Assignment 6

Due on: Monday 30th April, 25.30 GMT

Week 1: 2020-03-02

Unit: 1 - Foundations

Chapter 1: Introduction to Foundations

1.1 Identify the main components of a foundation system and their functions.

1.2 Discuss the importance of soil investigation in the design of a foundation system.

1.3 Describe the factors that influence the selection of a foundation type.

1.4 Explain the process of load transfer from the structure to the subsoil.

Week 2: 2020-03-09

Chapter 2: Statics of Foundations

2.1 Formulate the equilibrium equations for a statically determinate foundation system.

2.2 Analyze the stability of a foundation system under different loading conditions.

2.3 Calculate the required dimensions of a foundation system to meet specified load-bearing capacities.

2.4 Evaluate the effect of soil settlement on the structural integrity of a foundation system.

Week 3: 2020-03-16

Chapter 3: Dynamics of Foundations

3.1 Develop a dynamic model for a foundation system subjected to seismic forces.

3.2 Perform a vibration analysis to determine the natural frequencies of a foundation system.

3.3 Compare the results of static and dynamic analyses for a foundation system.

3.4 Evaluate the impact of environmental factors on the performance of a foundation system.

Week 4: 2020-03-23

Chapter 4: Advanced Topics in Foundations

4.1 Introduce the concept of active and passive earth pressures.

4.2 Discuss the effects of groundwater on the stability of a foundation system.

4.3 Analyze the influence of soil moisture content on the load-bearing capacity of a foundation system.

4.4 Explore the integration of geosynthetics in foundation design.

Week 5: 2020-03-30

Chapter 5: Case Studies in Foundation Engineering

5.1 Present real-world applications of foundation engineering principles.

5.2 Evaluate the effectiveness of different foundation systems in various construction projects.

5.3 Discuss the challenges and solutions encountered during the implementation of a foundation system.

5.4 Reflect on the future directions of foundation engineering research and practice.

Assignment Submission

Submit all assignments through the course's online platform by the due date. Late submissions will not be accepted.

This week's assignment is due on Monday, 2020-04-06, by 25.30 GMT. Good luck!