

GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

Competency-focused Outcome-based Green Curriculum-2021 (COGC-2021)

Semester - V

Course Title: Computer Aided Graphic Design

(Course Code: 4355801)

Diploma programme in which this course is offered	Semester in which offered
Printing Technology	5 th semester

1. RATIONALE

Modern printing uses designing software for wide usage and applications. Design software's like Photoshop and Illustrator are used for designing work and efficient working of this absolutely essential to work in the printing industry. These software's are also helpful to students for making carrier in publishing, graphic design, printing, and advertising agencies as well as to establish their own enterprise.

2. COMPETENCY

The course content should be taught and implemented with the aim to develop different types of skills leading to the achievement of the following competency:

- Design printing jobs using designing software.

3. COURSE OUTCOMES (COs)

The practical exercises, the underpinning knowledge, and the relevant soft skills associated with the identified competency are to be developed in the student for the achievement of the following COs:

- a) Create and edit Illustrations by using Adobe Illustrator Software.
- b) Apply basic concepts of page lay outing using Quark Xpress Software.
- c) Create Advertisements for newspaper and magazines using Adobe InDesign Software.
- d) Use Adobe Photoshop Software to create and edit Images.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P/2)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	CA	ESE	CA	ESE	
0	0	4	2	00	00	25*	25	50

(*): For this practical only course, 25 marks under the practical CA has two components i.e. the assessment of micro-project, which will be done out of 10 marks and the remaining 15 marks are for the assessment of practical. This is designed to facilitate the attainment of COs holistically, as there is no theory ESE.

Legends: L-Lecture; T- Tutorial/Teacher Guided Theory Practice; P-Practical; C – Credit, CA - Continuous Assessment; ESE -End Semester Examination

5. SUGGESTED PRACTICAL EXERCISES

The following practical outcomes (PrOs) are the sub-components of the COs. *They are crucial for that particular CO at the 'Precision Level' of Dave's Taxonomy related to 'Psychomotor Domain'.*

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
1	Introduction of Adobe Photoshop Software: Exploring Photoshop's Creative Potential	I	02
2	Image editing: Enhancing and Retouching Images	I	02
3	Create a Design for social media: Optimizing Visual Content using Photoshop	I	02
4	Typography: Designing Beautiful Text Effects using Photoshop	I	02
5	Create Photo Manipulation using special effects of Photoshop	I	02
6	Creating Eye-Catching Design for Packaging Product using Photoshop	I	02
7	Introduction of Adobe Illustrator Software: Exploring Illustrator's Creative Potential	II	02
8	Create Greeting Card using Illustrator	II	02
9	Create a Logo of any brand/company using Illustrator	II	02
10	Prepare alphabetic logo using Illustrator	II	02
11	Prepare any product/service advertisement using Illustrator	II	02
12	Design certificate for the event/competition using Illustrator	II	02
13	Draw a Tray/Tube Style Carton Using Illustrator Software	II	02
14	Create Title page for any Food/Fashion/Travel Magazine Using Illustrator Software	II	02
15	Prepare a Design of Bills / Vouchers for any Product/service in Illustrator	II	02
16	Prepare a Design of Labels in multiple steps using Illustrator	II	02
17	Introduction of Adobe InDesign Software	III	02
18	Performing the Pagination and Imposition for Booklet Using InDesign Software	III	02
19	Create a Brochure using InDesign Software	III	02
20	Create a master page in InDesign Software	III	02
21	Introduction of QuarkXPress Software	IV	02
22	Prepare 4-page layout of the book in QuarkXPress	IV	02
23	Prepare advertisement using QuarkXPress	IV	02
24	Create a master page in QuarkXPress	IV	02
	Minimum Practical Hours		48

Note

- i. More **Practical Exercises** can be designed and offered by the respective course teacher to develop the industry-relevant skills/outcomes to match the COs. The above table is only a suggestive list.
- ii. The following are some **sample** 'Process' and 'Product' related skills (more may be added/deleted depending on the course) that occur in the above listed **Practical Exercises** of this course required which are embedded in the COs and ultimately the competency.

