Courses of Descriptions—Civil Engineering

829. Fluid Transients
Spring of even-numbered years. 3(3-0)
Application of unsteady flow concepts and wave mechanics to hydraulic engineering; method of characteristics, surges and hammer in piping systems, resonance phenomena.
QP: CE 321 QA: CE 829

831. Pavement Design and Analysis I
Spring. 3(3-0)
Theoretical models for analysis of pavement systems. Evaluation and application of current design practices related to elastic and plastic theory. Formulation of improved design procedures.
QP: CE 814 QA: CE 840

835. Engineering Management of Pavement Networks
Spring of odd-numbered years. 3(3-0)
QA: CE 890

827. Transportation Materials Engineering
Fall of even-numbered years. 3(3-0)
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.
A student may earn a maximum of 8 credits in all enrollments for this course.
Topics in pavement engineering such as nondestructive deflection testing and back calculation of layer moduli, advanced application of finite element theory in slab design, or fracture mechanics analyses of joint and crack performance.
QP: CE 494

829. Stabilizing Unbound Granular Materials
Fall of even-numbered years. 3(3-0)
Improving performance and engineering properties of various granular materials through the use of mechanical processes, and chemical or mineralogical additives. Characterization of engineering properties of stabilized materials.
QP: CE 418 QA: CE 819

841. Traffic Flow Theory
Spring. 3(3-0)
QP: STT 351 QA: CE 843

842. Advanced Airport Systems Design
Fall of odd-numbered years. 3(3-0)
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 412

843. Simulation and Optimization of Urban Traffic Flow
Fall of even-numbered years. 3(3-0)
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 411, CE 449 QA: CE 841

844. Highway and Traffic Safety
Fall of odd-numbered years. 3(3-0)
QP: CE 843, STT 423 QA: CE 844

845. Public Transportation System Planning
Fall of odd-numbered years. 3(3-0)
Planning and operating urban and rural transportation systems. Schedule and technology and management. Budgeting and programming of transportation services. Environmental impact statements. Paratransit and demand-responsive systems.
QP: CE 836 QA: CE 845, CE 941

846. Statewide Transportation Network Evaluation
Spring of even-numbered years. 3(3-0)
Transportation system measures, needs studies, sufficiency ratings. Cost allocation models, programming and budget constraints. Corridor analysis, transportation economics, demand elasticity.
QP: CE 846 QA: CE 844

849. Transportation Research Methods
Spring. 3(3-0)
Application and interpretation of quantitative methods and design experiments for transportation research; ANOVA, non-parametric, discriminant analysis, factor analysis, multivariate regression, SPSS.
QP: CE 351 QA: CE 849

900. Independent Study in Civil Engineering
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.

901. Selected Topics in Civil Engineering
Fall, Spring, Summer. 2 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.
Selected topics in new or developing areas of civil engineering.
QP: CE 890

909. Master's Thesis Research
Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 24 credits in all enrollments for this course.
QP: CE 899

902. Random Vibration of Structural and Mechanical Systems
Spring of even-numbered years. 3(3-0)
Interdepartmental with Mechanical Engineering and Materials Science and Mechanics.
P: CE 802 or ME 860, CE 810 or STT 351.
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.
P: CE 802, ME 825, STT 381, STT 441 QA: CE 807

904. Advanced Structural Mechanics II
Spring. 3(3-0)
P: CE 804
P: 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.
P: CE 406 QA: CE 805, CE 803

915. Earth Structures
Fall of odd-numbered years. 3(3-0)
P: CE 812.
P: CE 817 QA: CE 915

916. Soil Dynamics
Spring. 3(3-0)
P: CE 812.
P: CE 817 QA: CE 916

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

929. Selected Topics in Hydraulics
Fall of odd-numbered years. 1 to 3 credits.
A student may earn a maximum of 6 credits in all enrollments for this course.
P: CE 828 or CE 829 or CE 829.
Advanced fluid mechanics and hydraulics related to civil and environmental engineering.
P: CE 829 QA: CE 929

999. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 72 credits in all enrollments for this course.
QP: CE 999

