



BANGLADESH TECHNICAL EDUCATION BOARD
Agargoan, Dhaka-1207.

4-

YEAR DIPLOMA-IN-ENGINEERING PROGRAM
SYLLABUS (PROBIDHAN-2016)

CERAMIC TECHNOLOGY

TECHNOLOGY CODE: **676**

3rd SEMESTER

DIPLOMA IN
ENGINEERING
PROBIDHAN-2016

CERAMIC TECHNOLOGY
(676) 3rd SEMESTER

Sl. No	Subject Code	Name of the subject	T	P	C	Marks				Total
						Theory		Practical		
						Cont. assess	Final exam	Cont. assess	Final exam	
1	65722	Communicative English	1	3	2	20	30	50	0	100
2	65931	Mathematics -3	3	3	4	60	90	50	0	200
3	65922	Physics -2	3	3	4	60	90	25	25	200
4	67631	Model & Mould Fabrication-1	2	3	3	40	60	25	25	150
5	67632	Ceramic Equipments & Body Preparation	2	3	3	40	60	25	25	150
6	67633	Mining and Geological Engineering	1	3	2	20	30	25	25	100
7	66611	Computer Application	0	6	2	0	0	50	50	100
Total			12	24	20	240	360	250	150	1000

AIMS

To provide the students with an opportunity to develop knowledge and skills to:

- Understand Gypsum and plaster of Paris.
- Understand the model & mould.
- Understand manufacture processes for model and mould.
- Understand sizing reagent.
- Understand mould key, Plug and center.
- Understand profile.
- Develop skill in performing experiments on model and mould fabrication.

SHORT DESCRIPTION:

Model; Mould Fabrication, Gypsum; Plaster of Paris; Mixing of Plaster of Paris; Sizing Materials; Mould Key, Plugs and Center; Modeling Wheel and Tools; Profile.

DETAIL DESCRIPTION**THEORY:**

- 1. Understand the concept of model.**
 - 1.1 Discuss the basic concept of model.
 - 1.2 Explain the necessity of model.
 - 1.3 Describe the preservation method of model.
 - 1.4 Describe the necessary of preservation of model.
- 2. Understand the model making process.**
 - 2.1 Explain the model making process.
 - 2.2 Mention the type of model making process.
 - 2.3 Explain the free hand process of model making.
 - 2.4 Describe the lathe process of model making.
 - 2.5 Describe the roller & frame process of model making.
 - 2.6 Describe the wheel process of model making.
- 3. Understand the Basic concept of die and mould.**
 - 3.1 Define die.
 - 3.2 Define mould and press mould.
 - 3.3 Explain core and Cavity.
 - 3.4 Distinguish between die and mould
 - 3.5 Describe the necessity of die and mold in ceramics.
- 4. Understand the Mould Materials.**
 - 4.1 Basic concept of mould materials.
 - 4.2 Classify mould materials.
 - 4.3 Make a list of mould materials.
 - 4.4 Mention advantages and disadvantages of Metal and Non Metal mould materials.
 - 4.5 Selection criteria of mould materials.
- 5. Understand the mould fabrication.**
 - 5.1 Define mould fabrication process.
 - 5.2 Describe the classification of mould fabrication process.

5.3 Describe the advantage of plaster mould.

6. Explain the necessity of plaster mould in Understand the Gypsum.

6.1 State the meaning of gypsum.

6.2 Describe the different types of gypsum.

6.3 Describe the physical properties of gypsum.

6.4 Describe the chemical properties of gypsum.

6.5 List the uses of gypsum.

6.6 Mention the chemical analysis of gypsum.

7. Understand the Plaster of Paris.

7.1 Define Plaster of Paris.

7.2 Describe the type of plaster of paris.

7.3 Define the calcinations.

7.4 List the manufacturing process of Plaster of Paris from gypsum.

7.5 Describe the kettle calcinations process for the production of Plaster of Paris.

7.6 Describe the rotary calcinations process for the production of plaster of Paris.

7.7 List the uses of plaster of Paris.

8. Understand the mixing of Plaster of Paris.

8.1 Explain mixing process.

8.2 Describe the necessity of mixing of Plaster of Paris.

8.3 Mention the ratio between water & plaster for different mould.

8.4 Explain the physical change of plaster of paris with water.

8.5 Describe the chemical reaction of plaster of paris with water.

8.6 Mention the necessity of Plaster mixing process.

8.7 Solve the problems related mixing of plaster of Paris.

9. Understand the sizing materials.

9.1 Define sizing.

9.2 List the sizing materials.

9.3 Describe the preparation of size.

9.4 Describe the necessity of sizing.

9.5 Describe the applying process of size.

9.6 Describe the removing process of size.

9.7 Explain the effect of bubbles in mould.

10. Understand Mould key, plug and Cottle.

10.1 Define the following terms :

(i) mould key, (ii) Notches, (iii) plug and (iv) cottle Explain the necessity of mould key and Notches.

10.2 Discuss the importance plug and cottle

Describe the making process of

knotch. 10.5 Explain the necessity of plug for mould making.

10.6 Discuss the importance of cottle.

11. Understand Modeling wheel and tools.

11.1 State the meaning of model

wheel.

- 11.2 List of modeling tools.
- 11.3 Explain the uses of modeling tools.
- 11.4 Define the terms dividing line and centering.
- 11.5 Describe the finding process of centering on the wheel.
- 11.6 Describe the finding process of deviding line on the wheel.
- 11.7 Explain the necessity of centering.

12. Describe the importance of Understand the profile.

- 12.1 Define profile.
- 12.2 List the profile materials in the ceramic field.
- 12.3 Describe the profile making processes.
- 12.4 Explain the necessity of profile.
- 12.5 Mention the considering factors for profile making .

13. Understand the Template.

- 13.1 Define Template.
- 13.2 Describe the Template making processes.
- 13.3 Explain the necessity of Template.
- 13.4 Describe function of template .
- 13.5 Discuss the uses of template.

Practical

- 1. Show skill in physical identification of Gypsum.
- 2. Show skill in calcinations of gypsum.
- 3. Show skill in Physical identification of Plaster of Paris.
- 4. Show skill in determining water and plaster of Paris ratio in the deferent type of mould.
- 5. Show skill in preparing size.
- 6. Show skill in making following model with mould.
(1) Pen holder. (2) Salt pot. (3) Triangle ashtray. (4) Oval type ashtray. (5) Corrugated ashtray. (6) Fish. (7) Dolls. (8) Photo frame. (9) soap case. (10) Paper weight (different shapes).

Reference Books:-

- 1. Ceramic Hand Books-by Robinson, Sin.
- 2. Text Book of Ceramic Engineering-by Komolel.
- 3. Stoneware and porcelain –by Daniel Rhodes.
- 4. Ceramic form, Degigns and Decovatrners –by Lane peter.
- 5. Ceramic Hand Book –by Gregory.
- 6. Ceramic proceeding –by Terpstres.
- 7. Ceramic Technology and processing –by king alom