CERAMIC PRESS OPERATOR

COMPETENCY BASED CURRICULUM

(Duration: 1 Yr. 3 Months)

APPRENTICESHIP TRAINING SCHEME (ATS)

NSQF LEVEL- 3

SECTOR – PRODUCTION & MANUFACTURING

सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
DIRECTORATE GENERAL OF TRAINING

Directorate General of Training

Skill India
कौशल भारत-कुशल भारत

CERAMIC PRESS OPERATOR

(Revised in 2018)

APPRENTICESHIP TRAINING SCHEME (ATS)

NSQF LEVEL - 3

Developed By

Ministry of Skill Development and Entrepreneurship
Directorate General of Training
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE
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ACKNOWLEDGEMENT

The DGT sincerely express appreciation for the contribution of the Industry, State Directorate, Trade Experts and all others who contributed in revising the curriculum. Special acknowledgement to the following industries/organizations who have contributed valuable inputs in revising the curricula through their expert members:

1. Larsen & Turbo, Mumbai.
2. BHEL, Noida.

Special acknowledgement is extended by DGT to the following expert members who had contributed immensely in this curriculum.

Co-ordinator for the course: Shri. Nirmalya Nath., ADT, CSTARI, Kolkata

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1. BACKGROUND

1.1 Apprenticeship Training Scheme under Apprentice Act 1961

The Apprentices Act, 1961 was enacted with the objective of regulating the programme of training of apprentices in the industry by utilizing the facilities available therein for imparting on-the-job training. The Act makes it obligatory for employers in specified industries to engage apprentices in designated trades to impart Apprenticeship Training on the job in industry to school leavers and person having National Trade Certificate(ITI pass-outs) issued by National Council for Vocational Training (NCVT) to develop skilled manpower for the industry**.** There are four categories of apprentices namely**; trade apprentice, graduate, technician and technician (vocational) apprentices.**

Qualifications and period of apprenticeship training of **trade apprentices** vary from trade to trade. The apprenticeship training for trade apprentices consists of basic training followed by practical training. At the end of the training, the apprentices are required to appear in a trade test conducted by NCVT and those successful in the trade tests are awarded the National Apprenticeship Certificate.

The period of apprenticeship training for graduate (engineers), technician (diploma holders and technician (vocational) apprentices is one year. Certificates are awarded on completion of training by the Department of Education, Ministry of Human Resource Development.

1.2 Changes in Industrial Scenario

Recently we have seen huge changes in the Indian industry. The Indian Industry registered an impressive growth during the last decade and half. The number of industries in India have increased manifold in the last fifteen years especially in services and manufacturing sectors. It has been realized that India would become a prosperous and a modern state by raising skill levels, including by engaging a larger proportion of apprentices, will be critical to success; as will stronger collaboration between industry and the trainees to ensure the supply of skilled workforce and drive development through employment. Various initiatives to build up an adequate infrastructure for rapid industrialization and improve the industrial scenario in India have been taken.

1.3 Reformation

The Apprentices Act, 1961 has been amended and brought into effect from 22nd December, 2014 to make it more responsive to industry and youth. Key amendments are as given below:

- Prescription of number of apprentices to be engaged at establishment level instead of trade-wise.
- Establishment can also engage apprentices in optional trades which are not designated, with the discretion of entry level qualification and syllabus.
- Scope has been extended also to non-engineering occupations.
- Establishments have been permitted to outsource basic training in an institute of their choice.
- The burden of compliance on industry has been reduced significantly.

2. TRAINING SYSTEM

2.1 GENERAL

Directorate General of Training (DGT) under Ministry of Skill Development & Entrepreneurship offers range of vocational training courses catering to the need of different sectors of economy/ Labour market. The vocational training programmes are delivered under aegis of National Council of Vocational Training (NCVT). Craftsman Training Scheme (CTS) and Apprenticeship Training Scheme (ATS) are two pioneer programmes of NCVT for propagating vocational training.

