

In the name of God

**Lecture Plan form**

**Faculty:** Civil Engineering, Architecture, and Art **Major:** Civil Engineering **Sub major:** Geotechnics **Degree:** M.Sc.

**Lecture:** Advanced Foundation Engineering **Theory Unit No.:**3 **Practical Unit No.:-** **Preceded lecture:-**

**Teacher:** Amin Bahmanpour  Full Time  Part Time  Visiting  Place:  Classroom  Lab.

General Aim of the Lecture :Introducing the design of shallow and deep foundations as well as the retaining walls

Major Contents	
Bearing capacity of shallow foundations based on limit equilibrium method	1 <sup>st</sup> week
Bearing capacity of shallow foundations based on SPT and CPT	2 <sup>nd</sup> week
Settlement of shallow foundations	3 <sup>rd</sup> week
Bearing capacity of shallow foundations with eccentricity and inclination of the load, and foundation and ground inclination above and beneath the water level	4 <sup>th</sup> week
Bearing capacity of vertical piles faced with vertical loads	5 <sup>th</sup> week
Bearing capacity of drilled shafts	6 <sup>th</sup> week
Bearing capacity of piles based on SPT and CPT	7 <sup>th</sup> week
Uplift capacity of piles	8 <sup>th</sup> week
Bearing capacity of piles during short term and long term situation	9 <sup>th</sup> week
Soil pressure exerted to the walls based on Rankine method	10 <sup>th</sup> week
Soil pressure exerted to the walls based on Coulomb method	11 <sup>th</sup> week
Rigid and flexible retaining walls	12 <sup>th</sup> week
Design of unsupported sheet piles	13 <sup>th</sup> week
Design of supported sheet piles	14 <sup>th</sup> week
Introduction to problematic soils	15 <sup>th</sup> week
Design of foundation on the problematic soils with the method of improvement	16 <sup>th</sup> week

Note: in case of any difference between the contents and the method of teaching in any semester, the form should be refilled by the teacher and delivered to the instruction office of the faculty and uploaded on the website.

**The method of the verification of the student activities during the plan:** Final exam

**References:**

Soil Mechanics and Foundation, M. Budhu, 3<sup>rd</sup> Edition

Foundation Design, D.P. Coduto, 3<sup>rd</sup> Edition