



# Gujarat Council of Vocational Training Gandhinagar



1. Name of Course:

Lab Technician of Ceramic Glaze Preparation

N.C.O. No. for Skills Covered:  
(Please refer National Classification of  
Occupations -2004 available  
on www.dget.nic.in)

3116

3116.10

8138

8138.20

7324

7324.90

2. Engineering OR Non-engineering: **Engineering**

3. No. of students per batch: **16+05=21**

4. Duration in Hours. : **240**

5. Duration in Month: \_\_\_\_\_ @ 42 hours/Week.

Duration in Month: **3 Month @ 22 hours/Week.**

6. Examination Scheme:

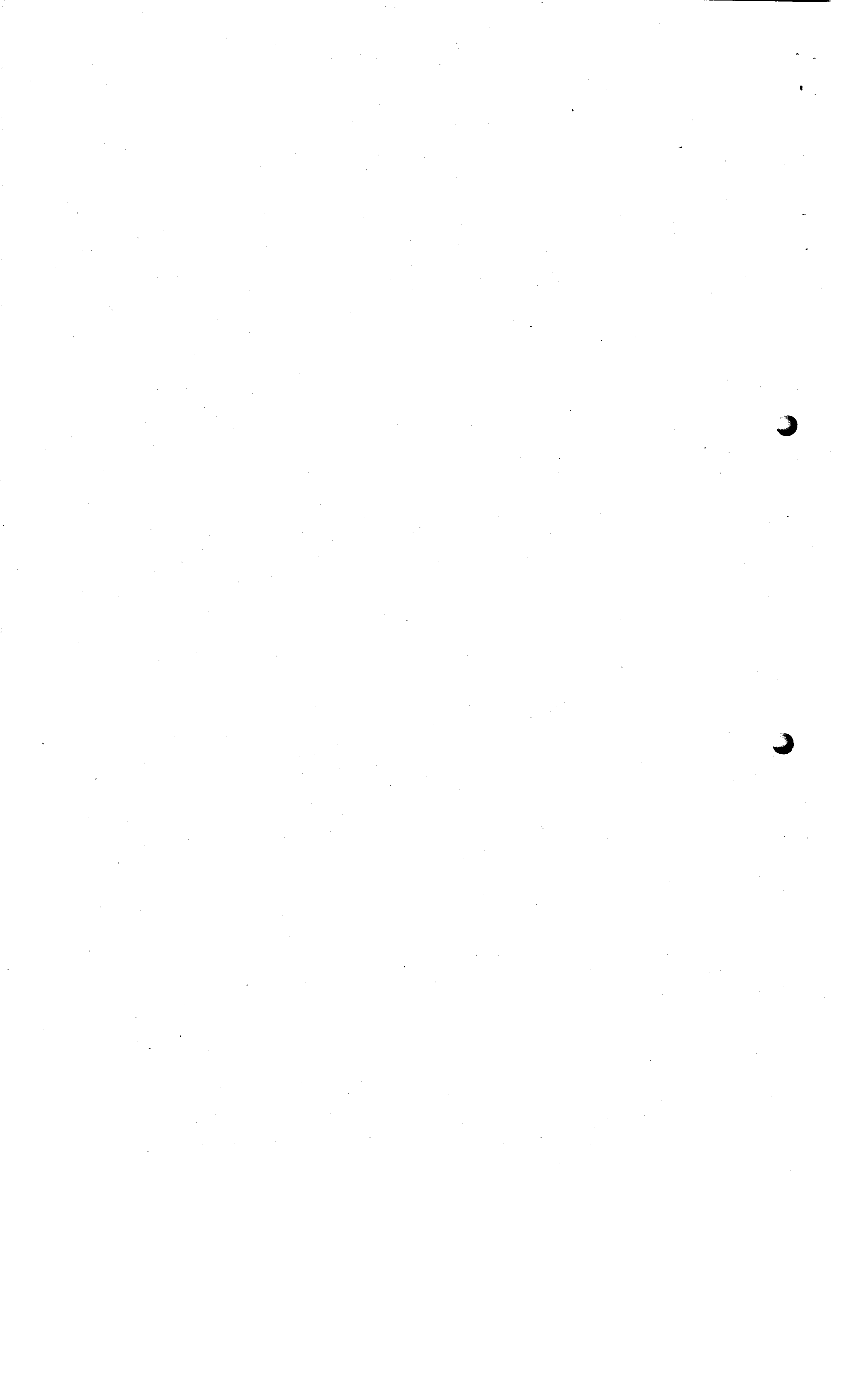
No.	Name of Subject	Teaching Hours during full course.	Maximum Marks. (Excluding Sessional)	Minimum Marks required for Passing (Excluding Sessional).	Sessional Marks if any.
Subject-1	Theory	120	100	40	
Subject-2	Practical	120	300	180	
Subject-3					
Subject-4					
Subject-5					

7. Entry qualification for Trainee:

Minimum entry qualification (Essential):	8 <sup>th</sup> Pass (Priority should given 10th,9th,8th)
Desirable:	

