

PROCESS CAMERAMAN

COMPETENCY BASED CURRICULUM

(Duration: 1yr 03 months.)

APPRENTICESHIP TRAINING SCHEME (ATS)

NSQF LEVEL- 4



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कौशल भारत कुशल भारत

SECTOR – ENTERTAINMENT & MEDIA



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

PROCESS CAMERAMAN

(Revised in 2018)

APPRENTICESHIP TRAINING SCHEME (ATS)



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Developed By

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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:

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

Sl. No.	Name & Designation Sh./Mr./Ms.	Organization	Expert Group Designation
1.			Expert
2.			Expert
3.			Expert
4.			Expert
5.			Expert
6.			Expert
7.			Expert
8.			Expert

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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.



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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.

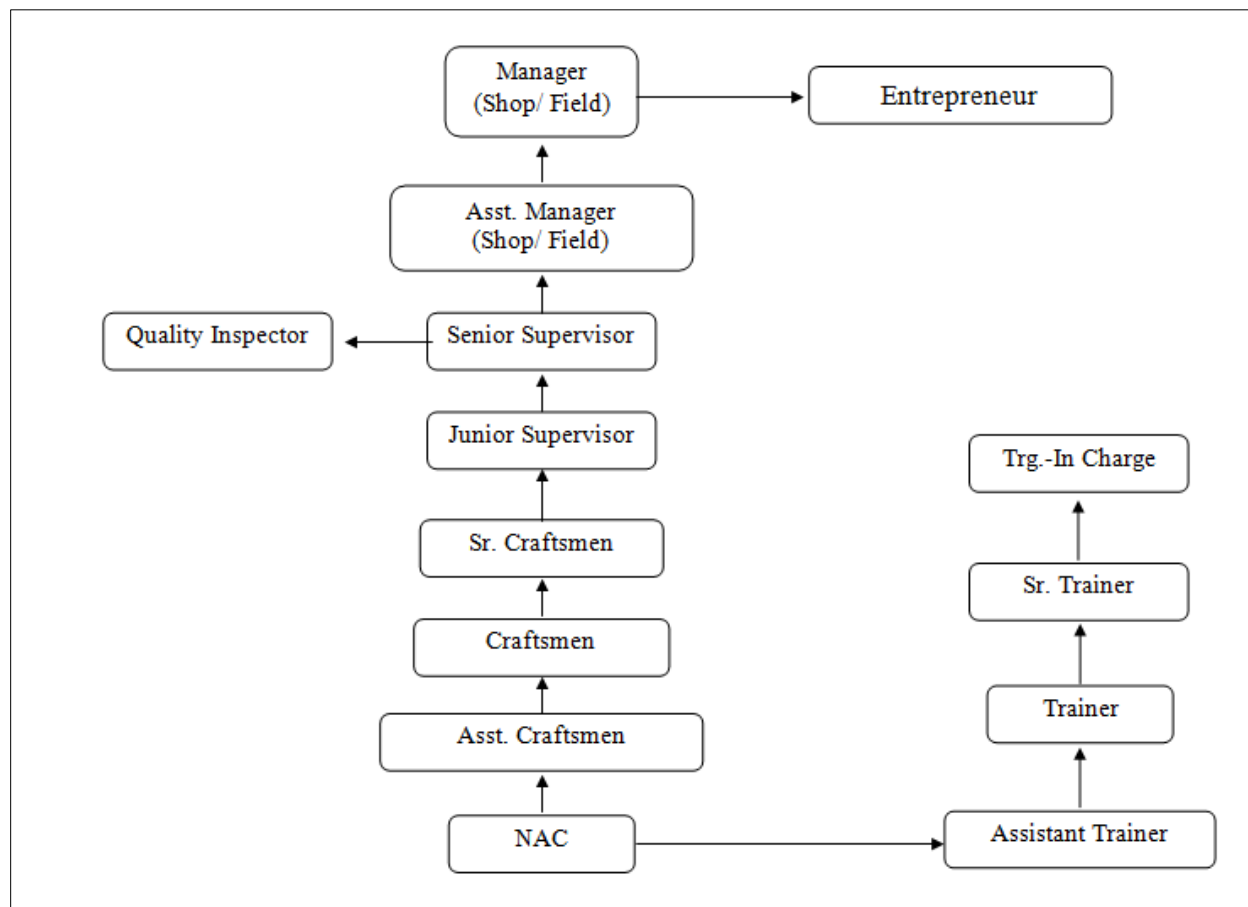
Process Cameraman trade under ATS is one of the most popular courses delivered nationwide through different industries. The course is of one years and three month (01 Blocks) duration. It mainly consists of Domain area and Core area. In the Domain area Trade Theory & Practical impart professional - skills and knowledge, while Core area - and 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.
- Check the different make-up application according to different facial shapes & age.
- 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

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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

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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 standard of craftsmanship.	• 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 with those

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	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 above 75% - 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.

