

Scheme & Syllabus of

B.Sc. (Graphics and Web Designing)

Batch 2026 onwards



By

Board of Study Computer Applications

Department of Academics

IK Gujral Punjab Technical University

**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

B.Sc. in Graphics and Web Designing:

It is an Under Graduate (UG) Program of 3 years duration (6 semesters)

Eligibility:

All those candidates who have passed the 10+2 or its equivalent examination in any stream conducted by a recognized Board / University / Council.

OR

Those candidates who have passed their Matriculation examination AND have also passed three-year Diploma in any Trade from Punjab State Board of Technical Education & Industrial Training, Chandigarh or such Examination from any other recognized State Board of Technical Education, or Sant Longowal Institute of Engineering & Technology, Longowal.

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Programme Educational Objectives:

PEO 1: To impart core theoretical and practical knowledge of Graphics and Web Designing for leading successful career in industries, pursuing higher studies or entrepreneurial endeavors.

PEO 2: To develop the ability to critically think, analyze, design and develop Graphics and Web based solutions.

PEO 3: To imbibe the life-long learning and understanding of ethical values, their duties toward environmental issues and sensitize them toward their social responsibility as Graphics Designer and Web Developer.

Programme Outcomes:

PO1: Graphics knowledge: Apply the knowledge of mathematics, science and IT to the complex graphics design.

PO2: Problem analysis: Identify, formulate, research literature, and analyze complex problems reaching substantiated conclusions using principles of mathematics, natural sciences, and IT.

PO3: Design/development of solutions: Develop solutions for complex graphics and web designing problems that meet the specified needs with appropriate consideration for the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and methods including analysis and interpretation of data that can explore different approaches in computer graphics and web development.

PO5: Modern tool usage: Create, select, and apply various aspects of interactive websites, motion graphics, video and informational graphics with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

PO7: Environment and sustainability: Understand the impact of the graphics and website development in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the professional practice.

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PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex graphics and web design activities with the professional community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the development and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Specific Outcomes:

PSO 1: Able to acquire practical competency with emerging technologies and skills needed for becoming an effective graphics and web designer.

PSO 2: Able to assess hardware and software aspects necessary to develop Graphics and Web Designing.

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First Semester

Course Code	Course Type	Course Title	Load Allocation			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
UGCA2601	Core Theory	Mathematics for Design	3	1	0	40	60	100	4
UGCA2602	Core Theory	Fundamentals of Computer and IT	3	1	0	40	60	100	4
UGCA2603	Core Theory	Fundamentals of Drawing and Visualization	3	1	0	40	60	100	4
UGCA2604	Practical/Laboratory	Workshop on Desktop Publishing & Print Design	0	0	4	60	40	100	2
UGCA2605	Core Practical/Laboratory	Drawing & Sketching Lab	0	0	4	60	40	100	2
UGCA2606	Core Practical/Laboratory	Fundamentals of Computer and IT Laboratory	0	0	4	60	40	100	2
BTHU103/18	Ability Enhancement Compulsory Course (AECC)-I	English	1	0	0	40	60	100	1
BTHU104/18	Ability Enhancement Compulsory Course (AECC)	English Practical/Laboratory	0	0	2	30	20	50	1
HVPE101-18	Ability Enhancement Compulsory Course (AECC)	Human Values, De-addiction and Traffic Rules	3	0	0	40	60	100	3
HVPE102-18	Ability Enhancement Compulsory Course (AECC)	Human Values, De-addiction and Traffic Rules (Lab/ Seminar)	0	0	1	25	--**	25	1
BMPD102-18		Mentoring and Professional Development	0	0	1	25	--**	25	1
	TOTAL		13	3	16	460	440	900	25

****The Human Values, De-addiction and Traffic Rules (Lab/ Seminar) and Mentoring and Professional Development course will have internal evaluation only. (See guidelines at the last page of this file)**

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Second Semester

Course Code	Course Type	Course Title	Load Allocation			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
UGCA2607	Core Theory	Web Design Fundamentals	3	1	0	40	60	100	4
UGCA2608	Core Theory	Graphic Design & Branding	3	1	0	40	60	100	4
UGCA2609	Core Theory	Typography & Digital Publishing	3	1	0	40	60	100	4
UGCA2610	Core Practical/Laboratory	Web Design Laboratory	0	0	4	60	40	100	2
UGCA2611	Core Practical/Laboratory	Typography & Layout Laboratory	0	0	4	60	40	100	2
UGCA2612	Practical/Laboratory	Graphic Design Studio	0	0	4	60	40	100	2
EVS102-18	Ability Enhancement Compulsory Course (AECC) -III	Environmental Studies	2	0	0	40	60	100	2
BMPD202-18		Mentoring and Professional Development	0	0	1	25	--	25	1
	TOTAL		11	3	13	365	360	725	21

SEMESTER –I

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Course Code: UGCA2601

Course Name: Mathematics for Design

Program: B.Sc. in Graphics and Web Designing	L: 3 T: 1 P: 0
Branch: Computer Applications	Credits: 4
Semester: 1 st	Contact hours: 44 hours
Internal max. marks: 40	Theory/Practical: Theory
External max. marks: 60	Duration of end semester exam (ESE): 3hrs
Total marks: 100	Elective status: core/elective: Core

Course Objectives:

The course introduces mathematical concepts and digital measurement techniques required for graphic design, web design, computer graphics, and digital media production. It develops analytical skills for geometric construction, coordinate systems, transformations, scaling, digital imaging, and graphical modeling.

Course Outcomes: After studying this course, students will be able to:

CO#	Course Outcomes
CO1	Apply mathematical principles and algebraic methods to design-related problems.
CO2	Use geometric and trigonometric concepts for visual composition and layout design.
CO3	Perform calculations involving digital measurements, image resolution, color systems, and file sizes.
CO4	Apply vectors, matrices, and geometric transformations in computer graphics and web design.
CO5	Understand mathematical foundations of curves, surfaces, and 3D graphical representations used in modern digital media.

Detailed contents	Contact hours
<u>Unit-I</u> Number systems and numerical representation, Scale factors and dimensional calculations, Golden ratio and mathematical proportions in design, Mathematical patterns and symmetry in visual communication.	8 hours

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<u>Unit-II</u>	
Basic geometric shapes and properties, Angles, polygons, circles and geometric constructions, Coordinate geometry fundamentals, Trigonometric functions and identities, Measurement of angles and distances, Applications of trigonometry in computer graphics and design	9 hours
<u>Unit -III</u>	
Introduction to vectors and vector notation, Vector addition, subtraction and scalar multiplication, Dot product and geometric interpretation, Applications of vectors in graphics, Matrix concepts and matrix operations, Determinants and inverse matrices, Matrix representation of geometric transformations	9 hours
<u>Unit-IV</u>	
Digital units: pixels, points, picas, inches and centimeters, Image dimensions and aspect ratios, Screen resolution, PPI and DPI, File size estimation and storage calculations, RGB, CMYK and hexadecimal color values, Translation, rotation, scaling and reflection, Composite transformations in 2D graphics	9 hours
<u>Unit-V</u>	
Introduction to mathematical modeling in computer graphics, Parametric representation of curves, Bézier curves and spline concepts, Surface representation fundamentals, Three-dimensional coordinate systems, Projection and viewing concepts in computer graphics	9 hours

Suggested Readings:

1. John Vince, *Mathematics for Computer Graphics*, Springer.
2. John Vince, *Geometry for Computer Graphics*.
3. David Salomon, *Transformations and Projections in Computer Graphics*.
4. Alan Watt and Mark Watt, *Advanced Animation and Rendering Techniques*.

