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

COMPETENCY BASED CURRICULUM

DIGITAL PHOTOGRAPHER

(Duration: One Year)

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL- 4

SECTOR –MEDIA AND ENTERTAINMENT

Directorate General of Training

DIGITAL PHOTOGRAPHER

(Non-Engineering Trade)

(Revised in 2019)

Version: 1.2

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL - 4

Developed By

Ministry of Skill Development and Entrepreneurship

Directorate General of Training
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE
EN-81, Sector-V, Salt Lake City,
Kolkata – 700 091
www.cstaricalcutta.gov.in

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1. COURSE INFORMATION

During the one-year duration of "Digital Photographer" trade, a candidate is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this, a candidate is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence. The broad components covered in one year duration are as below:

During the one-year duration, the trainee learns about elementary first-aid, firefighting, environment regulation and housekeeping, etc. The trainee identifies trade tools, digital cameras, compact and SLR. The trainee will be able to do the practical by the use of natural light, tungsten light, fluorescent light, single and multiple electronic flash reflectors, exposure meters, studio flash and its accessories. They will also be able to do the practical on various lighting techniques for different lenses and will do practice on special areas of photography in outdoor and indoor conditions .They will be able to do practical on computer system by digital editing software, printing the photographs taken by digital cameras and will be able to do the image transportation to the storage media, sending photographs through E-mail and to Scan photographs, capture frames and analysis of images. There will be a visit to studio for six weeks where they will be able to handle the digital Video cameras, Tape, DVD, HDD, accessories and exposure to take different common shots, dimension of images and movements as per requirement. The trainee will be able to do lighting of different areas of video shooting, practice on three point lighting indoor and outdoor. Taking photographs using different types of lenses using different aperture, shutter speed setting for still, Video camera, CCTV and spy camera. Taking photographs of portrait, studio photography, commercial/Advertisement photography, sports photography, fashion photography, slow and fast moving objects, functions, machines and processes , landscape, architecture, night photography children, animal, birds, shooting spot etc by digital camera. They will have the concept of audio video recording, mixing, editing, dubbing of sound, using different types of microphones. Shooting of different areas and topics such as sports, wildlife, modeling, drama, documentary, serial, story board making, news, interview, seminar/ workshop, industrial, live broadcasting, musical event, advertisement, etc. The trainee also undergoes two weeks on-the- job training in various studios/labs at the end of the year which gives them more practical exposure to the professional working environment.

2.1 GENERAL

The Directorate General of Training (DGT) under Ministry of Skill Development & Entrepreneurship offers a range of vocational training courses catering to the need of different sectors of the economy/ labour market. The vocational training programs are delivered under the aegis of Directorate General of Training (DGT). Craftsman Training Scheme (CTS) with variants and Apprenticeship Training Scheme (ATS) are two pioneer programs of DGT for propagating vocational training.

'Digital Photographer' trade under CTS is one of the professional courses delivered nationwide through a network of ITIs. The course is of one year duration. It mainly consists of Domain area and Core area. In the Domain area (Trade Theory & Practical) impart professional skills and knowledge, while the core area (Employability Skill) imparts requisite core skills, knowledge, and life skills. After passing out the training program, the trainee is awarded National Trade Certificate (NTC) by DGT which is recognized worldwide.

Candidates broadly need to demonstrate that they are able to:

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

2.2 PROGRESSION PATHWAYS

- Can join industry as Technician and will progress further as Senior Technician, Supervisor and can rise up to the level of Manager.
- Can become Entrepreneur in the related field.
- Can join Apprenticeship programs in different types of industries leading to a National Apprenticeship certificate (NAC).
- Can join Crafts Instructor Training Scheme (CITS) in the trade for becoming an instructor in ITIs.
- Can join Advanced Diploma (Vocational) courses under DGT as applicable.

2.3 COURSE STRUCTURE

Table below depicts the distribution of training hours across various course elements during a period of one year: -

S No.	Course Element	Notional Training Hours
1.	Professional Skill (Trade Practical)	1200
2.	Professional Knowledge (Trade Theory)	240
3.	Employability Skills	160
	Total	**1600**

2.4 ASSESSMENT & CERTIFICATION

The trainee will be tested for his skill, knowledge and attitude during the period of course through formative assessment and at the end of the training programme through summative assessment as notified by the DGT from time to time.

a) The Continuous Assessment (Internal) during the period of training will be done by **Formative Assessment Method** by testing for assessment criteria listed against learning outcomes. The training institute has to maintain an individual trainee portfolio as detailed in assessment guideline. The marks of internal assessment will be as per the formative assessment template provided on www.bharatskills.gov.in

b) The final assessment will be in the form of summative assessment. The All India Trade Test for awarding NTC will be conducted by Controller of examinations, DGT as per the guidelines. The pattern and marking structure is being notified by DGT from time to time. **The learning outcome and assessment criteria will be the basis for setting question papers for final assessment. The examiner during final examination will also check** the individual trainee's profile as detailed in assessment guideline before giving marks for practical examination.

2.4.1 PASS REGULATION

For the purposes of determining the overall result, weightage of 100% is applied for six months and one year duration courses and 50% weightage is applied to each examination for two years courses. The minimum pass percent for Trade Practical and Formative assessment is 60% & for all other subjects is 33%. There will be no Grace marks.