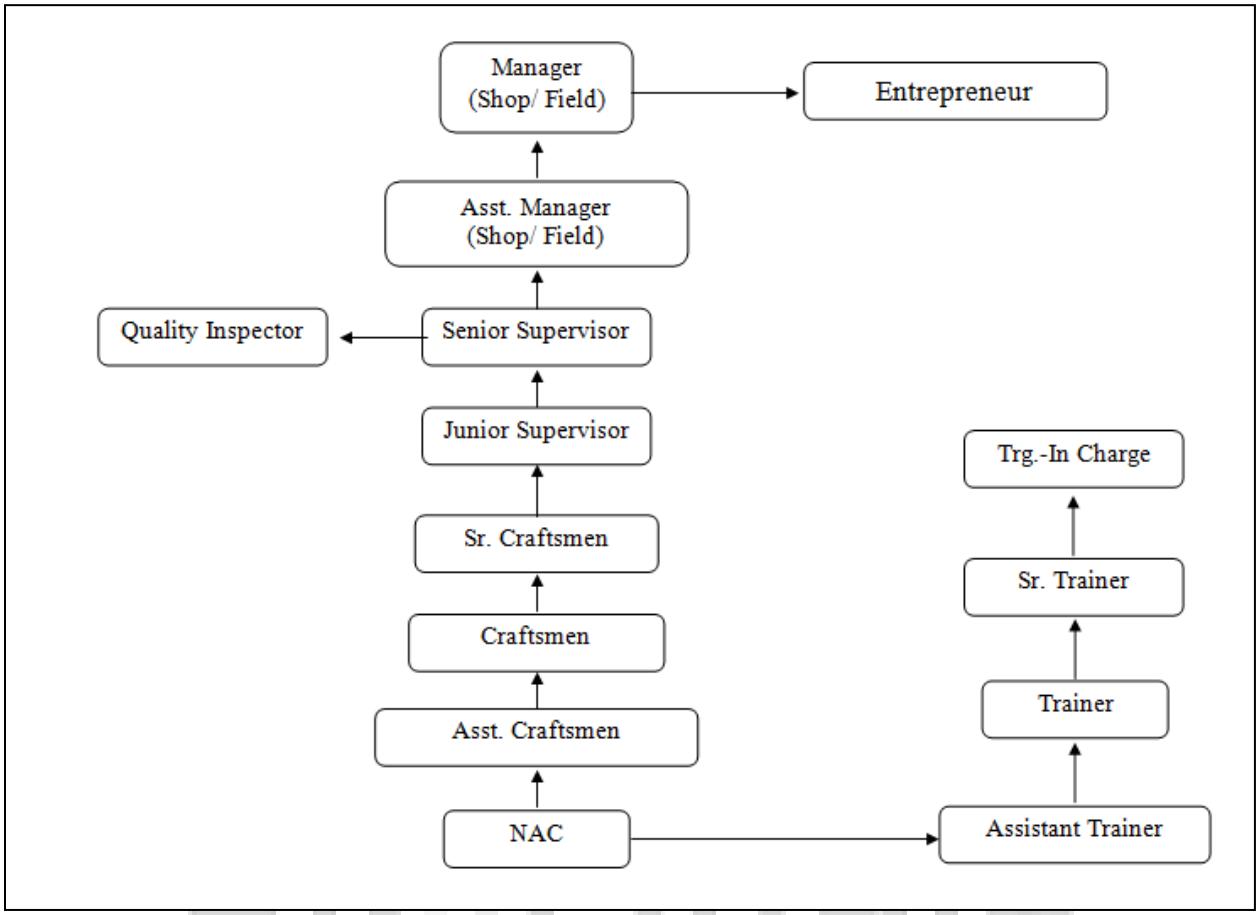
CERAMIC PRESS OPERATOR trade under ATS is one of the most popular courses delivered nationwide through different industries. The course is of one year three months (01 Block of 15 months duration including basic training) duration. It mainly consists of Domain area and Core area. In the Domain area Trade Theory & Practical impart professional - skills and knowledge, while Core area - Employability Skills imparts requisite core skills & knowledge and life skills. After passing out the training programme, the trainee is being awarded National Apprenticeship Certificate (NAC) by NCVT having worldwide recognition.

Broadly candidates need to demonstrate that they are able to:

- Read & interpret technical parameters/document, plan and organize work processes, identify necessary materials and tools;
- Perform task with due consideration to safety rules, accident prevention regulations and environmental protection stipulations;
- Apply professional skill, knowledge, core skills & employability skills while performing jobs and solve problem during execution.
- Document the technical parameters related to the task undertaken.

2.2 CAREER PROGRESSION PATHWAYS:

- Indicative pathways for vertical mobility.



2.3 COURSE STRUCTURE:

Table below depicts the distribution of training hours across various course elements during a period of one year (*Basic Training and On-Job Training*): -

Total training duration details: -

Time (in months)	1-3	4 - 15
Basic Training	**Block– I**	**-----**
Practical Training (On - job training)	**----**	**Block – I**

A. Basic Training

For 02 yrs. Course (Non-Engg.):- **Total 03 months:** 03 months in 1st yr.only

For 01 yr. Course (Non-Engg):- **Total 03 months:** 03 months in 1st yr.

Sl. No.	Course Element	Total Notional Training Hours (For 01 yr. Course)
1	Professional Skill (Trade Practical)	270
2	Professional Knowledge (Trade Theory)	120
3	Employability Skills	110
	Total (including Internal Assessment)	**500**

B. On-Job Training:-

For 01 yr. Course (Non-Engg.) :-(**Total 12 months**)

Notional Training Hours for On-Job Training: 2080 Hrs.

C. Total training hours:-

Duration	Basic Training	On-Job Training	Total
For 02 yrs. Course (Non-Engg.)	500 hrs.	3640 hrs.	4140 hrs.
For 01 yr. Course (Non-Engg.)	500 hrs.	2080 hrs.	2580 hrs.

