



**University of Basrah**  
**College of Engineering**  
**Department of Civil Engineering**



**Subject: Concrete Technology I**  
**Code: CE216**  
**Class: 2<sup>nd</sup> Year/1<sup>st</sup> Semester**  
**Pre-requisite: None**

**Theoretical: 2 hrs/wk**  
**Practical: 2 hrs/wk**  
**Tutorial: ---**  
**Units: 3**

Item	Subject	Hours
1	<b>Introduction: Cement and Aggregate</b>	4
2	Manufacturing of concrete <ul style="list-style-type: none"><li>- Mixing</li><li>- Transportation</li><li>- Placing and compaction</li><li>- Curing</li><li>- Finishing</li></ul>	
3	Properties of Fresh Concrete <ul style="list-style-type: none"><li>- Workability and Consistency</li><li>- Segregation and Bleeding</li><li>- Pressure on form work</li><li>- Stripping of form</li></ul>	
4	Strength of Concrete <ul style="list-style-type: none"><li>- Compressive strength</li><li>- Tensile strength</li><li>- Modulus of rupture</li><li>- Bond strength with steel reinforcement</li><li>- Factors affecting concrete strength</li><li>- Factor affecting concrete test</li></ul>	
5	Deformation of Concrete <ul style="list-style-type: none"><li>- Creep</li><li>- Shrinkage</li><li>- Modulus of elasticity and Poisson's ratio</li></ul>	



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Subject: Concrete Technology II

Code: CE226

Class: 2<sup>nd</sup> Year/2<sup>nd</sup> Semester

Pre-requisite: Concrete Technology I

Theoretical: 2 hrs/wk

Practical: 2 hrs/wk

Tutorial: ---

Units: 3

Item	Subject	Hours
1	<b>Concrete Mix Design</b> <ul style="list-style-type: none"><li>- Factors Effecting Mix Design</li><li>- British Method</li><li>- American Method</li><li>- High Strength Mix</li></ul>	
2	<b>Durability of Concrete</b> <ul style="list-style-type: none"><li>- Permeability of Concrete</li><li>- Durability of Steel in Concrete (weathering, chemical attack, frost attach, thermal properties, fire resistance)</li></ul>	
3	<b>Non-Destructive Testing of Hardened Concrete</b> <ul style="list-style-type: none"><li>- Rebound Hammer Test</li><li>- Ultrasonic Pulse Velocity</li></ul>	
4	<b>Special Concrete</b> <ul style="list-style-type: none"><li>- Lightweight and High Density Concrete</li><li>- Aerated and under water Concrete</li></ul>	
5	<b>Additives</b>	
6	<b>Polymer Concrete</b>	

Civil Engineering Department