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 the assessment. Due consideration should be given while assessing for teamwork, avoidance/reduction of scrap/wastage and disposal of scrap/waste as per procedure, behavioral attitude, sensitivity to the 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 and records of internal (Formative) assessments are to be preserved until forthcoming examination for audit and verification by examining 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 should produce work which demonstrates attainment of an acceptable standard of craftsmanship with occasional guidance, and due regard for safety procedures and practices	• Demonstration of good skills and accuracy in the field of work/ assignments. • A fairly good level of neatness and consistency to accomplish job activities. • Occasional support in completing the task/ job.
(b)Weightage in the range of 75%-90% to be allotted during assessment	
For this grade, a candidate should produce work which demonstrates attainment of a reasonable standard of craftsmanship, with little guidance, and regard for safety	• Good skill levels and accuracy in the field of work/ assignments. • A good level of neatness and consistency to accomplish job activities.

procedures and practices	• Little support in completing the task/ job.
(c) Weightage in the range of more than 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 and accuracy in the field of work/ assignments. • A high level of neatness and consistency to accomplish job activities. • Minimal or no support in completing the task/ job.

Digital Photographer General; takes photograph of persons, places, or other subjects, using various kinds of photographic equipment. Measures day light using exposing meter or arranges artificial lighting and holds or places camera at desired angle and distance from subject to be photographed. Focuses lens and adjusts lens opening and exposure time. Loads camera with film or plate. Presses lever to open lens shutter and exposes film or plate by pressing lever, allowing time, if for publication. Supplies series of pictures on selected topics, for writing feature articles in magazines. May develop films and print copies. Photographers and Image and Sound Recording Equipment Operators, Other take photographs of persons, places and objects and record sound for different purposes and include Photographers, Image and Sound Recording Equipment Operators not elsewhere classified.

Photographer News; or Press Photographer photographs news events, persons or objects for use in news-papers, magazines and other publications. Receives instructions from News Editor or Chief Reporter regarding nature of pictures to be taken. Travels to location; loads camera with film, waits for suitable moment and takes photographs. Attends State functions and parties and takes photographs of important persons arousing special interest of news value for publication. Accompanies important visitors and dignitaries and takes photographs of significant events associating important persons. Removes exposed film for developing and printing. Examines print, gives appropriate title or heading, and hands it over to News Editor.

Photographer, Aerial; photographs objects, places and areas of vital importance from aero planes in flight, for use in surveys, planning, development and other scientific and military purposes. Determines number of exposures and time lapse between them by making necessary calculations. Loads camera, adjusts exposure-time and exposes film by opening shutter at calculated intervals. Operates and maintains automatic camera and photo equipment for aerial photographs. Develops aerial films of various types in automatic, semi-automatic or manual tank developers. Makes prints for photo interpretation.

Digital photographical institutions; it will provide the familiarization with the institution, its importance of trade training & professional use of Digital camera into different types of uses into variety of interests of the Govt. and public sectors. After getting trained, the trainee will be able to do the job for making short documentary, news items, and interviews of great personalities of different areas, music videos and professional photography for wild life, modeling, drama documentary, serial, story board making news, live broadcasting, seminar/workshop industrial, musical event, advertisement as well as domestic purposes etc.

Reference NCO-2015:

      (i)   3431.0100 – Photographer General

      (ii)   3431.0200 – Photographer News

      (iii)   3431.0300 – Photographer, Aerial

      (iv)   3431.9900 – Photographer & Others

Name of the Trade	**DIGITAL PHOTOGRAPHER**
Trade Code	DGT/1082
NCO – 2015	3431.0100, 3431.0200, 3431.0300, 3431.9900
NSQF Level	Level-4
Duration of Craftsmen Training	One Year (1600 Hours)
Entry Qualification	Passed 10th class examination
Minimum Age	14 years as on first day of academic session.
Eligibility for PwD	LD, CP, LC, DW, AA, DEAF, HH, AUTISM
Unit Strength (No. of Student)	24 (There is no separate provision of supernumerary seats)
Space Norms	48 Sq. m
Power Norms	6.35 KW
Instructors Qualification for:	
(i) Digital Photographer Trade	Diploma (Minimum 2 Years) in Photography/ Cinematography/ Videography from recognized board or relevant Advanced Diploma (Vocational) from DGT with two years' experience in the relevant field. **OR** NAC/NTC passed in the trade of Digital Photographer/Photographer with three years' experience in the relevant field. **Essential Qualification:** Relevant National Craft Instructor Certificate (NCIC) in any of the variants under DGT. **Note:** *Out of two Instructors required for the unit of 2 (1+1), one must have Degree/Diploma and other must have NTC/NAC qualifications. However both of them must possess NCIC in any of its variants.*
(ii) Employability Skill	MBA/ BBA / Any Graduate/ Diploma in any discipline with Two years' experience with short term ToT Course in Employability Skills from DGT institutes.