2.4 ASSESSMENT & CERTIFICATION:

The trainee will be tested for his skill, knowledge and attitude during the period of course and at the end of the training programme as notified by Govt of India from time to time. The Employability skills will be tested in first two semesters only.

a) The **Internal assessment** during the period of training will be done by **Formative assessment method** by testing for assessment criteria listed against learning outcomes. The training institute have to maintain individual *trainee portfolio* as detailed in assessment guideline. The marks of internal assessment will be as per the template (Annexure – II).

b) The final assessment will be in the form of summative assessment method. The All India Trade Test for awarding NAC will be conducted by NCVT on completion of course as per

guideline of Govt of India. The pattern and marking structure is being notified by govt of India from time to time. **The learning outcome and assessment criteria will be basis for setting question papers for final assessment. The examiner during final examination will also check** individual trainee's profile as detailed in assessment guideline before giving marks for practical examination.

2.4.1 PASS REGULATION

The minimum pass percent for Practical is 60% & minimum pass percent for Theory subjects 40%. The candidate pass in each subject conducted under all India trade test.

2.4.2 ASSESSMENT GUIDELINE

Appropriate arrangements should be made to ensure that there will be no artificial barriers to assessment. The nature of special needs should be taken into account while undertaking assessment. Due consideration should be given while assessing for team work, avoidance/reduction of scrap/wastage and disposal of scarp/wastage as per procedure, behavioral attitude, sensitivity to environment and regularity in training. The sensitivity towards OSHE and self-learning attitude are to be considered while assessing competency.

Assessment will be evidence based comprising the following:

- Job carried out in labs/workshop
- Record book/ daily diary
- Answer sheet of assessment
- Viva-voce
- Progress chart
- Attendance and punctuality
- Assignment
- Project work

Evidences of internal assessments are to be preserved until forthcoming semester examination for audit and verification by examination body. The following marking pattern to be adopted while assessing:

Performance Level	Evidence
(a) Weightage in the range of 60 -75% to be allotted during assessment	
For performance in this grade, the candidate with occasional guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of an acceptable	• Demonstration of good skill in the use of hand tools, machine tools and workshop equipment • Below 70% tolerance dimension/accuracy achieved while undertaking different work

standard of craftsmanship.	with those demanded by the component/job/set standards. • A fairly good level of neatness and consistency in the finish • Occasional support in completing the project/job.
(b)Weightage in the range of above75% - 90% to be allotted during assessment	
For this grade, the candidate, with little guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of a reasonable standard of craftsmanship.	• Good skill levels in the use of hand tools, machine tools and workshop equipment • 70-80% tolerance dimension/accuracy achieved while undertaking different work with those demanded by the component/job/set standards. • A good level of neatness and consistency in the finish • Little support in completing the project/job
(c) Weightage in the range of above 90% to be allotted during assessment	
For performance in this grade, the candidate, with minimal or no support in organization and execution and with due regard for safety procedures and practices, has produced work which demonstrates attainment of a high standard of craftsmanship.	• High skill levels in the use of hand tools, machine tools and workshop equipment • Above 80% tolerance dimension/accuracy achieved while undertaking different work with those demanded by the component/job/set standards. • A high level of neatness and consistency in the finish. • Minimal or no support in completing the project.

3. JOB ROLE

Brief description of Job roles:

Pressman; Press Operator; Moulder Machine (Ceramics) sets and operates press machine to mould ceramic articles from moist clay. Selects and fixes appropriate die or mould in machine; oils surface of lump of kneaded moist clay to prevent its sticking to inside of mould; places clay lump in position on lower plate of mould box; turns handle and pulls lever to operate press which compresses clay mass into shape of mould, such as tile, brick or sagger (fire clay container in which pottery is placed for fixing in kiln or oven); presses pedal to lift form to remove adhering particles to meet specification; cleans and adjusts mould fitted to machine, if necessary. May be designated according to nature of articles moulded such as SAGGAR MAKER, MACHINE or BRICK MOULDER, MACHINE; DIE PRESSER CERAMICS.

Plan and organize assigned work and detect & resolve issues during execution in his own work area within defined limit. Demonstrate possible solutions and agree tasks within the team. Communicate with required clarity and understand technical English. Sensitive to environment, self-learning and productivity.

Reference NCO 2015: 8181.0400 - Pressman (Ceramics)

4. NSQF LEVEL COMPLIANCE

NSQF level for CERAMIC PRESS OPERATOR trade under ATS: **Level 3**

As per notification issued by Govt. of India dated- 27.12.2013 on National Skill Qualification Framework total 10 (Ten) Levels are defined.

Each level of the NSQF is associated with a set of descriptors made up of five outcome statements, which describe in general terms, the minimum knowledge, skills and attributes that a learner needs to acquire in order to be certified for that level.

Each level of the NSQF is described by a statement of learning outcomes in five domains, known as level descriptors. These five domains are:

a. Process
b. professional knowledge,
c. professional skill,
d. core skill and
e. Responsibility.

The Broad Learning outcome of CERAMIC PRESS OPERATOR trade under ATS mostly matches with the Level descriptor at Level- 3.

The NSQF level-3 descriptor is given below:

LEVEL	Process Required	Professional Knowledge	Professional Skill	Core Skill	Responsibility
Level 3	Person may carry out a job which may require limited range of activities routine and predictable	Basic facts, process and principle applied in trade of employment	Recall and demonstrate practical skill, routine and repetitive in narrow range of application	Communication written and oral, with minimum required clarity, skill of basic arithmetic and algebraic principles, person al banking, basic understanding of social and natural environment	Under close supervision Some Responsibility for own work within defined limit.

