

**Department : Building & Construction Technology Engineering**

**Subject : Foundation Engineering Technology**

**Class : Fourth year**

**Hours : 2 hrs ( Theoretical ) , 2hrs ( Practical )**

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**Objectives :**

**The student will learn the basic of foundation engineering , soil investigation , calculation of bearing capacity of soil , selection and design of different types of foundation .**

<b>Week</b>	<b>Syllabus</b>
<b>1&amp;2&amp;3 &amp;4&amp;5</b>	<b>Soil investigation : Collecting samples , No. of holes , Depth of bore holes , Laboratory tests , Report writing.</b>
<b>6&amp;7&amp;8&amp;9 &amp;10&amp;11</b>	<b>Bearing capacity theories , Factors affecting bearing capacity , Settlement calculations .</b>
<b>12&amp;13 &amp;14&amp;15</b>	<b>Design of shallow foundations .</b>
<b>16&amp;17&amp;18 &amp;19&amp;20</b>	<b>Deep foundations ,Types of piles , Method of execution, Bearing capacity of single pile , Bearing capacity of pile group , Design of piles , Design of piles cap , Settlement of piles .</b>
<b>21</b>	<b>Lateral earth pressure .</b>
<b>22&amp;23</b>	<b>Design of concrete retaining walls .</b>
<b>24&amp;25</b>	<b>Design of sheet piles.</b>
<b>26&amp;27</b>	<b>Slope stability ,Types &amp; factors affecting slope stability, Methods of analysis for clays &amp; sand .</b>
<b>28</b>	<b>Soil improvement , Soil improvement by compaction &amp; additives .</b>
<b>29&amp;30</b>	<b>Introduction to soil reinforcement .</b>

**References :**

- 1- Principles of Foundation Engineering , Fifth Edition , By Braja-M. Dass , California University 2006 .**
- 2- Foundation Analysis & Design / Bowles**
- 3- Foundation Engineering / Peck , Hunson & Tharnborm**