8. Minimum qualification for Trainer:

Minimum qualification (Essential):	Diploma in Ceramic Engineering with 03 Year experience or Degree in Ceramic Engineering or B.Sc.(Chemistry) with 03 Year experience
Desirable:	





## Gujarat Council of Vocational Training Gandhinagar



### 9. Syllabus Committee Member:

Sr. No.	Name	Organization	Designation	Technical Qualification	Experience in Years	Signature
1.	P.B. Jadeja	Parsuram Pottery Works Ltd. Morbi	Retired Production Manager	B.Sc.(Chemistry)	25 Years	
	P.D. Jadeja	L.E. College Morbi	Lecturer	Diploma in Ceramic Engineering	24 Years	
	J.V.Makwana	Parsuram Pottery Works Ltd. Morbi	Retired Production Manager	B.Sc.(Chemistry)	26 Years	
	N.M. Joint	Parsuram Pottery Works Ltd. Morbi	Retired Production Manager	M.Sc.(Chemistry)	28 Years	
	R.R.Halvadiya	Ceramic Industries, Morbi	Consultant	Diploma in Ceramic Eng., Gold Medalist	30 Years	
	Prafulbhai Kaila	Favorite Ceramics, Morbi	Director	B.E. (Electrical)	20 Years	
	Rajubhai Dhamasana	FACE Ceramics, Morbi	Director of FACE / Chairman, IMC of ITI Morbi	B.E. (Chemical)	20 Years	
	R.J. Kaila	Principal ITI Morbi	Member Secretary, IMC of ITI Morbi	B.Sc.(Maths), PGDCA	22 Years	

### 10. Terminal Skills of trainee: (Should be well defined and having reference to NCO):

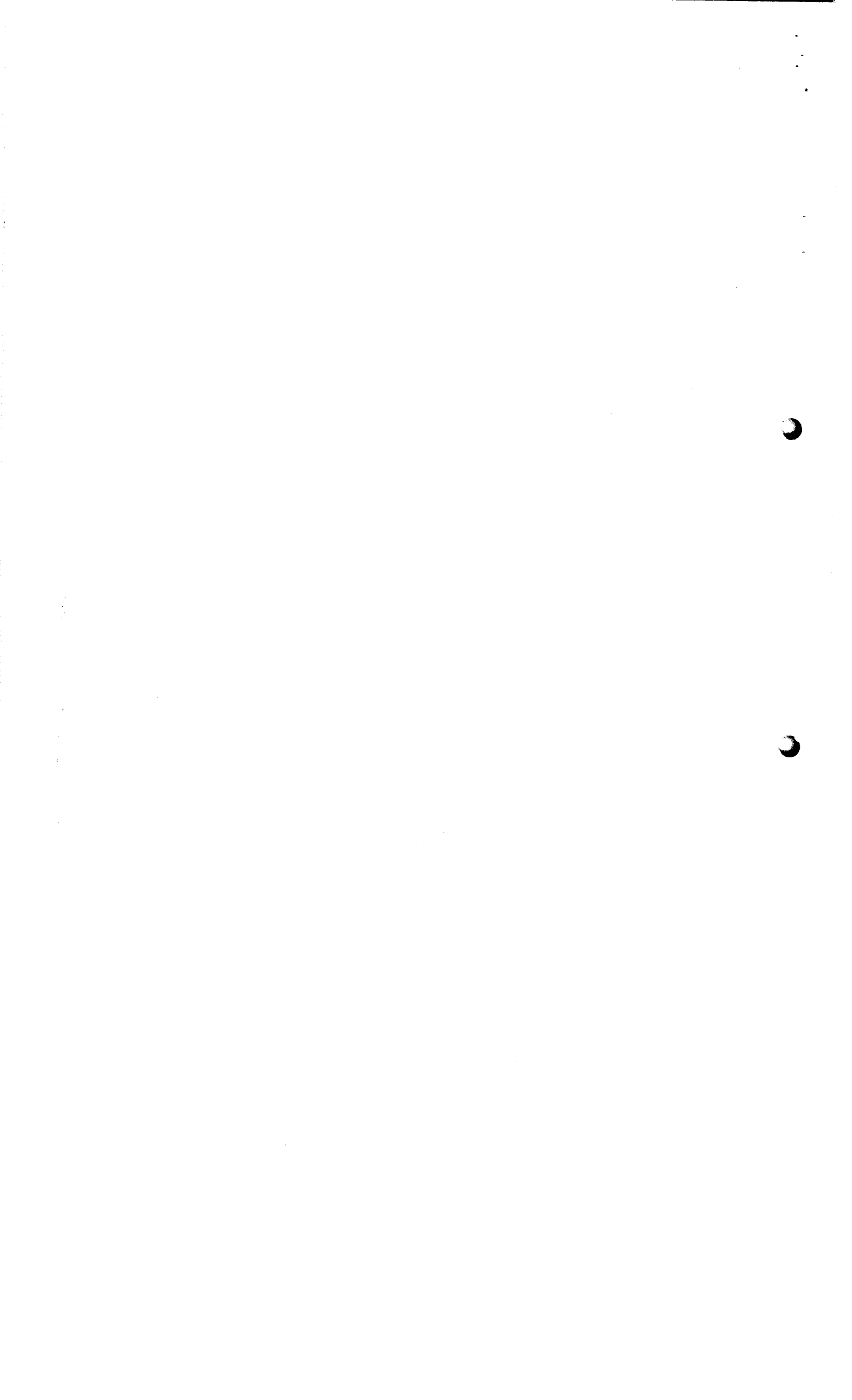
The trainee, after successful completion of training, will have following skills...