S.No.	Sample Performance Indicators for the PrOs	Weightage in %
1	Select relevant tools and options.	20
2	Collection of required data.	20
3	Operate the software and computer system	20
4	Question and answers	20
5	Interpret the outcome and reflect	20
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

These major equipment with broad specifications for the PrOs is a guide to procure them by the administrators to usher in uniformity of practicals in all institutions across the state.

S. No.	Equipment Name with Broad Specifications	PrO. No.
1	Computers Windows 11 or Windows 10, 64-bit, with latest Updates Intel Core i3/5/7/9 or AMD Ryzen 3/5/7/9/Threadripper, EPYC OpenCL 1.2-enabled video card with 3+ GB VRAM 8+ GB or more recommended 512 GB or more hard disk space 1280 x 720 screen resolution at 100% (96 dpi) DVD drive optional (for box installation); Internet nodes	1 to 24
2	Color printer A3 Color Laser Printer, Copy and Scan Print speed up to 30 ppm (black), 50 ppm (color) USB 2.0, Ethernet, Hardware Integration Pocket Black and white printer	1 to 24

S. No.	Equipment Name with Broad Specifications	PrO. No.
	Laser printer Multi-function Monochrome Black, toner cartridge Copy and scan print speed up to 30 ppm (black) USB 2.0, Ethernet, Hardware Integration Pocket	
3	Adobe Photoshop CC 2022	1 to 6
4	Illustrator Software version CC2020	7 to 16
5	Adobe InDesign 18.3	17 to 20
6	Quark Express 2022	21 to 24

7. AFFECTIVE DOMAIN OUTCOMES

The following **sample** Affective Domain Outcomes (ADOs) are embedded in many of the above-mentioned COs and PrOs. More could be added to fulfill the development of this course competency.

- a) Work as a leader/a team member.
- b) Follow safety practices while stretching and making screen frame
- c) Practice Good housekeeping
- d) Follow ethical practices
- e) Realize the importance of green energy.

The ADOs are best developed through laboratory/field-based exercises. Moreover, the level of achievement of the ADOs according to Krathwohl's 'Affective Domain Taxonomy' should gradually increase as planned below:

- i. 'Valuing Level' in 1st year
- ii. 'Organization Level' in 2nd year.
- iii. 'Characterization Level' in 3rd year.

8. UNDERPINNING THEORY

The major underpinning theory is given below based on the higher level UOs of Revised Bloom's taxonomy that is formulated for the development of the COs and competency. If required, more such UOs could be included by the course teacher to focus on the attainment of COs and competency.

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different levels)	Topics and Sub-topics
Unit – I Image	1a. Understand the tools of Photoshop 1b. State the steps of application of tools of Photoshop	1.1 Introduction of Tools of Photoshop 1.2 Introduction of Menus of Photoshop 1.3 Photograph editing in Photoshop. 1.4 Color correction in Photoshop