CLASSICAL STUDIES

CLA

Department of Romance and Classical Languages

College of Arts and Letters

110. 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.
QP: CLA 220

121. Medical Terminology
Spring of odd-numbered years. 3(3-0)
Basic Greek and Latin word elements used in the formation of prefixes, suffixes, and roots.
QP: CLA 221

300. Greek Civilization
Fall. 3(3-0)
R: Not open to freshmen.
Political, social, religious, and intellectual life of ancient Greece from the Minoan period to the death of Alexander the Great, through such authors as Homer, Herodotus, Aeschylus, Euripides, Aristophanes, Thucydides, and Plato.
QP: 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.
QP: CLA 327

350. Greek and Roman Literature in English Translation
Spring of odd-numbered years. 1 to 3 credits.
R: Not open to freshmen.
Representative works of major Greek and Roman authors.
QP: CLA 304, CLA 305
409. Women in Classical Greek Society Fall, Spring, 3(3-0) Interdepartmental with Women's Studies. R: Not open to freshmen and sophomores. Images, roles, and status of women in Greek society as seen through literary sources. QA: CLA 330

410. Greek Mythology Spring, 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 492. R: Approval of department. Scholarly research and writing with a focus on specific problems, under faculty supervision. QA: LTN 493. 

COMMUNICATION ARTS AND SCIENCES CAS

College of Communication Arts and Sciences

492. Special Topics Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 16 credits in all enrollments for this course. R: Approval of department. Varied topics pertaining to the study of communication processes. QA: CAS 492

493. Special Topics Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 16 credits in all enrollments for this course. R: Open only to graduate students in the College of Communication Arts and Sciences or approval of college. Varied topics pertaining to advanced study of communication processes. QA: CAS 492

494. Doctoral Seminar Fall, Spring, Summer. 3(3-0) A student may earn a maximum of 18 credits in all enrollments for this course. R: Approval of department. R: Open only to Ph.D. students in Mass Media and Communication or approval of college. Topics on theoretical and research issues in communication and mass media. QA: COM 940

495. Research Internship Fall, Spring, Summer. 1 credit. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open only to Ph.D. students in Mass Media. Participation in faculty research projects. QA: CAS 990

496. Doctoral Dissertation Research Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to Ph.D. students in Mass Media. QA: CAS 999

425. Communication in Close Relationships Fall, Spring. 4(4-0) P: COM 225 or COM 325. R: Open only to junior, senior, or graduate student Communication majors. In-depth treatment of current research and of theoretical and methodological issues.

440. Organizational Communication Structure Fall. 4(4-0) P: COM 470. R: Open only to junior, senior, or graduate student Communication majors. Systems approaches to information processing and communication structures in organizations. QA: COM 315

460. Critical Perspectives in Communication Spring, 4(4-0) QA: COM 100. R: Not open to freshmen and sophomores. Evaluation of efficacy of messages. Interdependence of communication and other societal factors, emphasizing criteria for ethical and social appropriateness. QA: COM 100. QA: COM 460

475. Communication Campaign Design and Analysis Fall. 4(4-0) R: Open only to junior, senior or graduate student Communication majors. Design and analysis of campaigns presented through mediated channels including electronic and print media. QA: TC 300 QA: COM 425

490. Independent Study Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. P: One 200 level COM course. R: Not open to freshmen and sophomores. Approval of department; application required. Directed study under faculty supervision.

493. Internship Fall, Spring, Summer. 1 to 7 credits. A student may earn a maximum of 7 credits in all enrollments for this course. R: Open only to Communication majors. Approval of department; application required. Supervised practical experience in a professional environment.

494. Practicum in Communication Research and Instruction Fall, Spring. Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to Communication majors. Approval of department; application required. Structured participation in departmental research teams and applied practice in the community.

890. Communication Programs and Evaluation Fall. 3(3-0) Communication audits, training and development, and focus groups as they apply to the evaluation of communication programs and institutions. Related topics include interviewing, questionnaire design and formative evaluation. QA: COM 870, COM 840

891. Communication Research I Fall. 4(4-0) Communication research strategy and methodology. Scientific process. Design and test of hypotheses. Methods of research design. QA: COM 804, COM 805

892. Communication Research II Spring. 4(4-0) QA: COM 801. Further consideration of communication research strategy and methodology. Topics include systems theory, cybernetics, and transactional analysis. QA: COM 804, COM 805 QA: COM 806