

GEOLOGICAL ENGINEERING (GEOE)

GEOE 200 (s) Seminar

GEOE 398 (s) Internship

GEOE 403 (s) Workshop
Credit arranged

GEOE 404 (s) Special Topics
Credit arranged

GEOE 407 Rock Mechanics
3 credit

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.

Prereq: ENGR 350

GEOE 428 Geostatistics
3 credits

Cross-listed with GEOL 428.

Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Recommended Preparation: STAT 301. Cooperative: open to WSU degree-seeking students.

GEOE 436 Geological Engineering Analysis and Design
3 credits

Geological engineering analysis and design methods, including data collection, stability analysis, and ground reinforcement techniques; individual and teamwork approaches to formulation and solving geological engineering problems. One 1-day field trip.

Prereq: CE 360 or Graduate standing

GEOE 465 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.

Prereq: CE 211 or Permission

GEOE 499 (s) Directed Study
Credit arranged

GEOE 500 Master's Research and Thesis
Credit arranged

GEOE 501 (s) Seminar
Credit arranged

GEOE 502 (s) Directed Study
Credit arranged

GEOE 503 (s) Workshop
Credit arranged

GEOE 504 (s) Special Topics

GEOE 517 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.

Prereq: GEOE 407 or Permission

GEOE 535 Seepage and Slope Stability
3 credits

Cross-listed with CE 563.

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. Cooperative: open to WSU degree-seeking students. (Alt/even years, Spring only)

Prereq: CE 360 or GEOE 436; or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

GEOE 598 (s) Internship
Credit arranged

GEOE 599 (s) Research
Credit arranged

Research not directly related to a thesis or dissertation.

Prereq: Permission