

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCS101	Art and Design Fundamentals 1	0-0-10-0	10	2024
Course Objective To introduce students to the elements and principles of two-dimensional design and its representation. To train students in the use of different art mediums and tools. To enable students to express their ideas through visualisation.				
Syllabus Elements of Design, Principles of Design, Freehand Sketching, Perspective drawing, Scale and Proportion, Composition, Abstraction, Pattern Generation, Colour Theory, Mood Boards, Visual Mapping, Storyboarding.				
Expected outcome By the end of the course, students will have an understanding of the elements and principles of design and composition. They will be able to apply their art and representation skills in design projects.				
Reference Books Design Basics, Paperback – Illustrated, 1 January 2015 by David Lauer & Stephen Pentak Principles of Form & Design Paperback – Illustrated, 1 September 1993 by Wucius Wong Drawing on the Right Side of the Brain, Paperback – Illustrated, 26 April 2012 by Betty Edwards Complete Guide to Illustration and Design Techniques and Materials Hardcover – 8 May 1980 by Terence Dalley Design Elements, Color Fundamentals: A Graphic Style Manual for Understanding How Color Affects Design, Paperback – Illustrated, 1 January 2012 by Aaris Sherin Interaction of Color, Paperback – Illustrated, 2 July 2013 by Josef Albers & Nicholas Fox Weber Understanding Comics Paperback – 27 April 1994 by Scott McCloud (Author) Grid Systems, Hardcover – 1 January 1999, English Edition by Josef Mülller-Brockmann				

Course Content			
Module	Course Plan	Hrs	Marks
I	Explorations using the elements of design - point, line, shape, volume. Freehand line sketching, pen/ pencil rendering. Outdoor Nature Sketching - natural forms, animals, birds, trees, leaves, flowers etc. Introduction to the basics of proportions and application of scale. Human proportions - human body and its parts, proportioning systems.	40	30%
II	Abstraction/ simplification of forms. Pattern Generation. Compositions exploring the principles of design, application of color and texture. Application of layouts, grids and spacing in compositions.	40	30%
III	Principles of perspective, one-point, two-point and three-point perspective, perspective as applied to objects, furniture, Interior and exterior of the buildings etc. Explorations into the effect of colour and light on surface compositions.	30	20%
IV	Visual Thinking - Mood board, Activity/ mental mapping, Doodling, Storyboarding	30	20%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCT102	Visual fundamentals	3-0-0-0	3	2024
Course Objectives To introduce, explore and understand the basic elements and principles of design to make general aesthetics of a product consistent. To introduce the principles and values that guide and influence the 2 dimensional and 3-dimensional design compositional aesthetics. To promote the visual literacy level and prepare to appreciate the aesthetic components of art and design.				
Syllabus Introducing the vocabulary of art and design constituted by elements and principles. Introduction to the meaning, context, and significance of the elements and outcomes of designs in graphics, textiles, ceramics, sculpture, painting and printing as related to design. Improvising the ability to understand, interpret and evaluate visual messages.				
Expected Outcome Students will be able to explain the vocabulary of art and design constituted by elements and principles. Students will be able to explain visual meanings, and understand the relationship of art and design				
Reference Books Interaction of Color by Josef Albers Art Fundamentals: Theory and Practice, Ocvirk, Otto G., Stinson, Robert E., Wig The Elements of Graphic Design by Alexander W. White Design Basics by David A. Lauer and Stephen Pentak Principles of Form and Design by Wucius Wong The Art of Color by Johannes Itten The Non-Designer's Design Book by Robin Williams Visual Grammar by Christian Leborg Bustanoby, Jacques Henri. "Principles of color and color mixing." (1947). Lauer, David A., and Stephen Pentak. Design basics. Cengage Learning, 2011.				