editing software (Adobe Photoshop)	<p>1c. Understand the menus of Photoshop</p> <p>1d. State the steps of application of menus of Photoshop</p> <p>1e. Describe the steps to edit Photograph in Photoshop</p>	<p>1.5 Layer editing in Photoshop</p> <p>1.6 Text editing in Photoshop</p> <p>1.7 Image creating using different tools and filters.</p>
Unit – II Illustration Software (Adobe Illustrator)	<p>2a. Identify the tools of Adobe Illustrator</p> <p>2b. State the steps of application of tools of Adobe Illustrator.</p> <p>2c. Understand the menus of Adobe Illustrator</p> <p>2d. State the steps of application of menus of Adobe Illustrator</p> <p>2e. Prepare various jobs in Adobe Illustrator</p>	<p>2.1. Introduction of Adobe Illustrator software</p> <p>2.2. Introduction of Tools of Adobe Illustrator</p> <p>2.3. Introduction of Menus of Adobe Illustrator</p> <p>2.4. Prepare Illustrations and logos using different tools and effects</p> <p>2.5. Identify Different important function of Adobe Illustrator Software</p> <p>2.6. Fill different textures, color, picture in Illustrations</p> <p>2.7. Create package design, Advertisement, Poster design and Invitation card using Adobe Illustrator</p>
Unit– III Page layout Software (Adobe InDesign)	<p>3a. Identify various features of Adobe InDesign software</p> <p>3c. Identify the tools of Adobe InDesign</p> <p>3d. State the steps of application of tools in Adobe InDesign Software</p> <p>3e. Identify the Menus of Adobe InDesign Software</p> <p>3f. Create multiple page layout imposition by using Adobe InDesign software</p>	<p>3.1 Introduction and identify various features of Adobe InDesign software</p> <p>3.2 Introduction of Tools of Adobe InDesign.</p> <p>3.3 Introduction of Menus of Adobe InDesign.</p> <p>3.4 Entering texts, formatting type, changing font families, character specification, editing text</p> <p>3.5 Insert/ draw graphics, crop it and wrap text around graphics.</p> <p>3.6 Create a book containing a table of contents, index, and the page number.</p> <p>3.7 Print the publication by choosing odd pages, even pages, proof, reverse printing, composite color, 4 color separation using a laser printer</p>
Unit– IV QuarkXPress software	<p>4a. Identify features and capabilities of QuarkXPress Software</p> <p>4b. Identify the tools of QuarkXPress software.</p> <p>4c. State the steps of application of tools of QuarkXPress software</p>	<p>4.1 Introduction and identify various features of QuarkXPress software</p> <p>4.2 Introduction of Tools of Quark Xpress software.</p> <p>4.3 Identify interface, palettes, and toolbars.</p>

	<p>4d. Identify the menus of QuarkXPress software.</p> <p>4e. Create multiple page layout imposition by using QuarkXPress software</p>	<p>4.4 Introduction of Menus of Quark Xpress software.</p> <p>4.5 Create a book containing a table of contents, index, and the page number.</p> <p>4.6 Create 8 page imposition brochure using all the design elements</p>
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9. SUGGESTED SPECIFICATION TABLE FOR QUESTIONPAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Not Applicable						

Legends: R=Remember, U=Understand, A=Apply and above (Revised Bloom's taxonomy)

10. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, the following are the suggested student-related **co-curricular** activities which can be undertaken to accelerate the attainment of the various outcomes in this course. Students should perform the following activities in group and prepare reports of about 5 pages for each activity. They should also collect/record physical evidences for their (student's) portfolio which may be useful for their placement interviews:

- a) Use different online free software like Canva, greeting island to make different occasions greeting cards.
- b) Prepare one YouTube post of anyone features of Adobe Illustrator software.
- c) Prepare one Instagram post of any one feature of Illustrator software.
- d) Collect different good designs from well-known magazines.
- e) Prepare certificate for the college-level event.
- f) Prepare a newsletter for the institute.
- g) Design different stationery for nearby NGO
- h) Design different brochures on different state government and central government schemes and circulate by various social sites.

11. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a) Massive open online courses (**MOOCs**) may be used to teach various topics/subtopics.
- b) Guide student(s) in undertaking micro-projects.
- c) **'L' in section No. 4** means different types of teaching methods that are to be employed by teachers to develop the outcomes.

- d) About **20% of the topics/sub-topics** which are relatively simpler or descriptive in nature are to be given to the students for **self-learning** but to be assessed using different assessment methods.
- e) With respect to **section No.10**, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- f) Guide students on how to address issues on the environment and sustainability.

12. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her at the beginning of the semester. In the first four semesters, the micro-project is group-based (group of 3 to 5). However, **in the fifth and sixth semesters**, the number of students in the group should **not exceed three**.

