COMPUTER GRAPHICS - PRINT

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COMPETENCY STANDARDS

National Vocational Certificate Level 3

Version 1 - July 2013

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Competency Standards: Graphics Design (Print Media)

Title A: Develop Familiarity with Terminologies and Tools

Overview: These competency standards will ensure that the trainee will be competent in developing general knowledge, skills and understanding of the basics of creating art work. This module also provides training of graphics software.

Competency Unit	Performance Criteria	Knowledge and Understanding
L1: **Recognize elements of design.**	**Trainee will be able to:** **P1.** Apply elements of design in different designs and patterns. **P2.** Select respective elements of designs, which will contain most if not all the elements. **P3.** Formulate design concept for any given product/ service appropriately. **P4.** Comprehend colour theory and composition, how to select colours based on requirements or branding guidelines.	**Trainee will be able to :** **U1.** Differentiate, describe, and practice the use of the following design elements: **K1.** Find out that Dot/ Point is the smallest and the most basic element. It can vary in size, value, regularity, and can be used alone or as a unit in a group, which form a line or shape in the design. **K2.** Understand characteristics of line and types of lines; Line can be considered in two ways. The linear marks made with a pen or brush or the edge ar created when two shapes meet. **K3.** Identify categories of shapes; A shape is a self defined area of geometric or organic form. A positive shape in a painting automatically creates a negative shape. **K4.** Comprehend direction of lines, which can be Horizontal, Vertical or Oblique; Horizontal suggests calmness, stability and tranquility. Vertical gives a feeling of balance, formality and alertness. Oblique suggests

		movement and action.
		K5. Apprehend that size is simply the relationship of the area occupied by one shape to that of another.
		K6. Grasp that texture is the surface quality of a shape - rough, smooth, soft hard glossy etc. Texture can be physical (tactile) or visual.
		K7. Identify value/ Tone which is the lightness or darkness of a colour. Value is also called Tone.
		K8. Identify Positive/ Negative Space.
L2: **Apprehend the principles of design:**	**Trainee will be able to:** **P1.** Develop familiarity with applications of design principles and differentiate in a good and bad design. **P2.** Apply design principles (most of them if not all) to help make visual layout pleasing and attractive for a product or service.	**Trainee will be able to:** **U1**. Differentiate, describe, and practice the use of the following design principles: **K1.** Know that Balance is psychological sense of equilibrium. **K2.** Relate gradation to size and direction in order to produce liner perspective. **K3.** Analyze how repetition can make an image either interesting or monotonous. **K4.** Define how contrast is the juxtaposition of opposing elements on the color wheel. **K5.** Identify how harmony brings together a composition with similar or related visual images. **K6.** Apply dominance to give design interest, counteracting

		confusion and monotony. **K7.** Find out concept of unity in a design helps to create relationship among elements of visual in functioning together.
L3: **Build up understanding of the concept of perspective**	**Trainee will be able to:** **P1:** Elaborate how perspective is used to introduce the illusion of depth in an image. **P2:** Apply perspective in a design to make the design appear real by altering the size, location of objects on a canvas. **P3:** Utilize perspective to draw attention to certain objects of interest or concept.	**Trainee will be able to:** **K1:** Learn that perspective is a learned meaning of the relationship between different objects seen in space. e.g. Is the dark rectangle in front of a circle, or beside a semi-circle? **K2:** Visualise perspective as being created through the arrangement of objects in two-dimensional space to look as they appear in real life. **K3:** Highlight the fact that perspective can be used to lead the audience into a visual. **K4:** Achieve the perception through the use of relative sizes of objects, overlapping objects, and blurring or sharpening objects.
L4: **Comprehend the colour theory and its relevance in design**	**Trainee will be able to:** **P1:** Check how the change of hue or saturation of a colour can evoke a completely different feeling. **P2:** Highlight importance of certain colours with respect to culture and mood depiction. **P3:** Present appropriate colour combination. **P4:** Select and apply relevant colour scheme and theme.	**Trainee will be able to:** **K1:** Conclude the fact that value of colour in a design is very subjective. **K2:** Know about: Warm colours include red, orange, yellow and variations of these colours. Red and yellow are both primary colours, with orange falling in the middle. Use warm colours in designs to reflect passion, happiness, enthusiasm, and energy.

