# ALAGAPPA UNIVERSITY

(Accredited with A+ Grade by NAAC (CGPA: 3.64) in the Third Cycle,
Graded as Category-I University and granted autonomy by MHRD-UGC)

**DIRECTORATE OF COLLABORATIVE PROGRAMMES**

# B.Des. User Experience Design

**Regulations and Syllabus**

**[For those who join the Course in June 2023 and after]**

# ALAGAPPA UNIVERSITY

## Vision

Achieving Excellence in all spheres of Education, with particular emphasis on Pedagogy, Extension, Administration, Research and Learning (PEARL).

## Mission

Affording a High-Quality Higher Education to the learners so that they are transformed into intellectually competent human resources that will help in the uplift of the nation to Educational, Social, Technological, Environmental and Economic Magnificence (ESTEEM).

## Objectives

Providing instructions and training in such branches of learning, as the University may determine. Fostering research for the advancement and dissemination of knowledge.

## COLLABORATIVE PROGRAMMES

## BACHELOR OF DESIGN – USER EXPERIENCE DESIGN

| | |
|---|---|
| **Name of the Programme** | : **B. Des. (Bachelor of Design)** |
| **Pattern** | : Semester System |
| **Mode** | : Collaborative Programs |
| **Medium** | : English |
| **Duration** | : Four Years |

**Eligibility** : Candidate for admission to **B. Des.**shall be required to have passed Higher Secondary (10+ 2) or its equivalent in any stream from any recognized Institution.

Eligibility of candidates applying from abroad shall be evaluated for equivalence on case-to-case basis.

## STANDARD OF PASSING AND AWARD OF DIVISION:

a) The total marks for theory courses shall have a contribution of 25% from Continuous Internal Assessment and 75% from External Assessment.
b) The total marks for practical/project courses shall have a contribution of 75% from Continuous Internal Assessment and 25% from External Assessment.
c) The overall passing minimum for each subject. shall be 40% in aggregate of Continuous Internal Assessment and External Assessment.
d) The minimum marks for passing in each External Assessment of theory/practical course shall be 40% of the marks prescribed for the course.
e) The minimum marks for passing in each Internal Assessment of theory/practical course shall be 40% of the marks prescribed for the course.
f) A candidate who secures 40% or more marks but less than 60% of the aggregate marks shall be awarded **SECOND CLASS.**
g) A candidate who secures 60% or more of the aggregate marks shall be awarded **FIRST CLASS.**
h) A candidate who secures 80% and above marks will be awarded **FIRST CLASS WITH DISTINCTION** (Provided the student pass all the courses in the first attempt)
i) The external assessment of the practical/project shall be done by a minimum of two examiners comprising of an Internal Examiner and External Examiner.

## CONTINUOUS INTERNAL ASSESSMENT

The respective course faculty will continuously assess the performance of students in each course.

For theory papers, the Continuous Internal Assessment marks shall be awarded by the concerned course faculty based on the performance of the students in case studies, presentations, quizzes, practical, tests and other assignments.

For Practical/Project based courses, the Continuous Internal Assessment shall be conducted through evaluation of design assignments administered by the course faculty. The factors of assessment is given below:

| FACTORS | OBJECTIVES | MARKS |
|---|---|---|
| UNDERSTANDING OF THE SUBJECT | KNOWLEDGE | 15 |
| LEVEL OF EXPLORATION/IDEATION | SKILL | 15 |
| THOROUGHNESS IN WORK | KNOWLEDGE | 15 |
| FUTURISTIC THINKING | ATTITUDE | 15 |
| COMPREHENSIVE PESENTATION | SKILL | 15 |
| | **Total** | **75** |

**THEORY QUESTION PAPER PATTERN(EXTRENAL ASSESSMENT):**

**i) Question paper pattern (75 Marks)**

| | | | |
|---|---|---|---|
| Part A | Answer for all 10 x 1 = 10 Marks | 10 Marks | 10 questions – 2 each from every unit |
| Part B | Either/or type like 1. a (or) b 5 x 5 = 25 Marks | 25 Marks | 5 questions – 1 each from every unit |
| Part C | Either/or type like 1. a (or) b 5 x 8 = 40 Marks | 40 Marks | 5 questions -1 each from every unit |

**PRACTICAL/PROJECT COURSES EXTERNAL ASSESSMENT PATTERN:**

The learning efforts of the students through assignment execution shall be evaluated by Externaljury based on the following factors.

