Syllabus for the trade

of

PROCESS CAMERAMAN

(SEMESTER PATTERN)

UNDER

CRAFTSMEN TRAINING SCHEME

Designed in: 2013

List of members of the Trade Committee meeting for the Trade of Process Cameraman

Sl. No.	Name & Designation S/Sri.	Organisation	Remarks
1.	D.Mallick, Director/Chairman	A.T.I- Kanpur & RD, RDAT, Kanpur	Chairman
2.	Anil Kumar, Director	A.T.I-E.P.I, Dehradun	Member
3.	Anil Kumar tripathi, Principal	Govt-I.T.I, Dehradun,U.K.	Member
4.	Vinay Kumar, Manager	Dept. of Science & Technology, Govt.of India, Dehradun	Member
5.	Akhil Gupta	Saraswati Press, Dehradun	Member
6.	Amit Garg, Director	Om color creation, lane no.2, chaman vihar, Dehradun	Member
7.	Vinay Mittal, Manager	Saraswati Press, Dehradun	Member
8.	Ashok Mehta, Manager Sales	HCL INFOSYSTEMS LTS.	Member
9.	GN Prasad Padhy, Regional sales manager	HCL INFOSYSTEMS LTS.	Member
10.	Thakur Singh Rawat, Incharge- Printing Section	LBS. NAA, Mussoorie	Member
11.	Satyabir Singh, AO. Printing Dept.	LBS. NAA, Mussoorie	Member
12.	Ravindra Mohan Kala, Secretary, Scout and Guide	55, Rajpur Road, State H.Q. ,Dehradun	Member
13.	Gajender Pal, Proprietor	Dev Printers, D.dun	Member
14.	P.N.Yadav, Dy.Director of Trg.	ATI Kanpur	Member
15.	Rajeev Kumar, Proprietor	Rajeev Binders& Printers	Member
16.	H. C. Goyal, Dy. Director	A.T.I.-E.P.I. dehradun	Member
17.	Ashwani Kumar, Asstt. Director	A.T.I.-E.P.I. dehradun	Member

List of members attended the Workshop to finalize the syllabi of existing CTS into Semester Pattern held from 6th to 10th May'2013 at CSTARI, Kolkata.

Sl. No.	Name & Designation	Organisation	Remarks
1.	R.N. Bandyopadhyaya, Director	CSTARI, Kolkata-91	Chairman
2.	K. L. Kuli, Joint Director of Training	CSTARI, Kolkata-91	Member
3.	K. Srinivasa Rao, Joint Director of Training	CSTARI, Kolkata-91	Member
4.	L.K. Muhkerjee, Deputy Director of Training	CSTARI, Kolkata-91	Member
5.	Ashoke Rarhi, Deputy Director of Training	ATI-EPI, Dehradun	Member
6.	N. Nath, Assistant Director of Training	CSTARI, Kolkata-91	Member
7.	S. Srinivasu, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
8.	Sharanappa, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
9.	Ramakrishne Gowda, Assistant Director of Training	FTI, Bangalore	Member
10.	Goutam Das Modak, Assistant Director of Trg./Principal	RVTI, Kolkata-91	Member
11.	Venketesh. Ch. , Principal	Govt. ITI, Dollygunj, Andaman & Nicobar Island	Member
12.	A.K. Ghate, Training Officer	ATI, Mumbai	Member
13.	V.B. Zumbre, Training Officer	ATI, Mumbai	Member
14.	P.M. Radhakrishna pillai, Training Officer	CTI, Chennai-32	Member
15.	A.Jayaraman, Training officer	CTI Chennai-32,	Member
16.	S. Bandyopadhyay, Training Officer	ATI, Kanpur	Member
17.	Suriya Kumari .K , Training Officer	RVTI, Kolkata-91	Member
18.	R.K. Bhattacharyya, Training Officer	RVTI, Trivandrum	Member
19.	Vijay Kumar, Training Officer	ATI, Ludhiana	Member
20.	Anil Kumar, Training Officer	ATI, Ludhiana	Member
21.	Sunil M.K. Training Officer	ATI, Kolkata	Member
22.	Devender, Training Officer	ATI, Kolkata	Member
23.	R. N. Manna, Training Officer	CSTARI, Kolkata-91	Member
24.	Mrs. S. Das, Training Officer	CSTARI, Kolkata-91	Member
25.	Jyoti Balwani, Training Officer	RVTI, Kolkata-91	Member
26.	Pragna H. Ravat, Training Officer	RVTI, Kolkata-91	Member
27.	Sarbojit Neogi, Vocational Instructor	RVTI, Kolkata-91	Member
28.	Nilotpal Saha, Vocational Instructor	I.T.I., Berhampore, Murshidabad, (W.B.)	Member
29.	Vijay Kumar, Data Entry Operator	RVTI, Kolkata-91	Member