Course Content			
Module	Course Plan	Hrs	Marks
I	Introduction to design fundamentals Exposure to various elements of design - line, shape, space, texture, value, colour. Exposure to various principles of design - balance, contrast, emphasis, rhythm, proportion, unity and harmony.	9	20%
II	Colour Nomenclature of colours. Colour theory: complete study on various aspects of colour wheel and colours. Properties of colour- Hues, complimentary etc. Colour schemes, colour uses, colour symbolism. Chromatic Values, International Colour Standardisation systems	12	30%
III	Aesthetics and visual perception. Gestalt theory of visual perception. Key Principles of Gestalt Theory. Impact on Aesthetics and Design and its applications. (case studies) Composition Techniques, Rule of Thirds, Golden Ratio, Grid Systems, Symmetry and Asymmetry, Leading Lines Framing, Negative Space (White Space) Alignment Pattern and Tessellation, Similarities and differences.	15	30%
IV	Visual Literacy Introduction to Visual Literacy Definition and importance of visual literacy. The role of visual literacy in everyday life through (case studies). Visual Communication, Semiotics and Visual Language. Symbols, Icons, and Pictograms Communicating through Imagery	6	20%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCL103	Material Exploration 1	0-0-0-6	2	2024
Course Objective Students will learn about different materials by studying their physical, chemical, and visual qualities. The course will help them use various materials effectively with various tools and techniques. Students will also improve their precision and accuracy in working with materials to improve their design skills.				
Syllabus Paper Manipulation and Model Making. Conceptualization using Corrugated sheet, PU Foam/ Thermocol and Foam Board. Understand Clay Preparation and Manipulation. Sustainable Material Exploration and Material Integration – Bamboo				
Expected outcome Students will gain knowledge of various materials and their physical and visual properties. Become proficient in using hand tools and machinery for exploring and manipulating materials. Develop an understanding of materials through sensory perception and hands-on techniques, with a focus on paper, clay, fabrics etc Enhance their precision and accuracy by creating both functional and abstract forms from materials.				
Reference Books Rand, P., & Dell, V. Materials for Design. Basbanes, N. On Paper: Everything on Its 2000-Year History. Johnson, A., & Hallett, C. Fabric for Fashion: Natural & Man-Made Fabrics. Hirsch, J. Clay Modelling for Beginners. Trudeau, N. (Year). Professional Modelmaking: A Handbook of Techniques and Materials for Architects and Designers. Hallgrimsson, B. Prototyping and Modelmaking for Product Design. Rao, A. G., & Koli, M. Bamboo Craft Design. [1] Examination of bamboo craft design principles and practices. Grid Systems, Hardcover – 1 January 1999, English Edition by Josef Mülller-Brockmann				

Course Content			
Module	Course Plan	Hrs	Marks
I	Paper Manipulation and Model Making Simple paper sculpture creation Construct functional paper objects (e.g., lampshades) Practice scoring, folding, and cutting techniques. Experiment with layering paper to create depth and dimension.	21	25%
II	Conceptualization using Corrugated sheet, PU Foam/ Thermocol and Foam Board Hands-on exercises with corrugated sheets and foam materials. Create basic prototypes of products or designs. Experiment with carving, sanding, and gluing techniques to shape these materials	21	25%
III	Clay Preparation and Manipulation Practice basic clay manipulation techniques such as rolling, pinching, and coiling. Create a series of small, functional clay objects, such as cups, bowls, or decorative tiles. Focus on consistency and refinement in form.	21	25%
IV	Sustainable Material Exploration and Material Integration – Bamboo and Fabrics. Study bamboo's properties and applications. Hands-on exercises with bamboo, including cutting and basic shaping. Practice cutting, splitting, and shaping bamboo. Learn about the different tools and techniques used in bamboo crafting. Explorations using fabrics and manipulation techniques for creating lifestyle products.	21	25%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCS104	Photography	0-1-1-0	2	2024

Course Objective

To understand the fundamentals of photography.
 To learn the technical aspects of using a camera and lighting for photography.
 To develop the ability to creatively style and compose images.
 To build a portfolio of professional-grade images.