| FACTORS | OBJECTIVES | MARKS |
|---|---|---|
| UNDERSTANDING OF THE SUBJECT | KNOWLEDGE | 5 |
| LEVEL OF EXPLORATION/IDEATION | SKILL | 5 |
| THOROUGHNESS IN WORK | KNOWLEDGE | 5 |
| FUTURISTIC THINKING | ATTITUDE | 5 |
| COMPREHENSIVE PESENTATION | SKILL | 5 |
| | **Total** | **25** |

**ATTENDANCE:**

| ATTENDANCE GUIDELINES | | | |
|---|---|---|---|
| **0 - 59 %** | **60 - 69 %** | **70 - 74 %** | **75 - 100 %** |
| NOT ELIGIBLE TO APPEAR FOR EXAMINATION | CONDONATION FEE + MEDICAL CERTIFICATES | CONDONATION FEE | MEETING THE ATTENDANCE REQUIREMENTS |
| SEMESTER DROP | IF NOT DEPOSITED / SUBMITTED THEN SUBJECT ARREAR | | |

**UNIVERSITY EXAMINATIONS:**

The University theory examinations will be held at the end of each Semester that has a theory paper for a duration of three hours for each subject.

**EVALUATION OF ANSWER PAPERS:**

Answer papers of the University Examinations shall be subjected to evaluation by a Board of Examiners constituted by Alagappa University.

**INTERNSHIP:**

The course being professional, the students are required to undergo industrial exposure at the end of the 6th semester of the program for a period of minimum one and half month or 45 days.

Assessment for internship shall be done by a team of one internal examiner and one external examiner.

**DEGREE PROJECT:**

The degree project can be executed either in an industrial studio or as an in-house project in the institute. The internal assessment shall be done in the form of two internal reviews and one pre-jury. Attending all the three assessments is mandatory.

The external assessment for degree project shall be done by a minimum of one internal examiner and one external examiner.

The student shall be allowed to appear for the final degree project if and only if he/she has cleared all the previous courses.

**AWARD OF DEGREE:**

Students who successfully complete the program by meeting all the academic requirements within the stipulated period of six years from the year of admission shall be awarded the degree of B. Des. (Bachelor of Design).

**PROGRAMME CONTENT AND SCHEME OF EXAMINATIONS**

The course of study shall comprise the following subjects according to the syllabus prescribed from time to time.