Brief description of Job roles:

Perform work involved in developing and processing photographic images from film or digital media. May perform precision tasks such as editing photographic negatives and prints.

Process cameraman ensures that photographic negatives submitted to their lab are developed and processed correctly. Recently, this work has also included the development of digital film into hard copies of photographs, as well as the development of photo rolls. Technicians may also be responsible for enlarging, refocusing or retouching photographs to make specific parts of the image clearer or more visible.

Printer, Photographic; Contact Printer prints and develops black and white photographs by contact- printing method in dark room. Examines negative for contrast, and selects appropriate photographic printing paper of suitable grade according to degree of contrast in negative; positions negative and printing paper in contact printing frame, fastening down edges; arranges lights to compensate for variations of light and shade in negative; exposes negative and paper to light for carefully timed period, according to density of negative; unfastens printing frame after exposure and removes exposed printing paper from frame; develops exposed prints in series of timed chemical and water baths; washes and dries developed prints, and trims finished ones. May apply glossy finish to prints by heated metal press. May print colour photographs using colour-filters, when processing colour prints, or by other methods such as projection or reproduction process, and be designated as Printer, Colour Film. May operate contact printing machine to produce photographic prints in large numbers. May be designated as Printer, Motion Picture Film, if operates film printing machine to print copies (positives) of film from picture or sound negatives in dark room. May be designated as CHIEF LABORATORIAN if directs, controls and co-ordinates work of other DEVELOPERS, PRINTERS.

Developer, Photographic treats and develops in dark room exposed films or photographic plates in series of chemical and water baths for prescribed period to prepare transparent black and white negative or positive film. Prepares various developing and fixing solutions in special acid-resistant containers by mixing chemicals with water according to formulae; immerses film or plate in developer solution for specified period to make image visible; times period of immersion in each bath and maintains solutions and water at required temperature; rinses film in water to wash off developer solution; places film or plate into fixing bath to produce transparent and light-constant negative; rinses negative in cold running water to wash off fixing solution; dries negative by swabbing off excess water with sponge and exposing it to air in dustless location. May prepare transparent positives from negatives. May develop film on automatic developing machine. May develop positive or negative film in colour solution to produce colour film, and be designated as DEVELOPER COLOUR FILM. May print copies from negatives.

Reference NCO: 8132.0100, 8132.0200, 8132.0600,8132.0700

4. NSQF LEVEL COMPLIANCE

NSQF level for Process Cameraman trade under ATS: **Level 4**

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 PROCESS CAMERAMAN trade under ATS mostly matches with the Level descriptor at Level- 4.

The NSQF level-4 descriptor is given below:

Level	Process Required	Professional Knowledge	Professional Skill	Core Skill	Responsibility
Level 4	Work in familiar, predictable, routine, situation of clear choice.	Factual knowledge of field of knowledge or study	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts	Language to communicate written or oral, with required clarity, skill to basic Arithmetic and algebraic principles, basic understanding of social political and natural environment.	Responsibility for own work and learning.

5. GENERAL INFORMATION

Name of the Trade	PROCESS CAMERAMAN
NCO - 2015	8132.0700, 8132.0100, 8132.0200, 8132.0600
NSQF Level	Level – 4
Duration of Apprenticeship Training (Basic Training + On-Job Training)	3 months+ One year (01 Block of 15 month 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 10th class examination under 10+2 system of education 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	03 months
CTS trades eligible for PROCESS CAMERAMAN (Apprenticeship)	PROCESS CAMERAMAN

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.

6. LEARNING OUTCOME

6.1 GENERIC LEARNING OUTCOME

The following are minimum broad Common Occupational Skills/ Generic Learning Outcome after completion of the Cutting and Sewing Machine Operator course of 01 years duration under ATS.