GENERAL INFORMATION

1. **Name of the Trade** : PROCESS CAMERAMAN

2. **N.C.O. Code No.** :

3. **Duration** : One year (Two Semester)

4. **Power Norms** : 4 KW

5. **Space Norms** : 96 sq. mtrs.

6. **Entry Qualification** : passed 10th class examination

7. **Unit size (No of student)** :16 Trainees.

8. **Instructor's/Trainer's Qualification**: Three year Diploma in printing technology from a Recognized board /Institution with two year Experience in the relevant field.

9. **Desirable qualification** : Preference to be given CIC (Craft instructor Certificate) holders.

At least one Instructor must have Degree / Diploma in relevant field

SYLLABUS FOR THE TRADE OF PROCESS CAMERAMAN UNDER C.T.S.
DURATION: Six Months

First Semester

Semester Code: PRC:SEM I

Week No.	Trade Practical	Trade Theory
1.	Familiarization and identification of Pin hole, box, studio, field, pocket, folding, stereoscopic, panoramic, video, cine and digital cameras. Proper selection of camera and its size for different function.	History of camera and lenses: Pin hole, box, studio, field, pocket, folding, stereoscopic, panoramic, video, cine and digital cameras. Choice of camera and its size for different function.
2.	To make trainees familiar with machine and equipment .Let them identify the different tools and equipment used in process camera.	Importance of safety and precaution related to the trade of process cameraman. Knowledge of proper housekeeping related to tools and equipment of trade.
3.	Handling, uses and care of various shutter, view finders, rising and folding cross movement , attachment , accessories ,cross movement and swing back focusing system.	Principle of working of various shutter, view finders, rising and folding cross movement, attachment, accessories, cross movement and swing back focusing system.
4-5	Familiarization with practical experiments of refraction and dispersion of light, Image formation ,principal focal and focus length, size and intensity of image, speed of lenses , diaphragm notation, principle of axis, depth of field, depth of focus, factor controlling the depth of field and focus, variation of aperture with distance, chromatic and spherical aberration , curvature of field and distortion astigmatism.	Elementary photographic optics: refraction and dispersion of light, Image formation ,principal focal and focus length, size and intensity of image, speed of lenses , diaphragm notation, principle of axis, depth of field, depth of focus, factor controlling the depth of field and focus, variation of aperture with distance, chromatic and spherical aberration , curvature of field and distortion astigmatism.
6.	Observation of effect of light. Use of natural light, fluorescent light, tungsten light.	Define the light and colour. Additive and subtractive color theory. Knowledge of different kind of light source for photography, color temperature and colour balance.
7-8	Practice to familiarize various technique of photography such as infra red, ultraviolet, x-rays, polarized, coping, microphotography, microfilming, lanternslide, shadow gram, macro photography, finger prints and document photography, commercial, industrial and advertising photography, photo engraving, colour separation, elements composition, arrangements of lines and tones, rendering colour	Knowledge of various technique of photography such as infra red, ultraviolet, x-rays, polarized, coping, microphotography, microfilming, lanternslide, shadow gram, macro photography, finger prints and document photography, commercial, industrial and advertising photography, photo engraving, colour separation, elements composition, arrangements of lines and tones, rendering colour contrast in monochrome, principle of perspective.