	(Must have studied English/ Communication Skills and Basic Computer at 12th / Diploma level and above) **OR** Existing Social Studies Instructors in it is with short term ToT Course in Employability Skills from DGT institutes
(iii) Minimum age for Instructor	21 years
List of Tools and Equipment	As per Annexure – I

Distribution of training on hourly basis: (Indicative only)

Total Hrs./week	Trade Practical	Trade Theory	Employability Skills
40 Hours	30 Hours	6 Hours	4 Hours

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

5.1 LEARNING OUTCOMES (TRADE SPECIFIC)

1. Identify and use Lenses following safety precautions.
2. Apply various types of lights on the photographs using lighting techniques, taking indoor and outdoor photographs and use of special areas of photography.
3. Use different types of object lighting: Daylight, Artificial light and their combination. Tungsten light, fluorescent Light, single & multiple electronic flash, reflectors, exposure meters.
4. Work with basic portrait, studio photography, Commercial/Advertisement photography, Sports photography, fashion photography, slow and fast moving objects, functions, machines and processes, landscape, architecture, night photography children, animal, birds, shooting spot etc. by digital camera, candid photography, time lapse photography.
5. Apply Computer Fundamentals Monitor Calibration, Interfaces.
6. Apply Image transportation by using editing software, taking printouts of photographs by using computer system from digital camera.
7. Develop the skill & knowledge of Multimedia in Photography. Demonstrate most of the important aspects of Photo Editing software Elements. Show the usual workflow steps for photo editing, organizing, and sharing.
8. Work with Images & Graphics.
9. Demonstrate four Key Skills of a Successful Photographer and procurement of good quality cameras and its accessories.
10. Use different video equipment and their operations. Demonstrate the basic principles of video and audio recording.
11. Apply skill of Editing Techniques and the motion Picture Photography techniques.
12. Apply Principles of Light, demonstrating the quality and types of lights.
13. Demonstrate the shooting techniques by using digital video camera with pan-tilt-zoom and use of camcorder camera operating techniques.
14. Apply Audio recording sound by using different types of microphones. Mixing, editing, dubbing and sweetening of sound
15. Use of three point lighting for video shooting in a studio and selection of shooting camera, studio lights accessories for field lighting
16. Make documentary films, Shoot interviews, news, and make advertisements etc.
17. Work with post-production.
18. Apply the necessity of planning a production while working.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
1. Identify and use Lenses following safety precautions.	Identify different types of lenses for different types of digital camera.
	Demonstrate lenses with wide angle, Normal, telephoto and zoom range.
	Identify and understand the focal length of the different types of lenses.
	Demonstrate disposal procedure of wastage/electronic materials.
	Identify the different types of lenses to take variety of photo.
2. Apply various types of lights on the photographs using lighting techniques, taking indoor and outdoor photographs and use of special areas of photography.	Practice on different types of composition using various lighting techniques.
	To do practice on taking photographs by varying aperture, shutter speed and use of different types of lenses.
	To do practice on taking photographs by varying aperture, shutter speed and use of different types of lenses.
	To do practice of taking photographs on special area of photography.
3. Use different types of object lighting: Daylight, Artificial light and their combination. Tungsten light, fluorescent Light, single & multiple electronic flash, reflectors, exposure meters.	Take photographs in natural light, tungsten light and fluorescent light.
	Take photographs with single & multiple electronic flash.
	Take photographs with Reflectors, exposure meters, studio flash.
	Take photographs with different accessories (Lux Meter, Slave Unit) and guide number.
4. Work with basic portrait, studio photography, Commercial/Advertisement photography, Sports photography, fashion photography,	Demonstrate different parts of digital camera photography for commercial/advertisement.
	Demonstrate photography for sports by digital cameras.
	Demonstrate photography for fashion by digital cameras.
	Demonstrate photography for basic architecture /monuments with digital cameras.
	Demonstrate photography for animal and birds in slow and fast-

	slow and fast moving objects, functions, machines and processes, landscape, architecture, night photography children, animal, birds, shooting spot etc. by digital camera, candid photography, time lapse photography.	moving conditions by digital cameras.
		Demonstrate photography in night conditions for children/group by digital cameras
5.	Apply Computer Fundamentals Monitor Calibration, Interfaces.	Work with operating software with accessories and configuration of multimedia PC with other application software. Monitor Calibration.
		Work on multimedia platform for internet and its functions.
6.	Apply image transportation by using editing software, taking printouts of photographs by using computer system from digital camera.	Perform digital editing by using bit map and vector based image editing software.
		Demonstrate ability of taking printouts of photographs taken by a digital camera from computer printer.
		Explain the concept of image transportation to storage media.
		Demonstrate sending photographs through internet/E-mail.
7.	Develop the skill & knowledge of Multimedia in Photography. Demonstrate most of the important aspects of Photo Editing software Elements. Show the usual workflow steps for photo editing, organizing and sharing.	Demonstrate ability to work with Adjustment Layers.
		Demonstrate blending modes for layers using filters, styles, and effects, working with text layers.
		Repair and retouching tools and techniques with the Smart Brush and adjustment layers.
		Demonstrate colour spaces, colour management, and printing.
		Demonstrate resolution and pixels for printing image with the we band working with old photos. Scanning, colorizing, black & white.
		Perform slide shows with adding music and titles to old photographs and old video.
		Demonstrate the Photo merge tools to combine the best parts of photos/video.
8.	Work with Images & Graphics.	Demonstrate can photographs and capture frames and making still images in multimedia application.