# B.Des. User Experience Design

| Sem | Part | Course Code | Sub. Code | Title of the Paper | T/P | Credits | H/W | Marks | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Int. | Ext. | |
| I | I | T/OL | 60911T/F/H/ M/TU/ S/A | Tamil / Other Languages - I | T | 3 | 3 | 25 | 75 | 100 |
| | II | E | 60912 | General English - I | T | 3 | 3 | 25 | 75 | 100 |
| | III | CC | 60913 | Creativity and Mind Mapping | P | 2 | 3 | 75 | 25 | 100 |
| | | CC | 60914 | Foundation Drawing | P | 4 | 5 | 75 | 25 | 100 |
| | | CC | 60915 | Elements of Design - I | P | 4 | 5 | 75 | 25 | 100 |
| | | CC | 60916 | Colour Theory | P | 2 | 3 | 75 | 25 | 100 |
| | | Allied | 60917 | Introduction to Materials | P | 4 | 4 | 75 | 25 | 100 |
| | IV | SEC-I | 60918 | Value Education | T | 2 | 2 | 25 | 75 | 100 |
| | | | | Library | | | 2 | | | |
| | | | **Total** | | | **24** | **30** | **450** | **350** | **800** |
| II | I | T/OL | 60921T/F/H/ M/TU/ S/A | Tamil / Other Languages - II | T | 3 | 3 | 25 | 75 | 100 |
| | II | E | 60922 | General English - II | T | 3 | 3 | 25 | 75 | 100 |
| | III | CC | 60923 | Introduction to Photography | P | 4 | 4 | 75 | 25 | 100 |
| | | CC | 60924 | Product Sketching and Drawing | P | 4 | 6 | 75 | 25 | 100 |
| | | CC | 60925 | Design Process | P | 4 | 6 | 75 | 25 | 100 |
| | | Allied | 60926 | Elements of Design - II | P | 4 | 4 | 75 | 25 | 100 |
| | IV | SEC-II | 60927 | Environmental Studies | T | 2 | 2 | 25 | 75 | 100 |
| | | | | Library | | | 2 | | | |
| | | | **Total** | | | **24** | **30** | **375** | **325** | **700** |
| III | I | T/OL | 60931T/F/H/ M/TU/ S/A | Tamil / Other Languages - III | T | 3 | 3 | 25 | 75 | 100 |
| | II | E | 60932 | General English - III | T | 3 | 3 | 25 | 75 | 100 |
| | III | CC | 60933 | Art Design and Culture | P | 2 | 3 | 75 | 25 | 100 |
| | | CC | 60934 | User Interface and User Experience | P | 3 | 4 | 75 | 25 | 100 |
| | | CC | 60935 | Visual and Heuristic Principles | P | 3 | 4 | 75 | 25 | 100 |
| | | CC | 60936 | Typography | P | 3 | 4 | 75 | 25 | 100 |
| | | Allied | 60937 | Product Experience | P | 4 | 5 | 75 | 25 | 100 |
| | IV | SEC-III | 60938 | Entrepreneurship | T | 2 | 2 | 25 | 75 | 100 |
| | | NME-I | 60939A/ 60939B/ 60939C | NME-I<br>1) Adipadai Tamil–I/ | P | 2 | 2 | 25 | 75 | 100 |
| | | | | 2) Advance Tamil– I/ | T | | | | | |
| | | | | 3) IT Skills for Employment | T | | | | | |
| | | | | MOOC'S | | | | | | |
| | | | **Total** | | | **25** | **30** | **475** | **425** | **900** |
| IV | I | T/OL | 60941T/F/H/ M/TU/ S/A | Tamil / Other Languages - IV | T | 3 | 3 | 25 | 75 | 100 |
| | II | E | 60942 | General English - IV | T | 3 | 3 | 25 | 75 | 100 |
| | III | CC | 60943 | Aesthetics in Design | P | 2 | 3 | 75 | 25 | 100 |
| | | CC | 60944 | Research Methodology | P | 2 | 3 | 75 | 25 | 100 |
| | | CC | 60945 | Digital Design Tools | P | 3 | 4 | 75 | 25 | 100 |
| | | CC | 60946 | Applied Ergonomics | P | 4 | 4 | 75 | 25 | 100 |
| | | Allied | 60947 | Information Architecture | P | 4 | 4 | 75 | 25 | 100 |
| | | DSE | 60948 | Project I – Information and Data Visualization | P | 4 | 4 | 75 | 25 | 100 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | IV | NME-II | 60949A/ 60949B/ 60949C | NME-II<br>1) Adipadai Tamil –II/ | P | 2 | 2 | 25 | 75 | 100 |
| | | | | 2) Advance Tamil– II/ | T | | | | | |
| | | | | 3) Small Business Management | T | | | | | |
| | | | | MOOC'S | | | | | | |
| | | | **Total** | | | **27** | **30** | **525** | **375** | **900** |
| V | III | CC | 60951 | Sustainable Design | P | 4 | 6 | 75 | 25 | 100 |
| | | CC | 60952 | Microinteractions | P | 2 | 2 | 75 | 25 | 100 |
| | | CC | 60953 | Useability Testing | P | 4 | 6 | 75 | 25 | 100 |
| | | Allied | 60954 | Data Analytics and SEO | P | 4 | 6 | 75 | 25 | 100 |
| | | Allied | 60955 | AI for Design | P | 2 | 2 | 75 | 25 | 100 |
| | | DSE | 60956 | Project II – System Design | P | 4 | 6 | 75 | 25 | 100 |
| | IV | OE | 60957A<br>60957B<br>60957C | Open Elective<br>1) Theatre for Design<br>2) Craft Study-I<br>3) ClayModelling | P | 2 | 2 | 75 | 25 | 100 |
| | | | **Total** | | | **22** | **30** | **525** | **175** | **700** |
| VI | III | CC | 60961 | UX Ethics and Security | P | 4 | 4 | 75 | 25 | 100 |
| | | CC | 60962 | Inclusive User Experience | P | 4 | 6 | 75 | 25 | 100 |
| | | CC | 60963 | Toy and Game Design | P | 4 | 6 | 75 | 25 | 100 |
| | | Allied | 60964 | Interaction in Virtual Environment | P | 4 | 6 | 75 | 25 | 100 |
| | | Allied | 60965 | Portfolio Skills | P | 2 | 2 | 75 | 25 | 100 |
| | | DSE | 60966 | Project III –Application Design | P | 4 | 4 | 75 | 25 | 100 |
| | IV | OE | 60967A<br>60967B<br>60967C | Open Elective<br>1) Puppetry<br>2) Craft Study-II<br>3) Story Telling | P | 2 | 2 | 75 | 25 | 100 |
| | | | **Total** | | | **24** | **30** | **525** | **175** | **700** |
| VII | III | | | Industrial internship of 45 days (between VI and VII semester break) | | | | | | |
| | | CC | 60971 | Internship | I | 2 | | 75 | 25 | 100 |
| | | CC | 60972 | New Media Design | P | 4 | 6 | 75 | 25 | 100 |
| | | CC | 60973 | Film Design | P | 4 | 6 | 75 | 25 | 100 |
| | | CC | 60974 | Project IV – Interaction Design | P | 4 | 6 | 75 | 25 | 100 |
| | | CC | 60975 | Visual Merchandising | P | 4 | 6 | 75 | 25 | 100 |
| | | Allied | 60976 | Design Management and Professional Practice | P | 2 | 3 | 75 | 25 | 100 |
| | | DSE | 60977 | Design For Future | P | 2 | 3 | 75 | 25 | 100 |
| | | | **Total** | | | **22** | **30** | **525** | **175** | **700** |
| VIII | III | CC | 60981 | Degree Project | PR | 10 | 24 | 75 | 25 | 100 |
| | | DSE | 60982 | Design Research Report Writing | P | 4 | 6 | 75 | 25 | 100 |
| | | | **Total** | | | **14** | **30** | **150** | **50** | **200** |
| **Grand Total** | | | | | | **182** | **240** | **3550** | **2050** | **5600** |