5. GENERAL INFORMATION

Name of the Trade	**CERAMIC PRESS OPERATOR**
NCO - 2015	8181.0400
NSQF Level	Level – 3
Duration of Apprenticeship Training (Basic Training + On-Job Training)	3 months + One year (01 Block of 15 months duration including basic training).
Duration of Basic Training	a) Block –I : 3 months **Total duration of Basic Training: 3 months**
Duration of On-Job Training	a) Block–I : 12 months **Total duration of Practical Training: 12 months**
Entry Qualification	Passed 8th class of 10+2 system of education or 2 standard below or its equivalent.
Selection of Apprenticeship	The apprentices will be selected as per Apprenticeship Act amended time to time.
Instructors Qualification for Basic Training	As per ITI instructors qualifications as amended time to time for the specific trade.
Infrastructure for basic Training	As per related trade of ITI
Examination	The internal examination/ assessment will be held on completion of each block. Final examination for all subjects will be held at the end of course and same will be conducted by NCVT.
Rebate to Ex-ITI Trainees	**------**
CTS trades eligible for CERAMIC PRESS OPERATOR Apprenticeship	------

Note:

- *Industry may impart training as per above time schedule for different block, however this is not fixed. The industry may adjust the duration of training considering the fact that all the components under the syllabus must be covered. However the flexibility should be given keeping in view that no safety aspects is compromised.*
- *For imparting Basic Training the industry to tie-up with ITIs having such specific trade and affiliated to NCVT.*
- *-up with ITIs having such specific trade and affiliated to NCVT.*

6. LEARNING OUTCOME

6.1 GENERIC LEARNING OUTCOME

The following are minimum broad Common Occupational Skills/ Generic Learning Outcome after completion of the CERAMIC PRESS OPERATOR course of 01 years 03 months duration under ATS.

Block I:

1. Recognize & comply safe working practices, environment regulation and housekeeping.
2. Explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.
3. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
4. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.
5. Plan and organize the work related to the occupation.

6.2 SPECIFIC LEARNING OUTCOME

Block – I:

1. Carry out safety and best practices/Basic Industrial Culture (5S, KAIZEN, etc.)
2. Prepare different types of documentation as per industrial need by different methods of recording information.
3. Recognise deflocculation and setting.
4. Identify Casting process.
5. Distinguish Plaster Making-economy in the use of Plaster.
6. Classify different ceramic wares according to body, namely, Terracotta, stoneware, E'ware, Semi-porcelain, Porcelain, Bone china, Vitreous China etc
7. Identify raw materials without use of sophisticated instruments.
8. Examine various parts of machine for ceramic slip house and casting slip, namely –Ball mill, Bungers, Diaphragm Pump Fitter Press, De-airing Pug Mill, Magnets etc.
9. Prepare casting slip with Deflocculating agent like Sodium Silicate, Sodium Carbonate etc.
10. Apply casting rate with different age of moulds:
    a) Density-pint weight, specific gravity, flow properties, contents of bobbles.
    b) Age of curing.
11. Examine various faults in casting:-
    (a) Flabby casting (f) Variation of casting weight

(b) Pin holding (g) Bubble formation in casting slip
(c) Cracking
(d) Wreathing
(e) Proportionate shrinkage

12. Identify Development of Strength of Plaster.
13. Test Casting slip – Viscosity, Pint- weight, PH value, etc.
14. Recognise Strength vs. Thickness.
15. Rectify the above defects of the casting slip by thickening, corrective additions, P H control etc.
16. Apply Drain Casting, solid Casting and Pressure Casting – Tea set, Dinner Set Artistic Toys, sanitary- ware, Insulators etc.
17. Identify Practical uses of casting Tools.
18. Carry out joining and finishing of the cast wares.
19. Perform TPM (Total Production Management), TQM (Total Quality Management) and record keeping system.

Note: *Learning outcomes are reflection of total competencies of a trainee and assessment will be carried out as per assessment criteria.*

7. LEARNING OUTCOME WITH ASSESSMENT CRITERIA

GENERIC LEARNING OUTCOME	
LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
1. Recognize & comply safe working practices, environment regulation and housekeeping.	1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements.
	1.2 Recognize and report all unsafe situations according to site policy.
	1.3 Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures.
	1.4 Identify, handle and store / dispose off dangerous/unsalvageable goods and substances according to site policy and procedures following safety regulations and requirements.
	1.5 Identify and observe site policies and procedures in regard to illness or accident.
	1.6 Identify safety alarms accurately.
	1.7 Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures.
	1.8 Identify and observe site evacuation procedures according to site policy.
	1.9 Identify Personal Productive Equipment (PPE) and use the same as per related working environment.
	1.10 Identify basic first aid and use them under different circumstances.
	1.11 Identify different fire extinguisher and use the same as per requirement.
	1.12 Identify environmental pollution & contribute to avoidance of same.
	1.13 Take opportunities to use energy and materials in an environmentally friendly manner
	1.14 Avoid waste and dispose waste as per procedure
	1.15 Recognize different components of 5S and apply the same in the working environment.
2. Explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to	2.1 Explain the concept of productivity and quality tools and apply during execution of job.
	2.2 Understand the basic concept of labour welfare legislation and adhere to responsibilities and remain sensitive towards such laws.