		Demonstrate the methods of storing & processing (Raster method, Vector method) – Factors influencing quality (Resolution, Pixel depth, Pixel aspect ratio) – Colour models.
		Demonstrate methods of capturing: Scanner – Digital Camera – Frame Grabber and IMAGE COMPRESSION
9.	Demonstrate Four Key Skills of a successful Photographer and Procurement of a good quality cameras and its accessories.	Demonstrate hard skill: Technical
		Demonstrate on hard : Artistic
		Communication skill and body language to be checked.
10.	Use different video equipment and their operations.Demonstrate the basic principles of video and audio recording.	Work with digital video cameras on tripod stand, VTR, Camcorder, Monitor.
		Set up a single camera unit: Black balance and White balance, Adjustment of viewfinder and monitor, Familiarization of in- camera filters and other in-camera controls, Day-&-night Video-graphy by manipulation of white balance.
		Demonstrate operation of various camera movements.
11.	Apply skill of Editing Techniques and the motion Picture Photography techniques.	Demonstrate basic shot terminology : Close up, Mid shot, Long shot, Big close up, Mid-long shot, Extreme long shot, Point of view (POV) shot, Over-the Shoulder(OSS) shot, high angle and low angle shot, top angle shot.
		Demonstrate Action Axis (180 degree rule); matching of action, Static and Dynamic Continuity, Reverse angle.
		Perform operations and Camera movements Pan, tilt, trolley, dolly, crane, steady – cam and usage of other camera support.
12.	Apply Principles of Light, demonstrating the quality and types of lights.	Explain basic principle of light. (i) Electromagnetic spectrum, visible spectrum. (ii) Behavior of light (Direct and Indirect)(iii) Inverse square law. (iv) Basic principles of color, Color temperature, CIE diagram, trichromatic theory of vision.
		Work on quality of light: Specular, diffused and bounced. (ii) Types of light : Natural day light, Incandescent, (tungsten- halogen, LED and PAR etc.
		Work on Low key and High key technique of lighting, use of back

	light, kicker and background light. Practice to light up 2-point and 3-point lighting in an indoor situation. Light source filters and gels for mixed lighting situation.	
	Use the reflectors, mirrors, skimmers as fill light in an outdoor situation.	
13. Demonstrate the Shooting techniques by using digital video camera with pan-tilt-zoom and use of camcorder camera operating techniques.	Handle digital video camera and their accessories, camera Movement – Pan – tilt- Zoom. Dimension of image.	
	Explain basic camera do's and "dont's Before and after the shoot.	
	Work on DSLR and video camera. Assignment must be given at week end and monitored regularly.	
14. Apply the Audio recording sound by using different types of microphones. Mixing, editing, dubbing and sweetening of sound.	Work on the concept of audio video recording using External Microphone and Line recording.	
	Perform mixing, editing, dubbing of sound.	
15. Use of three point lighting for video shooting in a studio and selection of shooting camera, studio lights accessories for field lighting.	Practice for Lighting of different areas of video shooting.	
	Practice on three point lighting, indoor and outdoor lighting etc.	
	Practice on hard and soft lighting. Single camera lighting, bounce lighting.	
	Use of reflectors& skimmer.	
16. Make documentary films, Shoot interviews, news, and make advertisements etc.	Shoot different areas and topics such as sports, wildlife, modelling, demand documentary, serial.	
	Perform shooting of news, interview, seminar/ workshop, industrial, live broadcasting, musical event, Advertisement, Architectural, monuments, travel videos and Landscapes.	
17. Work with post-production.	Demonstrate Video Editing Process.	
	Edit thestory, Trim thestory, Addmusic, titles and transitions,	

	Rearranging, adding and removing sections of video clips and audio clips. Applying colour correction, filters and other enhancements, Creating transitions between clips.
	Perform Non-Linear Video Editing technique and their utilisation for various types of production.
18. Apply the necessity of planning a production while working.	Make a plan for production and qualities of a good production.
	Explain principle of direction during production, objective to be coped with during pre-production.

		SYLLABUS FOR DIGITAL PHOTOGRAPHER TRADE	
		DURATION: ONE YEAR	
Duration	**Reference Learning Outcome**	**Professional Skills (Trade Practical) With Indicative Hours**	**Professional Knowledge (Trade Theory)**
Professional Skill 60 Hrs; Professional Knowledge 12 Hrs	Identify and use Lenses following safety precautions.	1. Identification of basic first aid devices and use them in different circumstances. (5 hrs) 2. Identification of different fire Extinguishers and its use as per requirement and also the use of safety alarms. (5 hrs) 3. To identify, handle and disposed off dangerous goods according to policy and procedures and also know how to report to supervisor /competent authority in case of any incident. (10 hrs) 4. To identify and observe evacuation procedure according to site policy. (5 hrs) 5. To identify different types of digital cameras and its different parts. (5 hrs.)	Importance of safety and general precautions. Observed in the trade by the Institution. Care & maintenance of equipments & material. Introduction to photography and its applications. Introduction to Cameras & it's History (From pin-hole camera to digital camera) (06 hrs)
		6. To identify different types of lenses for different types of digital camera (5hrs) 7. To use the lenses with wide angle, Normal, telephoto and zoom range. (10 Hrs) 8. Identify and understand the focal length of the different	Types of Lenses Four basic types of lenses, they are: •Normal •Wide angle •Telephoto •Zoom Introduction to Focal length. Depth-of-field in comparison with human eye. Depth of focus