	P5: Apply appropriate colour for the job of printing.	K3: Create awareness about cool colours that include green, blue, and purple, these are often more subdued than warm colors. They are the colours of night, of water, of nature, and are usually calming, relaxing, and somewhat reserved. Blue is the only primary colour within the cool spectrum. Use cool colours in designs to give a sense of calm or professionalism.
L5: **Learn to use Typography**	**Trainee will be able to:** **P1:** Select appropriate fonts relating to or reflecting the design concept. **P2:** Choose the anatomy of Typeface.	**Trainee will be able to:** **K1:** Typography Anatomy, the expression of different fonts, their families and its use in design graphics **K2:** The choice of typeface and how you make it work with the layout, grid, color scheme, design theme
L6: **Study tools and software for graphics and art work creation**	**Trainee will be able to:** **P1:** Employ graphics design software.	**Trainee will be able to:** **U1:** Use the tools for creating and editing images, graphics, pictures, text, etc. **K1:** Develop familiarity with Adobe Photoshop, Adobe Illustrator, Adobe Indesign for creating images, editing type, and text. **K3:** Gain knowledge about editing techniques in Adobe Lightroom. **K4:** Get an insight into the tools in Corel Draw.

Competency Standards: Graphics Design (Motion)

Title B: Develop Design Concepts

Overview: These competency standards will ensure that the trainee will be competent to develop the initial design and its sketches and take it to the end product. This will done based on the product/ service unique selling point (USP) and knowledge of target market and requirements of the client.

Competency Unit	Performance Criteria	Knowledge and Understanding
L1: **Identify Unique Selling Point (USP) of Product/ Service**	**Trainee will be able to:** **P1.** Collect requirements and needs of target market/ audience. **P2.** Identify the unique selling point of product or service. **P3.** Express and implement the idea in visual form in the design.	**Trainee will be able to:** **K1.** Highlight unique selling point of a given product/ service by analyzing product characteristics, price structure, placement strategy or promotional strategy. **K2.** Analyze requirements/ needs of target market/ audience. **K3.** Find out what emotional need is being specifically met by your product or service. **K4.** Know what motivates customer behavior and buying decisions. **K5.** Discover unique aspects of product or service that competitors cannot imitate. **K6.** Create design about unique product or service

L2: **Define particular branding guidelines and themes**	**Trainee will be able to:** **P1**. Design effective brand guidelines **P2.** Outline colour themes based on brand guidelines **P3.** Apply brand guidelines in design creation	**Trainee will be able to:** **K1.** Formulate the significant idea which permeates the brand. **K2.** Live the brand; formulate the guidelines in the look and feel of the new brand design. **K3.** Relate to the knowledge of elements, principles of elements, perspective, typography, color theory to create brand guidelines, brand manual and themes.
L3: **Visualize the layout of the concept following brand guidelines**	**Trainee will be able to:** **P1.** Conceptualize products and/or services. **P2.** Arrange thoughts and concepts in order to develop thumbnails sketches.	**Trainee will be able to:** **U1.** Comprehend the development process of thumbnails for objects and design. **K1.** Create and sketch the page or canvas with layout based on brand guidelines. **K2.** Review the composition of elements following concepts learned in module 2. **K3.** Collect, organize and apply material in the layout.

Title C: Analyze Cost Effective Solution

Overview: These competency standards will ensure that the trainee will be able to compute the optimal cost based on client requirement and designer's experience. The trainee will realize that knowledge of printing machine, medium of publication, paper types, size, number of pages and colour jobs that best satisfy the requirement of client and final product/ service is essential.

Competency Unit	Performance Criteria	Knowledge and Understanding
L1: **Determine suitable size of the document**	**Trainee will be able to:** **P1.** Identify the suitable document size in terms of medium of publication. **P2.** Select appropriate printing process. **P3.** Decide the suitable orientation of document size. **P4.** Calculate the most cost effective printing process. **P5.** Recognize local and international names of paper sizes and printing machines	**Trainee will be able to:** **U1.** Recognize various available paper sizes both international and local (Letter, Legal, Tabloid, Letter Half Size, A4 – A1, Compact Disc, Postcards, Business Cards, Posters, Banners, etc). **U2.** Comprehend process of digital printing and its setup along with its pros and cons. **U3.** Understand screen printing process and its setup, also have knowledge of its pros and cons. **K1.** Create custom paper sizes in a graphics software, and set it for printing without affecting the image quality. **K2.** Develop appropriate orientation and size of paper or document. **K3.** Comprehend offset printing process and its printing machines like Rota, Solna, Roland and Heidelberg.