Reference Books:

1. Foley, van Dam, Feiner and Hughes, *Computer Graphics: Principles and Practice*.
2. Rogers and Adams, *Mathematical Elements for Computer Graphics*.
3. Francis D.K. Ching, *Design Drawing*.
4. Timothy Samara, *Making and Breaking the Grid*.

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Course Code: UGCA2602

Course Name: Fundamentals of Computer and IT

Program: B.Sc in Graphics and Web Designing	L: 3 T: 1 P: 0
Branch: Computer Applications	Credits: 4
Semester: 1 st	Contact hours: 44 hours
Internal max. marks: 40	Theory/Practical: Theory
External max. marks: 60	Duration of end semester exam (ESE): 3hrs
Total marks: 100	Elective status: Core

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	Understanding the concept of input and output devices of Computers
CO2	Learn the functional units and classify types of computers, how they process information and how individual computers interact with other computing systems and devices.
CO3	Understand an operating system and its working, and solve common problems related to operating systems
CO4	Learn basic word processing, Spreadsheet and Presentation Graphics Software skills.
CO5	Study to use the Internet safely, legally, and responsibly

Detailed Contents	Contact hours
Unit-I Human Computer Interface Concepts of Hardware and Software; Data and Information. Functional Units of Computer System: CPU, registers, system bus, main memory unit, cache memory, Inside a computer, SMPS, Motherboard, Ports and Interfaces, expansion cards, ribbon cables, memory chips, processors. Devices: Input and output devices (with connections and practical demo), keyboard, mouse, joystick, scanner, OCR, OMR, bar code reader, web camera, monitor, printer, plotter. Memory: Primary, secondary, auxiliary memory, RAM, ROM, cache memory, hard disks, optical disks. Data Representation: Bit, Byte, Binary, Decimal, Hexadecimal, and Octal Systems, Conversions and Binary Arithmetic (Addition/ Subtraction/ Multiplication) Applications of IT.	12

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Unit-II Concept of Computing, Types of Languages: Machine, assembly and High level Language; Operating system as user interface, utility programs. Word processing: Editing features, formatting features, saving, printing, table handling, page settings, spell-checking, macros, mail-merge, equation editors.	10
Unit-III Spreadsheet: Workbook, worksheets, data types, operators, cell formats, freeze panes, editing features, formatting features, creating formulas, using formulas, cell references, replication, sorting, filtering, functions, Charts & Graphs. Presentation Graphics Software: Templates, views, formatting slide, slides with graphs, animation, using special features, presenting slide shows.	10
Unit-IV Electronic Payment System: Secure Electronic Transaction, Types of Payment System: Digital Cash, Electronic Cheque, Smart Card, Credit/Debit Card E-Money, Bit Coins and Crypto currency, Electronic Fund Transfer (EFT), Unified Payment Interface (UPI), Immediate Payment System (IMPS), Digital Signature and Certification Authority. Introduction to Bluetooth, Cloud Computing, Big Data, Data Mining, Mobile Computing and Embedded Systems and Internet of Things (IoT)	12

Textbooks:

1. Introduction to Information Technology, ITL Education Solutions limited, Pearson Education, second edition, 2012.
2. Computer Fundamentals , A. Goel, Pearson Education, First edition, 2010.
3. Fundamentals of Computers, P. K.Sinha & P. Sinha, BPB Publishers, Reprint Edition 2018 edition (30 November 2004).
4. “Introduction to Information Technology”, Satish Jain, Ambrish Rai & Shashi Singh, Paperback Edition, BPB Publications, 2014.
5. IT Tools, R.K. Jain, Khanna Publishing House.

Reference Books:

1. “Introduction to Computers”, Peter Norton, McGraw Hill Education; 7 edition (1 July 2017).
2. Computers Today, D. H. Sanders, McGraw Hill. First Edition edition (1983)
3. “Computers”, Larry long & Nancy long, Twelfth edition, Prentice Hall. (January 13, 2004)
4. Problem Solving Cases in Microsoft Excel, Joseph Brady & Ellen F Monk, Thomson Learning , Cengage Learning; 15 edition (February 23, 2017).

E Books/ Online learning material

1. www.sakshat.ac.in
2. <https://swayam.gov.in/course/4067-computer-fundamentals>

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Course Code: UGCA2603

Course Name: Fundamentals of Drawing & Visualization

Program: B.Sc in Graphics and Web Designing	L: 3 T: 1 P: 0
Branch: Computer Applications	Credits: 4
Semester: 1 st	Contact hours: 44 hours
Theory/Practical: Theory	Theory/Practical: Theory
Internal max. marks: 40	Duration of end semester exam (ESE): 3hrs
External max. marks: 60	Elective status: Core
Total marks: 100	

Course Objectives:

The course is designed to develop fundamental drawing, observation, and visualization skills among students. It introduces the principles of visual representation, perspective drawing, composition, and creative visualization techniques used in graphic and web design. The course aims to enhance artistic expression, visual thinking, and conceptual development through systematic drawing exercises and observational studies. It helps students understand forms, proportions, textures, spatial relationships, and composition principles required for effective visual communication. The course also prepares learners for advanced studies in graphic design, web design, user interface design, digital illustration, and other creative media disciplines.

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	Understand fundamental drawing principles, visual representation methods, and creative visualization techniques.
CO2	Apply perspective, proportion, composition, and spatial organization concepts in drawing and design projects.
CO3	Demonstrate observational drawing skills for representing objects, human figures, environments, and visual concepts effectively.
CO4	Create concept sketches, storyboards, layout roughs, and visual ideas for graphic and web design applications.
CO5	Develop artistic confidence, creative thinking, and visualization abilities required for professional design practices.

Detailed Contents	Contact hours
Unit-I Introduction to Drawing & Visual Thinking: Introduction to drawing and visualization, importance of drawing in graphic and web design, visual perception and observation techniques, elements of drawing, line, shape, form, texture, tone and value, basic sketching methods, creative visualization concepts, visual thinking and idea generation techniques.	10

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Unit-II Perspective & Composition: Principles of perspective drawing, one-point perspective, two-point perspective, scale and proportion, composition principles, balance and harmony, spatial organization, object placement, foreground, middle ground and background relationships, visual hierarchy and arrangement techniques.	11
Unit-III Object & Human Visualization: Object construction techniques, geometric and organic forms, product sketching fundamentals, human proportions, facial features and expressions, gesture drawing, observational studies, light and shadow rendering, texture representation techniques, visual analysis exercises.	11
Unit-IV Creative Concept Development & Design Visualization: Imagination drawing, concept sketching techniques, visual storytelling fundamentals, thumbnail sketching, storyboard development, layout roughs, website wireframe sketching, interface concept visualization, creative composition methods, presentation techniques and portfolio preparation.	12

Software Integration: Students may use Adobe Photoshop, Adobe Fresco, Krita, SketchBook, Canva and Figma for digital sketching, drawing enhancement, concept visualization, wireframe development, creative presentations and portfolio preparation.

Suggested Practical Exercises: Freehand sketching exercises., Line, shape and form studies., Perspective drawing sheets., Object and product sketching., Human figure and facial expression studies., Light and shadow rendering exercises., Creative visualization sketches., Website wireframe rough sketches., User interface concept sketches., Storyboard and visual storytelling panels., Portfolio presentation sheets.