**As per attach Page No. 01 To 02  
Of Lab Technician of Ceramic Glaze Preparation Syllabus**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

(please attach separate page is required)







**Gujarat Council of Vocational Training**  
**Gandhinagar**



11. Approximate cost of Tools  
/ Equipments / Machinery for  
starting one batch of the course:

Rupees  
400000/-

Reference Year  
2014-15

12. Area required for practical / Workshop for one batch.

70 Sq. Meter

13. Minimum Power connection required

3.45 K.W.

14.1 No of items in Standard list of Machinery :

06

14.1.1. Page NO from 3 to 3.

14.2 No of items in Standard list of Shop outfit :

02

14.2.1. Page NO from 3 to 3.

14.3 No of items in Standard list of Trainee Toll-Kit :

06

14.1.1. Page NO from 3 to 3.

\*\*\*\*\* FOR OFFICIAL USE \*\*\*\*\*

Approved by GCVT in Governing Body meeting on :

7-10-2014

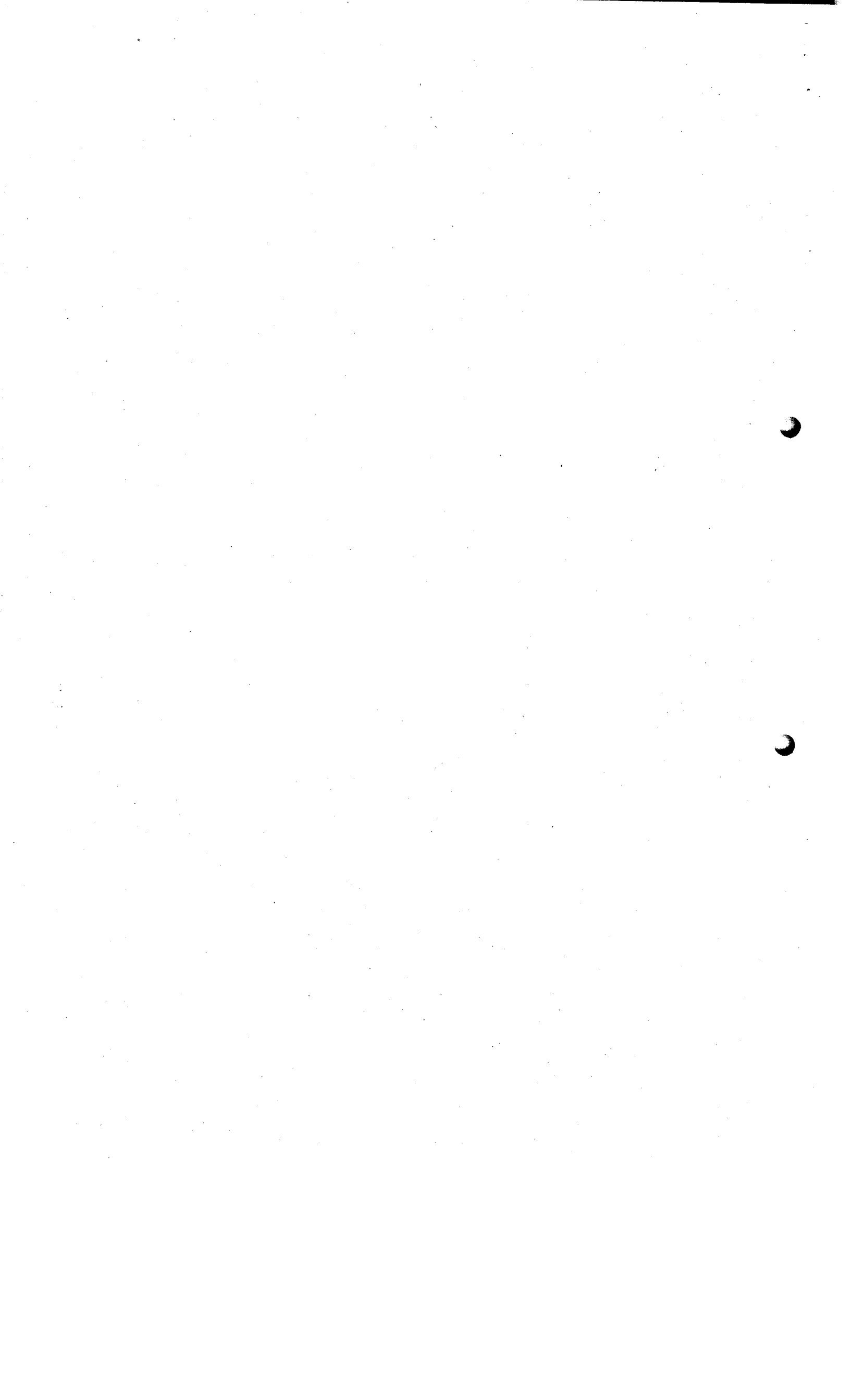
Syllabus implemented w.e.f. admission session :

