

## CERAMICS TECHNOLOGY

Credits	3 (3.2.7)	Course code	CI3031		
Periods	<b>Total:</b> 60	<b>Theory:</b> 30		<b>Project:</b> 30	<b>Work:</b> yes
Evaluation	<b>Work:</b> <b>10%</b>	<b>Project:</b> 20 <b>%</b>	<b>Application:</b> 10%	<b>Homework:</b> <b>10%</b>	<b>Exam:</b> <b>50%</b>
Evaluation type	<ul style="list-style-type: none"> <li>- <i>Midterm exam: quiz, 45 minutes</i></li> <li>- <i>Final exam: quiz, 90 minutes</i></li> <li>- <i>Experiment: report</i></li> </ul>				
Prerequisite course					
Previous course					
Co-requisite course					
Training field	Technology of Construction Materials				
Standard	Undergraduate				
Course grade	2				
Other notes	<i>Class 3 unit / week</i>				

### **Aims of course**

Introduce the field of engineering and focus on the ceramic technology in construction materials.

Explain the CDIO principle such as Conceive – Design – Implement – Operate a product on ceramic manufacturing project. The student have ability to select and design a ceramic processing

Recognize key elements of selection of raw material, problem solving, mix design and process management in manufactory. Hence, the student can explain and introduce to ceramic design project by communication.

### Course outline

Provide students an introduction to and knowledge to select material, mix proportion, design and operate the ceramic manufactory. Deep knowing in designing and processing in fields of tile, brick, ceramic and sanitary ware. The students have ability to select machine and to manage the process.

### Study documents

- [1] Kỹ thuật gốm sứ (Ceramic) Mockba 1985
- [2] Công nghệ gốm xây dựng – Nhà xuất bản Giáo dục 2006
- [3] Kỹ thuật silicat- tập 1, tập 2 – Trường Đại học Bách khoa Hà Nội 1999.
- [4] Thiết kế hệ thống thiết bị sấy – Nhà xuất bản KHKT 2007

### Learning outcomes

No	Course learning outcomes	CDIO
L.O.1	Apply basic science and basically specialist knowledge to analysis	1.3, 1.4
	L.O.1.1- Apply mathematic knowledge to determine physical property	1.3.2
	L.O.1.2- Remember diagram equation	1.3.3
	L.O.1.3- Know different equation on thermal material	1.4.2
	L.O.1.4- Remember the basic characteristic of silicate material	1.4.3 1.4.4
L.O.2	Know ceramic processing on building materials	4.1
	L.O.2.1- Introduce ceramic materials	4.1.2
	L.O.2.2- Introduce ceramic processing	4.1.3
	L.O.2.3- Specification of ceramic materials	4.1.5
	L.O.2.4- Know influence of ceramic materials on society	4.1.6
L.O.3	Introduce raw material and selection method	2.1, 2.2, 2.3
	L.O.3.1- Introduce raw materials	2.1.2
	L.O.3.2- Introduce factor of raw materials	2.1.3
	L.O.3.3- Know characteristic and property of raw material	2.2.2
	L.O.3.4- Know diagram equation	2.2.3
	L.O.3.5- Calculate mix proportion	2.3.2 2.3.3
L.O.4	Plan of manufacturing process	2.3, 4.3
	L.O.4.1 – Introduce module on process	2.3.2
	L.O.4.2 – Know module of process	2.3.3
	L.O.4.3 – Simulate module of process	4.3.1 4.3.2
L.O.5	Selection and design manufacturing process	4.4, 4.5

	L.O.5.1 – Calculate and select equipment on process	4.4.1
	L.O.5.2 – Plan equipment	4.4.2
	L.O.5.3 – Design manufacturing process	4.4.3
	L.O.5.4 – Calculate and plan module of process	4.5.1 4.5.2
L.O.6	Apply software to design mix proportion and design processing	1.5, 4.5
	L.O.6.1 – Use software to calculate the plan	1.5.1
	L.O.6.2 - Use software such as Ansys, Etab and Sap to draw and design processing	4.5.2 4.5.3
L.O.7	Teamwork and presentation	3.1, 3.2
	L.O.7.1 – Team work	3.1.2
	L.O.7.2 – Presentation manufacturing process	3.2.2 3.2.4

### Learning strategies & Assessment scheme

Total score of course includes:

- Work: 10%
- Application: 10%
- Homework: 10%
- Project: 20%
- Final exam: 50%

### Instructors

- Mr. Nguyen Hung Thang
- Mrs. Đặng Thanh Kim Mai
- Dr. Le Anh Tuan