improve productivity & quality.	2.3 Knows benefits guaranteed under various acts
3. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.	3.1 Explain the concept of energy conservation, global warming, pollution and utilize the available recourses optimally & remain sensitive to avoid environment pollution.
	3.2 Dispose waste following standard procedure.
4. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.	4.1 Explain personnel finance and entrepreneurship.
	4.2 Explain role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes & procedure & the available scheme.
	4.3 Prepare Project report to become an entrepreneur for submission to financial institutions.
5. Plan and organize the work related to the occupation.	5.1 Use documents, drawings and recognize hazards in the work site.
	5.2 Plan workplace/ assembly location with due consideration to operational stipulation
	5.3 Communicate effectively with others and plan project tasks
	5.4 Assign roles and responsibilities of the co-trainees for execution of the task effectively and monitor the same.
SPECIFIC OUTCOME	
Block-I (Section:10 in the competency based curriculum)	
*Assessment Criteria i.e. the standard of performance, for each specific learning outcome mentioned under **block – I** (section: 10) must ensure that the trainee performs job that requires limited range of activities which are routine and predictable. Assessment criteria should broadly cover the aspect of **Planning** (Identify, ascertain, etc.); **Execution** (perform, illustration, etc. by applying basic methods, tools, materials and information 2) Knowledge of basic facts, process and principle applied in trade of employment) Basic Mathematical Skills and **Checking/ Testing** to ensure functionality during the assessment of each outcome. The assessments parameters must also ascertain that the candidate is responsible for own work within defined limit.*	

8. SYLLABUS

BASIC TRAINING (Block – I)

Duration: (03) Three Months

Week No.	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
1	Safety: - its importance, classification, personal, general, workshop and job safety. Occupational health and safety. Basic injury prevention, Basic first aid, Hazard identification and avoidance, safety signs for Danger, Warning, caution & personal safety message. Preventive measures for electrical accidents & steps to be taken in such accidents. Importance of housekeeping & good shop floor practices. Disposal procedure of waste materials like cotton waste, metal chips/burrs etc. Fire& safety: Use of Fire extinguishers.	Importance of safety and general precautions observed in the in the industry/shop floor. All necessary guidance to be provided to the new comers to become familiar with the working of Institute system including stores procedures. Introduction of First aid. Safety attitude development of the trainee by educating him to use Personal Protective Equipment (PPE). Response to emergencies eg; power failure, fire, and system failure. Accidents- Definition types and causes. First-Aid, nature and causes of injury and utilization of first-aid. Introduction to 5S concept & its application. Fire: - Types, causes and prevention methods. Fire Extinguisher, its types. Global warming its causes and remedies. Industrial Waste its types, sources and waste Management.
2	Identification of common ceramic raw materials. Familiarisation with the common tools & equipment. Familiarisation with the common ceramic machineries, kilns and furnace etc. Marking out from drawing using scales, dividers, Scribers etc. Practice on the fundamental manufacturing process of ceramic articles.	Different type of raw materials used in ceramic industries- China clays, fire clays, ball clays, feldspar, quartz, limestone, sillimanie, kyamite, chemicals, colouring oxides etc. Visual selection of the raw materials. Classification of ceramic bodies: Common clays (terracotta), Stoneware. Earthenware Faiences, Semi-porcelain, Vitreous china, Hotel china, Bone china etc.
3	Maintenance of tool, cleaning, sharpening, protecting etc.	Basic Knowledge about functioning of important machineries like Jaw crusher,

	Making and use of templates. Fitting of studs and removal of broken ones, fitting and replacement of dowels. Fitting of vee, flat and endless belts, jointing of belts.	Edge runner mill, Ball mill, Blunger, Fitter pump and press. Basic Knowledge about functioning of important machineries like De-airing pug mill, Jigger & Jolly. Introduction of simple repair and maintenance of pumps and presses. Introduction to preventive maintenance.
4	Simple pipe fitting. Fitting of guards and safety devices. Calcinations of Quartz. Grinding and crushing of feldspar, quartz etc.	Basic Knowledge about functioning of important machineries like Vibratory Screen Toggle Press, Extrusion Press. Basic Knowledge about functioning of important machineries like High duty refractory presses like Screw and hydraulic refractory presses, semi-automatic and automatic machines.
5	Charging of blunger. Wet-grinding of raw materials in ball mill.	Pottery and refractory Driers- different types Driers and their mechanism of drying.
6	Magnetic separation of iron particles. Preparation of clay for casting and pressing. Operation of jigger and jolly.	Different kiln furniture like saggers, setters, stilts, cranks, thimbles, and deck slabs, cantilevers etc, their uses.
7	Simple casting, jointing and finishing. Drying Pressing. Drying and glazing.	Furnaces- types of kilns and classification of furnaces. Intermittent and continuous kilns like Down draft kiln, Chamber kiln, Tunnel kiln fired by solid, liquid, gaseous fuel and electricity. Kiln and furnace instrumentation (reading of instruments).
8-9	Preparation of sagger mixture-pressing of saggers. Hand making of saggers. Drying of saggers. Placing of wares in saggers. Placing of saggers in the kiln. Application of colours and different decoration and art.	Pottery Glaze and Decoration – under glaze, in- glaze, in- glaze and on- glaze decoration and methods of application hand drawing, lithographic transier and printing etc.
10	Making of refractory moulds. Shaping of refractory by hand moulding.	Ceramic Fabrication process like Extrusion, Throwing, Turning, Casting, Jiggering, Pressing etc.
11-12	Operation of tile presses. Operation of insulator making machine. Operation of kilns, Down Draft, Chamber, Tunnel, Decorating etc.	
13	**Revision & Internal Assessment**	

