

Geological Engineering

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GeoE 403 (s) Workshop (cr arr)

GeoE 404 (s) Special Topics (cr arr)

GeoE 407 Rock Mechanics (3 cr)

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 420 Erosion and Sediment Control (3 cr)

Erosion and sediment control principles and practices, with emphasis on construction activities and compliance with regulatory guidelines. One 1-day field trip.

Prereq: Permission

GeoE ID428 Geostatistics (3 cr)

Same as Stat 428. WSU Geol and Stat 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.

GeoE 436 Geological Engineering Analysis and Design (3 cr)

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 cr)

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 (cr arr)

GeoE 500 Master's Research and Thesis (cr arr)

GeoE 501 (s) Seminar (cr arr)

GeoE 502 (s) Directed Study (cr arr)

GeoE 503 (s) Workshop (cr arr).

GeoE 517 Tunnel Design and Construction (3 cr)

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 528 Advanced Topics in Geological Engineering (3 cr)

Advanced theory and applications, with emphasis on geostatistical simulations, soil and rock reinforcement, and computer modeling methods in geological engineering.

Prereq: GeoE 428 and 435

GeoE 535 Seepage and Slope Stability (3 cr)

See CE 563. (Alt/even yrs, Spring only)

GeoE 598 (s) Internship (cr arr)

GeoE 599 (s) Non-thesis Master's Research (cr arr)

Research not directly related to a thesis or dissertation.

Prereq: Permission