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

6.2 SPECIFIC LEARNING OUTCOME

Block – I

1. Practice safety – Hazards, prevent measures.
2. Explain handling - care and maintenance of equipment and materials used in camera and dark-rooms.
3. Prepare originals, reflection type and transmission type, monochrome and multicolour, suitability for satisfactory reproduction.
4. Know cameras – different kinds, parts, handling and operation process lenses.
5. Knowledge of light source _ different kinds, carbon arc, fluorescent, tungsten, mercury-vapour, electronic flash, exposure, timing and control.
6. Prepare contact screens – negative working and positive working grey and magenta – uses.
7. Carry out films and plates, kinds, pre screened films, emulsion speed, colour sensitivity.
8. Demonstrate developers – main components, preparation, hypo and other chemicals used, dish developing, developing tank/processor and temperature controlled sinks.
9. Carry out making line , continuous – tone and half –tone negative, direct and indirect method, conversion of continuous-tone images to halftone, characteristics of the above images for the three forms of graphic reproduction, photo-engraving, photo lithography and photo gravure contact positives, screened positive, quality control.
10. Carry out graphic reproduction – enlargers – their use.

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11. Demonstrate colour separations – tri-colour, four colour, use of filters, filter factor, screen angles, more patterns.
12. Create colour masking techniques.
13. Prepare chemical reversal methods and reversal materials.
14. Demonstrate Step-wages, register marks, colour guides-their use.
15. Demonstrate Densitometer – reflection and transmission – readings.

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



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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. Select and ascertain measuring instrument and measure dimension of components and record data.	2.1 Select appropriate measuring instruments such as micrometers, verniercalipers, dial gauge, bevel protector and height gauge (as per tool list).
	2.2 Ascertain the functionality & correctness of the

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	instrument.
	2.3 Measure dimension of the components & record data to analyse the with given drawing/measurement.
3. Explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.	3.1 Explain the concept of productivity and quality tools and apply during execution of job.
	3.2 Understand the basic concept of labour welfare legislation and adhere to responsibilities and remain sensitive towards such laws.
	3.3 Knows benefits guaranteed under various acts
4. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.	4.1 Explain the concept of energy conservation, global warming, pollution and utilize the available recourses optimally & remain sensitive to avoid environment pollution.
	4.2 Dispose waste following standard procedure.
5. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.	5. 1. Explain personnel finance and entrepreneurship.
	5. 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.
	5. 3. Prepare Project report to become an entrepreneur for submission to financial institutions.
6. Plan and organize the work related to the occupation.	6. 1. Use documents, drawings and recognize hazards in the work site.
	6. 2. Plan workplace/ assembly location with due consideration to operational stipulation
	6. 3. Communicate effectively with others and plan project tasks
	6. 4. Assign roles and responsibilities of the co-trainees for execution of the task effectively and monitor the same.
SPECIFIC OUTCOME	
<u>Block-I</u>	
<i>Assessment Criteria i.e. the standard of performance, for each specific learning outcome mentioned under Block – I(section: 10) must ensure that the trainee works in familiar, predictable, routine, situation of clear choice. Assessment criteria should broadly cover the aspect of Planning (Identify, ascertain, etc.); Execution apply factual knowledge of field of knowledge, recall and demonstrate practical skill during performing the work in routine and repetitive in narrow range of application, using appropriate rule and tool, complying with</i>	

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*basic arithmetic and algebraic principles and language to communicate in written or oral with required clarity; **Checking/ Testing** to ensure functionality during the assessment of each outcome. The assessments parameters must also ascertain that the candidate is responsible for his/her own work and learning.*



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BASIC TRAINING (Block – I)**Duration: (03) Three Months**