9. SYLLABUS - CORE SKILLS

9.1 EMPLOYABILITY SKILLS

(DURATION: - 110 HRS.)

Block – I (Duration – 55 hrs.)	
1. English Literacy	Duration : 20 Hrs. Marks : 09
Pronunciation	Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)
Functional Grammar	Transformation of sentences, Voice change, Change of tense, Spellings.
Reading	Reading and understanding simple sentences about self, work and environment
Writing	Construction of simple sentences Writing simple English
Speaking / Spoken English	Speaking with preparation on self, on family, on friends/ classmates, on know, picture reading gain confidence through role-playing and discussions on current happening job description, asking about someone's job habitual actions. Cardinal (fundamental) numbers ordinal numbers. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.
2. I.T. Literacy	Duration : 20 Hrs. Marks : 09
Basics of Computer	Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.
Computer Operating System	Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.
Word processing and Worksheet	Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion & creation of Tables. Printing document. Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets.

Computer Networking and Internet	Basic of computer Networks (using real life examples), Definitions of Local Area Network (LAN), Wide Area Network (WAN), Internet, Concept of Internet (Network of Networks), Meaning of World Wide Web (WWW), Web Browser, Web Site, Web page and Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication. Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cyber crimes.
3. Communication Skills	Duration : 15 Hrs. Marks : 07
Introduction to Communication Skills	Communication and its importance Principles of Effective communication Types of communication - verbal, non verbal, written, email, talking on phone. Non verbal communication -characteristics, components-Para-language Body language Barriers to communication and dealing with barriers. Handling nervousness/ discomfort.
Listening Skills	Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening. Triple- A Listening - Attitude, Attention & Adjustment. Active Listening Skills.
Motivational Training	Characteristics Essential to Achieving Success. The Power of Positive Attitude. Self awareness Importance of Commitment Ethics and Values Ways to Motivate Oneself Personal Goal setting and Employability Planning.
Facing Interviews	Manners, Etiquettes, Dress code for an interview Do's & Don'ts for an interview.
Behavioral Skills	Problem Solving Confidence Building Attitude
Block – II **Duration – 55 hrs.**	

4. Entrepreneurship Skills		Duration : 15 Hrs. Marks : 06
Concept of Entrepreneurship	Entrepreneur - Entrepreneurship - Enterprises:-Conceptual issue Entrepreneurship vs. management, Entrepreneurial motivation. Performance & Record, Role & Function of entrepreneurs in relation to the enterprise & relation to the economy, Source of business ideas, Entrepreneurial opportunities, The process of setting up a business.	
Project Preparation & Marketing analysis	Qualities of a good Entrepreneur, SWOT and Risk Analysis. Concept & application of PLC, Sales & distribution Management. Different Between Small Scale & Large Scale Business, Market Survey, Method of marketing, Publicity and advertisement, Marketing Mix.	
Institutions Support	Preparation of Project. Role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes & procedure & the available scheme.	
Investment Procurement	Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation & Costing, Investment procedure - Loan procurement - Banking Processes.	
5. Productivity		Duration : 10 Hrs. Marks : 05
Benefits	Personal / Workman - Incentive, Production linked Bonus, Improvement in living standard.	
Affecting Factors	Skills, Working Aids, Automation, Environment, Motivation - How improves or slows down.	
Comparison with developed countries	Comparative productivity in developed countries (viz. Germany, Japan and Australia) in selected industries e.g. Manufacturing, Steel, Mining, Construction etc. Living standards of those countries, wages.	
Personal Finance Management	Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.	
6. Occupational Safety, Health and Environment Education		Duration : 15 Hrs. Marks : 06
Safety & Health	Introduction to Occupational Safety and Health importance of safety and health at workplace.	
Occupational Hazards	Basic Hazards, Chemical Hazards, Vibroacoustic Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards. Occupational health, Occupational hygienic, Occupational Diseases/ Disorders & its prevention.	
Accident & safety	Basic principles for protective equipment.	

