

## CONCRETE TECHNOLOGY

Credits	<b>3 (2.2.5)</b>			Course code	CI3057	
Periods	<b>Total: 60</b>	<b>LT: 30</b>	<b>TH: 30</b>	<b>TN:</b>	<b>ĐA:</b>	<b>BTL/TL:</b>
Evaluation	BT: <b>10%</b>	TN:	KT: <b>20%</b>	BTL/TL:		Thi: <b>70%</b>
Evaluation type	<ul style="list-style-type: none"> <li>- <i>Midterm exam: writing, 45 minutes</i></li> <li>- <i>Final exam: writing, 90 minutes</i></li> </ul>					
Prerequisite course						
Previous course	Construction Materials Reinforced concrete structures 1					
Co-requisite course						
Training field	Technology of Construction Materials					
Standard	Undergraduate					
Course grade	<b>3</b>					
Other notes	<i>Exercise is together with theory class. Theory and exercise spend 3 teaching periods per week for 15 weeks.</i>					

### Course Description

The students study concrete and products of concrete, fresh concrete, setting, process of portland cement and structural formation of cement stone, the technical properties of concrete, concrete with solid aggregates, other products of concrete.

### Study documents

- [1]. Giáo trình Công nghệ bê tông xi măng - tập 1, Nguyễn tấn Quý – Nguyễn Thiện Ruệ, Nhà xuất bản Giáo dục, 2000.
- [2]. Công nghệ bê tông, Viện sĩ IU. M. Bazeco và các tác giả, Nhà xuất bản Xây dựng, Hà Nội, 2004.
- [3]. Properties of concrete, A.M Neville, Addison Wesley – Longman Limited, England, 1995, sixth edition.

[4]. Tuyển tập tiêu chuẩn xây dựng – tập 8 & 10, Bộ xây dựng, 1997.

### Course Goals

- Apply basic knowledge;
- Design concrete mix proportion;
- Study on properties of fresh concrete;
- Study on properties of concrete;
- Study on durability of concrete;
- Description of special concretes.

### Learning outcomes

STT	Course learning outcomes	CDIO
L.O.1	Apply basically science and basically specialist knowledge	1.2, 1.2
	L.O.1.1 – Apply basic knowledge to design concrete mixture.	1.1.1, 1.2.2
	L.O.1.2 – Apply basic knowledge to determine properties of materials used in the factory.	4.5.4, 4.5.5
L.O.2	Design concrete mixture proportion.	1.1,1.3, 2.1
	L.O.2.1 – Understand methods for concrete mixture design.	2.1.3,
	L.O.2.2 – Have enough knowledge for checking properties of materials and concrete.	1.3.10
		1.1.1 1.3.12
L.O.3	Study on properties of fresh concrete	4.3, 4.4
	L.O.3.1- Introduction of properties of fresh concrete.	4.3.1
	L.O.3.2- Study on factors effecting on properties of fresh concrete.	4.3.2, 4.4.1
L.O.4	Study on properties of hardened concrete	4.3, 4.4. 4.5
	L.O.4.1- Introduction of properties of hardened concrete.	4.3.1, 4.4.1
	L.O.4.2- Study on factors effecting on properties of hardened concrete.	4.5.2
L.O.5	Durability of concrete	2.3, 2.4

STT	Course learning outcomes	CDIO
	L.O.5.1 – Introduction of concrete durability.	2.3.1, 2.3.2
	L.O.5.2 – Study on factors effecting on the durability of the concrete.	2.3.4, 2.4.2
L.O.6	Show knowledge of other concretes.	1.2, 2.3, 2.5
	L.O.6.1 – Knowledge of classification and application of other concretes.	1.2.8, 2.3.1
	L.O.6.2 – Understand basic properties of other concretes.	2.5.4, 2.3.4

### Learning strategies & Assessment scheme

Total score of course includes:

- Exercise : 10%
- Midterm exam: 20%
- Final exam : 70% .

#### Instructors:

- Assoc.Prof. Nguyen Van Chanh
- Assoc.Prof. Tran Van Mien