Syllabus

This course is designed to introduce students to the foundational principles of product photography, guiding them through the technical and creative aspects essential for capturing high-quality product images. Through a combination of theoretical knowledge and practical exercises, students will learn about the critical tools, techniques, and concepts needed to succeed in design photography. By the end of the course, students will have built a portfolio showcasing their skills.

Expected outcome

By the end of this course, students will have a strong grasp of the essential techniques and tools needed for product photography, enabling them to create professional-quality images that effectively showcase products in various contexts.

Reference Books

Adams, A. (2018). The Camera. Ansel Adams.
 Azoulay, A. (2010). What is a photograph? What is photography? Philosophy of Photography, 1(1), 9-13.
 Company, E. K. (1978). Encyclopedia of Practical Photography.
 Dawson, D., & Tran, J. T. (2013). Street Fashion Photography: Taking Stylish Pictures on the Concrete Runway. Chronicle Books.
 Freeman, M. (2020). Light & How to Photograph It. Hachette UK.
 Jones, B. E. (1974). Encyclopedia of Photography.
 Langford, M., Fox, A., & Smith, R. S. (2012). Langford's Basic Photography. In Routledge eBooks.
<https://doi.org/10.4324/9780080959023>
 Maloney, H. B. (2024). Ennio Morricone's Film Music in the Western Genre (Doctoral dissertation, University of Nottingham).
 Peres, M. R. (2013). The Focal Encyclopedia of Photography. Taylor & Francis.
 Spencer, D. A., & Mannheim, L. A. (1975). D.A. Spencer's Colour Photography in Practice.
 The Kodak Encyclopaedia of Creative Photography. (1984)
 Tissandier, Gaston, and John Thomson. A history and handbook of photography. BoD–Books on Demand, 2024.

Online tutorials and workshops

http://ndl.iitkgp.ac.in/he_document/nptel/nptel/IN__N__1_E_D__13163_V_C__13165_M_3_P__13176_13177
https://onlinecourses.swayam2.ac.in/cec19_ge02/preview
<https://www.theschoolofphotography.com/tutorials>
<https://www.udemy.com/course/free-photography-course-for-beginners/>
<https://www.udemy.com/course/secrets-of-magazine-model-photography/>
https://youtu.be/Yugf_8TeJgI
<https://www.udemy.com/topic/product-photography/>

Course Content			
Module	Course Plan	Hrs	Marks
I	Introduction to Product Photography Overview of product photography, Types of photography (product photography, fashion photography, photography for news and media, etc.) Essential equipment: Cameras, lenses, tripods, lighting, and accessories	6	20%
II	Understanding Camera Basics Camera settings: ISO, aperture, shutter speed, and white balance Lens selection for product photography Introduction to RAW vs JPEG formats Basic composition techniques (rule of thirds, leading lines, framing)	6	20%
III	Doodling with Light: Natural vs artificial lighting: Pros and cons Continuous lighting vs strobe lighting Lighting setups: One-light, two-light, and three-light setups Controlling shadows and reflections Photographic Lenses: Lens Accessories, Lens Defects	8	30%
IV	Product Styling and Composition Importance of styling in product photography Choosing backgrounds and props Composition techniques for different types of products (small items, large items, reflective surfaces) Using negative space and focal points. Assignment: "Capturing the Essence of Products" Project Overview: In this project, students will create a series of product photographs that demonstrate their understanding of the basics of product photography, camera settings, lighting techniques, and composition. The goal is to showcase the essence of the products through thoughtful styling, lighting, and camera work. students should select three different types of products to photograph, experimenting with various techniques learned in class. Submission Requirements: A digital portfolio with 3-5 images per product, showcasing different techniques. A written summary (500-700 words) describing the process, challenges, and what you learned from the project.	8	30%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDAEL106	Digital Skills 1	0-1-0-3	2	2024
Course Objective To introduce students to the basic concepts of 2D drawings using digital mediums. To train students in image editing and illustration software so that they integrate their digital skills into the projects				
Syllabus Image creation, image editing, manipulation, non-destructive editing. Creation of posters, illustrations, icons, and infographics.				
Expected outcome By the end of the course, students will have a basic understanding of the tools and techniques used in image creation and editing software. Students will be able to apply their skill sets in design projects.				
Reference Books Vector Graphics and Illustration: A Master Class in Digital Image-making Paperback – Import, 1 September 2008 by Steven Withrow &, Jack Harris Digital Painting in Photoshop: Industry Techniques for Beginners: A comprehensive introduction to techniques and approaches Paperback – December 18, 2018, by 3DTotal Publishing Learn Adobe Illustrator CC for Graphic Design and Illustration: Adobe Certified Associate Exam Preparation, 2e Paperback – 8 May 2020 by Chad Chelius & Rob Schwartz Quick And Easy Vector Graphics: Learn the 5 basic skills that will have you creating icons, logos, illustrations and UI in minutes (Graphic Design for Beginners Book 1) by Antonis Tsagaris				