L2: **Determine Number of Pages and Colours for Printing**	**Trainee will be able to:** **P1.** Implement the cost efficient solution based on number of pages and number of colours.	**Trainee will be able to describe and explain:** **K1.** Select appropriate colour mode: RGB, CMYK, Lab, etc **K2.** Differentiate between spot and offset printing **K3.** Sift out number of pages verses cost effective solution **K4.** Define number of colours sufficient for print job verses cost effective solution
L3: **Understand the Usage of Appropriate Printing Material and Texture**	**Trainee will be able to:** **P1.** Differentiate between various types of printing material and their weight **P2.** Identify suitable printing textures	**Trainee will be able to:** **U1.** Recognize various printing materials available (glossy, matte paper, vinyl, cloth, etc) **K1.** Acquaint with various papers' weights **K2.** Distinguish various paper textures **K3.** Recognize lamination (glossy, matte, textured)

Title D: Edit of Photo and Develop Graphics

Overview: These competency standards will ensure that the trainee will be able to learn various editing techniques and skills in order to capture the essence of people, places, or objects – for images to stand out - they must be edited.

Competency Unit	Performance Criteria	Knowledge and Understanding
L1: Edit and Scan Photo	**Trainee will be able to:** **P1.** Demonstrate use of different editing tools and techniques available for photos in editing software. **P2.** Apply visual effects such as filters to a photo for enhancement. **P3.** Merge different photos to create a single image. **P4.** Scan and use digital photos.	**Trainee will be able to :** **K1.** Sort out different colour correction techniques. **K2.** Indicate different adjustments in brightness, contrast, colour tint, colour saturation of the image as a whole or a portion. **K3.** Define sharpening, retouching, removing dust specks and scratches techniques. **K4.** Experience the use of visual effects. **K5.** Define transformation and styles. **K6.** Correct lens aberrations (barrel and pincushion), chromatic aberrations and light falloff in wide angle lens. **K7.** Adjust the geometry by crop, rotate, correct perspective, and distortion. **K8.** Explain photo enhancement/ manipulation through the

		use of filters.
		K9. Find out how two or more photos can be merged together to form one photo.
		K10. Import photos through scanning device into a layout.
L2: Create Layout	**Trainee will be able to:** **P1.** Sense the balance and alignment of objects in a layout on canvas. **P2.** Use typography to create graphics/ objects. **P3.** Present an effective layout to allow better communication of complex information to the viewer.	**Trainee will be able to :** **K1.** Draw objects (media elements, graphics, graphs, tables, diagrams, etc.) on canvas. **K2.** Fill in colours, effects, and other required enhancement techniques into objects.

Competency Standards: Graphics Design (Motion)

Title E: Prepare Pre-Press Job

Overview: These competency standards will ensure that the trainee will be able to prepare the completed design for printing purposes, by adding the registration and cropping marks. It is expected that learner will be able to come up with design and burn it on the CD or DVD to be sent for printing.

Competency Unit	Performance Criteria	Knowledge and Understanding
L1: **Set Bleed, Margins, Gutter and Slug for Cropping (printing)**	**Trainee will be able to:** **P1.** Carry out the printing process.	**Trainee will be able to :** **K1.** Understand what bleed is, and type of documents that require bleed. **K2.** Define bleed to extend the image background colour beyond live area to ensure clean edges. **K3.** Apply standard size margins to the document. **K4.** Make out of gutter setting for the document to be printed. **K5.** Appreciate the concept of slug

L2: Apply Cropping and Registration Marks	**Trainee will be able to:** **P1.** Use crop and registration marks.	**Trainee will be able to :** **U1.** Learn the use of crop marks or trim marks, which are lines in the corner of the document to command the printer where to trim. **K1.** Delineate the use of crop marks for printing making it much easier to trim the sheet back to create the bleed. **K2.** Know how trim marks are used to set the final intended size of the document or design.
L3: Apply USP Guidance	**Trainee will be able to:** **P1.** Demonstrate the relationship between printing plates and document size.	**Trainee will be able to :** **U1.** Understand the use of rulers. **K1.** Define document size and paper size for USP.
L4: Prepare and Publish Artwork	**Trainee will be able to:** **P1.** Use formats for publishing artwork. **P2.** Select appropriate storage medium to store and publish the artwork. **P3.** Prepare CD or DVD.	**Trainee will be able to :** **K1.** Demonstrate how to save artwork on CD/DVD or other storage media. **K2.** Know the submission guidelines for artwork. **K3.** Recognize formats used for preparing artwork for publishing.

