Part I: Geotechnical Site Investigation, Underground Excavations and Tunneling

Instructor: Dr. Navid Mojtabai

Office Hours: Will be announced by the instructor.

Office: MSEC 294/296
Phone: (505) 835-5836
E-mail: Mojtabai@nmt.edu

Part II: Foundation Engineering and Soil Slope Stability

Instructor: Dr. Mehrdad Razavi

Office Hours: Tuesdays and Thursdays 11:00 AM to 12:00 AM

Office: MSEC 288
Phone: (505) 835-6447
E-mail: Mehrdad@nmt.edu

Part III: Rock Slope Stability

Instructor: Dr. Navid Mojtabai

Class Webpage:
http://www.nmt.edu/~Mehrdad/ME442

Class Schedule

Tuesday and Thursday 9:30 AM to 10:45 AM MSEC 268

Wednesday (Lab) 2:00 PM to 4:30 PM MSEC 268

References

Part I:
Part II:

4. Lecture Handouts

Part III:


Course Outline

**Part I: Geotechnical Site Investigation, Underground Excavations and Tunneling**

- Background, Need for Site Investigation
  - Steps, Procedures, Methods, and Sampling
- Rock Mass Classification and Empirical Support Design
- Stresses Around Openings
- Discontinuities and Use of Stereonets
- Analysis of Structurally Controlled Instability
- Strength of Rock and Rock Masses
  - Failure Criteria
- Rock Support Interaction
  - Support Design
- Pillar Design, Pillar Stresses, and Pillar Layout

**Part II: Foundation Engineering and Soil Slope Stability**

- Soil Mechanics (Review)
- Subsoil Exploration
- Slope Stability Analysis
- Bearing Capacity
- Shallow Foundations
- Lateral Earth Pressure
- Retaining Walls
- Deep Foundations
Part III: Rock Slope Stability

- Modes of failure
- Shear strength analysis
- Slope design
  - Plane Failure
  - Wedge Failure
  - Toppling

Grading

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<th>Part</th>
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Homework Requirement (Part II)

1. All homework problems must be handed in on engineering paper. The pages should be numbered and stapled together.
2. All homework assignments will be due one week after the day they are assigned.
3. Late homework is accepted, however, a 20% penalty is applied for each day after the due date.
4. Each problem should be clearly labeled and the solution should be presented in a logical manner. All solution steps should be included.

Grading Policy

1. To pass the course all homework assignments and project should be submitted.
2. Grades will be assigned on an absolute scale, as minimum. However the instructors reserve the right to adjust borderline grades upward on the basis of trends in homework and course project performance.