Course Content			
Module	Course Plan	Hrs	Marks
I	Introduction to digital art: Image creation and manipulation using software like gimp, photoshop etc. Using software for photo-retouching, colour correction, masking, and applying filters and text.	12	25%
II	Introduction to resolution, bit depth, layers, blending modes, channels, paths, and non-destructive editing. Raster Vs Vector	8	20%
III	Introduction of vector graphics using software like Inkscape, Illustrator etc. Introduction to layer integration, curve drawing, font and colour selection tools, charts, icons, infographics, etc. Raster Vs Vector.	12	25%
IV	Project-based learning: Creating posters, illustrations, and infographics using both vector and raster graphics.	24	30%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCS201	Art and Design Fundamentals 2	0-0-10-0	10	2024

Course Objective

To introduce students to the fundamentals of three-dimensional forms. To explore and discover the possibilities in three-dimensional design and geometrical forms. To train students in the fundamental techniques of technical drawing.

Syllabus

Primary Forms, Platonic and Archimedean Solids, Additive and Subtractive forms, Dimensional form transformation. 2D to 3D form transition, 3D Abstraction, Positive and Negative forms, Space, Form and Structure, Tessellation and geometrical patterns, Figure and Ground, Orthographic projection, Isometric projections, Auxiliary projections, Product Sketching

Expected outcome

Students will have an understanding of the basic fundamentals of 3D form development and its manipulation. They will be able to prepare technical drawings of their design projects.

Reference Books

Elements of design: Rowena Reed Kostellow and the structure of visual relationships, Princeton Architectural Press, Paperback – 1 July 2002 by Gail Greet Hannah

Platonic and Archimedean Solids Paperback – 25 October 2005 by Daud Sutton

Universal Principles of Color: 100 Key Concepts for Understanding, Analyzing, and Working with Color Hardcover – 21 November 2023 by Stephen Westland & Maggie Maggio

Pencil Sketching Paperback – 1 November 1977 by Thomas C. Wang

Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press, 2001 by Kimberly Elam

Sacred Geometry (Wooden Books U.S. Editions) Paperback – Import, 15 March 2022 by Miranda Lundy

By Natures Design - an Exploratorium Book, Chronicle Books, 1993 by William Neill & Pat Murphy