		types of lenses. (5 Hrs) 9. Identify and practice the different types of lenses to take variety of photo. (5Hrs) 10. Practice with digital camera lenses with depth of field. (5 hrs)	Perspective ,aberrations of Lens. (06 hrs)
Professional Skill 60 Hrs; Professional Knowledge 12 Hrs	Apply various types of lights on the photographs using lighting techniques, taking indoor and outdoor photographs and use of special areas of photography.	11. Practice on different types of composition using various lighting techniques. (15 hrs) 12. To do practice on taking photographs by varying aperture, shutter speed and use of different types of lenses. (15 Hrs) 13. To do practice on taking photographs by varying aperture, shutter speed and use of different types of lenses. (15 Hrs) 14. To do practice of taking photographs on special area of photography. (15Hrs)	Correct Exposure, ('rules' of photographic composition) Conception of aperture, shutter speed, ISO. Knowledge of Pixels& their uses. Use of lens hood, tripod and mono pod stand. (12 hrs)
Professional Skill 60 Hrs; Professional Knowledge 12 Hrs	Use different types of object lighting: Daylight, Artificial light and their combination. Tungsten light, fluorescent Light, single & multiple electronic flash, reflectors, exposure meters.	15. To practice of taking photographs in natural light, tungsten light and fluorescent light. (20 hrs) 16. To practice of taking photographs with single & multiple electronic flash (10 hrs) 17. To practice of taking photographs with Reflectors, exposure meters, studio flash. (20 hrs) 18. To practice of taking photographs with different accessories (Lux Meter, Slave Unit) and guide number. (10	Understanding visual communication and aesthetic in Photography. Theory of light and sources. White balance, Kelvin temperature & colour balance. (12 hrs)

		Hrs)	
Professional Skill 90 Hrs; Professional Knowledge 18 Hrs	Work with basic portrait, studio photography, Commercial/Advertisement photography, Sports photography, fashion photography, slow and fast moving objects, functions, machines and processes, land scape, architecture, night photography children, animal, birds, shooting spot etc. by digital camera, candid photography, time lapse photography.	19. Practice on different parts of digital camera photography for commercial/advertisement.(20 Hrs) 20. Practice of photography for sports by digital cameras(20 Hrs) 21. Practice of photography for fashion by digital cameras(10 Hrs) 22. Practice of photography for basic architecture /monuments with digital cameras. (20 Hrs) 23. Practice of photography for animal and birds in slow and fast-moving conditions by digital cameras(10 Hrs) 24. Practice of photography in night conditions for children/group by digital cameras(10 Hrs)	Understand of special & professional shooting techniques. Learning & usage of various filters like- (ND-Neutral Density, Gradient Filters) (18 hrs)
Professional Skill 30 Hrs; Professional Knowledge 06 Hrs	Apply Computer Fundamentals Monitor Calibration, Interfaces.	25. Practice on operating software with accessories and configuration of multimedia PC with other application software. Monitor Calibration. (15 Hrs) 26. Practice on multimedia platform for internet and its functions. (15 Hrs)	Basics of Computers, OS, RAM, ROM and Graphic cards, Concept of operating software, functions and its uses. Basics of Internet, different image editing software & its application. Multimedia platform, accessories and configuration of multimedia PC. (06 hrs)
Professional Skill 60 Hrs; Professional Knowledge	Apply image transportation by using editing software, taking printouts of	27. Practice on digital editing by using bit map and vector based image editing software. (20 Hrs) 28. Practice on ability of taking	Knowledge of image editing software. Knowledge of different types of printing media for hard copy. Knowledge of different types of

12 Hrs	photographs by using computer system from digital camera.	printouts of photographs taken by a digital camera from computer printer. (20 Hrs)	printers in respect of their resolution. (12 hrs)
		29. Practice on the concept of image transportation to storage media. (15 Hrs)	
		30. Practice of sending photographs through internet/E-mail. (5 Hrs)	
Professional Skill 90 Hrs; Professional Knowledge 18 Hrs	Develop the skill & knowledge of Multimedia in Photography. Demonstrate most of the important aspects of Photo Editing software Elements. Show the usual workflow steps for photo editing, organizing, and sharing.	31. Practice on ability to Work with Adjustment Layers. (10 Hrs)	Workflow steps for editing photos in Photo editing software & Elements, learning the tools and techniques in a natural way. (18 hrs)
		32. Practice on blending modes for layer susing filters, styles, and effects, working with text layers. (10 Hrs)	
		33. Practice on repairing and retouching tools and techniques with the Smart Brush and adjustment layers. (10 Hrs)	
		34. Practice on colour spaces, colour management, and printing. (10 Hrs)	
		35. Practice on resolution and pixels for printing image with the web and working with old photos. Scanning, colorizing, black & white. (15 Hrs)	
		36. Practice on slide shows with adding music and titles to old photographs and old video. (10 Hrs)	
		37. Practice by using the Photo merge tools to combine the best parts of photos/video. (10 Hrs)	

Professional Skill 30 Hrs; Professional Knowledge 06 Hrs	Work with Images & Graphics.	38. Practice to scan photographs and capture frames and making still images in multimedia application. (5 Hrs) 39. DIGITAL IMAGE: Practice on the methods of storing & processing (Raster method, Vector method) – Factors influencing quality (Resolution, Pixel depth, Pixel aspect ratio) – Colour models. (15 Hrs) 40. PRACTICE ON METHODS OF CAPTURING: Scanner – Digital Camera – Frame Grabber and IMAGE COMPRESSION (10 Hrs)	Knowledge different types of scanners& capture cards, editing and capturing methods. Knowledge of photo editing through different types of updated photo editing software's. (06 hrs)
Professional Skill 60 Hrs; Professional Knowledge 12 Hrs	Demonstrate four Key Skills of a Successful Photographer and procurement of good quality cameras and its accessories.	41. Practice on hard skill: Technical (20 Hrs) 42. Practice on hard : Artistic (10 Hrs) 43. Practice on soft skills(10 Hrs) 44. Practice on Communication, Body Language. (20 Hrs)	External Soft skills. Internal Hard Skills. Knowledge for the selection criteria for a good quality camera and its accessories. Etiquette of Photography Basic Rule for Photographer Corporate Etiquette Ethics of Photographer (NPPA) The combination of skilled photographer and the empathic communicator is what makes a successful photographer. (12 hrs)
Professional Skill 90 Hrs; Professional Knowledge	Use different video equipment and their operations. Demonstrate the basic principles of	45. Practice with digital video cameras on tripod stand, VTR, Camcorder, Monitor. (30 Hrs) 46. To set up a single camera unit: Black balance and White	Persistence of Vision, Understand the concept of handling the video cameras and their accessories.

18 Hrs	video and audio recording.	balance, Adjustment of viewfinder and monitor, Familiarization of in- camera filters and other in-camera controls, Day-&-night Videography by manipulation of white balance. (20 Hrs) 47. Operational practice of various camera movements. (40 Hrs)	Understand the techniques of shooting etc. Understanding theoretical knowledge of videography. (18 hrs)
Professional Skill 90 Hrs; Professional Knowledge 18 Hrs	Apply skill of Editing Techniques and the motion Picture Photography techniques.	48. Practice on basic shot terminology : Close up, Mid shot, Long shot, Big close up, Mid-long shot, Extreme long shot, Point of view (POV) shot, Over-the Shoulder (OSS) shot, high angle and low angle shot, top angle shot. (30 Hrs) 49. Practice on Action Axis (180 degree rule); matching of action, Static and Dynamic Continuity, Reverse angle. (30 Hrs) 50. Operations and Camera movements Pan, tilt, trolley, dolly, crane, steady – cam and usage of other camera support. (30 Hrs)	**Camera , parts & its Setting** Knowledge of visual composition and aesthetic approaches. Knowledge of still digital camera, Video camera and drone camera. (18 hrs)
Professional Skill 30 Hrs; Professional Knowledge 06 Hrs	Apply Principles of Light, demonstrating the quality and types of lights.	51. Practice on basic principle of light. (i) Electromagnetic spectrum, visible spectrum. (ii) Behaviour of light (Direct and Indirect) (iii) Inverse square law. (iv) Basic principles of color, Color temperature, CIE diagram, trichromatic	Basic principle of light. (i) Electromagnetic spectrum, visible spectrum. (ii) Behaviour of light falling on an object – absorption, reflection refraction, transmission, diffraction, dispersion, scattering of light, refractive index. (iii) Inverse square law. (iv) Basic principles of color, CIE

		theory of vision. (10 Hrs) 52. Practice on quality of light: Specular, diffused and bounced. (ii) Types of light : Natural day light, Incandescent, (tungsten-halogen, LED and PAR etc. (10Hrs) 53. Practice on Low key and High key technique of lighting, use of back light, kicker and background light. Practice to light up 2-point and 3-point lighting in an indoor situation. Light source filters and gels for mixed lighting situation. (5 Hrs) 54. Practice to use the reflectors, mirrors, skimmers as fill light in an outdoor situation. (5 Hrs)	diagram, trichromatic theory of vision. 2. (i) Quality of light : Specular, diffused and bounced. (ii) Types of light: Natural day light, Incandescent, (tungsten-halogen, [Tenner (10K), Senior (5K), Junior (2K), Baby (1K), Inkie Multi 10, Multi 20 etc], photoflood), fluorescent, (Kino Flo), Metal Halide enclosed AC arc (HMI) etc. 3. Basic understanding of lighting ratio (key + fill : fill alone) use of back light, kicker and back ground light. How to lit up an indoor situation. Use of light source filters. 4. Use of reflectors, and soft boxes, mirrors, skimmers as fill light in an outdoor situation. 5. Knowledge of symbols (icon) to identify the various lighting equipments. (06 hrs)
Professional Skill 90 Hrs; Professional Knowledge 18 Hrs	Demonstrate the Shooting techniques by using digital video camera with pan-tilt-zoom and use of camcorder camera operating techniques.	55. Handling of digital video camera and their accessories, camera Movement – Pan – tilt-Zoom. Dimension of image. (25 Hrs) 56. Practice on some basic camera do's and dont's Before and after the shoot. (25 Hrs) 57. Practice on DSLR and video camera. Assignment must be given at week end and monitored regularly. (25 Hrs)	**Video & Video technology** Introduction to Video, How Video camera works? Working principle of an image sensor, Camera mounts and Camera support accessories. Composition. Use of video as a communication tool, latest video technology, types of video cameras their Various formats and recording medium (tapes, disc and Hard disc). Applications of video recording. (18 hrs)

Professional Skill 60 Hrs; Professional Knowledge 12 Hrs	Apply Audio recording sound by using different types of microphones. Mixing, editing, dubbing and sweetening of sound.	58. Practice on the concept of audio video recording using External Microphone and Line recording. (30 Hrs) 59. Practice on mixing, editing, dubbing of sound. (30 Hrs)	**Video and Audio productions.** Knowledge of sound techniques. Use of different microphones, Mono, Stereo and Surround sound techniques. Recording methods, Video tape recording insert, sound mixing, editing, audio dubbing etc. (12 hrs)
Professional Skill 60 Hrs; Professional Knowledge 12 Hrs	Use of three point lighting for video shooting in a studio and selection of shooting camera, studio lights accessories for field lighting.	60. Practice for Lighting of different areas of video shooting. (10 Hrs) 61. Practice on three point lighting, indoor and outdoor lighting etc. (20 Hrs) 62. Practice on hard and soft lighting. Single camera lighting, bounce lighting. (20 Hrs) 63. Use of reflectors & skimmer. (10 Hrs)	**Lighting for still & video photography.** Knowledge of different types of video lighting. Concept of power distribution depending upon the requirement of the light output. Detailed light source including natural and studio lights instruments, Field lighting instruments. Usage of Light meter (Lux meter), Inter valometer. (12 hrs)
Professional Skill 90 Hrs; Professional Knowledge 18 Hrs	Make documentary films, Shoot interviews, news, and make advertisements etc.	64. Preparing Story board and Practice on shooting of different areas and topics such as sports, wildlife, modelling, drama and documentary, serial. (60 Hrs) 65. Practice on shooting of news, interview, seminar/ workshop, industrial, live broadcasting, musical event, Advertisement, Architectural, monuments, travel videos and Landscapes. (30 Hrs)	Shooting with Zoom function, macro function, High speed shutter function &Automatic and manual focus function. Identification of Location and proper placement of different accessories. (18 hrs)
Professional Skill 120 Hrs; Professional	Work with post-production.	66. Practice on learning Video Editing Process. Ingesting media (capturing and transferring). (10 Hrs)	Linear (Insert and assemble modes) Editing equipment: Edit VTR, Edit Control Unit, Vision Mixer, Computer Graphics (C.G.)

Knowledge 24 Hrs		67. Edit the story, Trim the story, Add music, titles and transitions, Rearranging, adding and removing sections of video clips and audio clips. Applying colour correction, filters and other enhancements, Creating transitions between clips. (50 Hrs) 68. Non-Linear Video Editing technique and their utilisation for various types of production. (60 Hrs)	etc., Non-linear Recording of audio (commentary, dubbing, music). Effects (visual and audio) - Better understand techniques editors use to construct stories. - Have a thorough working knowledge of a non-linear editing software. Be able to do professional style color correction. - Know how to create high quality motion graphics. - Understand video formats and principles. Video editing Practice on Different Audio & Video Software's with Effect, Titling, frame cutting/ trimming/ editing/ inserting audio & video/Pictures Rendering on Different format and resolutions. (24 hrs)
Professional Skill 30 Hrs; Professional Knowledge 06 Hrs	Apply the necessity of planning a production while working.	69. To do practice on getting idea and planning for production and qualities of a good production. (15 Hrs) 70. To do practice on the principle of direction during production, objective to be coped with during pre-production. (15 Hrs)	Knowledge of planning for quality production, co-ordinating with director during production, objective to be coped with during pre-production. (06 hrs)

SYLLABUS FOR CORE SKILLS
1. Employability Skills (Common for all CTS trades) (160Hrs.)

Learning outcomes, assessment criteria, syllabus and Tool List of Core Skills subjects which is common for a group of trades, provided separately inwww.bharatskills.gov.in

Industrial Training Institute
Digital Photographer

	List of Tools & Equipment		
	DIGITAL PHOTOGRAPHER (for batch of 24 Candidates)		
S No.	**Name of the Tools and Equipment**	**Specification**	**Quantity**
A. TOOLS AND EQUIPMENT			
1.	Digital HD Video Camera		6 Nos.
2.	Digital SLR Camera with standard accessories.		2 Nos.
3.	Digital SLR Camera with detachable recorder	Latest model	1 No.
4.	15" HD monitor, Electronic View finder		2 Nos.
5.	Multimedia speaker	2.1	2 sets
6.	Prime lens (Normal/wide/telephoto),Macro		2 sets each
7.	Dolly and gimbal		6 Nos.
8.	Camcorder		4 Nos.
9.	Zoom lens match able with Digital SLR camera	28-70mm, 70-300mm	1 each
10.	Fish eye lens for APS-C and Full frame DSLR match able with Digital SLR camera		1 No.
11.	Camera stand for still camera		2 Nos.
12.	Camera stand for video	low base	1 No.
13.	Cable release		2 Nos.
14.	Different types of filters, (10 types) match able with camera	UV filter Graduated, Star filter, multi image, ND, Skylight, polarizer, colour filter set, , both for video &still	1 No.
15.	Extension ring (4 types)		2 Nos.
16.	Electronic flash gun (Manual & auto) Different types with slave unit		5 Nos.
17.	Studio light/spot light		4 Nos.
18.	Drone with accessories		1 Nos.
19.	Umbrella soft box, Diffusers ,back drop screen with stands, Colour Gels, Scrim, 18 % Greycard		2 Nos.
20.	Air conditioner for studio		As Required

Digital Photographer

No.	Item	Specification	Quantity
21.	LUX Meter, Intervalo meter		2 Nos.
22.	Studio room (30ft. x 30ft. x 18ft. height) fitting with cataract system, light grid, sound proof, AC, with cyclorama		1 Room
23.	Studio & Classroom furniture a) Steel chairs folding type with arm rest for trainees b) Working table molded		24 Nos. 24 Nos.
24.	Computer with LAN	CPU: 32/64 Bit i3/i5/i7 or latest processor, Speed: 3 GHz or Higher. RAM:-4 GB DDR-III or Higher, Wi-Fi Enabled. Network Card: Integrated Gigabit Ethernet, with USB Mouse, USB Keyboard and Monitor (Min. 17 Inch. Licensed Operating System and Antivirus compatible with trade related software.	12 Nos.
25.	Standalone DVD recorder		2 Nos.
26.	Inkjet printer with colour cartridge	1200 dpi or higher	1 No.
27.	Laser printer with colour cartridge	1200 dpi or higher	1 No.
28.	Scanner	1200 dpi or higher	2 Nos.
29.	Online UPS or Offline UPS		As required
30.	Windows operating system	latest version	12 Licenses
31.	Photo editing software like Photoshop CS 3 etc.		As required
32.	MS-Office	latest version	12 Licenses
33.	Macro media Free Hand	latest version	12 Licenses
34.	Flash	latest version	12 Licenses
35.	Sound Forge/ cool edit pro	latest version	12 Licenses
36.	Digit Mix	latest version	12 Licenses
37.	Anti Virus software	latest version	12 Licenses
38.	Adobe premier	available version	12 Licenses
39.	DVD writable	latest capacity	96 Nos.
40.	DVD Re-writable	latest capacity	48 Nos.
41.	Portable hard disk	1 TB or higher	1 No.
42.	Pen drive	8 GB, 16 GB	6 Nos.
43.	Multiple card reader		6 each
44.	Reflectors (Folding Portable)		12 Nos.

45.	Cool light		12 Nos.
46.	Multi 10 & Multi 20		12 Nos.
47.	Sun Gun		7 Nos.
48.	Porto pack light		3 Sets
49.	Tape match able with the camera		As required
50.	Slide & film high resolution scanner with adapter for A3		1 No.
51.	Slide & film high resolution scanner with adapter for A4		1 No.
52.	DV VTR according to digital camera		1 No.
53.	DV VTR with play back adapter for camcorder		1 No.
54.	Play back adapter for video camera		1 No.
55.	Battery for digital video camera		1 No.
56.	Microphone (boom)		2 Nos.
57.	Microphone (lapel)		1 No.
58.	Trolley set	30 ft.	1 No.
59.	Round trolley	30 ft.	1 No.
60.	Power Cable		As required
61.	Extension Board		As required
62.	BNC cable with various connectors	80 ohms	As required
63.	Steel almirah		2 Nos.
64.	Pigeon hole steel almirah		1 No.
65.	Fire extinguisher		4 Nos.
66.	LCD Projector latest		1 No.
B. SHOP FLOOR FURNITURE AND MATERIALS			
67.	Steel almirah		2 Nos.
68.	Pigeon hole steel almirah		1 No.
69.	Table for computer		12 Nos.
70.	Chairs for computer classes		24 Nos.
71.	Table printer and scanner		4 Nos.
72.	Studio room (30ft. x 30ft. x 18ft. height) fitting with cataract system, light grid, sound proof, AC, with cyclorama		1 Room
73.	Studio & Classroom furniture a) Steel chairs folding type with arm rest for trainees b) Working table molded		24 Nos. 24 Nos.
74.	Instructor Chair and instructor Table		Each One No.

The DGT sincerely acknowledges contributions of the Industries, State Directorates, Trade Experts, Domain Experts, trainers of ITIs, NSTIs, faculties from universities and all others who contributed in revising the curriculum.

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S No.	Name & Designation Sh/Mr./Ms.	Organization	Remarks
1.	Shri B. V. S. Sesha Chari, Director	CSTARI, Kolkata	Chairman
2.	Shri N.R. Arvindan, Director	FTI, Bangalore	Member
3.	Shri V. Sukumaran, Chief Cameraman	Films Division, Govt. of India, Kendriya Sadan, Bangalore	Expert
4.	Shri Mahendar, Director of Photography	Ryan International School, Bangalore	Expert
5.	Shri G. Palani, Cameraman	Doordarshan, Bangalore	Expert
6.	Shri R. K. Narendra Kumar, Chief	Ahobila Photography, Bangalore	Expert
7.	Shri Prakash Y.D. , Cameraman	Photo Care, Bangalore	Expert
8.	Shri Chandra Prabhu, Cameraman/Film Editor	Viedo Came, Bangalore	Expert
9.	Smt. Malathi M., J.T.O.	Govt. I.T.I., Tumkur Road, Bangalore-22	Member
10.	Shri Rajendra C., DOP. Film & Media	DOP Freelancer, Bangalore-104	Expert
11.	Shri Vijaya Kumar R., Principal	Govt. Film & TV Institute, Heseraghata, Bangalore	Expert
12.	Prof. Hitesh Liya	SRFTI, Kolkata	Member
13.	Shri Utpal Moitra	Cameraman Grade1, DDK, Golf Green, Kolkata.	Member
14.	Shri Sanjay Khanande	Photographer cum Projectionist, FTI, Bangalore	Expert
15.	Shri V,Babu, DDT	Apex-Hitech, Bangalore	Member
16.	Shri R.C. Mandal, DDT	CSTARI, Kolkata	Member
17.	Shri P.K. Ghosh, Sr, D'man	CSTARI, Kolkata	Member

ABBREVIATIONS

CTS	Craftsmen Training Scheme	
ATS	Apprenticeship Training Scheme	
CITS	Craft Instructor Training Scheme	
DGT	Directorate General of Training	
MSDE	Ministry of Skill Development and Entrepreneurship	
NTC	National Trade Certificate	
NAC	National Apprenticeship Certificate	
NCIC	National Craft Instructor Certificate	
LD	Locomotor Disability	
CP	Cerebral Palsy	
MD	Multiple Disabilities	
LV	Low Vision	
HH	Hard of Hearing	
ID	Intellectual Disabilities	
LC	Leprosy Cured	
SLD	Specific Learning Disabilities	
DW	Dwarfism	
MI	Mental Illness	
AA	Acid Attack	
PwD	Person with disabilities	