Week No.	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
1-2	Handle and care of machinery, equipment and materials used for Graphic reproduction, dress, correct working posture. Cleaning, lubrication and general maintenance of the machinery and equipment. Safety – Hazards, preventive measures.	Brief history of printing, comparative analysis of different printing processes. Printing surfaces – outline of preparation for all processes. Safety – Hazards in cameras, dark-room, retouching and engraving section, preventive measures.
3-4	Process cameras, parts of the camera, lens, focus and optical calculations. Light source, arc lamp, exposure	Photo-mechanical process, graphic reproduction-classification. Equipment and materials used in camera, dark-room, retouching and engraving sections, their handling and care. Process camera – parts, mechanical and operational features.
5-6	Demonstrate Photographic plates and films, wet collosion process, gelatin emulsion. Solutions for negative making and plate-making (photo engraving), their preparation – chemicals used, handling and storage.	Process lens, prism, properties, use, focus, optical calculations, and theory of light, optical principles. Theory of halftone, making of line, continuous tone and halftone negatives for photo-engraving, photo-lithography and photogravure processes.
7	Identify Screens- glass cross-line screens, screen angles, screen distance, dot formation, contact screens. Making of line negatives, continuous tone negatives, half-tone negative, contact positives for letterpress lithographic and gravure printing.	Screens - glass-line and contact, kinds, properties, use, screen angle, screen distance. Originals for graphic reproduction – reflection and transmission type, preparation and grouping. Chemicals used for negative making – properties, preparation, handling and storage.
8-9	Process Colour separation – use of filters, simple exercises. Retouching – equipment and materials used, retouching of line, continuous- tone and half-tone jobs including opaquing monochrome and simple colour work, line and half-tone.	Photographic materials – plates, films, wet collodion process, emulsions, preparation, handling & care. Colour separation – theory of colour, filters – kinds handling and care. Contact printing unit – handling and care, making of contact positives. Equipment and materials used for retouching – chemicals used, preparation, handling and care, retouching of negatives and positives, line,

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		continuous tone and halftone work, monochrome and simple colour work.
10-11	Demonstrate Photo engraving – equipment and materials used, light sensitive coating on plates, printing down, Dragon’s blood process, conventional etching of line and half-tone work on zinc and copper plates, retouching, bevelling, hand engraving, mounting and proofing.	Photo engraving – machinery, equipment and materials used, routing machine, mechanical & operational features, handling and care, chemicals used, gum Arabic, egg albumen, ammonia and bichromate, preparation, handling and care. Metals used in photo engraving, zinc, copper, properties, use light sensitive coating of plates and printing down. Dragon’s blood process, etching, routine, hand engraving, bevelling, mounting and proofing, line& halftone work, monochrome and simple colour work.
12	Identify measuring gauges and instruments – their use and handling.	Measuring gauges and instruments, Various types, handling and care.
13	Step-wages – their use	Step-wedges – kinds, use.
Internal Assessment 03days		

Note: - More emphasis to be given on video/ real-life pictures during theoretical classes. Some real-life pictures/videos of related industry operations may be shown to the trainees to give a feel of Industry and their future assignment.

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9.1 EMPLOYABILITY SKILLS

(DURATION: - 110 HRS.)

Block – I (Duration – 110hrs.)	
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	Basic of computer Networks (using real life examples), Definitions of

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Networking and Internet	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
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

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	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

Process Cameraman

	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-JOB TRAINING)

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

Block – I

1. Practice safety – Hazards, prevent measures.
2. Explain handling - care and maintenance of equipment and materials used in camera and dark-rooms.
3. Prepare originals, reflection type and transmission type, monochrome and multicolour, suitability for satisfactory reproduction.
4. Know cameras – different kinds, parts, handling and operation process lenses.
5. Knowledge of light source _ different kinds, carbon arc, fluorescent, tungsten, mercury-vapour, electronic flash, exposure, timing and control.
6. Prepare contact screens – negative working and positive working grey and magenta – uses.
7. Carry out films and plates, kinds, pre screened films, emulsion speed, colour sensitivity.
8. Demonstrate developers – main components, preparation, hypo and other chemicals used, dish developing, developing tank/processor and temperature controlled sinks.
9. Carry out making line , continuous – tone and half –tone negative, direct and indirect method, conversion of continuous-tone images to halftone, characteristics of the above images for the three forms of graphic reproduction, photo-engraving, photo lithography and photo gravure contact positives, screened positive, quality control.
10. Carry out graphic reproduction – enlargers – their use.
11. Demonstrate colour separations – tri-colour, four colour, use of filters, filter factor, screen angles, more patterns.
12. Create colour masking techniques.
13. Prepare chemical reversal methods and reversal materials.
14. Demonstrate Step-wages, register marks, colour guides-their use.
15. Demonstrate Densitometer – reflection and transmission – readings.

Note:

1. Industry must ensure that above mentioned competencies are achieved by the trainees during their on job training.
2. In addition to above competencies/ outcomes industry may impart additional training relevant to the specific industry.