Next session

Revision History :

1. Revision No..... Revision Date.
2. Revision No..... Revision Date.
3. Revision No..... Revision Date.





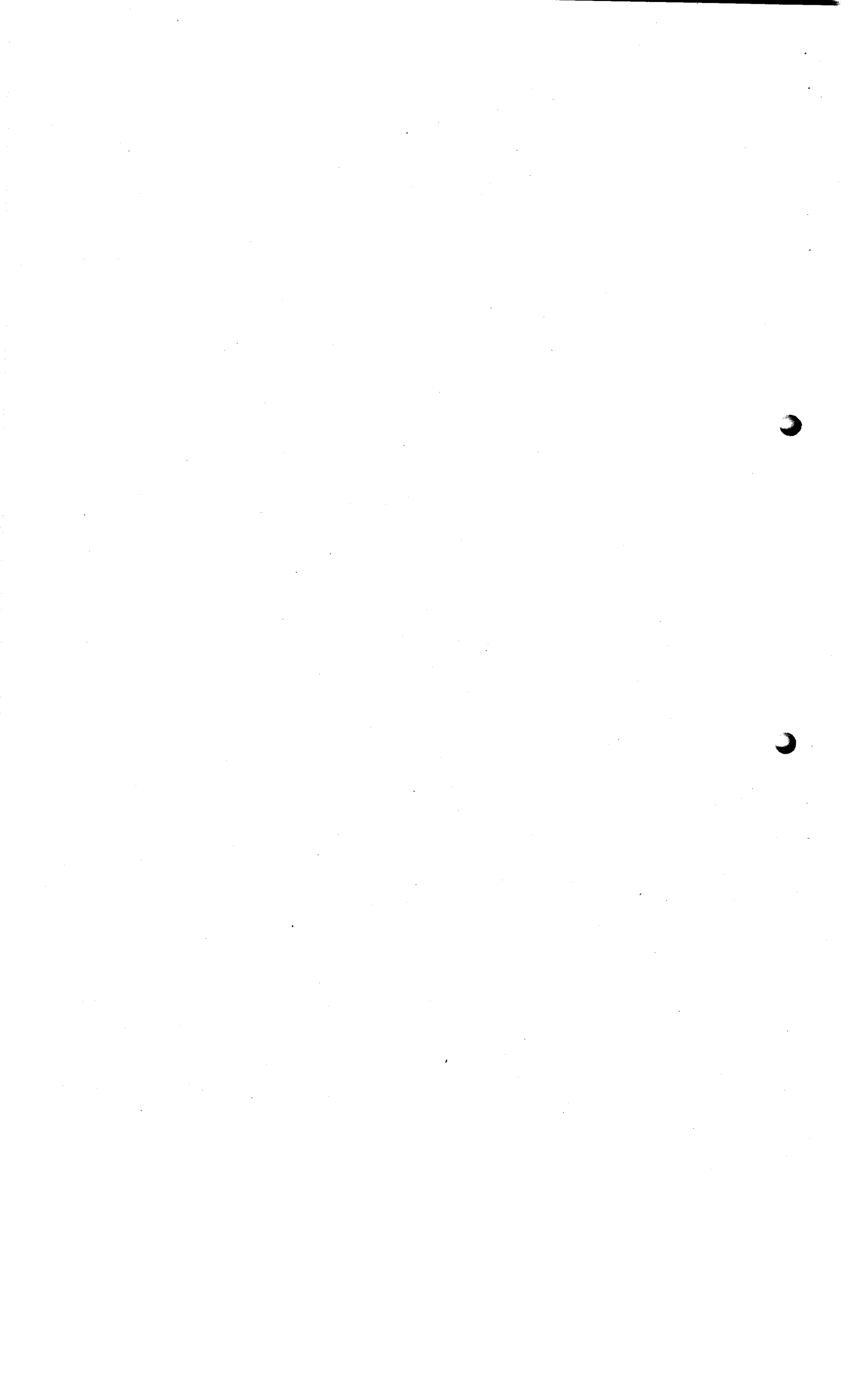


Standard List of Machinery - Equipment / Shop-outfit / or Trainee Toolkit  
for Trade of Lab Technician of Ceramic Glaze Preparation.

