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, Joint-listed with GEOL 534
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