Suggested Readings

1. Betty Edwards, *Drawing on the Right Side of the Brain*, Penguin Books.
2. Kimon Nicolaides, *The Natural Way to Draw*, Houghton Mifflin.
3. Ernest R. Norling, *Perspective Made Easy*, Dover Publications.
4. Andrew Loomis, *Figure Drawing for All It's Worth*, Titan Books.

**I. K. Gujral Punjab Technical University
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Course Code: UGCA2604

Course Name: Workshop on Desktop Publishing

Program: B.Sc in Graphics and Web Designing	L: 0 T: 0 P: 4
Branch: Computer Applications	Credits: 2
Semester: 1 st	Contact hours: 4 Hours per week
Internal max. marks: 60	Theory/Practical: Practical
External max. marks: 40	Duration of end semester examinations (ESE): ---
Total marks: 100	Elective status: Core

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	The students will gain professional skills of <i>Desk Top Publishing</i> Tools like designing, Printing & Publishing by using various tools.
CO2	Develop skills in printing jobs through basic understanding of a variety of designing tools.
CO3	Apply these concepts and knowledge in designing field including practice from text formatting to final publishing.
CO4	Workshops are included to enhance professional skills like Brochures, Flexes, Business Cards, Certificates and News Letter layouts etc.

Assignments:	
1.	Design and print a personal visiting card using appropriate typography, colour scheme, and layout principles.
2.	Design and print an official letterhead for a company or institution.
3.	Design and print an envelope matching the letterhead design.
4.	Design and print a corporate stationery set consisting of a visiting card, letterhead, and envelope.
5.	Design and print a promotional flyer for a college event, seminar, or workshop.
6.	Design and print a tri-fold brochure for a tourism destination, educational institution, or business organization.
7.	Design and print a product information leaflet incorporating images, icons, and formatted text.
8.	Design and print an A3-size awareness poster on social, environmental, or health-related themes.
9.	Design and print a commercial advertising poster for a product or service.
10.	Design and print a newspaper advertisement in black-and-white format.
11.	Design and print a magazine advertisement using colour and visual hierarchy

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	principles.
12.	Design and print a restaurant menu card with appropriate typography and layout.
13.	Design and print a wedding invitation card or event invitation card.
14.	Design and print a greeting card for a festival, celebration, or special occasion.
15.	Design and print a four-page newsletter using multiple columns, headers, footers, and images.
16.	Design and print a magazine cover page with masthead, cover story, and supporting visual elements.
17.	Design and print a four-page magazine layout incorporating text, images, and advertisements.
18.	Design and print a product package label suitable for commercial packaging.

Reference Books:

1. DTP Course, First edition by ShirishChavan published by Rapidex, 2003.
2. DTP Course Kit, First edition by Vikas Gupta published by Comdex,2010.
3. CorelDraw 9, first edition by David Karlins published by Techmedia, Pearson Education (US),1999.
4. Adobe Illustrator CC, First edition by Brian Wood published by Adobe Press, 2019.
5. Page Maker in Easy Steps - Scott Basham, DTECH (2000).

Suggested Softwares

- Adobe InDesign
- Adobe Illustrator
- Adobe Photoshop
- CorelDraw (optional)
- Scribes (open-source alternative)

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Course Code: UGCA2605

Course Name: Drawing and Sketching Lab

Program: B.Sc. in Graphics and Web Designing	L: 0 T: 0 P: 4
Branch: Computer Applications	Credits: 2
Semester: 1 st	Contact hours: 4 Hours per week
Theory/Practical: Practical	Duration of end semester exam (ESE): ---
Internal max. marks: 60	Elective status: Core
External max. marks: 40	
Total marks: 100	

Course Objectives:

The course is designed to develop practical drawing and sketching skills essential for graphic and web design professionals. It emphasizes observation, visualization, freehand drawing, perspective techniques, object construction, and creative representation. The course enables students to translate ideas into visual forms through sketching and concept development exercises. It encourages artistic expression, creative thinking, and the development of visual communication skills required for design projects. The course also serves as a foundation for illustration, interface design, storyboarding, branding, and digital design applications.

Course Outcomes: After studying this course, students will be able to:

CO#	Course Outcomes
CO1	Demonstrate proficiency in freehand drawing and sketching techniques
CO2	Apply perspective, proportion, shading, and composition principles in visual representation.
CO3	Create observational sketches of objects, products, and human forms with accuracy.
CO4	Develop creative concepts and communicate ideas through sketches and visual layouts.
CO5	Prepare presentation-quality drawing sheets and visual studies for design projects.

Detailed Contents	Contact hours
UNIT-I Basic Drawing Exercises: Freehand drawing techniques, line quality and control, geometric shape construction, object studies, contour drawing, observational sketching, visual perception exercises, hand-eye coordination development.	12
Unit-II Perspective & Rendering Techniques: One-point and two-point perspective drawing, scale and proportion, light and shadow studies, tonal rendering, texture representation, depth creation, composition and visual balance exercises	10

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Unit-III Human Figure & Environmental Sketching: Human proportions, facial features and expressions, gesture drawing, environmental sketching, indoor and outdoor scene studies, visual storytelling through sketches, character observation techniques.	10
UNIT IV Creative Sketch Development: Concept sketching, thumbnail development, storyboard sketches, logo roughs, packaging concepts, website layout roughs, interface sketches, presentation rendering techniques and portfolio sheet preparation.	12

Software Integration: Students may use Adobe Photoshop, Adobe Fresco, SketchBook, Krita, Canva and Figma for digital sketch enhancement, rendering, concept visualization, storyboard creation, interface sketching and portfolio presentation.

Suggested Practical Exercises: Freehand sketching exercises., Line, shape and form studies., Perspective drawing sheets., Object and product sketching., Human figure and facial expression studies., Light and shadow rendering exercises., Creative visualization sketches., Website wireframe rough sketches., User interface concept sketches., Storyboard and visual storytelling panels., Portfolio presentation sheets.

Suggested Readings

1. Bert Dodson, *Keys to Drawing*, North Light Books.
2. Barrington Barber, *The Fundamentals of Drawing*, Arcturus Publishing.
3. Douglas Cooper, *Drawing and Perceiving*, Wiley Publications.
4. Robert W. Gill, *Rendering with Pen and Ink*, Thames & Hudson.
5. Giovanni Civardi, *Drawing: A Complete Guide*, Search Press.

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Course Code: UGCA2606

Course Name: Fundamentals of Computer and IT Laboratory

Program: B.Sc in Graphics and Web Designing	L: 0 T: 0 P: 4
Branch: Computer Applications	Credits: 2
Semester: 1 st	Contact hours: 4 Hours per week
Internal max. marks: 60	Theory/Practical: Practical
External max. marks: 40	Duration of end semester exam (ESE): ---
Total marks: 100	Elective status: Core

Prerequisite: -NA-

Co requisite: -NA-

Additional material required in ESE: - NA-

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	Familiarizing with Open Office (Word processing, Spreadsheets and Presentation).
CO2	To acquire knowledge on editor, spread sheet and presentation software.
CO3	The students will be able to perform documentation and accounting operations.
CO4	Students can learn how to perform presentation skills.

Instructions:

Word Orientation:

The instructor needs to give an overview of word processor.

