

## Course Outline

### **Introduction**

General principles  
Geotechnical Engineering fundamentals

Ref.: Chapters 1 – 9, Handout Notes

### **Site Investigations**

Planning  
Exploration methods  
Sampling techniques  
Laboratory and field tests

Ref.: Chapter 11, Handout Notes

### **Lateral Earth Pressure**

At-rest  
Rankine's Earth pressure Theory  
Coulomb's Earth Pressure Theory

Ref.: Chapter 10

### **Shallow Foundations**

Bearing capacity  
Immediate (elastic) settlements  
Settlements in clays and sands  
Tolerable settlements

Ref.: Chapter 12, Handout Notes

### **Deep Foundations**

Types of piles  
Load transfer mechanism  
Pile capacity  
Load tests  
Group effects

Ref.: Chapter 13, Handout Notes

### **Earth Retaining Structures**

Design of retaining walls  
Cantilever and anchored sheet piles (if time permits)  
Braced excavations (if time permits)

Ref.: Chapter 14

### **Stability of Slopes**

Types of slope movement  
Method of slices, wedges  
Computer program SLOPE W

Ref.: Chapter 15

**NB:** Chapters refer to Course Textbook.

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