious, and intellectual life of ancient Greece from the Mycenaean period to the death of Alexander the Great, through such authors as Homer, Herodotus, Aeschylus, Euripides, Aristophanes, Thucydides, and Plato.
QA: CLA 326

310*. **Roman Civilization**
Spring. 3(3-0)
R: Not open to freshmen.
Enduring features of Roman civilization to Justinian. Political institutions, religion, architecture, literary forms, creative arts, and gender roles.
QA: CLA 327

350*. **Greek and Roman Literature in English Translation**
Spring of even-numbered years. 3(3-0)
R: Not open to freshmen.
Representative works of major Greek and Roman authors.
QA: CLA 304 CLA 305

400*. **Women in Classical Greek Society**
Spring of even-numbered years. 3(3-0)
Interdepartmental with the Department(s) of Women's Studies,.
R: Not open to freshmen and sophomores.
Images, roles, and statuses of women in Greek society as seen through literary sources.
QA: CLA 330

410*. **Greek Mythology**
Spring of even-numbered years. 3(3-0)
R: Not open to freshmen and sophomores.
Myths as social discourse defining order in Greek culture, as source of inspiration for poets and thinkers, and as legacy for modern Western culture.
QA: CLA 319 CLA 320

420*. **Greek and Roman Religions**
Fall of odd-numbered years. 3(3-0)
R: Not open to freshmen and sophomores.
Religious life of the Greeks and Romans. Cults, priesthoods, festivals, rites, and the ecstatic and mystic movements.
QA: CLA 325

499*. **Senior Thesis**
Fall, Spring. 3(3-0)
P: LTN 402. R: Approval of department.
Scholarly research and writing with a focus on specific problems, under faculty supervision.
QP: LTN 490

COMMUNICATION ARTS AND SCIENCES   CAS

492. **Special Topics**
Fall, Spring, Summer. 1 to 8 credits. May reenroll for a maximum of 16 credits.
R: Approval of department.
Varied topics pertaining to the study of communication processes.
QA: CAS 492

892*. **Special Topics**
Fall, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 16 credits.
R:graduate students approval of college
Varied topics pertaining to advanced study of communication processes.
QA: CAS 892

992*. **Doctoral Seminar**
Fall, Spring, Summer. 3(3-0) May reenroll for a maximum of 15 credits.
R: graduate students   permission of instructor
Rotating topics on theoretical and research issues in Communication and/or Mass Media.
QA: COM 940

993*. **Research Internship**
Fall, Spring, Summer. 1(1-0) May reenroll for a maximum of 6 credits.
R: Mass Media Ph.D. Students (98 curriculum code)
Research practice on a project with a designated faculty member.
QA: CAS 990

999*. **Doctoral Dissertation Research**
Fall, Spring, Summer. 1 to 9 credits. May reenroll for a maximum of 99 credits.
R: students in Mass Media Ph.D. Program (curriculum 98)
Dissertation research for the Ph.D. program in the Mass Media.
QA: CAS 999

COMMUNICATION   COM

100. **Human Communication**
Fall, Spring, Summer. 3(3-0)

Process and functions of communication. Principles underlying communication behavior. Practice in analyzing communication situations and in speaking and writing.
QA: COM 100

200*. **Introduction to Communication Inquiry**
Fall, Spring, Summer. 4(3-2)
P: MTH 110 or MTH 116 or designated score on mathematics placement test. <F9

Nature and conduct of communication inquiry. Significant questions about communication and finding systematic answers.
QP: MTH 108 MTH 110   QA: COM 199

225. **An Introduction to Interpersonal Communication**
Fall, Spring, Summer. 3(3-0)

Principles and practices of interpersonal communication. Emphasis on effective and responsible interpersonal communication.
QA: COM 125

240. **Introduction to Organizational Communication**
Fall, Spring, Summer. 3(3-0)
Theories, systems, structures and processes of organizational communication. Organizational cultures. Communication in multinational organizations and in individual, leadership, supervisor-subordinate and small group situations.

315*. **Information Gathering and Interviewing Theories**
Fall. 3(3-0)
P: COM 200, COM 225. R: Not open to freshmen and sophomores.
Information gathering as a relational process. Interaction through the asking and answering of questions.
QP: COM 125 COM 199

325*. **Interpersonal Communication Theory and Research**
Fall, Spring. 3(3-0)
P: COM 200, COM 225. R: Not open to freshmen and sophomores. Only open to Communication majors.
Theories, processes and models of interpersonal communication. Topics include conflict resolution, deception, concensus, and uncertainty reduction in communication.
QP: COM 125 COM 199

340*. **Dyadic and Group Processes in Organizations**
Fall, Spring. 3(3-0)
P: COM 200, COM 240. R: Not open to freshmen and sophomores. Only open to Communication majors.
Theory and research on dyadic and group relations within organizations. Topics include leadership, motivation, networks, decision making, and organizational taxonomy.
QP: COM 199