Course Content			
Module	Course Plan	Hrs	Marks
I	Exploration of Simple, Platonic and Archimedean Solids. Transformation of forms - Additive, Subtractive and Dimensional. Isometric Projection of simple, truncated and/ or combination solids - Isometric scale, isometric view of planes. Orthographic Projection of Simple or Platonic Solids in simple positions and their combinations placed in different positions. Auxiliary projections of simple solids and combinations in different positions and auxiliary plane method.	40	25%
II	Introduction to Product Sketching - methods, mediums, tools. Exploded views.	20	20%
III	Explorations in 2D and 3D Tessellation and geometrical patterns, figure and ground, 3D printed prototyping of 3D tessellation. Introduction to sacred geometry and fractals.	40	25%
IV	Exploration in 3D form - 2D to 3D transition, 3D abstraction, dynamic forms inspired from nature, positive and negative forms. Understanding the relationship between space, form and structure through the concept of abstraction and metaphors.	40	30%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCT202	History of Art	2-0-0-0	2	2024
Course Objective The course offers a comprehensive exploration of the history of art, focusing on significant art movements, styles, and periods with a focus on Indian art traditions. Emphasis will be placed on understanding, appreciating, and critically analyzing art within the broader context of societal, political, and cultural developments. Students will develop skills in art appreciation and criticism, enhancing their ability to interpret and value diverse forms of artistic expression. The course includes a comprehensive study of Indian art history alongside global movements.				
Syllabus Understand Art Movements and its evolution, Art Appreciation and criticism, Contextual Analysis, Impact of Movements, Indian Art Contributions and Future art trends.				
Expected outcome Students will be able to identify and describe key art movements and their characteristics and acquire basic proficiency in art appreciation and criticism. Students will be able to understand of the relationship between art, society, and politics. They will acquire knowledge of the history and significance of Indian art.				
Reference Books Gardner's Art Through the Ages by Fred S. Kleiner The Story of Art by E.H. Gombrich Art Since 1900: Modernism, Antimodernism, Postmodernism by Hal Foster Art: A World History by Elke Linda Buchholz After the End of Art by Arthur C. Danto After Modern Art 1945-2000 by David Hopkins Digital Art by Christiane Paul The Living Tradition: Perspectives on Modern Indian Art by K.G. Subramanyan				

Course Content			
Module	Course Plan	Hrs	Marks
I	Ancient to Renaissance Art Introduction to Art History: Overview of art history and its significance. Introduction to art movements (isms) and terminology. Renaissance Art, Characteristics, Key artists and its impact on society. Baroque and Rococo, Differences and similarities between Baroque and Rococo. Key artists and its influence on design. Indian Art and its origin. Indus Valley Civilization and later periods.	6	20%
II	Baroque to 19th Century Art Neoclassicism and Romanticism, Characteristics and Key artists and political implications of these movements. Realism and Impressionism, Characteristics, Key artists, Changes in society and their reflection in art. Post-Impressionism and Symbolism, Characteristics, Key artists and Influence on later art movements. Indian Art: Mughal and Rajput Paintings, Colonial Art.	6	30%
III	20th Century Art Movements Modernism and its Characteristics. Key artists and its impact of modernity and industrialization on art. Art Deco and its Characteristics of Art Deco. Influence on design, architecture, and society. Abstract Expressionism and Pop Art: Characteristics and key figures of Abstract Expressionism and Pop Art. Social and political context. Key artists. Indian Art: Bengal School of Art, Progressive Artists Group. Modern Indian art movement and artists. Works of prominent contemporary Indian artists like Dashrath Patel, Anish Kapoor etc.	8	30%
IV	Contemporary Art: Overview of contemporary art trends and movements. Key artists and their contributions. Influence of globalization and technology on art. Art Appreciation Techniques: Methods for appreciating and interpreting art. Visit to a local museum or gallery. Art in the Future: Speculation on future art trends. Impact of new technology (AI, VR, AR) on art.	8	20%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCL203	Material Exploration 2	0-0-0-6	2	2024
Course Objective The course aims to equip students with the skills to explore and comprehend materials in the man-made environment, focusing on their physical, chemical, and visual properties. Students will learn to apply this understanding meaningfully through the use of various tools, processes, and manipulation techniques, with a strong emphasis on developing precision and accuracy in material handling.				
Syllabus This course covers essential techniques in woodworking, metal manipulation, and the integration of wood and metal, focusing on the creation of functional and aesthetically balanced projects. Students will gain hands-on experience in cutting, shaping, and treating wood, as well as fabricating and finishing metal objects using various joining methods. The course also emphasizes the combination of materials, challenging students to integrate wood, metal, and plastics in innovative designs.				
Expected outcome Students will, Develop an understanding of materials through sensory perception and methods to manipulate them Develop an understanding of hard materials like Metal, Wood & Plastic and their inherent properties. Develop knowledge of various tools and processes available to manipulate these materials Develop a sense of accuracy and precision through manipulating the materials into various meaningful and abstract forms.				
Reference Books Ranjan, S. M. P., & Ranjan, A. Handmade in India: A Geographical Encyclopaedia of Indian Hand Crafts. Bess, N. M., & Wein, B. Bamboo in Japan. Eames, C., & Eames, R. Objects & Furniture Design. Publisher Imprint: Ediciones Polígrafa Tilley, C. Material Culture & Texts: The Art of Ambiguity. Solank, S. Why Material Matter. "Making and Drawing" by Kyra Cane "Material Matters: New Materials in Design" by Philip Howes and Zoe Laughlin				