Competency Standards: Graphics Design (Motion)

Title F: Maintain Software and Hardware

Overview: These competency standards will ensure that the trainee will be able to develop concepts About preparing the computer for a designer. It introduces computers to the trainee and its usage.

Competency Unit	Performance Criteria	Knowledge and Understanding
L1: **Install Graphics Software**	**Trainee will be able to:** **P1.** Install relevant graphics software. **P2.** Uninstall irrelevant graphics software.	**Trainee will be able to :** **K1.** Develop familiarity with method of installing graphics software. **K2.** Learn the configurations (if any) required by software **K3.** Describe work environment of Photoshop, Illustrator, Indesign, Lightroom for designing artwork. **K4.** Locate Corel Draw workspace.
L2: **Install/ Uninstall Operating System**	**Trainee will be able to:** **P1.** Install relevant Operating System.	**Trainee will be able to :** **K1.** Install an Operating System on a computer/ laptop. **K2.** Un-install an Operating System on a computer/ laptop.

	P2. Uninstall irrelevant Operating System.	**K3.** Show, upgrade and configure operating systems.
L3: **Install/ Configure Drivers, Input/ Output Devices**	**Trainee will be able to:** **P1.** Install and configure required driver. **P2.** Install and configure input/output devices.	**Trainee will be able to :** **K1.** Present installation of software and configuration of drivers **K2.** Describe installation and configuration of input/output devices **K3.** Define plug and play devices
L4: **Connect Devices to Ports sing Appropriate Cables**	**Trainee will be able to:** **P1.** Connect various devices using appropriate ports and cables.	**Trainee will be able to describe and explain:** **U1.** Identify different types of connector. **K1.** Differentiate different types of cables. **K2.** Recognize different ports used to connect various devices. **K4.** Know how to install the drivers of devices.

Competency Standards: Graphics Design (Motion)

Title G: Communicate with Others

Overview: These competency standards will ensure that the trainee will be able to develop the skills necessary for communication. The learner should communicate efficiently and collect requirements from the client Regarding product/ services.

Competency Unit	Performance Criteria	Knowledge and Understanding
L1: **Communicate with Client/ Owner/ Boss/ Stakeholder**	**Trainee will be able to:** **P1.** Listen to client/owner/ boss and synthesize relevant information about all problems and perceive their requirements related to product/ service.	**Trainee will be able to :** **K1.** Know communication and interpersonal communication. **K2.** Learn skills needed to interact in a social environment communicate effectively in order to sort out requirements and needs. **K3.** Apply communication skills to facilitate the stakeholders in their understanding and enable them undertake decisions as equal partners. **K4.** Communicate effectively, both orally and in writing. **K5.** Synthesize and present information to fulfil the needs of the client, and discuss achievable goals and final

		product/ services.
L2: **Communicate with Senior/ Junior/ Peers**	**Trainee will be able to:** **P1.** Develop a strategy for using communication skills **P2.** Interact with other professionals involved in design development through effective teamwork	**Trainee will be able to :** **K1.** Communicate effectively with colleagues, peers, the community, other related personals to exchange information over an extended period of time. **K2.** Monitor and critically reflect on use of communication skills, adapting suitable strategy , to produce the quality of outcomes required.

Competency Standards: Graphics Design (Motion)

Title H: Perform Duties and Exercise Rights at work place

Overview: These competency standards will ensure that the trainee will be able to develop code of ethics and professional conduct, improve planning capabilities and awareness about provision of employment rights. This module can be delivered alongside other modules.

Competency Unit	Performance Criteria	Knowledge and Understanding
L1: **Observe Ethics and Professional Conduct**	**Trainee will be able to:** Observe and implement the mandatory standard for: **P1.** Responsibility **P2.** Respect **P3.** Fairness **P4.** Honesty	**Trainee will be able to :** **U1.** Undertake responsibility to take ownership for the decisions and actions, and their consequences. This can be learnt through role play. **U2.** Show a high regard for resources entrusted to This includes accountability to subordinates, tangible assets such as equipments, and company profile. **U3.** Take up responsibility to make decisions and act impartially and objectively; free from self interest. (Quantified self assessment can be performed, e.g. case studies/white papers, for areas like conflict of interest.) **K1.** Conceive truth and act in truthful manner in conduct and communication, e.g. daily attendance enrolment on register, "What you say is what you did?"