The micro-project could be industry application-based, internet-based, workshop-based, laboratory-based, or field-based. Each micro-project should encompass two or more COs which are in fact, integration of PrOs, UOs and ADOs. Each student will have to maintain a dated work diary consisting of individual contributions in the project work and give a seminar presentation of it before submission. The duration of the micro-project should be about **14-16 (fourteen to sixteen) student engagement hours** during the course. The students ought to submit micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. This has to match the competency and the COs. Similar micro-projects could be added by the concerned course teacher:

- a) Visit a nearby graphic studio and prepare a report on it.
- b) Visit any well-known graphic designer and discuss skill requirements for designing and prepare a report.
- c) Collect the data on trends of modern designing and prepare a report on it.
- d) Collect 10 samples of advertisement and prepare a report on it.
- e) Collect information on newly launched features in various DTP software.
- f) Prepare a report on technical specifications required for computer and laptop for 2021 versions.
- g) Correlate different graphic design principles and prepare a report on them.
- h) Identify designing defects in various printed products and give a solution for them.
- i) Identify the various ways of doing the same thing in Photoshop, Illustrator, and InDesign, QuarkXPress and prepare a report.
- j) Prepare a brochure on the know your river concept and circulate it on various social sites.
- k) Prepare a brochure on climate change and put it on the college notice board.
- l) Prepare a report on sustainability in designing

13. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication with place, year and ISBN
1	Graphic Design: A Concise History	Hollis, Richard	Newyork: Thames and Hudson, 1994 Print ISBN: 9780500202708
2	Graphic Design: A New History	Eskilson, Stephen	New Haven: Yale UP 2007. Print ISBN: 9780300172607
3	Elements and Principles of Design: Tools for digital imagery, art, and design	Zena O'Connor	Sydney: Design Research Associates 2014 ASIN :B00K8G3IU0

Other Learning Resources

14. SOFTWARE/LEARNING WEBSITES

- Align text in various shapes: <https://www.youtube.com/watch?v=uH04AMidp7c>
- Apply 3D effects on text: <https://www.youtube.com/watch?v=LegtbMgj-yY>
- Create custom type using DTP Software:
https://www.youtube.com/watch?v=yH2L_d3E-tk
- Use step and repeat options to create a design:
<https://www.youtube.com/watch?v=eUdw9-8wctc>
- Use power clip command for various designs:
<https://www.youtube.com/watch?v=JrdDCCsRghU>
- Use print and merge command for variable data printing:
<https://www.youtube.com/watch?v=MeSJcKhd7vw&t=253s>
- Prepare alphabetic logo using Illustrator:
<https://www.youtube.com/watch?v=ymBosZVeRc8>
- Apply various effect to photos using Illustrator:
<https://www.youtube.com/watch?v=IL2XEchbMXE>
- Apply texture effects using Illustrator:
https://www.youtube.com/watch?v=0oCMw1qd_tE
- Create flat illustration using Illustrator:
<https://www.youtube.com/watch?v=AUKW2id17CQ>

15. PO-COMPETENCY-CO MAPPING

Semester V	Computer Aided Graphic Design (Course Code: 4355801)									
	POs and PSOs									
Competency & Course Outcomes	PO 1 Basic & Discipline	PO 2 Problem Analysis	PO 3 Design / development	PO 4 Engineering Tools	PO 5 Engineering practice	PO 6 Project Management	PO 7 Life-long learning	PSO 1 Design and develop the	PSO 2 Analyze and improve productivity, quality and cost	PSO 3 (If needed)

	specific knowledge		of solutions	, Experimentation & Testing	ices for society, sustainability & environment	ment		product and process for the need of the industries and society.	effectiveness for the various pre-press, press and post press process involved in printing to meet the industries requirement.	
Competency	Print package on suitable substrate with appropriate process.									
<u>Course Outcomes</u>	3	-	-	-	-	2	-			
CO a) Create and edit Illustrations by using Adobe Illustrator Software.								2	2	
CO b) Apply basic concepts of page layouting using Quark Xpress Software.	3	-	2	3	-	2	-	2	2	
CO c) Create Advertisements for newspaper and magazines using Adobe InDesign Software.	3	-	2	3	-	2	-	2	2	
CO d) Use Adobe Photoshop Software to create and edit Images.	3	-	2	3	-	2	-	-	2	

Legend: '3' for high, '2' for medium, '1' for low and '-' for no correlation of each CO with PO.

16. COURSE CURRICULUM DEVELOPMENT COMMITTEE

GTU Resource Persons

S. No.	Name and Designation	Institute	Contact No.	Email
1	V. B. Patel	R. C. Technical Institute, Sola, Ahmedabad	9825219434	vinita_printing@yahoo.com
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