Details of the four tasks and features that would be covered Using word – Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter.

1.	Using word to create Resume Features to be covered: - Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date and Time option in Word.
2.	Creating an Assignment Features to be covered: - Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track Changes.
3.	Creating a Newsletter Features to be covered :- Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes and Paragraphs
4.	Creating a Feedback form Features to be covered:- Forms, Text Fields, Inserting objects, Mail Merge in Word.

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Excel Orientation:	
The instructor needs to tell the importance of Excel as a Spreadsheet tool, give the details of the four tasks and features that would be covered Excel – Accessing, overview of toolbars, saving excel files,	
1.	Creating a Scheduler Features to be covered :- Gridlines, Format Cells, Summation, auto fill, Formatting Text
2.	Calculations Features to be covered :- Cell Referencing, Formulae in excel – average, std.deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function, LOOKUP/VLOOKUP
3.	Performance Analysis Features to be covered :- Split cells, freeze panes, group and outline, Sorting, Boolean and logical operators, Conditional formatting
4.	Game (like Cricket, badminton) Score Card Features to be covered :- Pivot Tables, Interactive Buttons, Importing Data, Data Protection, Data Validation
Presentation Orientation:	
1.	Students will be working on basic power point utilities and tools which help them create basic power point presentation. Topic covered includes :- PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Lines and Arrows
2.	This session helps students in making their presentations interactive. Topics covered includes : Hyperlinks, Inserting –Images, Clip Art, Audio, Video, Objects, Tables and Charts
3.	Concentrating on the in and out of Microsoft power point. Helps them learn best practices in designing and preparing power point presentation. Topics covered includes: - Master Layouts (slide, template, and notes), Types of views (basic, presentation, slide slotter, notes etc), Inserting – Background, textures, Design Templates, Hidden slides. Auto content wizard, Slide Transition, Custom Animation, Auto Rehearsing
4.	Power point test would be conducted. Students will be given model power point presentation which needs to be replicated
Internet and its Applications	
The instructor needs to tell the how to configure Web Browser and to use search engines by defining search criteria using Search Engines	
1.	To learn to setup an e-mail account and send and receive e-mails
2.	To learn to subscribe/post on a blog and to use torrents for accelerated downloads
3.	Hands on experience in online banking and Making an online payment for any domestic bill

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Reference Books:

1. IT Tools, R.K. Jain, Khanna Publishing House.
2. Introduction to Information Technology, ITL Education Solutions limited, Pearson Education, second edition, 2012.
3. Introduction to information technology, Turban, Rainer and Potter, John Wiley and Sons, 3rd Edition edition (24 May 2004).
4. Problem Solving Cases in Microsoft Excel, Joseph Brady & Ellen F Monk, Thomson Learning, Cengage Learning; 15 edition (February 23, 2017).

AECC (For UGC courses)

BTHU103-18 English:

Program: B.Sc. in Graphics and Web Designing	L: 1 T: 0 P: 0
Branch: Computer Applications	Credits: 1
Semester: 1 st	Contact hours: --
Theory/Practical: Theory	Percentage of numerical/design problems: --
Internal max. marks: 40	Duration of end semester exam (ESE): --
External max. marks: 60	Elective status: core/elective: --
Total marks: 100	

Course Outcomes: After studying this course, students will be able to:

CO#	Course Outcomes
CO1	The objective of this course is to introduce students to the theory, fundamentals and tools of communication.
CO2	To help the students become the independent users of English language.
CO3	To develop in them vital communication skills which are integral to their personal, social and professional interactions.
CO4	The syllabus shall address the issues relating to the Language of communication. Students will become proficient in professional communication such as interviews, group discussions, office environments, important reading skills as well as writing skills such as report writing, note taking etc.

The recommended readings given at the end are only suggestive; the students and teachers have the freedom to consult other materials on various units/topics given below. Similarly, the questions in the examination will be aimed towards assessing the skills

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learnt by the students rather than the textual content of the recommended books.

Detailed Contents:

Unit1- 1 (Introduction)

- Theory of Communication
- Types and modes of Communication

Unit- 2 (Language of Communication)

- Verbal and Non-verbal
- (Spoken and Written)
- Personal, Social and Business
- Barriers and Strategies
- Intra-personal, Inter-personal and Group communication

Unit-3 (Reading and Understanding)

- Close Reading
- Comprehension
- Summary Paraphrasing
- Analysis and Interpretation
- Translation (from Hindi/Punjabi to English and vice-versa)

OR

Precise writing /Paraphrasing (for International Students)

- Literary/Knowledge Texts

Unit-4 (Writing Skills)

- Documenting
- Report Writing
- Making notes
- Letter writing

Recommended Readings:

1. *Fluency in English* - Part II, Oxford University Press, 2006.
2. *Business English*, Pearson, 2008.
3. *Language, Literature and Creativity*, Orient Blackswan, 2013.
4. *Language through Literature* (forthcoming) ed. Dr. Gauri Mishra, DrRanjanaKaul, Dr Brati Biswas
5. *On Writing Well*. William Zinsser. Harper Resource Book. 2001
6. *Study Writing*. Liz Hamp-Lyons and Ben Heasley. Cambridge University Press. 2006.

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AECC

Course Code: BTHU104/18

Course Name: English Practical/Laboratory

Program: B.Sc in Graphics and Web Designing	L: 0 T: 0 P: 2
Branch: Computer Applications	Credits: 1
Semester: 1 st	Contact hours:
Theory/Practical: Practical	Percentage of numerical/design problems: --
Internal max. marks: 30	Duration of end semester exam (ESE):
External max. marks: 20	Elective status:
Total marks: 50	

Course Outcomes: After studying this course, students will be able to:

CO#	Course Outcomes
CO1	The objective of this course is to introduce students to the theory, fundamentals and tools of communication.
CO2	To help the students become the independent users of English language.
CO3	To develop in them vital communication skills which are integral to their personal, social and professional interactions.
CO4	The syllabus shall address the issues relating to the Language of communication. Students will become proficient in professional communication such as interviews, group discussions, office environments, important reading skills as well as writing skills such as report writing, note taking etc.

The recommended readings given at the end are only suggestive; the students and teachers have the freedom to consult other materials on various units/topics given below. Similarly, the questions in the examination will be aimed towards assessing the skills learnt by the students rather than the textual content of the recommended books.

Interactive practice sessions in Language Lab on Oral Communication

- Listening Comprehension
- Self-Introduction, Group Discussion and Role Play
- Common Everyday Situations: Conversations and Dialogues
- Communication at Workplace
- Interviews
- Formal Presentations
- Monologue
- Effective Communication/ Mis- Communication
- Public Speaking

Recommended Readings:

I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)

1. *Fluency in English* - Part II, Oxford University Press, 2006.
2. *Business English*, Pearson, 2008.
3. *Practical English Usage*. Michael Swan. OUP. 1995.
4. *Communication Skills*. Sanjay Kumar and PushpLata. Oxford University Press. 2011.
5. *Exercises in Spoken English*. Parts. I-III. CIEFL, Hyderabad. Oxford University Press, 1997.

Course Code: HVPE101-18

Course Name: Human Values, De-addiction and Traffic Rules

Program: B.Sc in Graphics and Web Designing	L: 3 T: 0 P: 0
Branch: Computer Applications	Credits: 3
Semester: 1 st	Contact hours: 33 hours
Internal max. marks: 40	Theory/Practical: Theory
External max. marks: 60	Duration of end semester exam (ESE): 3hrs
Total marks: 100	Elective status: Ability Enhancement

Prerequisite: -NA-

Co requisite: -NA-

Additional material required in ESE: -NA-

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
CO2	To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way.
CO3	To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature.