Course Content			
Module	Course Plan	Hrs	Marks
I	Basic Woodworking Techniques and Surface Treatments Hands-on practice: cut and shape wood using various techniques, apply different surface treatments. Create a wood project that utilizes these techniques to achieve a specific design or functional perspective.	21	25%
II	Basic Metal Manipulation and Fabrication A series of metal pieces demonstrating cutting, forming, and finishing techniques. Fabricated metal objects demonstrating various joining and finishing techniques. Documentation of design iterations and final outcomes showcasing different fabrication approaches.	21	25%
III	Metal and Wood Integration Making Products which can have combination of materials with metal and wood. Apply woodworking and metalworking techniques to create a multi-material project.	21	25%
IV	Model Representation with Plastics and Mixed Materials Hands-on exercises in cutting, shaping, and joining plastic materials. Techniques for bending, heating, and forming plastic components. Explore surface treatments for plastics, such as painting, sanding, and texturing. Models constructed from plastics and mixed materials, demonstrating various manipulation and assembly techniques.	21	25%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCL204	Typography	0-1-0-3	2	2024
Course Objective This course is an investigation into typography and text for verbal and visual expression. The course will explore different formats with varied applications of type, image and colour. Assignments will also encourage students to develop a greater sensitivity to typographic details in order to create successful typographic messages.				
Syllabus Study of Typography, Classification of typefaces, Compositions with type, Knowledge of famous type designers, Study of grids and layouts.				
Expected outcome Students will be able to construct and develop typefaces. Students will also be able to formulate typographic variables. They will also be able to evaluate the ability to compare different typefaces and visually interpret type families and know about type designers.				
Reference Books Carter Ron, Day Ben Meg Phillip, Typographic Design: Form and Communication, John Wiley & Sons, 1999 Allen Hurlburt, The Grid, John Wiley & Sons, 1998 Grids: The Structure of Graphic Design, 1 December 1996 by Andre Jute				

Course Content			
Module	Course Plan	Hrs	Marks
I	Study of Typography. Study of Indian Language scripts. Vernacular letter-forms. Introduction to type and its history. Type as a form and means of communication. Structure and anatomy of the type; x-height, ascenders, descenders, counter, cap-height, baseline, etc. Classification of typefaces. Theoretical and applicable principles of communicating with letterforms. Multi lingual Typography. Semantics of type. Expressive Typography.	16	40%
II	Compositions with type. Calligraphy in Indian Language scripts. Learning to see and recognise typefaces, type families.	12	10%
III	Knowledge of famous type designers. Exploration of three-dimensional features of letter forms. Typography in different contexts like Books, Mailers, New media, Posters, Signages, Motion graphics etc.	16	25%
IV	Study of grids and layouts. Construction of type with hand. Legibility and readability issues in type. Understanding Typesetting parameters. Typographic variables: kerning, tracking, leading, Spacing etc.	12	25%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDPCS205	Moving Image Design	0-1-2-0	3	2024

Course Objective

To understand the basic concepts of film and animation design.

Syllabus

A brief history of cinema and animation films and their development as art and an industry. Basic concepts of animation. Understanding various animation methods, the basic principles of animation, and the process of creating animation films, from story to script to screen.

Expected outcome

Students will understand the basic concepts of film and animation. Students will explore animation hands-on to grasp these concepts.

Reference Books

Frank Thomas, Ollie Johnston, The Illusion of Life: Disney Animation. New York: Hyperion, 1995.

Richard Williams, The animator's survival kit, London: Faber and Faber, 2009.

Shamus Culhane, Animation from Script to Screen, St. Martin's Griffin.

Smith, Thomas G, Industrial Light and Magic The Art of Special Effects, Columbus books, 1986.

Lord, Peter, Nick Park, Brian Sibley, Cracking Animation: The Aardman Book of 3-D Animation, Thames and Hudson.

Murch, Walter, In the Blink of an Eye Revised 2nd Edition, Publisher: Silman-James Pr; 1995.

Dix, Andrew, Beginning film studies, Publisher: Manchester University Press, 15-Jul-2008- Ray, Satyajit, Our Films Their Films, Publisher: Orient Longman Pvt. Ltd., Third Edition, 1993. reprint 1998.

Course Content			
Module	Course Plan	Hrs	Marks
I	A brief history of cinema and animation films and their development as art and an industry. Basic concepts of animation, Persistence of vision.	9	20%
II	Understanding different animation methods: Traditional animation, computer animation, visual effects, integration with live action, stop motion animation, etc.	9	20%
III	Understanding the basic Principles and techniques of Animation.	12	30%
IV	Understanding the process of animation, from story to script to screen. Pre-Production, Production and Post Production.	12	30%

Course Code	Course Name	L-T-S-P	Credits	Year of Introduction
BDAEL206	Digital Skills 2	0-1-0-3	2	2024
Course Objective To introduce students to the basic concepts of 3D modelling using CAD. To train students in creating renderings for simple products. To introduce students to basic programming.				
Syllabus Introduction to CAD. Basic 3D modelling, lighting, material mapping, and rendering. Introduction to basic programming.				
Expected outcome By the end of the course, students will have a basic understanding of the tools and techniques used in CAD for 3D modelling. They will also have an idea about the concept of lighting and material application while rendering.				
Reference Books Solidworks 2022 Step-By-Step Guide Paperback – 11 January 2022 by AMIT BHATT & Mark Wiley CAD/CAM: Theory and Practice: Special Indian Edition Paperback – 25 June 2009 by Ibrahim Zeid & R Sivasubramanian Digital Lighting and Rendering Paperback – 27 April 2006 by Jeremy Birn Digital Media Series: Rhinoceros by Jinmo Rhee Digital Media Series: Grasshopper by Jinmo Rhee				

Course Content			
Module	Course Plan	Hrs	Marks
I	Introduction to CAD: Understanding the basics of CAD, 3-D Planes, Sketching in Planes, Sketching Tools, and Entities. Creating Curves, Helix, Projected Curve, and Curve through References using software like Solidworks, Fusion 360, etc.	12	20%
II	Basic 3D Modelling: Modelling Operations- Extrude, Revolve, Sweep, Threading, Loft, Sweep, Mirroring	12	25%
III	Rendering: Introduction to lighting, material mapping and photorealistic rendering using software like Blender, V-ray etc	12	25%
IV	Introduction to the basics of algorithmic thinking and an introduction to object-oriented programming, introduction to Rhino Grasshopper. Introduction to 3D printing.	20	30%