**Note:**
For Theory: 1 Credit = 1 Hour
For Practical: 1 Credit = 2 Hours

| Syllabus Designed By | BOS Date | Approved By |
|---|---|---|
| Dr.Aravind Shanmuga Sundaram M<br>Mr.Ariharasunthan. R | 23.08.2023 | BOS |

**GLOSSARY**

| | |
|---|---|
| **MIL** | Modern Indian Language, |
| **E** | English |
| **CC** | Core course<br>(*Core competency, critical thinking, analytical reasoning, research skill & team work* ) |
| **GEC(Allied)** | Exposure beyond the discipline |
| **AECC** | Ability Enhancement Compulsory Course<br>((*Professional English & Environmental Studies*) - *Additional academic knowledge, psychology and problem solving etc*.,) |
| **OE** | Open Elective |
| **SEC** | Skill Enhancement Course<br>(*Exposure beyond the discipline -Value Education, Entrepreneurship Course, Computer Application for Science, etc.,*) |
| **NME** | Non-Major Elective<br>(*Exposure beyond the discipline*) |
| **DSE** | Discipline specific elective |
| **MOOC** | Massive Open Online Course |
| **IT** | Information Technology |

**ProgrammeEducational Objectives (PEOs)**

| Programme Educational Objectives | On the successful completion of B.Des the graduate student is expected to the below after graduation |
|---|---|
| PEO1 | Students shall be imbibed with a comprehensive quality knowledge in the field of design. |
| PEO2 | The design knowledge imparted shall be a conduit between conventional and contemporary practices. |
| PEO3 | As a design practitioner, students shall be trained to have a multidisciplinary approach to problem solving. |
| PEO4 | The students shall be groomed to be socially empathetic individuals in all walks of life. |
| PEO5 | As designers, students shall be able to appreciate and be sensitive to the interdependence between regional and global influences. |

**Programme Specific Outcomes (PSOs)**

| Programme Specific Outcomes | After the successful completion of the User Experience Design Program |
|---|---|
| PSO1 | Students will know all the functional constituents of User Experience design based on the different classes of products. |
| PSO2 | Studentscreateproductconceptswhich is a pragmatic meld of traditional and modern processes. |
| PSO3 | Students will consider social, economic, psychological, environmental, sustainable and scientific factors when they design a product. |
| PSO4 | Students will conduct themselves as socially empathetic individuals in their daily life. |
| PSO5 | Students will be able to ascertain the mutual influence between their design and global designs. |