Note: This course is intended to provide a much needed orientational input in Value Education to the young enquiring minds.

I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)

Detailed Contents	Contact hours
Unit-I Course Introduction - Need, Basic Guidelines, Content and Process for Value Education 1. Understanding the need, basic guidelines, content and process for Value Education 2. Self-Exploration–what is it? - its content and process; ‘Natural Acceptance’ and Experiential Validation- as the mechanism for self-exploration 3. Continuous Happiness and Prosperity- A look at basic Human Aspirations 4. Right understanding, Relationship and Physical Facilities- the basic requirements for fulfillment of aspirations of every human being with their correct priority 5. Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario 6. Method to fulfill the above human aspirations: understanding and living in harmony at various levels	8
Unit-II Understanding Harmony in the Human Being - Harmony in Myself! 1. Understanding human being as a co-existence of the sentient ‘I’ and the material ‘Body’	8
2. Understanding the needs of Self (‘I’) and ‘Body’ - <i>SukhandSavidha</i> 3. Understanding the Body as an instrument of ‘I’ (I being the doer, seer and enjoyer) 4. Understanding the characteristics and activities of ‘I’ and harmony in ‘I’ 5. Understanding the harmony of I with the Body: <i>Sanyam</i> and <i>Swasthya</i>; correct appraisal of Physical needs, meaning of Prosperity in detail 6. Programs to ensure <i>Sanyam</i> and <i>Swasthya</i> - Practice Exercises and Case Studies will be taken up in Practice Sessions.	

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B.Sc. (Graphics and Web Designing)**

Unit-III Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship 1. Understanding harmony in the Family- the basic unit of human interaction 2. Understanding values in human-human relationship; meaning of <i>Nyaya</i> and program for its fulfillment to ensure <i>Ubhay-tripti</i>; Trust (<i>Vishwas</i>) and Respect (<i>Samman</i>) as the foundational values of relationship 3. Understanding the meaning of <i>Vishwas</i>; Difference between intention and competence 4. Understanding the meaning of <i>Samman</i>, Difference between respect and differentiation; the other salient values in relationship 5. Understanding the harmony in the society (society being an extension of family): <i>Samadhan</i>, <i>Samridhi</i>, <i>Abhay</i>, <i>Sah-astitva</i> as comprehensive Human Goals 6. Visualizing a universal harmonious order in society- Undivided Society (<i>AkhandSamaj</i>), Universal Order (<i>SarvabhaumVyawastha</i>)- from family to world family! - Practice Exercises and Case Studies will be taken up in Practice Sessions.	6
Unit-IV Understanding Harmony in the Nature and Existence - Whole existence as Co-existence 1. Understanding the harmony in the Nature 2. Interconnectedness and mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature 3. Understanding Existence as Co-existence (<i>Sah-astitva</i>) of mutually	5
interacting units in all-pervasive space 4. Holistic perception of harmony at all levels of existence - Practice Exercises and Case Studies will be taken up in Practice Sessions.	

**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

Unit-V Implications of the above Holistic Understanding of Harmony on Professional Ethics 1. Natural acceptance of human values 2. Definitiveness of Ethical Human Conduct 3. Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order 4. Competence in professional ethics: a) Ability to utilize the professional competence for augmenting universal human order, b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, c) Ability to identify and develop appropriate technologies and management patterns for above production systems. 5. Case studies of typical holistic technologies, management models and production systems 6. Strategy for transition from the present state to Universal Human Order: a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers b) At the level of society: as mutually enriching institutions and organizations.	6
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Text Book

1. R R Gaur, R Sangal, G P Bagaria, 2009, *A Foundation Course in Value Education*.

Reference Books

1. Ivan Illich, 1974, *Energy & Equity*, The Trinity Press, Worcester, and HarperCollins, USA.
2. E.F. Schumacher, 1973, *Small is Beautiful: a study of economics as if people mattered*, Blond & Briggs, Britain.
3. A Nagraj, 1998, *Jeevan Vidyaek Parichay*, Divya Path Sansthan, Amarkantak.
4. Susan George, 1976, *How the Other Half Dies*, Penguin Press. Reprinted 1986, 1991.

**I. K. Gujral Punjab Technical University
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5. PL Dhar, RR Gaur, 1990, *Science and Humanism*, Commonwealth Publishers.
6. A.N. Tripathy, 2003, *Human Values*, New Age International Publishers.
7. Subhas Palekar, 2000, *How to practice Natural Farming*, Pracheen (Vaidik) Krishi Tantra Shodh, Amravati.
8. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, *Limits to Growth – Club of Rome's report*, Universe Books.
9. E G Seebauer & Robert L. Berry, 2000, *Fundamentals of Ethics for Scientists & Engineers*, Oxford University Press
10. M Govindrajran, S Natrajan & V.S. Senthil Kumar, *Engineering Ethics (including Human Values)*, Eastern Economy Edition, Prentice Hall of India Ltd.
11. B P Banerjee, 2005, *Foundations of Ethics and Management*, Excel Books.
12. B L Bajpai, 2004, *Indian Ethos and Modern Management*, New Royal Book Co., Lucknow. Reprinted 2008.

Relevant CDs, Movies, Documentaries & Other Literature:

1. Value Education website, <http://uhv.ac.in>
2. Story of Stuff, <http://www.storyofstuff.com>
3. Al Gore, An Inconvenient Truth, Paramount Classics, USA
4. Charlie Chaplin, Modern Times, United Artists, USA
5. IIT Delhi, Modern Technology – the Untold Story

Course Code: HVPE102-18

Course Name: Human Values, De-addiction and Traffic Rules (Lab/ Seminar)

Program: B.Sc in Graphics and Web Designing	L: 0 T: 0 P: 1
Branch: Computer Applications	Credits: 1
Semester: 1 st	Contact hours:
Internal max. marks: 25	Theory/Practical: Practical
External max. marks: 0	Duration of end semester exam (ESE): --
Total marks: 25	Elective status: Ability Enhancement

One each seminar will be organized on Drug De-addiction and Traffic Rules. Eminent scholar and experts of the subject will be called for the Seminar at least once during the semester. It will be binding for all the students to attend the seminar.

SEMESTER –II

**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

Course Code: UGCA2607
Course Name: Web Design Fundamentals

Program: B.Sc in Graphics and Web Designing	L: 3 T: 1 P: 0
Branch: Computer Applications	Credits: 4
Semester: 2 nd	Contact hours: 44 hours
Internal max. marks: 40	Theory/Practical: Theory
External max. marks: 60	Duration of end semester exam (ESE): 3hrs
Total marks: 100	Elective status: Core

Course Objectives:

The course introduces students to the fundamental concepts of web design and development. It covers website planning, design principles, user experience, web page structure using HTML, styling with CSS, responsive design concepts, and web publishing techniques. The course aims to develop the skills required to design visually appealing and user-friendly websites.

Course Outcomes: After studying this course, students will be able to:

CO#	Course Outcomes
CO1	Understand the principles and processes of web design.
CO2	Create structured web pages using HTML.
CO3	Apply CSS for styling and layout design.
CO4	Develop responsive and user-friendly web interfaces.
CO5	Design website layouts using modern design principles.
CO6	Publish and maintain simple websites.
CO7	Create a professional web design portfolio.