	Accident Prevention techniques - control of accidents and safety measures.
First Aid	Care of injured & Sick at the workplaces, First-Aid & Transportation of sick person.
Basic Provisions	Idea of basic provision legislation of India. safety, health, welfare under legislative of India.
Ecosystem	Introduction to Environment. Relationship between Society and Environment, Ecosystem and Factors causing imbalance.
Pollution	Pollution and pollutants including liquid, gaseous, solid and hazardous waste.
Energy Conservation	Conservation of Energy, re-use and recycle.
Global warming	Global warming, climate change and Ozone layer depletion.
Ground Water	Hydrological cycle, ground and surface water, Conservation and Harvesting of water.
Environment	Right attitude towards environment, Maintenance of in -house environment.
7. Labour Welfare Legislation	Duration : 05 Hrs. Marks : 03
Welfare Acts	Benefits guaranteed under various acts- Factories Act, Apprenticeship Act, Employees State Insurance Act (ESI), Payment Wages Act, Employees Provident Fund Act, The Workmen's compensation Act.
8. Quality Tools	Duration : 10 Hrs. Marks : 05
Quality Consciousness	Meaning of quality, Quality characteristic.
Quality Circles	Definition, Advantage of small group activity, objectives of quality Circle, Roles and function of Quality Circles in Organization, Operation of Quality circle. Approaches to starting Quality Circles, Steps for continuation Quality Circles.
Quality Management System	Idea of ISO 9000 and BIS systems and its importance in maintaining qualities.
House Keeping	Purpose of House-keeping, Practice of good Housekeeping.
Quality Tools	Basic quality tools with a few examples.

10. DETAILS OF COMPETENCIES (ON-JOBTRAINING)

The **competencies/ specific outcomes** on completion of On-Job Training are detailed below: -

Block – I

1. Carry out safety and best practices/Basic Industrial Culture (5S, KAIZEN, etc.)
2. Prepare different types of documentation as per industrial need by different methods of recording information.
3. Recognise Deflocenlation and setting.
4. Identify Casting process.
5. Distinguish Plaster Making-economy in the use of Plaster.
6. Classify different ceramic wares according to body, namely, Terracotta, stoneware, E'ware, Semi-porcelain, Porcelain, Bone china, Vitreous China etc
7. Identify raw materials without use of sophisticated instruments.
8. Examine various parts of machine for ceramic slip house and casting slip, namely –Ball mill, Bungers, Diaphragm Pump Fitter Press, De-airing Pug Mill, magnets etc.
9. Prepare casting slip with Deflocculating agent like Sodium Silicate, Sodium Carbonate etc.
10. Apply casting rate with different age of moulds:
    (a) Density-pint weight, specific gravity, flow properties, contents of bobbles.
    (b) Age of curing.
11. Examine various faults in casting:-
    (a) Flabby casting
    (b) Pin holding
    (c) Cracking
    (d) Wreathing
    (e) Proportionate shrinkage
    (f) Variation of casting weight
    (g) Bubble formation in casting slip
12. Identify Development of Strength of Plaster.
13. Test Casting slip – Viscosity, Pint- weight, PH value, etc.
14. Recognise Strength vs. Thickness.
15. Rectify the above defects of the casting slip by thickening, corrective additions, P H control etc.
16. Apply Drain Casting, solid Casting and Pressure Casting – Tea set, Dinner Set Artistic Toys, sanitary- ware, Insulators etc.
17. Identify Practical uses of casting Tools.
18. Carry out joining and finishing of the cast wares.
19. Perform TPM (Total Production Management), TQM (Total Quality Management) and record keeping system.

ANNEXURE – I

INFRASTRUCTURE FOR PROFESSIONAL SKILL & PROFESSIONAL KNOWLEDGE

CERAMIC PRESS OPERATOR			
LIST OF TOOLS AND EQUIPMENT for Basic Training (For 20 Apprentices)			
A. TRAINEES TOOL KIT (For each additional unit trainees tool kit Sl. 1-18 is required additionally)			
Sl. no.	**Name of the Tool &Equipments**	**Specification**	**Quantity**
1.	Safety goggles (armoured heat proof)		1
2.	Protective apron (jute or Asbestos)		1
3.	Rule Steel	300 M.M/12”	1
4.	Tool Tray		1
5.	Hand Brush.	25 m.m	1
6.	Steel Rule	6”/150 m.m.	1
7.	Foot Wear / Asbestos Over-shoes		1
8.	Try Square	250 m.m/10” (for wood work)	1
9.	Making Gauge (wood work)		1
10.	Diagonal scale		1
11.	Divider		1
12.	Iron Moulds		3
13.	Wooden Moulds		3
14.	Wooden Hammer		1
15.	Crucible	(30 c.c. capacity)	1
16.	Tongs (Nickel plated)		1
17.	Specific Gravity bottle		1
B : INSTRUMENTS & GENERAL SHOP OUTFIT			
18.	Standard Chemicals required for Acidimetry & Alhalimentry		1
19.	Torsion Viscometer		1
20.	Small Fitter Press		1
21.	Small Vacuum Pugmill (moterised)		1
22.	Modulus of rupture apparatus		1
23.	Platinum Crucible	(30 capacity)	2
24.	Nickel Crucible	(30 capacity)	8
25.	Electric Furnace	1000ºc capacity	1
26.	Electric Furnace	1450ºc capacity	1
27.	Gas fired Muffle Furnace	1200ºc capacity	1
28.	Vacuum Pump		1
29.	Vacuum Desecicator		2