	contrast in monochrome.	
9.	Observation of different type of films and film speed.	Knowledge about different type of film and film speed.
10-11.	Handling ,care and identification of proper functioning of dark room activities such as layout equipment, safelight, development theory and technique, various constituent of developer, elementary idea of developer, various developing agent, developer and their comparative study, velocity and time of development.	Dark room: layout equipment, safelight, development theory and technique, various constituent of developer, elementary idea of developer,, various developing agent, developer and their comparative study, velocity and time of development.
12.	Selection of camera type, lens type, lights type, filters type, film type, speed and size, tripod type, light meter type, flash type and other useful accessories for specific photography.	Proper knowledge of camera type, lens type, lights type, filters type, film type, speed and size, tripod type, light meter type, flash type and other useful accessories.
13.	Familiarization with proper selection of Aperture usage, shutter speed, depth of field ,focal length, lighting, low key and high key picture, rule of third angle of view and picture format for better image	Basic technique of Aperture usage, shutter speed, depth of field ,focal length, lighting, low key and high key picture, rule of third angle of view and picture format for better image
14.	Practice to acquire the skill in advances technique of framing, perspective, forced perspective, perspective correction texture, pattern, composition, Graphic design in photography, emphasis and balance the symmetrical world, asymmetry.	Principe of advances technique of framing, perspective, forced perspective, perspective correction texture, pattern, composition, Graphic design in photography, emphasis and balance the symmetrical world, asymmetry.
15-16.	Practice on black and white as well as color photography to attain the required quality for landscape(scene, people, birds/animals, monuments)portraits, environmental exposure silhouette, freezing movement, panorama, montage, indoor photography, industrial photography and especial effect.	Knowledge of landscape (scene, people, birds/animals, monuments) portraits, environmental exposure silhouette, freezing movement, panorama, montage, indoor photography, industrial photography and especial effect.
17.-19.	Observation and familiarization of realism, surrealism, expression, emotion, photo feature, action and sport, people and events, thematic presentation of nature by proper practice. Practice on dark room film developing.	Photography as a mirror of reality and symbol: realism, surrealism, expression, emotion, photo feature, action and sport, people and events, thematic presentation of nature. dark room developing
20.-22.	Proper practice on still, close up, macro and microphotography, special effect technique and manipulation of image, photomicrography, study by	Knowledge of still, close up, macro and microphotography, special effect technique and manipulation of image, photomicrography, study by magnification, close up lenses and

	magnification, close up lenses and devices.	devices.
22-23.	Familiarization and observation with practice on different type of framing and composition, picture at varying shutter speed, picture with different lenses, picture under different light condition, black and white picture on selected theme, picture each on different pattern, portrait photography, architecture photography, fashion photography, travel photography, nature photography, indoor/ outdoor photography, developing B/W films.	Description of different type of framing and composition, picture at varying shutter speed, picture with different lenses, picture under different light condition, black and white picture on selected theme, picture each on different pattern, portrait photography, architecture photography, fashion photography, travel photography, nature photography, indoor/ outdoor photography, developing B/W films.
24.	Visit to government and private photographic institute and establishment and reputed photographic organization.	
25.	Project work / Industrial Visit (optional)	
26	Examination	

Second Semester
Semester Code: PRC:SEM II

Week	Trade Practical	Trade Theory
1-2	Familiarization of basic digital theory. Description of digital still camera, type of still camera, major component and working of digital camera, mode and setup for digital imagining.	Define basic digital theory. Description of digital still camera, type of still camera, major component and working of digital camera, mode, advantage and setup for digital imagining.
2-3.	To understand and identify the major component of the computer system and characteristics of software and hardware. Identification and functioning of various storage devices. Operation of different kinds of printers.	Knowledge of computer architecture, memory, CPU, input and output devices, MS office and MS word. To learn about the various storage devices of the computer. To know about impact and non impact printer. Advantage of laser printer
4.	Practice on use of computer operating system E-mail. Sending photographs through e-mail.	To know computer operating system, internet and e-mail. Knowledge of adequate software on printing technology for different digital printer and editing.
5.	Observation of taking out print of photograph by printers. Demonstration of image transportation: CD, Pen drive and other devices.	Knowledge of taking prints of photos by various kind of printers with respect to the resolution of printer, different type of photo paper required for printing.
6-7.	Ability to scan photograph and capture frame through scanner and capture card. Editing and retouching of photograph using editing software.	Knowledge of different kinds of capturing devices such as scanner, frame grabber with digital camera. Description of different type of advance photo editing software .
8.	Proper practice on of digital camera and techniques, computers aided application and technique.	Knowledge of digital camera and techniques, computers aided application and technique.
9-10.	Demonstration on Digital representation of visual information related to image generation pixels, component and channel spatial resolution bit depth normalized values additional channels, HSV colour representation image input devices. Digital image film format .basic image manipulation, terminology colour manipulation and filtering.	Image generation pixels, component and channel spatial resolution bit depth normalized values additional channels, HSV colour representation image input devices. Digital image film format .basic image manipulation, terminology colour manipulation, filters.
11-12.	Observation and practice on digital imagining, latest trends in digital imagining, equipment needed for	Knowledge of digital imagining, latest trends in digital imagining, equipment needed for digital imagining, editing

	digital imagining, editing digital image, re sizing, digital image, on line print.	digital image, re sizing, digital image, on line print.
13-14.	Handling of video camera and other and other professional updated video camera. Demonstration on pan tilts, zoom and dimension of image.	Description of Video photography: compact camcorder technique, scoreboard, type of video camera, various type of video tape, principle of video recording
15.	Practice on three point lighting, indoor and outdoor lighting,, hard and soft lighting, single camera lighting ,bounce lighting, silhouette lighting .use of reflector and screamers with video camera.	Knowledge of different type of lighting used in video lighting. Concept of power distribution depending on the requirement of light output.
16-17.	Demonstration of sound technique such as recording, mixing. Practice on editing with digital audio workstation ,adjusting level, control surface in editing, audio processor, amplification, level control, dynamic processor, frequency processor, temporal processing, signal processing, noise reduction processor, monitors and loudspeakers ,transporting sounds.	Description of sound technique such as recording, mixing. Purpose and foundation of editing with digital audio workstation adjusting level, control surface in editing, audio processor, amplification, level control, dynamic processor, frequency processor, temporal processing, signal processing, noise reduction processor, monitors and loudspeakers ,transporting sounds.
18.-20.	Practice on of software for digital processor (Digital dark room). Description of film format converters. Working with different type of scanner. Demonstration of scanner technique, film scanning, photo printers' photo quality and various type of printer paper.	Knowledge of software for digital processor (Digital dark room). Description of film format converters. Working with different type of scanner. Define scanner technique, film scanning, photo printers photo quality and various type of printer paper.
21.-23.	Photography project, assignments, photo power point presentation, photo documentary, small budget studio design, equipments and budget, corporate studio design, creating photography website, connecting image for internet.	Description of project, assignment. Concept of small and corporate studio design. To know popular photography website.
24.	Visit to government/ private colour photo lab, studio and photo printing shop and photographic institute.	
25.	Revision	
26.	Examination	

List of Tools & Equipment

LIST OF TOOLS & EQUIPMENT

A.   TRAINEES TOOL KIT   FOR 16 + ONE TRAINEES

SL.No.	Name of the items	Quantity
1.	Colour Scanner –Drup Type/Flat Board	1 No.
2.	Reflection & transmission type Densitometer	1 No.
3.	Printing down frame, clam type in assorted size 25 x 30 cm.	2 Nos.
4.	Metal Halide Lamp/Carbon Arc lamp.	1 sets.
5.	Developing trays – i) 20 cm x 25 cm. ii) 30 cm x 40 cm. iii) 40 cm x 50 cm.	6 Nos. 4 Nos. 4 Nos.
6.	Process Camera (computerized Control Panel) complete with accessories like lens prism Halogen lamps. (Size – 40 cm x 40 cm.) vertical type.	1 No.
6.a	Process Camera (computerized Control Panel) complete with accessories like lens prism Halogen lamps (Size – 40 cm. x 50 cm.) Horizontal Type)	1 No.
7.	Colour filters – set of 4.	1 set.
8.	Grey scale-Reflection & Transmission type-set of 4	1 set.
9.	Enlarger with vacuum easel 36 x 45 cm.	1 No.
10.	Glass halftone screen (Circular) 120 (Lines/Sq. inch)	1 No.
11.	Rectangular glass screen – 65 & 100 LPI – 45o	
12.	Elliptical contact screen – negative (Magenta) 100, 120 & 133 (Lines/Sq. Inch) 45o	1 each
13.	Rubber roller (for hand rolling).	2 Nos.
14.	Etching trough 40 x 50 cm.	2 Nos.
15.	Routing machine with routes on different sizes and other accessories.	1 No.
15.a	Fret Saw	1 No.
16.	Rapid access film processor 50 cm.	1 No.
17.	hand beveling machine	1 No.
18.	Whirler, bulb type	2 Nos.
19.	Retouching disk/Illumination table 50 x 71 cm. (2 Nos. with tilting facility)	6 Nos.
20.	Chairs for retouching desks.	4 Nos.
21.	Dusting brush, Good quality.	6 Nos.
22.	Sable hair brushes (Nos. 0 to 7)	2 Nos. (of each type)
23.	Metal shearing machine, Treadle operated 60 cm.	6 Nos.
24.	Measuring cylinder, different sizes.	1 No.
25.	Barometer	2 Nos.
26.	Timers Luminous dial.	2 Nos.

27.	P.V.C. Sink (180 cm x 75 cm x 20 cm.) with stand.	1 No.
28.	Dish Thermometer	2 Nos.
29.	Steel rule 60 cm & 1 meter.	2 Nos. (each)
30.	Chemical balance with weight from 0.5 to 500 gms,	1 set.
31.	Burner/Stove.	2 Nos.
32.	Dusting Cabinet	1 No.
33.	Scraper, Steel	6 Nos.
34.	Proof-press (hand operated) 25 x 37 cm.	1 No.
35.	Whetstone (For sharpening engraving tools)	1 No.
36.	Pumpice stone	1 No.
37.	Glass Jar/Container	6 Nos.
38.	Dark Room contact printing unit 50 cm. x 60 cm.	1 no.
39.	Safe light red 10 x 15 cm.	8 Nos.
40.	Film trimmer	1 No.
41.	Magnifying glass (X 8)	4 Nos.
42.	Cupboard steel (big size)	1 No.
43.	Instructor table	1 No.
44.	Black Board/Enamel Board with stand.	1 No.
45.	Instructor Chair	1 No.
46.	Biker (assorted size)	12 Nos.
47.	Film Drying Cabinet	1 No.
48.	Make Ready table 90 x 75 cm.	1 No.
49.	Air conditioner 1.5 ton (for dark room – 2 Nos. for Scanner – 2 Nos.	4 Nos.
50.	Fire Extinguisher	4 Nos.
51.	Computer with multimedia facilities with CD writer, CD drive , Zip drive, video capture card (latest configuration) connected with LAN	10 No.
52.	Ink jet printer and laser jet printer with color cartridge(1200 dpi or higher)	02 No each.
53.	Studio room (03 ftX 30 FtX15 ft height) fitted with cataract system, light grid, sound proof ,AC with cyclorama	01 N0.
54.	Window operating system (latest version)	As required
55.	Free hand latest version	01 No.
56.	Photo editing software	01 No.
57.	M S Office latest version	As per requirement
58.	Flash latest version	01 No.
59.	Sound forge (latest version)	01 No.
60.	Digi mix latest version	01 No.
61.	Table for computer, printer and scanner	8 No.
62.	Computer chair	16 n0.
63.	Digital SLR Camera with camcorder and other accessories (latest version)	02 No.
64.	Video camera latest version with essential accessories	02 No.

65.	Studio and class room furniture:
	    a) Steel chair folding type with arm rest
	    b) Working table
		
		16 No.
		16 No.