Detailed Contents	Contact hours
Unit I Introduction to Web Design and Internet Technologies Evolution of the World Wide Web, Types of Websites, Website Planning and Development Process, Domain Names and Web Hosting, Web Browsers and Web Standards, Principles of Good Web Design, User Interface (UI) and User Experience (UX) Basics, Website Navigation Systems.	11 hours
UNIT II: HTML Fundamentals Introduction to HTML, HTML and the World Wide Web, HTML elements, basic structure elements of HTML, creating HTML pages, HTML tags, colour and fonts, formatting the body section, creating links. Adding graphics with image elements, using image as links, image maps, image files. Adding sound and Video formats, other	11 Hours

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multimedia formats, adding multimedia to web pages, Tables, Forms and Input Controls, Semantic HTML5 Elements, Website Structure Development	
UNIT III: Cascading Style Sheets (CSS) Introduction to CSS, CSS Syntax and Selectors, Colors, Backgrounds and Borders, Typography for Web Design, CSS Box Model, Margins, Padding and Positioning, CSS Flexbox, CSS Grid Layout, Responsive Design Principles, Media Queries	11 hours
UNIT IV Web Interface Design and Publishing Layout Design Principles, Visual Hierarchy, Wire framing and Mockups, Navigation Design, Landing Page Design, Mobile-First Design Approach, Accessibility and Usability Guidelines (Web Content Accessibility Guidelines), Website Optimization Techniques, Introduction to Content Management Systems, Website Testing and Publishing, Portfolio Website Planning	11 hours

Text Books

Primary Text Book

1. Jon Duckett, HTML and CSS: Design and Build Websites, Wiley Publications.
2. HTML & CSS: The Complete Reference, Fifth Edition (English, Paperback, Powell Thomas), edition Tata McGraw-Hill, 2003.
3. Internet& Web Technologies by Raj Kamal, edition Tata McGraw-Hill Education.2009.
4. Jason Beaird, The Principles of Beautiful Web Design.
5. Steve Krug, Don't Make Me Think.

I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)

Course Code: UGCA2608

Course Name: Graphic Design and Branding

Program: B.Sc. in Graphics and Web Designing	L:3 T:1 P:0
Branch: Computer Applications	Credits: 4
Semester: 2 nd	Contact hours: 44 hours
Theory/Practical: Theory	Duration of end semester exam (ESE): 3hrs
Internal max. marks: 40	Elective status: Core
External max. marks: 60	
Total marks: 100	

Course Objectives:

The course is designed to develop creative and technical skills in graphic design and digital illustration. It introduces students to the principles, techniques, and workflows used in creating visual communication materials for print and digital media. The course emphasizes concept development, illustration techniques, branding applications, and creative problem-solving through digital tools. It enables students to transform ideas into compelling visual designs and illustrations suitable for advertising, publishing, social media, branding, and digital communication. The course also prepares learners for advanced studies in graphic design, visual storytelling, digital art, and creative media production.

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	Understand graphic design principles and digital illustration techniques used in visual communication.
CO2	Apply creative design concepts and illustration methods to develop effective visual solutions.
CO3	Create digital illustrations, branding elements, and promotional graphics using professional design software.
CO4	Develop original visual concepts for advertising, publishing, and digital media applications.
CO5	Produce professional-quality graphic design and illustration projects suitable for portfolio presentation.

Detailed Contents	Contact hours
Unit-I Introduction to Graphic Design & Illustration: Fundamentals of graphic design, role of illustration in communication, design process and creative workflow, visual storytelling concepts, illustration styles and applications, concept development techniques, design research and idea generation.	10

**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

Unit-II Digital Illustration Techniques: Drawing and painting tools, vector illustration methods, shape construction, character illustration basics, object illustration, perspective application, colour application techniques, texture creation, composition and visual balance.	12
Unit-III Graphic Design Applications: Logo and identity design fundamentals, poster design, advertisement design, brochure concepts, social media graphics, branding materials, packaging design basics, promotional communication and visual hierarchy.	10
Unit-IV Creative Project Development: Concept visualization, campaign design, illustration-based communication, storytelling through graphics, editorial illustration concepts, portfolio projects, presentation techniques and professional design workflow.	12

Software Integration: Students may use Adobe Illustrator, Adobe Photoshop, Adobe Fresco, CorelDraw, Canva and Procreate for illustration development, vector artwork creation, branding projects, digital painting, visual communication design and portfolio preparation.

Suggested Practical Exercises: Digital sketching exercises., Vector illustration development., Character illustration projects., Object and product illustration studies., Logo design creation., Poster design projects., Advertisement layout development., Branding concept sheets., Social media creative development., Packaging design mockups., Editorial illustration assignments., Portfolio presentation sheets.

Suggested Readings

1. Von Glitschka, *Vector Basic Training*, New Riders.
2. Derek Lea, *Digital Painting Techniques*, Focal Press.
3. Zeegen Lawrence, *The Fundamentals of Illustration*, Fairchild Books.
4. Steven Heller and Gail Anderson, *Graphic Design: The New Basics*, Princeton Architectural Press.
5. Alan Male, *Illustration: A Theoretical and Contextual Perspective*, Bloomsbury Academic.

**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

Course Code: UGCA2609

Course Name: Typography and Digital Publishing

Program: B.Sc. in Graphics and Web Designing	L:3 T:1 P:0
Branch: Computer Applications	Credits: 4
Semester: 2 nd	Contact hours: 44 hours
Internal max. marks: 40	Theory/Practical: Theory
External max. marks: 60	Duration of end semester exam (ESE): 3hrs
Total marks: 100	Elective status: Core

Course Objectives:

The course is designed to develop an understanding of typography as a fundamental element of visual communication. It introduces students to the history, anatomy, classification, and application of typefaces in print and digital media. The course emphasizes the effective use of typography, layout organization, visual hierarchy, readability, and communication design principles. It enables students to create visually appealing and communicative designs through the integration of text, images, and graphic elements. The course also prepares learners for advanced studies in branding, publication design, advertising, web design, user interface design, and digital communication.

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	Understand the principles, anatomy, classification, and evolution of typography in visual communication.
CO2	Apply typography principles to create readable, legible, and aesthetically effective communication materials.
CO3	Develop layouts using grids, hierarchy, spacing, alignment, and composition techniques.
CO4	Create typographic solutions for branding, advertising, publications, and digital media platforms.
CO5	Produce professional-quality typography-based design projects suitable for portfolio presentation.

Detailed Contents	Contact hours
Unit-I Introduction to Typography: History and evolution of typography, anatomy of type, typeface classification, serif and sans-serif typefaces, display and decorative fonts, typography terminology, readability and legibility concepts, typography in visual communication.	12

**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

Unit-II Typography Principles & Layout Systems: Hierarchy, alignment, spacing, kerning, tracking, leading, balance, contrast, rhythm, grid systems, modular layouts, visual organization, text and image relationships, composition techniques.	10
Unit-III Typography for Print & Digital Media: Typography in branding, advertising, editorial design, brochures, posters, packaging, social media graphics, websites, mobile applications, responsive typography and accessibility considerations.	12
Unit-IV Creative Typography Applications: Experimental typography, typographic posters, logo typography, publication layouts, information design, infographic typography, visual storytelling through type, presentation design and portfolio development.	10

Software Integration: Students may use Adobe Illustrator, Adobe InDesign, Adobe Photoshop, Canva and Figma for typography exercises, layout development, publication design, branding projects, visual communication assignments and portfolio preparation.

Suggested Practical Exercises: Typeface classification studies., Typography anatomy sheets., Kerning and spacing exercises., Grid-based layout development., Typographic poster design., Logo typography creation., Magazine page layouts., Brochure design projects., Infographic typography exercises., Social media typography creatives., Presentation design assignments., Portfolio presentation sheets.

Suggested Readings

1. Ellen Lupton, *Thinking with Type*, Princeton Architectural Press.
2. Rob Carter, *Typographic Design: Form and Communication*, Wiley.
3. James Felici, *The Complete Manual of Typography*, Adobe Press.
4. Timothy Samara, *Typography Workbook*, Rockport Publishers.
5. Ina Saltz, *Typography Essentials*, Rockport Publishers.

I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)

Course Code: UGCA2610

Course Name: Web Design Laboratory

Program: B.Sc in Graphics and Web Designing	L:0 T:0 P:4
Branch: Computer Applications	Credits: 2
Semester: 2 nd	Contact hours: 4 Hours per week
Internal max. marks: 60	Theory/Practical: Practical
External max. marks: 40	Duration of end semester exam (ESE): ---
Total marks: 100	Elective status: Core

Course Objectives

The course is designed to provide practical training in website design and front-end web development using contemporary web technologies. It enables students to apply web design principles, responsive design techniques, user-centered design concepts, and digital publishing standards in real-world web projects. The course emphasizes website planning, layout development, interface design, content organization, and implementation using HTML and CSS. It develops technical proficiency, creative problem-solving abilities, and professional workflow practices required for designing modern websites. The course also prepares learners for advanced studies in web development, UI/UX design, content management systems, and interactive media.

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	Demonstrate proficiency in designing and developing static and responsive web pages.
CO2	Apply web design principles, layout techniques, and usability considerations in website projects.
CO3	Create visually appealing and user-friendly website interfaces using HTML, CSS, and modern design practices.
CO4	Develop structured web content and navigation systems suitable for diverse digital platforms.
CO5	Produce professional-quality website projects and web design portfolios for academic and industry applications.

Detailed Contents	Contact hours
Unit-I Website Planning & Interface Design: Website planning process, sitemap creation, content organization, wireframing techniques, page layout structures, navigation systems, user-centered design principles, visual hierarchy and interface planning.	10

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B.Sc. (Graphics and Web Designing)**

Unit-II HTML-Based Web Development: Web page structure, semantic HTML elements, text formatting, hyperlinks, images, lists, tables, forms, multimedia integration, page organization and website construction techniques.	12
Unit-III CSS Styling & Responsive Design: CSS fundamentals, selectors and properties, typography styling, colour schemes, layout design, flexbox concepts, responsive design principles, media queries, mobile-friendly design and cross-device compatibility.	10
Unit-IV Website Production & Publishing: Website testing techniques, usability evaluation, accessibility considerations, optimization methods, web publishing procedures, hosting concepts, domain management basics, portfolio website development and project presentation.	12

Software Integration: Students may use Visual Studio Code, Figma, Adobe XD, Adobe Dreamweaver, Bootstrap, Google Fonts and browser developer tools for website development, interface design, responsive layouts, testing and project deployment.

Suggested Practical Exercises: Website planning exercises., Sitemap development., Wireframe creation assignments., HTML page development., Navigation menu design., Contact form creation., CSS styling projects., Responsive webpage development., Landing page design., Portfolio website creation., Website testing activities., Project presentation sheets.

Suggested Readings

1. Jon Duckett, *HTML and CSS: Design and Build Websites*, Wiley.
2. Jennifer Niederst Robbins, *Learning Web Design*, O'Reilly Media.
3. Ethan Marcotte, *Responsive Web Design*, A Book Apart.
4. David McFarland, *HTML, CSS & JavaScript All-in-One for Dummies*, Wiley.
5. Keith J. Grant, *CSS in Depth*, Manning Publications.

I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)
Course Code: UGCA2611
Course Name: Typography and Layout Laboratory

Program: B.Sc. in Graphics and Web Designing	L: 0 T: 0 P: 4
Branch: Computer Applications	Credits: 2
Semester: 2 nd	Contact hours: 4 Hours per week
Internal max. marks: 60	Theory/Practical: Practical
External max. marks: 40	Duration of end semester exam (ESE): ---
Total marks: 100	Elective status: Core

Course Objectives

The course is designed to provide practical training in typography and layout design for print and digital media applications. It develops technical and creative skills required for arranging text, images, and graphic elements into visually effective compositions. The course emphasizes readability, visual hierarchy, grid systems, page organization, and communication effectiveness through hands-on projects. It enables students to experiment with typefaces, layout structures, and publication design techniques while strengthening their understanding of visual communication principles. The course also prepares learners for advanced work in editorial design, branding, advertising, publication design, web interfaces, and digital content production.

Course Outcomes: After studying this course, students will be able to:

CO#	Course Outcomes
CO1	Demonstrate practical understanding of typography and layout design principles.
CO2	Apply grids, alignment, hierarchy, spacing, and composition techniques in design projects.
CO3	Create effective layouts for publications, advertising materials, branding projects, and digital media.
CO4	Integrate typography and visual elements to enhance readability and communication impact.
CO5	Develop professional-quality layout designs suitable for print production and portfolio presentation.

UNIT-I Typography Practice & Type Exploration: Typeface identification, font selection techniques, type classification exercises, typography anatomy studies, readability and legibility testing, kerning, tracking, leading adjustments, visual hierarchy development and typographic experimentation.	12
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**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

Unit-II Layout Structures & Grid Systems: Grid construction methods, modular grids, column structures, alignment systems, visual balance, white space management, page organization, image-text relationships and composition techniques.	10
Unit-III Publication & Communication Design: Magazine layouts, newspaper layouts, brochure design, catalogue design, newsletter design, advertising layouts, corporate communication materials, presentation templates and information organization techniques.	10
Unit-IV Digital Layout Applications: Social media layouts, website content layouts, responsive design considerations, infographic layouts, presentation design, portfolio page design, digital publishing formats and final design presentation techniques.	12

Software Integration: Students may use Adobe InDesign, Adobe Illustrator, Adobe Photoshop, Canva and Figma for typography exercises, publication layouts, brochure design, editorial projects, presentation development and portfolio preparation.

Suggested Practical Exercises: Typeface classification studies., Typography hierarchy exercises., Kerning and spacing assignments., Grid construction projects., Magazine layout creation., Brochure design development., Newsletter layout exercises., Advertisement composition projects., Infographic design assignments., Presentation template creation., Portfolio page layouts., Portfolio presentation sheets.

Suggested Readings

1. Timothy Samara, *Making and Breaking the Grid*, Rockport Publishers.
2. Kimberly Elam, *Typographic Systems*, Princeton Architectural Press.
3. Gavin Ambrose and Paul Harris, *Layout Essentials*, AVA Publishing.
4. Jan V. White, *Editing by Design*, Allworth Press.
5. Timothy Samara, *Publication Design Workbook*, Rockport Publishers.

**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

Course Code: UGCA2612

Course Name: Graphic Design Studio

Program: B.Sc. in Graphics and Web Designing	L:0 T:0 P:4
Branch: Computer Applications	Credits: 2
Semester: 2 nd	Contact hours: 4 Hours per week
Theory/Practical: Practical	Percentage of numerical/design problems: --
Internal max. marks: 60	Duration of end semester exam (ESE): --
External max. marks: 40	Elective status: Core
Total marks: 100	

Course Objectives:

The course is designed to provide practical studio-based training in graphic design through creative projects and visual communication assignments. It enables students to apply design principles, typography, colour theory, composition techniques, and branding concepts in real-world design situations. The course encourages experimentation, innovation, and problem-solving through hands-on exercises involving print and digital media. It develops professional design workflow skills, presentation techniques, and portfolio-building capabilities. The course also prepares learners for advanced studio practices in branding, advertising, publication design, packaging, and digital communication.

Course Outcomes: After studying this course, students will be able to:

CO#	Course outcomes
CO1	Apply graphic design principles and creative methodologies in practical design projects.
CO2	Create effective visual communication materials using typography, imagery, color, and layout techniques.
CO3	Develop branding, advertising, and promotional design solutions for various media platforms.
CO4	Demonstrate professional design workflow, presentation, and project development skills.
CO5	Produce portfolio-quality graphic design projects suitable for professional and academic purposes.

Detailed Contents	
UNIT-I Design Studio Practices: Studio workflow and creative process, design briefing and research methods, idea generation techniques, concept development, mood boards, visual references, sketching and rough layout development,	11hours

I. K. Gujral Punjab Technical University
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design presentation methods.	
UNIT II Branding & Identity Design: Logo design process, visual identity systems, brand guidelines, stationery design, brand applications, colour selection, typography selection, visual consistency and brand communication strategies.	11hours
UNIT III Advertising & Promotional Design: Poster design, advertisement layouts, brochure design, flyer design, banner creation, social media creatives, marketing communication materials, campaign development and audience-focused design approaches	11hours
UNIT IV Publication & Packaging Design: Magazine layouts, newsletter design, catalogue design, packaging concepts, label design, product presentation, print production considerations, mockup preparation, portfolio documentation and final project presentation.	11hours

Software Integration: Students may use Adobe Photoshop, Adobe Illustrator, Adobe InDesign, CorelDraw, Canva and Adobe Express for branding projects, advertising layouts, publication design, packaging concepts, promotional materials and portfolio development.

Suggested Practical Exercises: Logo design projects., Brand identity development., Business stationery design., Poster design assignments., Advertisement layout creation., Brochure design projects., Flyer and banner development., Social media campaign creatives., Magazine page layouts., Packaging mockup preparation., Brand presentation boards., Portfolio presentation sheets.

Suggested Readings

1. David Airey, *Identity Designed*, Rockport Publishers.
2. Alina Wheeler, *Designing Brand Identity*, Wiley.
3. Catharine Fishel, *Logo Lounge Series*, Rockport Publishers.
4. Luke Herriott, *Thinking for a Living: The Making of a Graphic Designer*, Rockport Publishers.

**I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)**

Ability Enhancement Compulsory Course

Course Code: EVS102-18

Course Name: Environmental Studies

Program: B.Sc. in Graphics and Web Designing	L: 2 T: 0 P: 0
Branch: Computer Applications	Credits: 2
Semester: 2nd	Contact hours: --
Theory/Practical: Theory	Percentage of numerical/design problems: --
Internal max. marks: 40	Duration of end semester exam (ESE): --
External max. marks: 60	Elective status: Core
Total marks: 100	

Course Outcomes:

1. Students will enable to understand environmental problems at local and national level through literature and general awareness.
2. The students will gain practical knowledge by visiting wildlife areas, environmental institutes and various personalities who have done practical work on various environmental Issues.
3. The students will apply interdisciplinary approach to understand key environmental issues and critically analyze them to explore the possibilities to mitigate these problems.
4. Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world

UNIT-1: Introduction to Environmental Studies

Multidisciplinary nature of Environmental Studies: Scope & Importance
Need for Public Awareness

UNIT-2: Ecosystems

Concept of an Ecosystem: Structure & functions of an ecosystem (Producers, Consumers & Decomposers)

Energy Flow in an ecosystem: Food Chain, Food web and Ecological Pyramids

Characteristic features, structure & functions of following Ecosystems:

- Forest Ecosystem
- Aquatic Ecosystem (Ponds, Lakes, River & Ocean)

UNIT-3: Natural Resources

Renewable & Non-renewable resources

I. K. Gujral Punjab Technical University
B.Sc. (Graphics and Web Designing)

Forest Resources: Their uses, functions & values (Biodiversity conservation, role in climate change, medicines) & threats (Overexploitation, Deforestation, Timber extraction, Agriculture Pressure), Forest Conservation Act

Water Resources: Their uses (Agriculture, Domestic & Industrial), functions & values, Overexploitation and Pollution of Ground & Surface water resources (Case study of Punjab), Water Conservation, Rainwater Harvesting,

Land Resources: Land as a resource; Land degradation, soil erosion and desertification

Energy Resources: Renewable & non-renewable energy resources, use of alternate energy resources (Solar, Wind, Biomass, Thermal), Urban problems related to Energy

UNIT-4: Biodiversity & its conservation

Types of Biodiversity: Species, Genetic & Ecosystem

India as a mega biodiversity nation, Biodiversity hot spots and biogeographic regions of India

Examples of Endangered & Endemic species of India, Red data book

UNIT-5: Environmental Pollution & Social Issues

Types, Causes, Effects & Control of Air, Water, Soil & Noise Pollution

Nuclear hazards and accidents & Health risks

Global Climate Change: Global warming, Ozone depletion, Acid rain, Melting of Glaciers & Ice caps, Rising sea levels

Environmental disasters: Earthquakes, Floods, Cyclones, Landslides

UNIT-6: Field Work

Visit to a National Park, Biosphere Reserve, Wildlife Sanctuary

Documentation & preparation of a Biodiversity (flora & fauna) register of campus/river/forest

Visit to a local polluted site: Urban/Rural/Industrial/Agricultural

Identification & Photography of resident or migratory birds, insects (butterflies)

Public hearing on environmental issues in a village

Suggested Books:

1. Bharucha, E. Text Book for Environmental Studies. University Grants Commission, New Delhi.
2. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
3. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380 013, India, Email:mapin@icenet.net (R)
4. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
5. Clark R.S., Marine Pollution, Clanderson Press Oxford (TB)
6. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Publ. House, Mumabai, 1196p
7. De A.K., Environmental Chemistry, Wiley Eastern Ltd.
8. Down to Earth, Centre for Science and Environment (R)

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9. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute Oxford Univ. Press. 473p
 10. Hawkins R.E., Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)
 11. Heywood, V.H &Waston, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p.
 12. Jadhav, H &Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.
 13. Mckinney, M.L. & School, R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition. 639p.
 14. Mhaskar A.K., Matter Hazardous, Techno-Science Publication (TB)
 15. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
 16. Odum, E.P. 1971. Fundamentals of Ecology. W.B. Saunders Co. USA, 574p
 17. Rao M N. &Datta, A.K. 1987. Waste Water treatment. Oxford & IBH Publ. Co. Pvt. Ltd. 345p.
 18. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut
 19. Survey of the Environment, The Hindu (M)
 20. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (TB)
 21. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (TB)
 22. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p
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