contact stresses; and stress concentration. Prerequisite: ENGR 350A,B and ENGR 222A,B.

**558-3 Reliability in Engineering Applications.** An overview of principles and methods for quantifying the uncertainty in planning, design, testing and operation of engineering systems. Topics include probability theory, random variables, multivariate distributions, regression and correlation analyses, Monte Carlo simulations, and Bayesian approaches. Concepts are illustrated with examples from various areas of engineering, with particular emphasis on civil engineering applications. Prerequisite: ENGR 351 or consent of instructor.

**570-3 Sedimentation Engineering.** Introduction to the transport of granular sediment by moving fluids; analysis of regional degradation, aggradation and local scour in alluvial channels; investigation of sediment sources, yield and control. Prerequisite: CE 474 or consent of instructor.

**571-3 Water Resources Systems Engineering and Management.** Philosophy of water resources planning; economic, social and engineering interactions related to water quantity; quantitative optimal planning methodologies for the design and operation of hydrosystems; guest lecturers; projects/case studies. Prerequisite: CE 474 or consent of instructor.

**572-3 Advanced Hydraulic Design.** Design and analysis of stormwater control and conveyance systems, dams, spillways, outlet works, stilling basins, culverts and other complex hydraulic systems. Prerequisite: CE 474 or consent of instructor.

**573-3 Modeling of Hydrosystems.** Hydraulic and hydrologic modeling; theory and application of common surface and subsurface flow models such as HEC–RAS, HEC–6, FLDWAV, DAMBRK, MODFLOW and MODPATH. Prerequisite: CE 474 or consent of instructor.

**592-1 to 5 Special Investigations in Civil Engineering.** Advanced Civil Engineering Topics and/or problems in (a) Structural Engineering, (b) Hydraulic Engineering, (c) Environmental Engineering, (d) Geotechnical Engineering, (e) Fluid Flow Analysis, (f) Computational Mechanics, (g) Composite Materials, and (h) Stress Analysis. Restricted to graduate standing. Special approval needed from the instructor.

**593-3 Civil Engineering Project.** Advanced project on topics such as case studies, engineering design, testing and analysis methods, computer modeling, or any other topic focusing on engineering practice. Detailed project report is required. Restricted to graduate standing. Special approval needed from instructor.

**599-1 to 6 Thesis.**

**601-1 per semester Continuing Enrollment.** For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

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**Communication Disorders and Sciences**

(See Rehabilitation Institute for program description)