L2: **Plan Business Process Activities**	**Trainee will be able to:** **P1.** Highlight tasks, their scheduling, define milestones, and learn optimal utilization of resources	**Trainee will be able to describe and explain:** **K1.** Provide required assistance to in-line manager e.g. coordinating recurring meetings, intimate resource availability, maintain documents, validate applicable company defined standards. **K2.** Define activities, e.g. apply specific life cycle methodologies – (Requirement gathering, design solution, prototype, testing, documentations). **K3.** Estimate time, e.g. hour calculation for an activity; consider calendar year official leaves, company working timings. **K4.** Work out breakdowns, divide module in smaller and more manageable components, e.g. testing a product may include components like interface, performance, and test cases. **K5.** Level resource due to work load, e.g. calculations of leisure hours of a worker.
L3: **Develop Awareness for Rights**	**Trainee will be able to:** **P1.** Recognize the inspirational requirements of human rights in employment context.	**Trainee will be able to :** **K1**. Inform the concerned authorities and uphold the policies, rules and regulations that govern the work and workplace. **K2.** Report illegal conduct or illegitimate action to appropriate management.

		K3. Protect propriety or confidential information.
L4: **Understand Copyrights and Piracy**	**Trainee will be able to:** **P1.** Understand the legal rights granted to an author, composer, publisher, product, or any other artist's work. **P2.** Realize that unauthorized use or reproduction of copyright or patented material is illegal. **P3.** Understand not to give the design made for and sold to one client to the others.	**Trainee will be able to :** **K1.** Learn and adapt to the process of purchasing photos or any other required material from internet which has copyrights. **K2.** Understanding what is royalty free content. **K3.** Explain what can be adopted and what cannot be from internet or other resources.

Tools and Equipment

Sr. No.	Name of Item/ Equipment / Tools	Quantity
1.	**Computer Systems** Intel® 3rd gen. Core i7 3770 3.4GHz 8GB DDR3-1600 memory 1000GB SATA hard drive internal SATA DVD and CD writer 2GB dedicated graphic card (EVGA GT 640 2048MB - 128bit - GDDR 3 - core clock 901MHz memory clock 1782MHz - mini display port - HDMI - dual-link DVI - (02GP42643KR) 10-channel surround sound support true 420W power supply 4 way cooling chassis front USB 3.0,USB 2.0 ports up to 1000 MBPS LAN support Casing Intel approved, with rear and front USB ports and audio jacks Optical mouse (wireless) Multimedia keyboard (wireless)	20
2.	LCD Display 17" with built in speakers	20
3.	HP Laser Jet Printer – Black	01
4.	HP Laser Jet Printer- Coloured	01
5.	Flat bed Scanner	01
6.	Graphics Tablet	01

7.	USB Flash Drive	01
8.	Multimedia Projector	01
9.	Multimedia Projector Screen	01
10.	White Board	01
11.	Computer Tables & Chairs – Lab	20
12.	Study Tables & Chairs – Classroom	20
13.	Licensed Graphics Software Adobe Photoshop Adobe Illustrator Adobe InDesign Adobe Lightroom Corel Draw	20
14.	Licensed Microsoft Office Suit	20
15.	Licensed Nero Burning Software	20
16.	Licensed Operating System	20
17.	3000 VA UPS AMP Batteries Led AGS Reconditioned OR Generator to support a lab of 20 systems	10
18.	3KVA Stabilizer	20

List of consumable supplies

Sr. No.	Name of Consumable Supplies	Quantity
1.	Offset Paper A4 size (90 gm)	10 Rims
2.	Offset Paper Legal size	06 Rims
3.	White Board Markers	04 Dozen
4.	White Board Eraser	03
5.	Toner Black: Laser Printer	01
6.	Toner Coloured: Laser Printer	01
7.	CD's/ DVD's (RW)	04 Dozen
8.	Ball Point Pens (blue)	1 dozen
9.	Ball Point Pens (blue)	1 dozen
10.	Office Files	20
11.	Office Box Files	05
12.	Notepads	05
13.	Pencils	1 dozen
14.	Paint brushes	05
15.	Canvas	01
16.	Office Stationary Set	01
17.	Air Freshener	01