Sr. No.	Description of Item with detailed specifications	Item type i.e. Machinery / Equipment OR Shop Outfit OR Trainee Toolkit	Quantity Required per one Batch of Students	Quantity Required per one Batch of Students for Instructor	Total Quantity Required (Total of previous two columns)
1.	Crazing Testing Machine	Machinery	01 Nos.	--	01 Nos.
2.	Convection Microwave Ovens ( 28 Liters)	Machinery	01 Nos.	--	01 Nos.
3.	Pot Mill Set (Sample Grinding)	Machinery	01 Nos.	--	01 Nos.
4.	Modulus Of Ruptchur (MOR) Testing Machine	Machinery	01 Nos.	--	01 Nos.
5.	Electronics Balance ( Small & Medium Size)	Machinery	01 Nos.	--	01 Nos.
6.	Spactro Photometer for Whiteness	Machinery	01 Nos.	--	01 Nos.
7.	T.D.S. Meter	Equipment	01 Nos.	01 Nos.	02 Nos.
8.	Ph Meter	Equipment	01 Nos.	01 Nos.	02 Nos.
9.	Ford Cup	Toolkit	08 Nos.	01 Nos.	09 Nos.
10.	Density Pot	Toolkit	08 Nos.	01 Nos.	09 Nos.
11.	Kiln Sampling Dish (Perforated )	Toolkit	08 Nos.	01 Nos.	09 Nos.
12.	Sieve – Mesh 8#, 16#, 30#, 40#, 50#, 60# 80#, 100#, 150#, 200#, 240#, 300#	Toolkit	08 Nos.	01 Nos.	09 Nos.
13.	Liquid Measurement Pot ( 01 ltrs)	Toolkit	08 Nos.	01 Nos.	09 Nos.
14.	Sample Glaze Application Instrument	Toolkit	08 Nos.	01 Nos.	09 Nos.

(As many sheets as required should be used to accommodate all items)









SYLLABUS FOR SHORT TERM COURSE OF  
**LAB TECHNICIAN OF CERAMIC GLAZE PREPARATION**

Redesigned in 2014

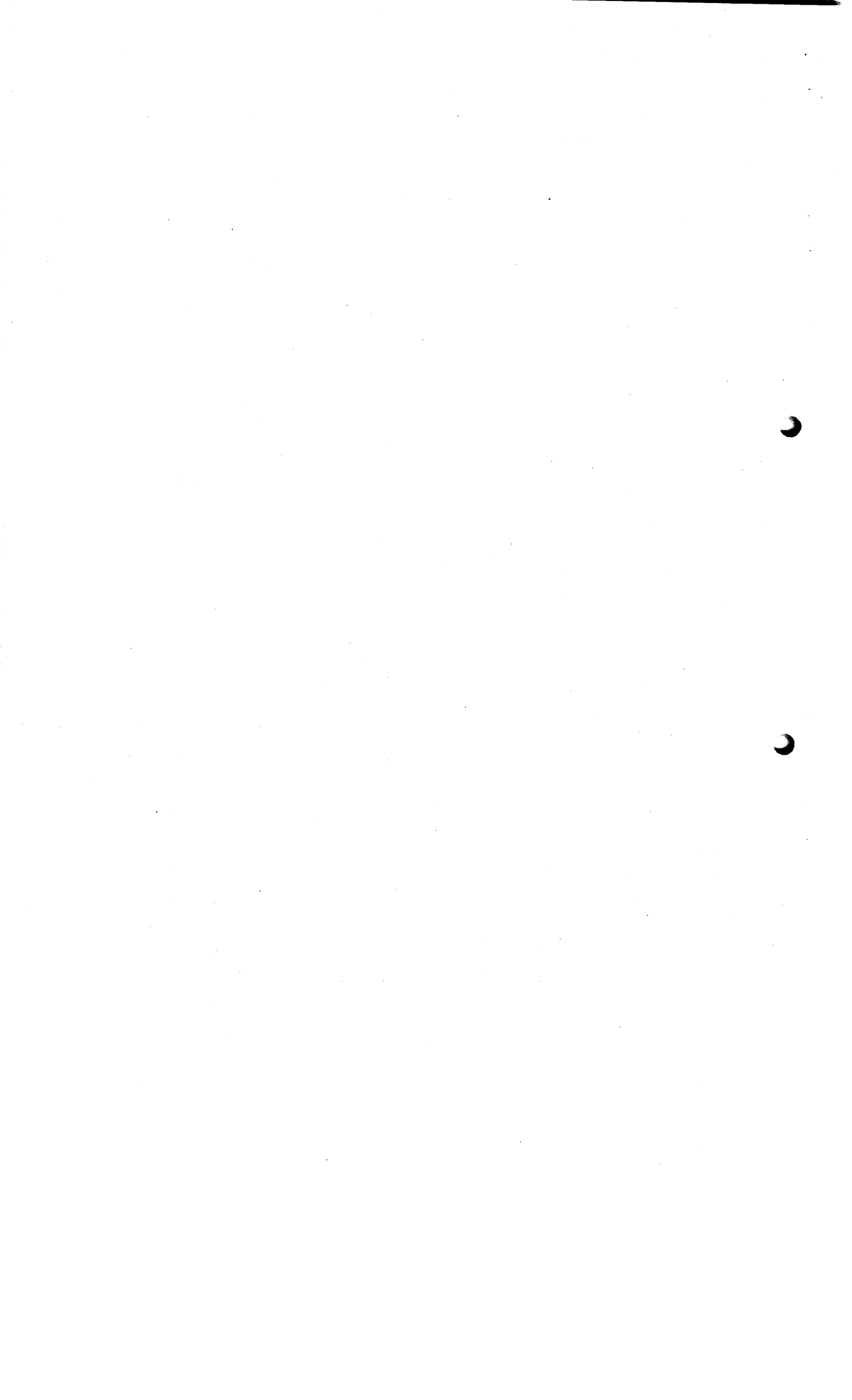
by

**Department of Labour and Employment,  
Directorate of Employment and Training, Gandhinagar, Gujarat State**

**// GENERAL INFORMATION //**

1. Name of the Short Term Course : Lab Technician of Ceramic Glaze Preparation
2. Duration of Course Training : 3 Month
3. Power Norms : 3.45 KW
4. Space Norms : 70 Sq.mt.
5. Entry Qualification : Passed 8th class examination
6. Unit strength : 16 + 5 = 21 Trainees
7. Instructors Qualifications :  
Diploma in Ceramic Engineering with 03 Year experience in ceramic industries. or  
Degree in Ceramic Engineering or  
B.Sc.(Chemistry) with 03 Year experience in ceramic industries.
8. Skill Covered / Job Scope:
  - 3116 - Chemical Engineering Technicians
  - 3116.10 - Laboratory Assistant, Glass and Ceramics
  - 7324 - Glass, Ceramics and Related Decorative Painters
  - 7324.90 - Glass, Ceramics and Related Decorators and Painters, Other
  - 8138 - Supervisors and Foremen, Glass, Ceramics and Related Plant Workers
  - 8138.20 - Supervisor and Foreman, Ceramics and Related Activities

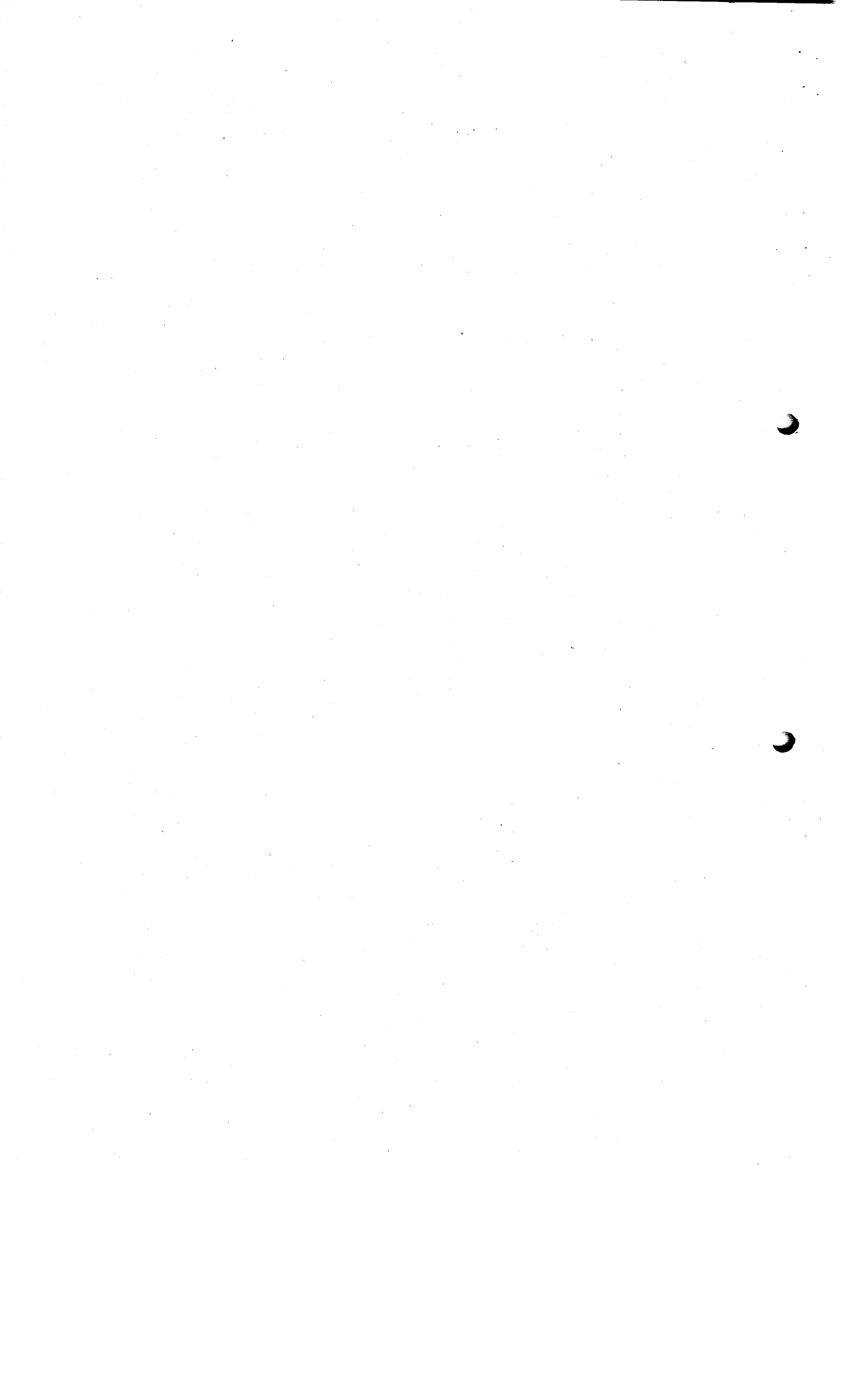




## Syllabus for Lab Technician of Ceramic Glaze Preparation

Week No.	Name of Topic	Theory Hrs.	Practical Hrs.
1	INTRODUCTION	10	10
2	GLAZE – TYPES & ENGOBE	10	10
	RAW MATERIALS		
3	• PROPERTIES OF MATERIALS	10	10
	• FUNCTION OF MATERIALS		
	• TESTS OF MATERIALS		
	Properties of Glaze		
4	• Glaze Fit	10	10
	• Thermal expansion		
	• Moisture expansion		
	Glaze Containments		
5	• Acidic oxides – Network formers	10	10
	• Basic oxides – Network Modifier		
	• Alkaline oxides		
6-7	Composition of Glaze	20	20
8-9	Preparation of Glaze and Machines Used	20	20
	• Ball Mill		
	• Grinding media		
	• Lift and Vibrators		
10-11	• Process	20	20
	Lab Tests		
	• Button Test (Fluidity of Glaze Fired)		
	• Residue of Glaze and Engobe		
	• Density of Glaze and Engobe		
• Viscosity of Glaze and Engobe			
12	• Sample Tile With Coating Engobe with coating Glaze and with Coating Engobe and Glaze Both	20	20
	Faults Related to Glaze		
13	Management	10	10
	• Men (Workers) Management		
	• Material Management		
	• Machine Management		
	• Quality Management		
	• Safely Management		
13	Industrial Visit / On Job Training		
	<b>Examination</b>	<b>120</b>	<b>120</b>





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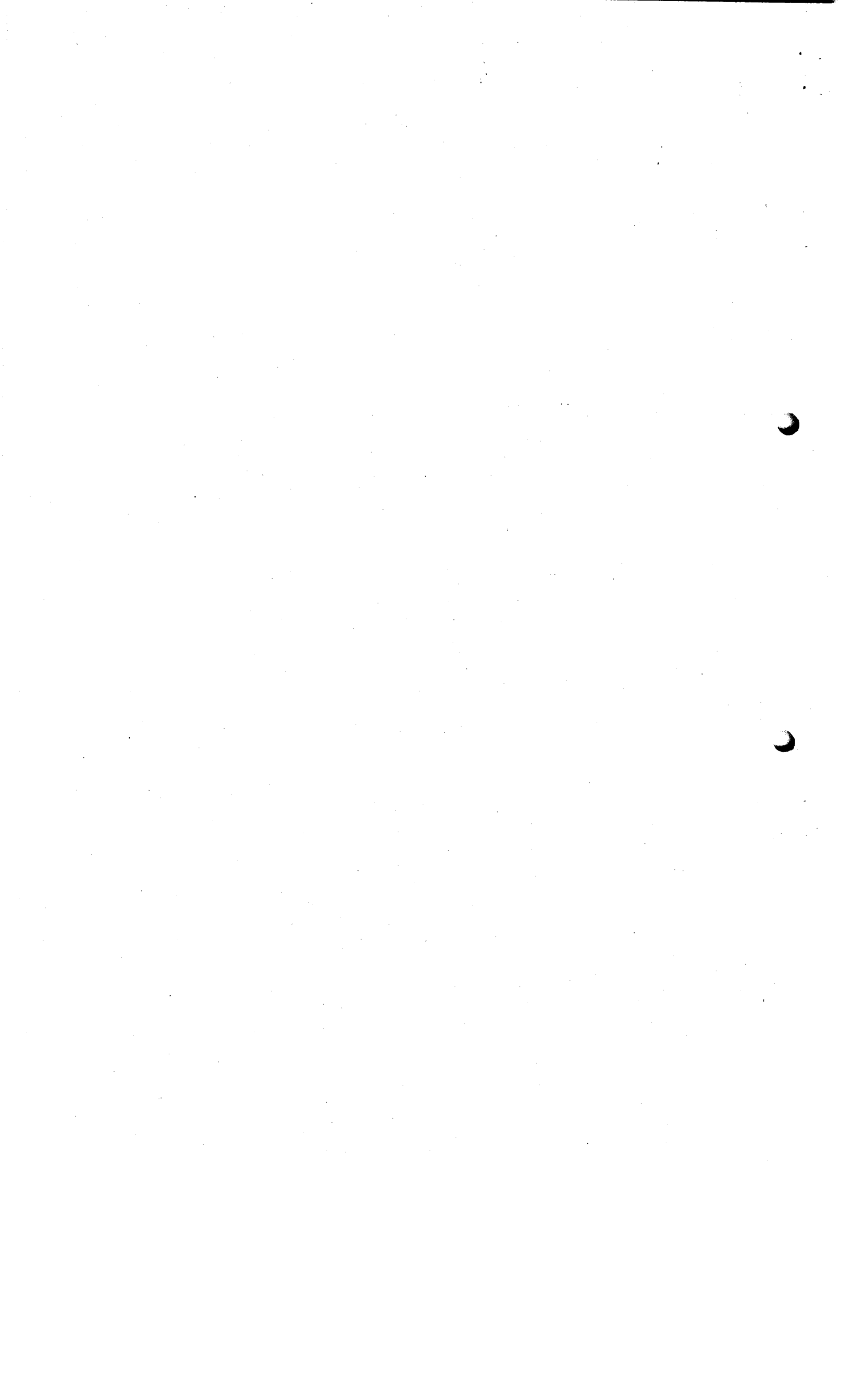
List of Tools / Equipments / Machinery

Sr. No.	Details	Unit	GM/GS/Tools
1	Crazing Testing Machine	01 Nos.	GM
2	Convection Microwave Ovens ( 28 Liters)	01 Nos.	GM
3	Pot.Mill Set (Sample Grinding)	01 Nos.	GM
4	Modulus Of Ruptchur (MOR) Testing Machine	01 Nos.	GM
5	Electronics Balance ( Small & Medium Size)	01 Nos.	GM
6	Spactro Photometer for Whiteness	01 Nos.	GM
7	T.D.S. Meter	02 Nos.	GS
8	Ph Meter	02 Nos.	GS
9	Ford Cup	09 Nos.	Tools
10	Density Pot	09 Nos.	Tools
11	Kiln Sampling Dish (Perforated )	09 Nos.	Tools
12	Sieve – Mesh 8#, 16#, 30#, 40#, 50#, 60# 80#, 100#, 150#, 200#, 240#, 300#	09 Nos.	Tools
13	Liquid Measurement Pot ( 01 ltrs)	09 Nos.	Tools
14	Sample Glaze Application Instrument	09 Nos.	Tools

List of Raw Materials

Sr. No.	Details	Unit
1	Ball Clay Lumps ( Santalpur Clay & Bikaner Clay )	40 Kg Each
2	China Clay Lumps ( Body Kutch & Amrapali & Modi )	40 Kg Each
3	Feldspar ( Potash & Soda ) Powder	50 Kg Each
4	Quartz Powder	50 Kg Each
5	Calcite Powder	50 Kg Each
6	Dolomite Powder	50 Kg Each
7	Talc Powder	50 Kg Each
8	Frit for Wall Tiles – Opaque & TR	50 Kg Each
9	Frit for Floor Tiles – Opaque & TR	50 Kg Each
10	S.T.P.P.	02 Kg
11	CMC Powder	02 Kg
12	Aluminum Powder	02 Kg
13	Zirconium Powder	02 Kg

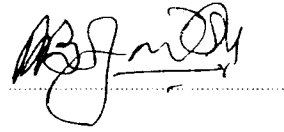




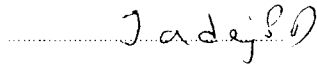
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## Member of Syllabus Design Committee for Lab Technician of Ceramic Glaze Preparation

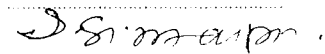
( P.B. Jadeja)  
B.Sc.(Chemistry)  
Retired Production Manager, Parsuram Pottery Works Ltd. Morbi.



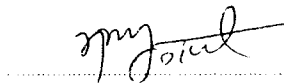
(P.D. Jadeja)  
Diploma in Ceramic Engineering  
Lecturer, L.E. College Morbi.



(J.V. Makwana)  
B.Sc.(Chemistry)  
Retired Production Manager, Parsuram Pottery Works Ltd. Morbi.



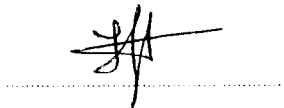
(N.M. Joint)  
M.Sc.(Chemistry)  
Retired Production Manager, Parsuram Pottery Works Ltd. Morbi.



(R.R. Halvadiya)  
Diploma in Ceramic Eng., Gold Medalist  
Consultant of Ceramic Industries, Morbi.



Prafulbhai Kaila  
B.E. (Electrical)  
Director, Favorite Ceramis, Morbi.



(Rajubhai Dhamasana)  
B.E. (Chemical)  
Chairman of IMC of ITI Morbi & Director of Face Ceramics, Morbi.



R.J. Kaila  
B.Sc.(Maths) & PGDCA  
Member Secretary, IMC of ITI Morbi. & Principal of ITI Morbi.



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