30.	Porcelain Mortar & Pestle		6
31.	Iron Mortar & Pestle		3
32.	Horse-sheet magnet		4
33.	Stop-Watch		2
34.	Chemical Balance		2
35.	Student petrological Microscope		1
36.	Tongs assorted		4
37.	Asbestos Hand Gloves		4 pairs
38.	Pint Mug Enamek		6
39.	Rule, contraction	600 m.m.	1
40.	Drill, Ratchet Brace	10”/250 m.m.	1
41.	Auger	6.9.12.15 m.m assorted	1 each
42.	Blow lamp, Kerosene		2
43.	Shovel, hand		2
44.	Wheel Barrows		1
45.	Funnel Enamel	75 m.m.	4
46.	Funnel Enamel	150 m.m.	4
47.	Buretties, Pipette measuring cylinders, etc as required in a Chemical Laboratory.		As Required
48.	Standard sieves	(I.S.Std)	1 Set
49.	Chisel Cold Flat	12 m.m.	4 Set
50.	Chisel Cold Flat	20 m.m.	4
51.	Hammer Ball pien	1 k.g.	4
52.	Hammer Ball pien	2 k.g.	4
53.	Half Round file	150 m.m.	4
54.	Remmer flat		4
55.	Wrench adjustable	75 m.m.	2
56.	Wire Brush		4
57.	Screw Driver	250 m.m.	3
58.	Screw Driver	150 m.m.	4
59.	Engineering Try Square	150 m.m.	2
60.	Scriber	200 m.m.	4
61.	Pliers	200	4
62.	Caliper outside	150m.m.	4
63.	Caliper inside	150m.m.	4
64.	Face shields (Clear)		8
65.	Head Wear		8
66.	Fire extinguisher foan, chemical (according to factory regulation)		2
67.	First-Aid Box including burn treatment		2
68.	Fire Buckets with stand		4 Sets
69.	Work Bench.	2m x 1.5m x 750 m.m	2 Nos.
70.	Vice, Bench	125m.m.jaw	4

71.	Locker Steel	with 8 Drawers each	2
72.	Hack Saw Frame	adjustable 225mm to 300m.m	4
73.	Hack Saw Blades	300 m.m.	As Required
74.	Mallet Hide		4
75.	Different tools & appliances for colouring		8 Sets
76.	Taper Trowel		4 (different sets)
77.	Temperature recorders		4 Sets
78.	Bunsen Burner		8
79.	Refractory Fire Bricks		As Required
80.	Oil/ Gas Burners		4 sets each
81.	Pyrometer / Thermocouples		4 sets each
82.	Indicators(Temperature)		4 sets each
83.	Steel Almirah for Teacher		1 (for each trade)
84.	Magnifying Lense		4
85.	Physical Balance	(250g.m.)	3
86.	Travelling Microscope		1
C : GENERAL MACHINERY INSTALLATIONS			
87.	Double ended Bench Grinder	150 mm Wheeldia	1
88.	Drying Oven		1
89.	Liquid limit Device		3
90.	Jaw Crusher		1
91.	Roller Mill		1
92.	Edge Runner		1
93.	Hammer Mill		1
94.	Ball Mill		1
95.	Pot Mill	(3 to a set)	3 sets
96.	Weighing Scale	10 k.g. capacity	1
97.	Weighing Scale	50 k.g. capacity	1

TOOLS &EQUIPMENTS FOR EMPLOYABILITY SKILLS		
Sl. No.	**Name of the Equipment**	**Quantity**
1.	Computer (PC) with latest configurations and Internet connection with standard operating system and standard word processor and worksheet software	10 Nos.
2.	UPS - 500VA	10 Nos.
3.	Scanner cum Printer	1 No.
4.	Computer Tables	10 Nos.
5.	Computer Chairs	20 Nos.
6.	LCD Projector	1 No.
7.	White Board 1200mm x 900mm	1 No.
Note: - Above Tools &Equipments not required, if Computer LAB is available in the institute.		

FORMAT FOR INTERNAL ASSESSMENT

Name & Address of the Assessor :			**Year of Enrollment :**
Name & Address of ITI (Govt./Pvt.) :			**Date of Assessment :**
Name & Address of the Industry :			**Assessment location: Industry / ITI**
Trade Name :	**Semester:**		**Duration of the Trade/course:**
Learning Outcome:			

Sl. No	**Candidate Name**	**Father's/Mother's Name**	Safety consciousness	Workplace hygiene	Attendance/ Punctuality	Ability to follow Manuals/ Written instructions	Application of Knowledge	Skills to handle tools & equipment	Economical use of materials	Speed in doing work	Quality in workmanship	VIVA	**Total internal assessment Marks**	**Result (Y/N)**
Maximum Marks (Total 100 Marks)			**15**	**5**	**10**	**5**	**10**	**10**	**5**	**10**	**15**	**15**		
1														
2														