

GEOLOGICAL ENGINEERING (GEOE)

GEOE 2000 (s) Seminar (1-16 credits, max 99)

GEOE 3980 (s) Internship (1-16 credits, max 99)

GEOE 4030 (s) Workshop (1-16 credits, max 99)

Credit arranged

GEOE 4040 (s) Special Topics (1-16 credits, max 99)

Credit arranged

GEOE 4070 Rock Mechanics (3 credits)

Mechanical properties of rocks and rock masses; lab and insitu techniques to estimate strength, stress distribution, and deformation behavior in rock masses; application of analytical tools such as the finite element method to design stable excavations and support systems in rock. Typically Offered: Varies.

Prereqs: ENGR 3500

GEOE 4280 Geostatistics (3 credits)

Cross-listed with GEOL 4280

Joint-listed with GEOL 5340

Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Recommended Preparation: STAT 3010 Cooperative: open to WSU degree-seeking students.

GEOE 4650 Excavation and Materials Handling (3 credits)

Principles of excavation design and handling of earth materials related to construction projects, quarries, and mines; blasting, excavation planning and scheduling, equipment selection and replacement, cost estimating, geographic information, and management information systems. Computerized design using Gemcom and/or other appropriate software. Typically Offered: Varies.

Prereqs: CE 2110 or Permission

GEOE 4990 (s) Directed Study (1-16 credits, max 99)

Credit arranged

GEOE 5000 Master's Research and Thesis (1-16 credits, max 99)

Credit arranged

GEOE 5010 (s) Seminar (1-16 credits, max 99)

Credit arranged

GEOE 5020 (s) Directed Study (1-16 credits, max 99)

Credit arranged

GEOE 5030 (s) Workshop (1-16 credits, max 99)

Credit arranged

GEOE 5040 (s) Special Topics (1-16 credits, max 99)

GEOE 5170 Tunnel Design and Construction (3 credits)

Geotechnical considerations for tunneling, drilling and blasting, TBM, ground support, haulage, ventilation, water handling, and trenchless technology. Application of analytical techniques such as the finite element method to design stable underground structures and support systems.

Prereqs: GEOE 4070 or Permission

GEOE 5350 Seepage and Slope Stability (3 credits)

Cross-listed with CE 5630

Principles governing the flow of water through soils; mechanics of stability analysis of slopes, landslides, and embankments for soil and rock masses; probabilistic analyses; stabilization methods. Typically Offered: Spring (Even Years).

Prereqs: CE 3600 or Permission. A minimum grade of C or better is required for prerequisite Cooperative: open to WSU degree-seeking students.

GEOE 5980 (s) Internship (1-16 credits, max 99)

Credit arranged

GEOE 5990 (s) Research (1-16 credits, max 99)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission