



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

COMPETENCY BASED CURRICULUM

MULTIMEDIA, ANIMATION & SPECIAL EFFECTS

(Duration: One Year)

CRAFTSMEN TRAINING SCHEME (CTS)

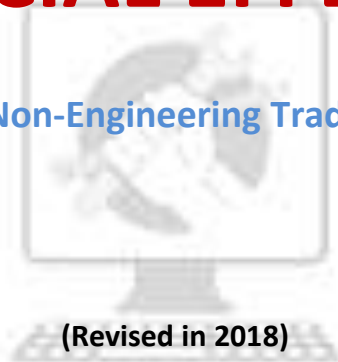
NSQF LEVEL - 4



SECTOR – IT & ITES

MULTIMEDIA, ANIMATION & SPECIAL EFFECTS

(Non-Engineering Trade)



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,

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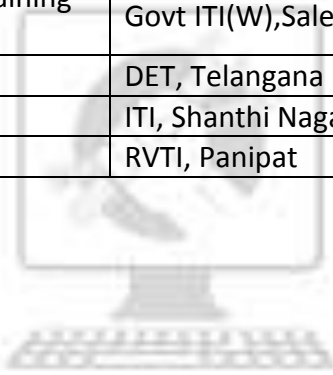
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1. COURSE INFORMATION

During the one year duration of Multimedia, Animation & Special Effects trade a candidate is trained on professional skill, professional knowledge and Employability skill. In addition to this a candidate is entrusted to undertake project work and extra-curricular activities to build up confidence. The broad components covered related to the trade are categorized in two semesters each of six months duration. The semester wise course coverage is categorized as below:-

1st semester – In this semester the trainee learns about safety and environment, use of fire extinguishers. They learn about computer peripherals, Windows interface and its related software installation process. Trainees will work with MS Office package for basic knowledge of computer. Trainees will work with Photography like Adobe Photoshop to edit image, retouch and fixing image using color, filter and for digital painting. They also learn and experience with application software with Adobe Photoshop illustrator for advance editing and graphic design. In this semester the trainees also learn Videography to practice the craft of film making, video streaming with advance features of camera. At the end of this semester trainees can go on industrial visit or projects specified in the syllabus.

2nd semester – In this semester the trainee learns to browse internet, upload/download video streaming and secure data from different cyber attack. They will work with Adobe Premier for video editing, mixing audio, text, image and video. Trainees will work with Adobe after effect to add special effect and compositing on video. They will work with Flash to create 2D animation, graphic illustration and compositing sound animation. . The trainees will learn and experience in 3Ds Max to create 3D architectural Design, 3D modeling and texturing. Finally the trainees will work with Maya to create 3D animation, 3D modeling, Texturing, Rigging, Lighting, Rendering artist. At the end of this semester trainees can go on industrial visit or projects specified in the syllabus.

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 economy/ Labour market. The vocational training programmes are delivered under the 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.

Multimedia, Animation and Special Effect trade under CTS is one of the popular courses delivered nationwide through a network of ITIs. The course is of one-year (02 semester) duration. It mainly consists of trade (skills and knowledge). After passing out of the training programme, the trainee is awarded National Trade Certificate (NTC) by NCVT which is recognized worldwide.

Trainee broadly needs to demonstrate that they are able to:

- Read and interpret technical parameters/ documentation, 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 knowledge & employability skills while performing the job and repair & maintenance work.
- Check the system specification and application software as per requirement of the design of job.
- Document the technical parameter related to the task undertaken.

2.2 CARRIER PROGRESSION PATHWAYS

- Can join Apprenticeship programme in different types of industries leading to National Apprenticeship certificate (NAC).
- Can join Crafts Instructor Training Scheme (CITS) in the trade for becoming instructor in ITIs.

2.3 COURSE STRUCTURE

Table below depicts the distribution of training hours across various course elements during a period of one year (02 semesters): -

S No.	Course Element	Notional Training Hours
1	Professional Skill (Trade Practical)	1260
2	Professional Knowledge (Trade Theory)	252
3	Employability Skills	110
4	Library & Extracurricular activities	58
5	Project work	160
6	Revision & Examination	240
	Total	2080

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 the 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 NTC will be conducted by NCVT at the end of each semester as per the guideline of Govt of India. The pattern and marking structure is being notified by Govt. of India from time to time. **The learning outcome and assessment criteria will be basis for setting question papers for final assessment. The examiner during final examination will also check individual trainee’s profile as detailed in assessment guideline before giving marks for practical examination.**

2.4.1 PASS REGULATION

The minimum pass percentage for Practical is 60% & minimum pass percentage for Theory subjects is 40%. For the purposes of determining the overall result, 50% weightage is applied to the result of each semester examination.

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 teamwork, avoidance/reduction of scrap/wastage and disposal of scrap/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:

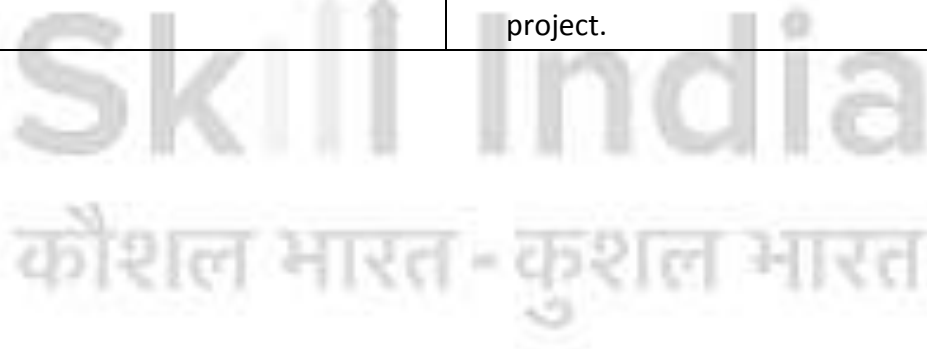
- Job carried out in labs/workshop
- Record book/ daily diary
- Answer sheet of assessment
- Viva-voce
- Progress chart
- Attendance and punctuality
- Assignment
- Project work

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 should produce work which demonstrates attainment of an acceptable standard of craftsmanship with occasional guidance, and due regard for safety procedures and practices.	<ul style="list-style-type: none"> • Demonstration of good skill in the use of hand tools, machine tools and workshop equipment. • Below 70% tolerance dimension achieved while undertaking different work with those demanded by the component/job. • A fairly good level of neatness and consistency in the finish.



	<ul style="list-style-type: none">• Occasional support in completing the project/job.
(b) Weightage in the range of above 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 procedures and practices.	<ul style="list-style-type: none">• Good skill levels in the use of hand tools, machine tools and workshop equipment.• 70-80% tolerance dimension achieved while undertaking different work with those demanded by the component/job.• 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.	<ul style="list-style-type: none">• High skill levels in the use of hand tools, machine tools and workshop equipment.• Above 80% tolerance dimension achieved while undertaking different work with those demanded by the component/job.• A high level of neatness and consistency in the finish.• Minimal or no support in completing the project.



Multi Media Artist and Animator/Animator:

Multi-Media Artists and Animators create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials. Apply story development, directing, cinematography, and editing to animation to create storyboards that show the flow of the animation and map out key scenes and characters. Assemble, typeset, scan and produce digital camera-ready art or film negatives and printer's proofs. Convert real objects to animated objects through modelling, using techniques such as optical scanning. Create and install special effects as required by the script, mixing chemicals and fabricating needed parts from wood, metal, plaster, and clay. Create basic designs, drawings, and illustrations for product labels, cartoons, direct mail, or television. Create pen-and-paper images to be scanned, edited, coloured, textured or animated by computer. Create two-dimensional and three-dimensional images depicting objects in motion or illustrating a process, using computer animation or modelling programmes. Design complex graphics and animation, using independent judgment, creativity, and computer equipment. Develop briefings, brochures, multimedia presentations, web pages, promotional products, technical illustrations, and computer artwork for use in products, technical manuals, literature, newsletters and slide shows.

Cameraman, Animation :

Cameraman (Animation) operates special camera to make animated cartoon motion picture film. Discusses with Director and Producer, (Film) and renders advise about can era movements and feasibility of variety of shot; envisages in script and chart and suggests alternatives wherever necessary. Receives animation charts and drawings. Sets and adjusts camera and lighting exposure appropriate to type of film used and mood and effect to be emphasized. Installs frame on camera table for exposure and positions overhead camera suspended securely over frame. Shoots frame by frame in a predetermined sequence and regulates exposure and aperture to obtain special effect such as fade out or fade in. Instructs Laboratory Technicians about method of processing of films, which need special treatment for effective development of striking feature of certain shots.

Reference NCO-2015:

- i) 2166.0201 - Multi Media Artist and Animator/Animator
- ii) 3521.0300 - Cameraman, Animation

4. GENERAL INFORMATION

Name of the Trade	Multimedia, Animation & Special Effects
NCO - 2015	2166.0201, 3521.0300
NSQF Level	Level 4
Duration of Craftsmen Training	1 Years (2 Semesters)
Entry Qualification	Passed 10 th class examination under 10+2 System of education.
Unit Strength (No. Of Student)	20 (Max. supernumeraries seats: 6)
Space Norms	80 Sq. Metres Lab & 50 Sq. m. Studio
Power Norms	6 KW
Instructors Qualification for	
1. Multimedia, Animation and Special Effect trade	<p>Degree in Multimedia and Animation from a recognised University with one year working experience in the relevant field.</p> <p style="text-align: center;">OR</p> <p>Diploma in Multimedia and Animation from recognized board of technical education with two years working experience in the relevant field.</p> <p style="text-align: center;">OR</p> <p>NTC/NAC holder in Multimedia Animation & Special Effects trade with three years post qualification working experience in the relevant field.</p> <p>Desirable: - Preference will be given to a candidate with CITS (Craft Instructor Training Scheme) in MASE trade.</p> <p>Note: <i>Out of two Instructors required for the unit of 2(1+1), one must have Degree/Diploma and other must have NTC/NAC qualifications.</i></p>
2. Employability Skill	<p>MBA OR BBA with two years experience OR Graduate in Sociology/ Social Welfare/ Economics with Two years experience OR Graduate/ Diploma with Two years experience and trained in Employability Skills from DGT institutes.</p> <p style="text-align: center;">AND</p> <p>Must have studied English/ Communication Skills and Basic Computer at 12th / Diploma level and above.</p> <p style="text-align: center;">OR</p> <p>Existing Social Studies Instructors duly trained in Employability</p>



		Skills from DGT institutes.		
List of Tools & Equipment		As per Annexure-I		
Distribution of training on Hourly basis: (Indicative only)				
Total Hrs /week	Trade Practical	Trade Theory	Employability Skills	Extra-Curricular Activity
40 Hours	30 Hours	6 Hours	2 Hours	2 Hours



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NSQF level for **Multimedia, Animation & Special Effect** trade under CTS: **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
- e. Responsibility

The broad learning outcome of **Multimedia, Animation & Special Effect** trade under CTS 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.

6. LEARNING/ ASSESSABLE OUTCOME

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

6.1 GENERIC LEARNING OUTCOME

1. Apply safe working practices.
2. Comply environment regulation and housekeeping.
3. Work in a team, understand and practice soft skills, technical English to communicate with required clarity.
4. Understand and explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.
5. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
6. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.

6.2 SPECIFIC LEARNING OUTCOME

7. Computer basics and perform installation, customization of Operating System, related software in a computer for Multimedia purpose.
8. Safe handling of Multimedia devices Video Camera, Digital Camera, Microphone, Webcam and Basics of Digital Photography, Video Recording and data transfer.
9. Photo editing and apply special effects by using Adobe Photoshop and Adobe Illustrator
10. Web browsing, Video streaming, uploading and downloading of video, audio, image on internet and secure information from cyber attacks.
11. Video editing and apply special effects by using Adobe Premier and Adobe After Effect.
12. Creation of Graphics Animation and sound effect by using Flash and Maya, 3Ds Max.

7. LEARNING OUTCOME WITH ASSESSMENT CRITERIA

GENERIC LEARNING/ ASSESSABLE OUTCOME	
LEARNING / ASSESSABLE OUTCOME	ASSESSMENT CRITERIA
1. Apply safe working practices.	1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements and according to site policy.
	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 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.
2. Comply environment regulation and housekeeping.	2.1 Identify environmental pollution & contribute to the avoidance of instances of environmental pollution.
	2.2 Deploy environmental protection legislation & regulations
	2.3 Take opportunities to use energy and materials in an environmentally friendly manner
	2.4 Avoid waste and dispose waste as per procedure
	2.5 Recognize different components of 5S and apply the same in the working environment.
3. Work in a team, understand and practice	3.1 Obtain sources of information and recognize information.
	3.2 Use and draw up technical drawings and documents.

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soft skills, technical English to communicate with required clarity.	3.3	Use documents and technical regulations and occupationally related provisions.
	3.4	Conduct appropriate and target oriented discussions with higher authority and within the team.
	3.5	Present facts and circumstances, possible solutions & use English special terminology.
	3.6	Resolve disputes within the team
	3.7	Conduct written communication.
4. Understand and explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.	4.1	Semester examination to test the concept in productivity, quality tools and labour welfare legislation.
	4.2	Their applications will also be assessed during execution of assessable outcome.
5. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.	5.1	Semester examination to test knowledge on energy conservation, global warming and pollution.
	5.2	Their applications will also be assessed during execution of assessable outcome.
6. Explain entrepreneurship and manage/organize related task in day to day work for personal & societal growth.	6.1	Semester examination to test knowledge on entrepreneurship.
	6.2	Its applications will also be assessed during execution of assessable outcome.

SPECIFIC LEARNING/ ASSESSABLE OUTCOME	
SEMESTER-I	
LEARNING / ASSESSABLE OUTCOME	ASSESSMENT CRITERIA
7. Computer basics and perform installation, customization of Operating System, related software in a computer for Multimedia purpose.	7.1 Demonstrate internal component and peripheral of Computer.
	7.2 Working on Windows Interface and customize the system properties.
	7.3 Install and configure Windows OS and application software.
	7.4 Install the printer and other peripheral devices.
	7.5 Burn CD/DVD.
	7.6 Install Photoshop, Flash, Maya and 3Ds Max.
	7.7 Practice on MS Office package.
8. Safe handling of Multimedia devices Video Camera, Digital Camera, Microphone, Webcam and basics of Digital Photography, Video Recording and data transfer.	8.1 Identify Photo capturing and storing devices and accessories.
	8.2 Digital Photography, Basic techniques.
	8.3 Transferring of files to a Computer and storing
	8.4 Conversion of datas into different formats.
	8.5 Video shooting, practicing the craft of film making.
9. Photo editing and apply special effects by using Adobe Photoshop and Adobe Illustrator.	9.1 Editing of Images using essential basic tools of Adobe Photoshop
	9.2 Edit pictures applying selection, transforming layer, filter, color correction mode.
	9.3 Edit image with different types of palettes and layer.
	9.4 Apply 3D Effect using Layer, mixing of Layers.
	9.5 Creation of Digital Painting
	9.6 Photo retouching, applying mask.
SEMESTER-II	
10. Web browsing, Video streaming, uploading and downloading of video, audio, image on internet and secure information from	10.1 Down loading and Installation of latest Web browsing Software – Fire Fox, Google Chrome, Internet Explorer.
	10.2 Familiarise with social Networking websites – You tube, Face Book.
	10.3 Down load Pictures, Audio, Video from different websites.
	10.4 Create image, video streaming with sound and Upload on web.
	10.5 Understand and familiarise – Computer virus, Antivirus, Copy right, web security



cyber attacks.	10.6 Provide firewall security for Internet connection and Network System.
	10.7 Secure your Wi-Fi networks using wireless security features.
11. Video editing and apply special effects by using Adobe Premier and Adobe After Effect.	11.1 Editing of video clippings and footage by using Adobe Premier and Adobe After Effect
	11.2 Addition of Captions, Sequence, Titles, Audio timeline.
	11.3 Refining sequence, practice with transition
	11.4 Saving in different video formats
	11.5 Creating and using compositions, applying special effect.
	11.6 Practice on Animate 3D transformations, Rotoscoping.
12. Creation of Graphics Animation and sound effect by using Flash and Maya, 3Ds Max.	12.1 Create Graphics and Animation by using Hand Drawing and Adobe Flash
	12.2 Create Graphics and Animation by using Autodesk Maya, 3D Studio Max
	12.3 Creation of basic modelling.
	12.4 Applying Rigging and skinning
	12.5 Working with Lighting and creation of rendering artist.



SYLLABUS FOR MULTIMEDIA, ANIMATION & SPECIAL EFFECTS			
FIRST SEMESTER – 06 Months			
Week No.	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours	Professional Knowledge (Trade Theory)
1	<ul style="list-style-type: none"> Apply safe working practices. Computer basics and perform installation, customization of Operating System, related software in a computer for Multimedia purpose. 	<p>Safe working practices</p> <ol style="list-style-type: none"> 1. Visit MASE Lab. of the institutes and locate the power supply to computer and its peripherals. (06 hrs) 2. Identifying safety symbols and hazard identification. (04 hrs) 3. Practice safe methods of fire fighting in case of electrical fire. (04 hrs) 4. Use of fire extinguishers. (04 hrs) <p>Computer Components</p> <ol style="list-style-type: none"> 5. Demonstrate of various parts of computer system such as mother board, RAM, CPU, serial and parallel ports. (6 hrs) 6. Power on start button of a computer system and check power supply to computer and all the connected peripherals of the system. (06 hrs) 	<p>Safe working practices</p> <ul style="list-style-type: none"> • Scope of the MASE trade. • Safety rules and safety signs. • Types and working of fire extinguishers. <p>Introduction to Computer components</p> <ul style="list-style-type: none"> • Introduction to computer system. Concepts of Hardware and Software. • Function of motherboard components and various processors. • Various Input/ Output devices in use and their features.
2 - 3	-do-	<p>Using Operating System and Software Installation</p> <ol style="list-style-type: none"> 7. Practice on Windows interface using start menu, task bar, title bar, Windows help, My computer, Recycle Bin. (06 hrs) 8. Customize the desktop settings and manage user accounts. (03 hrs) 9. View system properties and 	<p>Introduction to Operating System and Software Installation process</p> <ul style="list-style-type: none"> • Introduction to Windows Operating System. • Main features of Windows OS. • File Management through Windows explorer. • Introduction and applications of essential Accessories, Multimedia players.

		<p>customize the same using control panel details. (06 hrs)</p> <p>10. Work with keyboard shortcut commands. (06 hrs)</p> <p>11. Create, delete, copy, move, rename, view, sort, zip and unzip of files & folders. (06 hrs)</p> <p>12. Use Multimedia tools and windows media player for image, audio and video. (03 hrs)</p> <p>13. View the BIOS settings and their modifications. (01 hrs)</p> <p>14. Install Windows operating system. (05 hrs)</p> <p>15. Format hard disk and create partition. (03 hrs)</p> <p>16. Install necessary application software for Windows i.e. Office Package, PDF Reader, Media Player, Antivirus etc. (05 hrs)</p> <p>17. Install Drivers for printer, scanner, webcam and DVD etc. (05 hrs)</p> <p>18. Burn data, video and audio files on CD/DVD using application software. (05 hrs)</p> <p>19. Install Photoshop, Flash, Maya and 3Ds Max. (06 hrs)</p>	<ul style="list-style-type: none"> • Introduction to the booting process. • Introduction to various types of memories and their features. • Concept of installation process of Operating System and software. • Basic Hardware and software issues and their solutions. • Usage of Application software and Antivirus.
4 - 5	-do-	<p>Using MS Office</p> <p>20. Open MS Word, familiarise with basic word components and practice on creating, saving, closing and renaming of word documents. (06 hrs)</p> <p>21. Edit document using basic formatting tools. (06 hrs)</p> <p>22. Practice Inserting and formatting tables, pictures, videos and other objects. (06 hrs)</p> <p>23. Use Mail merge tool. Use conditional Mail Merge,</p>	<p>Introduction to MS Office</p> <ul style="list-style-type: none"> • Introduction to the various applications in MS office. • Introduction to Word features, Office button, toolbars. • Creating, saving and formatting and printing documents using Word. • Introduction to Excel features, data types and various functions in all categories of Excel. • Concepts of sorting, filtering

		<p>External Data Source. Practice Letters, Label & Envelop printing using Mail Merge (06 hrs).</p> <p>24. Open MS Excel, familiarise with basic application components and practice creating, saving and formatting excel spread sheets. (06 hrs)</p> <p>25. Practice Excel functions of all major categories i.e. Financial, Logical, Text, date & time, Lookup, Math, Statistical etc. (06 hrs)</p> <p>26. Use various data types in Excel, sorting, filtering and validating data. (03 hrs)</p> <p>27. Modify Excel page setup and print a worksheet. (03 hrs)</p> <p>28. Open power point presentation, familiarise with basic application components and practice on creating Slide shows, Inserting picture and theme. (06 hrs)</p> <p>29. Add new slide, format text, link with word and excel documents. (03 hrs)</p> <p>30. Practice animating slide transitions and objects. (03 hrs)</p> <p>31. Create slide shows by inserting audio & video and synchronise with presentation. (06 hrs)</p>	<p>and validating data.</p> <ul style="list-style-type: none"> • Introduction to Power Point Slide Show creation process. • Fine tuning the presentation and good presentation technique.
6	<ul style="list-style-type: none"> • Safe handling of Multimedia devices Video Camera, Digital Camera, Microphone, Webcam and Basics of Digital 	<p>Digital Photography (photo session)</p> <p>32. Identify different parts of digital camera; know the operating procedure and internal functions of the camera. (03 hrs)</p> <p>33. Practice to change important settings of camera. (03 hrs)</p>	<p>Digital Photography</p> <ul style="list-style-type: none"> • Learning digital camera anatomy. • Exploring important camera settings. • Understanding how to focus. • Introducing the subject for the photo shoot. • Understanding lighting setup

	<p>Photography, Video Recording and data transfer.</p>	<p>34. Practice on focusing using tools and auto focus. (03 hrs) 35. Practice on digital Photo Shooting with shallow depth of field. (03 hrs) 36. Practice on using neutral density (ND) filters to correct overexposure. (03 hrs) 37. Practice on gain to artificially brighten an underexposed photo shot. (03 hrs) 38. Practice on color temperature, white balancing a shot. (03 hrs) 39. Working with lighting instruments, understanding lighting concepts, creating a four-point lighting setup for a scene, using corrective gels (06 hrs) 40. Data transfer from Camera, SD card to Computer and Vice Versa. (03 hrs)</p>	<p>and working process with lighting instruments.</p>
<p>7-11</p>	<ul style="list-style-type: none"> • Photo editing and apply special effects by using Adobe Photoshop and Adobe Illustrator. 	<p>Working with Images in Photoshop</p> <p>41. Scan images with digital scanner and save with appropriate image format. (03 hrs) 42. Open Adobe Photoshop to practice with image editing tool, workspace-navigation, palettes, arranging document windows. (12 hrs) 43. Crop and rotate an image, change image size, pixels and resolution, color Depth and apply the color modes- RGB, CMYK and Grayscale. (12 hrs) 44. Edit image using bridge, brushes, choosing colors, sampling colors from an image, using Pantone colors, multiple undo and taking Snapshots, use the History</p>	<p>Introduction to Photoshop</p> <ul style="list-style-type: none"> • Implementation of Scanner • Image Editing techniques • Retouching techniques • Selection technique • Composition and design techniques • Colour correction • Working with type • Effects and Filters • Production

		<p>palette. (12 hrs)</p> <p>45. Retouch to Fix images using the Clone Stamp. (06 hrs)</p> <p>46. Practice with Healing tools: The history brush, the Red-Eye and colour replacement tools. (09 hrs)</p> <p>47. Practice for selection techniques using the marquee and the lasso tools, the quick selection tool, working in quick mask mode, adding and subtracting selections, saving a selection. (12 hrs)</p> <p>48. Composition and design techniques: Working with layers moving content to new layer, opacity, transforming layers, creating reflection and other effects. (12 Hrs)</p> <p>49. Transformation- Scaling and rotating, using color fill layers, using gradients and patterns, combing images with layer masks, applying a Mask to an Adjustments layer. (09 hrs)</p> <p>50. Practice for Color correction using the levels command histogram, curves and exposure, using the color balance command to modify color casts, adjusting vibrance, Hue and Saturation: general and specific color range adjustment, colorizing. (12 hrs)</p> <p>51. Working with type layers, formatting type, converting type to pixels. (09 hrs)</p> <p>52. Applying Effects and Filters: working with layers Styles-Drop shadows, glows, bevels etc., using filters-corrective and creative filtering technique, using the filter</p>	
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		<p>gallery. (12 hrs)</p> <p>53. Practice with Production technique: importing and exporting images the main stream file types and their uses, web graphics-Using the Save for Web command-Optimization and file formats. (09 hrs)</p> <p>54. Printing- recognizing nonprintable colors, converting images to CMYK, saving for print, 3d (Menu), Color Correction (Adjustments), Smart Objects, Content Aware, Puppet Wrap Define(Brush, Pattern, Custom Shape). (09 hrs)</p> <p>55. Preferences, Masking (Layer, Vector , Clipping, Channel),Video Layers, Filters (All), actions (Panel), Animation, Channel, Text (Character/Paragraph (Panels), using Bridge. (12 hrs)</p>	
12-14	-do-	<p>Advance Image Editing in Photoshop</p> <p>56. Work with Palettes, i.e., layers palette, navigator palette, info palette, color palette, Swatches palette, Styles palette, History palette, Actions Palette, Tool preset palette, Channels Palette and Path Palette. (12 hrs)</p> <p>57. Work with Layers and edit photo using Image adjustment options - Labels, Auto labels, Auto contrasts, Curves, Color balance, Brightness /Contrast, Posterize, Variations. (12 hrs)</p> <p>58. Prepare the file and work area. Creating different shapes. (09 hrs)</p> <p>59. Create three Dimensional</p>	<p>In depth Image Editing</p> <ul style="list-style-type: none"> • Exploring new creative options and producing high quality images for print & web. • Creating exceptional imagery with easier access to file streamlined web design. • Photo re-touching, colourful image collages, artistic backgrounds. • Creation of the optimized images with roll over effects and image mapping. • Special effects on images using

		<p>effects using Layers. (09 hrs)</p> <p>60. Work with the magic wand tool and lasso tool. (09 hrs)</p> <p>61. Create images using Symbol Sprayer Tool. (06 hrs)</p> <p>62. Edit the images using options of Warp Tool. (06 hrs)</p> <p>63. Use Dodge tool, Burn tool, Sponge Tool and Clone Stamp Tool. (09 hrs)</p> <p>64. Edit Selections; create images and giving special effects using Filters. (09 hrs)</p> <p>65. Produce an image by mixing two or more different Layer. (09 hrs)</p>	
15-18	-do-	<p>Graphics Editing using Adobe Illustrator/Corel draw</p> <p>66. Fundamental techniques of drawing in pencil, charcoal and ink. Emphasis is on realistic representation and visual observation. (06 hrs)</p> <p>67. Advanced drawing giving emphasis on design and composition and experimental techniques in different media: creating area text, applying basic character settings, paragraph settings, creating text threads, creating text on a path, converting text to outlines. (06 hrs)</p> <p>68. Using the basic selection tools, magic Wand and the Lasso tool, selecting objects by attribute, saving and reusing selections. (06 hrs)</p> <p>69. Appearances-Targeting objects attributes: adding multiple attributes, applying live effects, expanding appearances, creating graphic styles. (06 hrs)</p> <p>70. Modifying graphic styles:</p>	<p>Graphics Editing</p> <ul style="list-style-type: none"> • Traditional Design concepts • Traditional and digital applications of color, concept and composition. • Making Selections • Understanding Appearances • Working with Groups and Layers • Advanced Drawing and Path Editing • Working with Color • Object Transformation and Positioning • Use of Brushes • Use of Masks • Use of Symbols • Application of Filters and Live Effects • Advanced Text Editing • Designing for the Web • Creation of Blends • Working with Images • Performing Specialized Tasks Saving and printing • Working with Other programs

		<p>appearance palette settings, copying appearance. (06 hrs)</p> <p>71. Working with Groups and Layers: defining and editing groups, working with Layers, Layers and object hierarchy, creating template layers, object, group, and layer attributes. (06 hrs)</p> <p>72. Advanced Drawing and Editing Path: creating Live Paint groups, detecting gaps in Live Paint groups, path editing with Live Paint, using Offset Path, dividing an object into a grid, cleaning up errant paths. (09 hrs)</p> <p>73. Working with Color: defining swatches, creating swatch groups and libraries, working with gradients, patterns, using the Color Guide, experimenting with color, finding colors with kuler, modifying color in artwork. (06 hrs)</p> <p>74. Transformation and Positioning: Rotating and scaling objects, reflecting and skewing objects, using the free Transform panel, Aligning objects. (06 hrs)</p> <p>75. Distributing objects-Using Brushes: Creating a calligraphic brush, creating a scatter brush, creating an art brush, creating a pattern brush. (06 hrs)</p> <p>76. Working with Masks: Understanding clipping masks, using layer clipping masks, creating opacity masks. (06 hrs)</p> <p>77. Using Symbols: Defining and editing symbols, using the</p>	
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		<p>symbolism toolset. (06 hrs)</p> <p>78. Applying Filters and Live Effects: Minding your resolution settings, Mapping artwork to 3Dobjects, using the Transform effect. (06 hrs)</p> <p>79. Using the pathfinder effects: Using the Stylize effect, Scribble effect, Warp effect. (06 hrs)</p> <p>80. Advanced Text Editing: taking advantage of Open type fonts, using the Glyphs panel, wrapping text around objects, checking spelling, using the change cash function, Setting tabs and leaders, managing fonts, dealing with legacy text. (06 hrs)</p> <p>81. Web Designing using pixel preview, specifying web slicing, Optimizing web graphics, Creating simple animations. (06 hrs)</p> <p>82. Creating a basic Blends, using a blend to create an airbrush Effect, using a blend to create an animation, using a blend to evenly distribute. (06 hrs)</p> <p>83. Working with Images: Placing images, using the Links panel, The Edit Original workflow, Live Trace, Rasterizing artwork, Object mosaic creating graphs, creating a lens flare, using gradient Mesh, Envelope Warps, Liquefy distortion tools, saving your Graphics Editing Tool Document, Printing your Graphics Editing Tool Document, Using the Crop Area tools, setting up page tiling. (09 hrs)</p> <p>84. Adding XMP metadata</p>	
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<p>19-21</p>	<ul style="list-style-type: none"> • Safe handling of Multimedia devices Video Camera, Digital Camera, Microphone, Webcam and Basics of Digital Photography, Video Recording and data transfer. 	<p>Digital Videography (Practice shooting and Recording)</p> <p>85. Safe handling of Multimedia devices: demonstrate how to Keep and carry how to fix in camera stand, how to remove from Stand. (06 hrs)</p> <p>86. Identify different parts of video camera; know the operating procedure and internal functions of the video camera. (06 hrs)</p> <p>87. Practicing important settings of camera. (06 hrs)</p> <p>88. Practice on focusing using tools and auto focus. (06 hrs)</p> <p>89. Practice on Shooting with shallow depth of field. (06 hrs)</p> <p>90. Practice on using neutral density (ND) filters to correct overexposure. (06 hrs)</p> <p>91. Practice on gain to artificially brighten an underexposed shot. (06 hrs)</p> <p>92. Practice on choosing the right shutter speed. (06 hrs)</p> <p>93. Practice on color temperature, White balancing a shot. (06 hrs)</p> <p>94. Practice on choosing the right tripod, camera moves and Mastering hand-held shooting. (06 hrs)</p> <p>95. Practice on Audio Essentials for Five sound rules to live by, using the types of microphones for video shooting, setting up</p>	<p>Digital Videography</p> <ul style="list-style-type: none"> • Introduction to video camera • Learning camera anatomy • Exploring important camera settings • Understanding how to focus using tools to achieve better focus • Introducing the subject for the video shoot • Learning the craft of filmmaking • Shooting with shallow depth of field • Understanding exposure • Using neutral density (ND) filters to correct overexposure • Using gain to artificially brighten an underexposed shot • Choosing the right shutter speed • Understanding colour temperature • White balancing a shot • Data transfer process



		<p>microphones for a video shoot, using a boom microphone, setting proper audio levels. (12 hrs)</p> <p>96. Practicing the lighting essential: working with lighting instruments, understanding lighting concepts, creating a four-point lighting setup for a scene, using corrective gels. (12 hrs)</p> <p>97. Data transfer from Camera to Computer and vice versa using CD, DVD, Hard Disk, Pen Drive, SD card etc. (06 hrs)</p>	
22-23	Industrial Visits /Project Work Broad Areas: a) Image editing project using Adobe Photoshop. b) Graphics designing project using Adobe Illustrator. c) Projects on Videography.		
24-25	Revision		
26	Examination		

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SYLLABUS FOR MULTIMEDIA, ANIMATION AND SPECIAL EFFECT			
SECOND SEMESTER – 06 Months			
Week No.	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours	Professional Knowledge (Trade Theory)
27	<ul style="list-style-type: none"> Web browsing, Video streaming, uploading and downloading of video, audio, image on internet and secure information from cyber attacks. 	<p>Using Internet and Cyber Security</p> <p>98. Browse the Internet for information (use at least 3 popular browsers). (03 hrs)</p> <p>99. Create and use e-mail for communication with attachment, priority setting, and address book. (03 hrs)</p> <p>100. Browse social networking site and communicate with text, audio, video chatting. (03 hrs)</p> <p>101. Practice to create image, video streaming with sound and upload /download the same to /from internet. (06 hrs)</p> <p>102. Protect information, computers and networks from viruses, spyware and other malicious code. (03 hrs)</p> <p>103. Provide firewall security for Internet connection and Network System. (06 hrs)</p> <p>104. Secure your Wi-Fi networks using password, WEP, WPA-PSK, WPA2-PSK, SSID, MAC address filtering. Create individual user accounts for each member. (06 hrs)</p>	<p>Concepts of Internet and Cyber Security</p> <ul style="list-style-type: none"> Introduction to www, Concept of Internet, Web Browsers, internet servers and search engines. Concepts of Domain naming Systems and E mail communication. Upload, download techniques in internet. Overview of Information Security, SSL, HTTPS, Security threats, information Security vulnerability and Risk management. Introduction to Directory Services, Access Control, Security, Privacy protection, Audit and Security. Introduction to IT Act and penalties for cyber crimes.
28-30	<ul style="list-style-type: none"> Video editing and apply special effects by using Adobe Premier and Adobe After Effect. 	<p>Using Adobe Premier Project</p> <p>105. Practice to change Project settings, Preference settings, Asset Management, Sequences & Clips, Offline On-line Clips. (08 hrs)</p> <p>106. Managing Clips: The Project panel, Views, The preview</p>	<p>Adobe Premier Project</p> <ul style="list-style-type: none"> Introduction to Adobe Premier Project Creating a Sequence Editing in the Timeline Refining the sequence Transitions Audio



		<p>area, Organizing clips and bins, Duplicating and copying clips, Renaming clips, Finding clips(search function), Interpreting Footage, Unlinking and Re-linking Media, The Project Manager. (08 hrs)</p> <p>107. Working with Monitor Panels: Viewing Clips, Playback Controls, Audio Clips, Cuing Clips, Time Ruler Controls, Safe Zones, Display Mode, Wave form and Vector scope Options, The Reference Monitor, Ganging source and Program Monitor. (08 hrs)</p> <p>108. Creating a Sequence Editing Methods, In And Out Points, Sub Clips, Source And Target Tracks, Overlay And Insert Edits, Adding Clips By Dragging, 3 And 4 Point Edits, Lift And Extract, Storyboard Editing, Multiple And Nested Sequences. (08 hrs)</p> <p>109. Editing in the Timeline: The Time Ruler, Adding, Deleting and Renaming Tracks, Markers, Selecting, Splitting Clips, Speed, Duration and Reverse, Multicam Editing, Synchronizing Clips, Replace Clips. (08 hrs)</p> <p>110. Refining the sequence: Snapping, Trimming Methods, Trimming Clips, Ripple , Roll, Slip and Slide Edits, the Trim Panel, Split Edits (L And J Cuts). (08 hrs)</p> <p>111. Practice with Transitions: The Effects Panel, Understanding Transitions, Applying A Transitions, Editing A Transitions. (08 hrs)</p>	<ul style="list-style-type: none">• Tiles• Effects• Output
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31-33	-do-	<p>Applying Adobe After Effects</p> <p>116. Practice on User interface. (06 hrs)</p> <p>117. Creating and using compositions. (06 hrs)</p> <p>118. Practice on Key framing and using time line. (06 hrs)</p> <p>119. Practice on Looping animation. (06 hrs)</p> <p>120. Practice on Editing motion path. (06 hrs)</p> <p>121. Create the arrivals Bound Effects. (06 hrs)</p> <p>122. Simulation between Authoring Tool & Special effects Tool. (06 hrs)</p> <p>123. Apply filter effects and mask to components. (06 hrs)</p> <p>124. Practice on Animate 3D transformations. (12 hrs)</p> <p>125. Include a common loop</p>	<p>Introduction to Adobe After Effects</p> <ul style="list-style-type: none"> • Special effect Techniques • Introduction to User interface • Concepts of compositions, Key framing, Looping animation, motion path • Introduction to Bound Effects, Authoring Tool & Special effects Tool, filter effects and mask to components • 3D Animation transformations, use of common loop sound, simple scripting in special effect Tool • Rotoscoping, Chroma, 2D & 3D tracing, Green/Blue screen technique/shooting. Colour Correction

		<p>sound. (09 hrs)</p> <p>126.Practice on simple scripting in special effect Tool. (09 hrs)</p> <p>127.Rotoscoping, Chroma, 2D & 3D tracing, Green/Blue screen technique/shooting. Colour Correction. (12 hrs)</p>	
34-37	<ul style="list-style-type: none"> Creation of Graphics Animation and sound effect by using Flash and Maya, 3Ds Max. 	<p>Using Flash</p> <p>128.Practice on Tool Features, User interface, Image Editing Tool and Graphics, Editing Tool integration, Authoring Tool Video Technology, UI components. (12 hrs)</p> <p>129.Practice on Creating and Importing Graphics Assets, Working with different graphic. (18 hrs)</p> <p>130.Practice on formats - Importing bitmap graphics, working with layers and layer folder. (18 hrs)</p> <p>131.Use the drawing tools, Using object and merge drawing, Working with the colour panels, Creating and using Graphic symbols, using the Library panel. (18 hrs)</p> <p>132.Practice on Text Effectively-Text tool, Adding and formatting static text, Changing font rendering methods, Adding input text fields, Embedding fonts in input text fields, Using for best practices. (18 hrs)</p> <p>133.Practice on Creation of Animations - Working with the timeline, using key frames, blanks key frames and frames, Creating motion tweens, Creating shape tweens, creating transition effects, using animation best practices. (18 hrs)</p>	<p>Introduction to Flash</p> <ul style="list-style-type: none"> About Flash and General overview - Stage and Work area of Flash, using guides, grid & rulers. Using frames and key frames, Working with time line. Using layers - to create a layer, to create a layer folder, to show or hide a layer or folder, to view the contents of the layer as outlines, to change the layer height in the timeline, to change the order of the layers or folders. Using Guide layers. Drawing in Flash - to raw with a pencil tool, to paint with a brush tool, to draw with pen tool. Using colours in Flash, to use a gradient fill. Importing Artwork, Video and Audio. Different file formats in Video & Audio. Flash Compatible Audio & Video file formats

		134. Practice on Basic Action Script - Using Script Assist, Adding actions to a frame, Creating and using Button symbols. (18 hrs)	
38-41	-do-	<p>Working with 3Ds MAX</p> <p>135. Practice on creating projects and Scenes. (12 hrs)</p> <p>136. Practice on Transform tool basics, Pivot points, Grouping and parenting, Modelling with primitives. (12 hrs)</p> <p>137. Practice on User Interface - Setting up project, Views/panels, Hotbox, Viewing Geometry, Channel Box, Layer Box, Attributes Editor, QWERTY Navigation. (12 hrs)</p> <p>138. Working with the camera, over view of MEL, Outliner/ Hyper graph, Grouping /parenting Shelf Marking Menus. (15 hrs)</p> <p>139. Practice on Modelling – Curve Tools /snapping, Revolving, History, Duplicating, Working with NURBS, Detaching surfaces, Grouping /Duplicating. (15 hrs)</p> <p>140. Working with polygons, Sub-divisional surfaces, Split polygon Tool, Lofting, Extruding. (12 hrs)</p> <p>141. Practice on MODELLING, POLYGON TOOLS, WITH PROXY, NORMALS, Lighting /Rendering. (12 hrs)</p> <p>142. Practice on Hyper shade, Materials, Apply Materials, Making Shader Networks, Combining Ramps, Layered Textures, Intro to lights, Making Bump Maps. (15 hrs)</p> <p>143. Working with Shadows, UV</p>	<p>Introduction to 3ds Max</p> <ul style="list-style-type: none"> • Fundamentals & concepts of Animation • 3D Animation Techniques • User Interface • Modelling • Lighting /Rendering • Character Setup & Animation • Dynamics

		Mapping, Specular Maps, Paints FX, Render View, Camera Settings, Render Globals, TOON SHADER. (15 hrs)	
42-47	-do-	<p>Working with MAYA</p> <p>144. Practice on navigation with view port, view port menu, forms and grids, selecting objects, move rotate and scale, manipulating pivote, channel box, attributed editor, Marking menu. (24 hrs)</p> <p>145. Practice on Polygon modelling: Ploygon components, soft selection, extrude tools, extruding curves, polygon vevels, subdivide surface, character body. (24 hrs)</p> <p>146. Practice on NURBS Modeling: NURBS primitive NURBS carv tools, Text creations, NURBS revolve, NURBS loft, NURBS extrude, NURBS planner. (24 hrs)</p> <p>147. Practice on Organising Maya scene, out liner, group object, hierarchies, duplicating objects, hypergraph, hide /show object, players. (24 hrs)</p> <p>148. Practice on using Materials: Render Material, basics of material, applying of maps, BIP map picture, hyper shade, mental ray material, bump mapping, ramp shader, 3d paint tools. (24 hrs)</p> <p>149. Animation, time line animation, adjusting key, editing key, graph editor, dope sheet, break down keys, path animation, play blast,</p>	<p>Introduction to MAYA</p> <ul style="list-style-type: none"> • Introduction to Maya interface and functions of port menu, forms and grids, objects, move rotate and scale, pivote, channel box, attributed editor, Marking menu • Concept of Ploygon components, soft selection, extrude tools, extruding curves, polygon vevels, subdivide surface, character body • Introduction to NURBS, NURBS primitive NURBS carv tools, Text creations, NURBS revolve, NURBS loft, NURBS extrude, NURBS Planner • Organising Maya scene, out liner, group object, hierarchies, duplicating objects, hypergraph, players • Basics of Render Material, BIP map picture, hyper shade, mental ray material, bump mapping, ramp shader, 3d paint tools • Animation, time line animation, adjusting key, editing key, graph editor, dope sheet, break down keys, path animation, play blast, constrains, animation cycles, adding sound. • Rendering: Lights, depth map shadow, raterace shadows, basics of camera, depth of field, mental ray, software rendering, reflection and refraction, IPR rendering,

		<p>constrains, animation cycles, adding sound. (30 hrs)</p> <p>150. Practice on Rendering: Lights, depth map shadow, raterace shadows, basics of camera, depth of field, mental ray, software rendering, reflection and refraction, IPR rendering, lighting to scene, Batch rendering. (30 hrs)</p>	<p>lighting to scene Batch rendering.</p>
48-49	<p>Industrial Visit/Project work</p> <p>Broad Areas:</p> <p>a) Create and host a web site of at least 6 web pages using Front Page.</p> <p>b) Create a multimedia project with 3D MAX.</p> <p>c) Create an animation Project with MAYA.</p>		
50-51	<p>Revision</p>		
52	<p>Examination</p>		

Note: -

1. *Some of the sample project works (indicative only) are given against each semester.*
2. *Instructor may design their own project and also inputs from local industry may be taken for designing such new project.*
3. *The project should broadly cover maximum skills in the particular trade and must involve some problem solving skill. Emphasis should be on Teamwork: Knowing the power of synergy/ collaboration, work to be assigned in a group (Group of at least 4 trainees). The group should demonstrate Planning, Execution, Contribution and Application of Learning. They need to submit Project report.*
4. *If the instructor feels that for execution of specific project more time is required than he may plan accordingly to produce components/ sub-assemblies in appropriate time i.e., may be in the previous semester or during execution of normal trade practical.*

9. SYLLABUS - EMPLOYABILITY SKILL

CORE SKILL – EMPLOYABILITY SKILL	
First Semester	
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 known people, 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 on messages and filling in message forms, greeting and introductions, office hospitality, resumes or curriculum vitae essential parts, letters of application reference to previous communication.
2. IT Literacy	Duration : 20 hrs Marks : 09
Basics of Computer	Introduction, computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down computer.
Computer Operating System	Basics of Operating System, WINDOWS, 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 Text, Formatting the text, Insertion & creation of tables. Printing document. Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets.
Computer Networking	Basic of computer Networks (using real life examples), Definitions of

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, Website, 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.
Second Semester	
4. Entrepreneurship Skills	
Duration : 15 hrs Marks : 06	
Concept of Entrepreneurship	Entrepreneur - Entrepreneurship - Enterprises: Conceptual issue Entrepreneurship vs. management, Entrepreneurial motivation.

	Performance & Record, Role & Function of entrepreneurs in relation to the enterprise & relation to the economy, Source of business ideas, Entrepreneurial opportunities, and 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. Difference between small scale & large scale business, Market survey, Method of marketing, Publicity and advertisement, Marketing mix.
Institution's 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 familiarize 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 it improves or slows down productivity.
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 hygiene, Occupational Diseases/ Disorders & its prevention.
Accident & Safety	Basic principles for protective equipment. Accident prevention techniques - control of accidents and safety measures.

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

LIST OF TOOLS & EQUIPMENT			
MULTIMEDIA, ANIMATION AND SPECIAL EFFECTS			
S No.	Equipment/Tool	Specification	Quantity
A. Trainees Tools/ Equipment			
1.	Desktop Computer For Multimedia – 02 For Nodes – 10 Nos	CPU: 32/64 Bit i3/i5/i7 or latest processor, Speed: 3 GHz or Higher. Cache Memory: - Minimum 3 MB or better. RAM:-8 GB DDR-III or Higher. Hard Disk Drive: 500GB or Higher, 7200 rpm(minimum) or Higher, Wi-Fi Enabled. Network Card: Integrated Gigabit Ethernet(10/100/1000) - Wi-Fi, USB Mouse, USB Keyboard and Monitor (Min. 17 Inch), Standard Ports and connectors. DVD Writer, Speakers And Mic. Licensed Windows Operating System / OEM Pack(Preloaded), Antivirus / Total Security	10 Nos. (For Trainee) + 1 No. for Instructor
2.	Server for LAN	CPU: 32/64 bit i7 processor or Higher with PCI Express Video Card, RAM:-8 GB DDR-III or Higher Hard Disk Drive: 1 TB or Higher 22" TFT Monitor, Keyboard, Mouse, DVD OR BLU-RAY WRITER , Licensed of OS - Server Edition Internet, Antivirus / Total Security - Server Edition & UPS for Power Back up..	01 No.
3.	Wi-Fi Router	With Wireless Connectivity	01 No.
4.	Switch	24 Port	01 No.
5.	Structured cabling in Lab	to enable working with Wired Networks for Practical	As required
6.	Internet Connectivity	Broadband connection with min. 2 mbps speed	As required
7.	Registered Domain	at least 100 MB Web Space	As required
8.	Colour Laser Printer	Colour A4 Size	01 No.
9.	Network Laser Printer	Monochrome A4 Size	01 No.
10.	Optical Scanner	Flatbed A4	01 No.
11.	Digital Web Cam	High Resolution(3.1 mp or higher)	04 Nos.
12.	DVD or Blu-Ray Writer	24X or higher external (usb)	02 Nos.
13.	LCD Projector	3000 lumens or higher	01 No.
14.	Projector Screen	matte(antiglare) screen	01 No.

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15.	UPS	500 VA off line for nodes	13 Nos.
16.	Crimping Tool	RJ-45	05 Nos.
17.	Network Rack	4U for 24 port	01 No.
18.	Digital Multimeters	3.5 digit handheld type.	04 Nos.
19.	Screw Driver Set	Standard	04 Sets
20.	Mini Dongle for Bluetooth devices Connection	USB	04 Nos.
21.	Headphone & mic. set	Wired	05 Nos
22.	Sound System	4:1	02 Nos.
23.	External Hard Disk	1 TB	02 Nos.
24.	Patch Panel	24 Port	02 Nos.
25.	LAN Tester	UTP cat5 cable tester (RJ 45)	05 Nos.
26.	Punching Tool	for punching RJ 45 socket with cat 5 cable	05 Nos.
27.	Digital SLR Camera	24 MB, LCD Viewer, Memory card, Zoom Lense (Optical)	01 No
28.	Digital Video Camera	Semi professional with XLR Audio I/P Video O/P – SDI, Composite, DVI, HDMI	01 No
29.	Audio Cable	Balanced XLR, Umbrella, Stereo and Mono	As required
30.	Video Cable	BNC, HDMI, USB, VGA	As required
B. Software			
31.	MS Office	2010 (professional) or the latest version available at the time of procurement	11 Licenses
32.	Antivirus for – clients / workstations in profile	validity of an year or more which should be renewed upon expiry	11 Licenses
33.	Open Office or equivalent	Latest version	Open source software
34.	GIMP / IrfanView Image editor or equivalent	Latest version	Open source software
35.	Adobe Photoshop	Adobe Photoshop (academic edition with 10 user license)	01 No.
36.	3D STUDIO Max	3D STUDIO Max (academic edition with 10 user license)	01 No.

37.	Maya	Maya (academic edition with 10 user license)	01 No.
38.	Adobe Flash	Adobe Flash (academic edition with 10 user license)	01 No.
39.	Adobe premier Suite	Adobe premier Suite (academic edition with 10 user license)	01 No.
40.	Front Page Editor	Front Page Editor (Academic edition with 10 user license)	01 No.

C. List of Other Items/ Furniture

41.	Vacuum cleaner	Hand Held	01 No.
42.	Pigeon hole cabinet	20 compartments	01 No.
43.	Chair and table for the instructor	with armrest mounted on castor wheels, adjustable height/Standard	01 each (for class room & laboratory)
44.	Dual Desk or Chair and Tables for Trainees	Standard	10 / 20 Nos
45.	Computer table	laminated top 150X650X750 mm with sliding tray for key board and one shelf of storage	13 Nos.
46.	Operators chair	without arms mounted on castor wheels, adjustable height	20 Nos.
47.	Printer table	650X500X750 mm can be varied as per local specifications	03 Nos.
48.	Air conditioner	Split type 1.5 tons	03 Nos.
49.	Storage cabinet	60X700X450mm	01Nos.
50.	White Board	minimum 4X6 feet	01 No.
51.	Steel Almirah	2.5 m x 1.20 m x 0.5 m	01 No.
52.	Fire Extinguisher CO2	2 KG	02 Nos.
53.	Fire Buckets	Standard size	02 Nos.

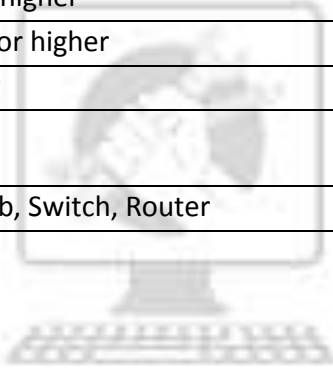
D. Raw Materials

54.	White Board Marker	Assorted colour	As required
55.	Duster Cloth	2'/2'	As required
56.	Cleaning Liquid	500 ml	As required
57.	Photo Copy Paper	A4	As required
58.	Full Scape Paper	White	02 reams
59.	Cartridges for printer	Colour/monochrome as per model of the printer	As required
60.	I/O Box with socket	RJ 45	As required
61.	RJ 45 connector	For connecting utp cat 5 cable	200 Pcs.



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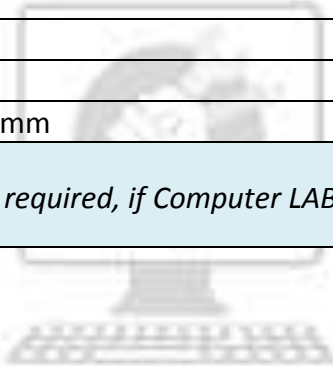
62.	Optical Mouse	USB/PS2	As required
63.	Key Board	USB/PS2	As required
64.	SMPS	12V DC	As required
65.	CMOS Batteries	3.0 V	As required
66.	Power Chord	3 Pin	As required
67.	Cable	Cat 5/5e	100 meter
68.	Stapler	Small	02 pcs.
69.	Stapler	Big	01 pcs.
70.	Battery for remote	AAA	As required
71.	Battery for clock	AA	As required
72.	Pen drive	8 GB	02 Nos.
73.	CDs	52x or higher	500 Nos
74.	DVDs	4.7GB or higher	100 Nos.
75.	Wall Clock	Analog	01 pcs.
76.	Battery for LAN tester	9 V	As required
77.	Power Adapter	For Hub, Switch, Router	As required



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TOOLS & EQUIPMENTS FOR EMPLOYABILITY SKILLS		
S No.	Name of the Equipment	Quantity
1.	Computer (PC) with latest configurations and Internet connection with standard operating system and standard word processor and worksheet software	10 nos.
2.	UPS - 500VA	10 nos.
3.	Scanner cum Printer	1 no.
4.	Computer Tables	10 nos.
5.	Computer Chairs	20 nos.
6.	LCD Projector	1 no.
7.	White Board 1200mm x 900mm	1 no.

Note: - Above Tools & Equipments not required, if Computer LAB is available in the institute.



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Industrial Training Institute

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ANNEXURE-II

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:															
S 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															