INFRASTRUCTURE FOR PROFESSIONAL SKILL & PROFESSIONAL KNOWLEDGE

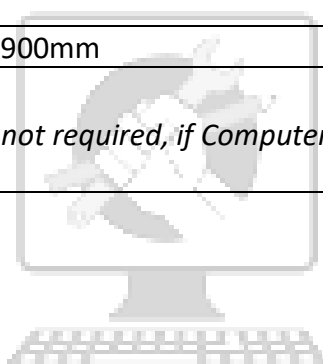
PROCESS CAMERAMAN			
LIST OF TOOLS AND EQUIPMENT for Basic Training (For 20 Apprentices)			
A. TRAINEES TOOL KIT (For each additional unit trainees tool kit Sl. 1-7 is required additionally)			
Sl. No.	Name of the items	Specification	Quantity (indicative)
1.	Developing trays	4 Nos. in each of sizes (i) 20cms * 25 cm (ii) 30 cm * 40 cm and (iii) 40 cm * 50 cm.	12Nos.
2.	Enamel glass funnel.		06 Nos.
3.	Camel hair brush, stiff type.		12 Nos.
4.	Measuring glasses, different sizes, graduated.		06 Nos.
5.	Magnifying glass(* 8)		04Nos.
6.	Artist brush	(Nos. 0 to 7)	04 set
B :TOOLS INSTRUMENTS AND GENERAL SHOP OUTFITS			
7.	Printing down frame, clamp type in assorted sizes.		4 Nos.
8.	Arc lamp.		1 No.
9.	Process camera	size 50cm * 50 cm complete with accessories like lens prism, arc lamps etc	1 No.
10.	Colour filters	Set of 4.	1 set
11.	Halftone screens (Circular)	Ranging from 65° to 133° (lines / sq. inch).	1 Each
12.	Contact screens negative (Gray Magenta)	100° and 120 ° (Lines/ sq. inch).	1 Each
13.	Nap roller (For hand rolling).		2 Nos.
14.	Etching through.		3 Nos.
15.	Rolling tray.		2 Nos.
16.	Routing machine with routes on different sizes and other accessories.		1Nos.
17.	Hand bevelling machine.		1 No.
18.	Whirler, hand, bulb type.		1 No.
19.	Retouching desk,	size 50 cm x 75 cm.	4 Nos.
20.	Chairs for retouching desks.		4 Nos.
21.	Metal shearing machine, treadle		1No.

Process Cameraman

	operated.		
22.	Measuring glasses, different sizes, graduated.		6 Nos.
23.	Hydrometer (Heavier than water).		2 Nos.
24.	Timers.		2 Nos.
25.	P.V.C. sink with stand.	(90 cm * 75cm * 20 cm)	1 No.
26.	Thermometer, Boume.		2 Nos.
27.	Steel rule, graduated.		4 Nos.
28.	Burner/stove.		1 No.
29.	Gloves		2 pairs.
30.	Dusting cabinet.		1 No.
31.	Scraper, steel.		6 Nos.
32.	Proof - press		1 No.
33.	Whit stone (For sharpening engraving tools).		1 No
34.	Pumic stone		1No.
35.	Glass jar/container (For silver nitrate etc.).		4 Nos.
36.	Argentometer (For testing Strength of silver nitrate bath).		1 No
37.	Densitometer (reflection and transmission type).		1 No.
38.	Contact printing unit.		1 No.
39.	Safe lights		4 Nos.
40.	Film trimmer		1 No.
41.	Magnifying glass(* 8)		4 Nos.
42.	Porcelain bowls.		2 Nos.
43.	Cupboard, steel.		1 No.
Furniture Required			
44.	White Board	(size: 8ft. x 4ft.)	01
45.	Trainer's Table		01
46.	Trainer's Chair		01

Note: In case of basic training setup by the industry the tools, equipment and machinery available in the industry may also be used for imparting basic training.

TOOLS & EQUIPMENTS FOR EMPLOYABILITY SKILLS		
Sl. No.	Name of the items	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.
<i>Note: - Above Tools & Equipments not required, if Computer LAB is available in the institute.</i>		



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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	Maximum Marks (Total 100 Marks)		15	5	10	5	10	10	5	10	15	15	Total internal assessment Marks	Result (Y/N)	
	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			
1															
2															