**Programme outcomes (POs)**

| Programme Outcomes | On the successful completion of B. Des. User Experience Design |
|---|---|
| PO1 | Students acquire fundamental knowledge and skills on the elements of design and their interrelationships. |
| PO2 | Will learn the design process and its impact in designing optimum solutions. |
| PO3 | Will gain knowledge about the characteristics of materials and their handling in designing and presenting products. |
| PO4 | Acquire skills in using digital tools and applying the right ergonomic factors in designing an Experience. |
| PO5 | Practice considerations for sustainability and social change in User Experience design. |
| PO6 | Execute designing advanced User Experience and interactions to enrich their User Experience design and development skills. |
| PO7 | Explore new User Experience design and development for the contemporary world. |
| PO8 | Students acquire skills in design of systems and product presentation techniques. |
| PO9 | Students will explore professional User Experience design practices by executing a design project by applying their learning |
| PO10 | Students become experts in Use Experience design skills and practices that prepare them for professional as well as research career. |

## SEMESTER I

| Semester I | | | | | |
|---|---|---|---|---|---|
| **T/OL** | **60911T/F/H/M/ TU/S/A** | **Tamil/Other Languages - I** | **T** | **Credits -3** | **Hours - 3** |

| Semester I | | | | | |
|---|---|---|---|---|---|
| **E** | **60912** | **General English - I** | **T** | **Credits -3** | **Hours - 3** |

| Semester I | | | | | |
|---|---|---|---|---|---|
| **CC** | **60913** | **Creativity and Mind Mapping** | **P** | **Credits -2** | **Hours - 3** |
| **Objectives** | 1. To gain insights on personal creative abilities.<br>2. To recognize importance of collective creative design endeavours.<br>3. To understand basic ideation related techniques.<br>4. To get introduced to basic design constructs and creative thinking tools.<br>5. To explore creativity through projects. | | | | |
| **Unit I** | Understanding Creativity – Realising personal creative capabilities and uniqueness through interdisciplinary activities – Definition of Abstract- Definition of Concrete – Creativity using language- Story writing – Story boarding- Acting- Enacting through theatre. Creating art through unconventional medium. | | | | |
| **Unit II** | What is Design? – Design Thinking- Boosting Visual Representations using metaphors. Figures of speech - Emphasis on Empathy - Emphasis on Teamwork - Individual contribution to collective cause-Understanding non-verbal communication. | | | | |
| **Unit III** | Mind mapping - Brain storming techniques – Applications of Mind Mapping – Creating Mind map Models - Real life problems – Grassroot design – Context Mapping – Data Collection – Analysis – Grouping information. | | | | |
| **Unit IV** | Introduction toCreative Techniques in Design, SCAMPER Creative Technique, Six thinking hats by Edward De Bono Technique for Creative Thinking, 6-8-5 Technique | | | | |
| **Unit V** | Team-based design projects – Individual/Team Presentations – Use of Visual Medium – Feedback Analysis – Critical Analysis – Listening and Reading Comprehension – Report Writing. | | | | |

**Reference and Text books**


Hisako Ichiki (2005); Takao Umehara, Extra ordinary: An amusing way for unleashing your creativity, Rockport Publishers

Joyce Wycoff (1991), Mind Mapping: your Personal guide to Exploring Creativity and Problem-Solving, Berkley Books, New York

Ed Catmull (2014), Creativity, INC: Overcoming the unseen forces that Stand in the way of True Inspiration, Bantam Press

Edward De Bono (2016), Six Thinking Hats (RIE): The multi-million bestselling guide to running better meetings and making faster decisions, Penguin Publishers


**Web Resources**

https://www.psychologytoday.com/us/basics/creativity
https://www.sciencedirect.com/journal/journal-of-creativity
https://www.tandfonline.com/journals/hcrj20
https://onlinelibrary.wiley.com/journal/21626057
https://www.adelaide.edu.au/writingcentre/sites/default/files/docs/learningguide-mindmapping.pdf
https://libguides.umn.edu/c.php?g=921727&p=8499064

| Course Outcomes | | Knowledge Level |
|---|---|---|
| CO1 | Understand and identify personal creative boundaries. | K2 |
| CO2 | Recognize the importance of collective efforts through individual creative contributions. | K2 |
| CO3 | Apply ideation techniques to analyse and synthesize information. | K3 |
| CO4 | Utilize creative thinking tools in design efforts. | K5 |
| CO5 | Evaluate creative skills and tools through project execution. | K5 |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 1 | - | - | - | - | 1 | 2 | 1 | 2 |
| CO2 | 3 | 2 | - | - | - | 2 | 1 | 3 | 3 | 2 |
| CO3 | 3 | 3 | 1 | - | - | 1 | 1 | 1 | 1 | 2 |
| CO4 | 3 | 1 | - | 2 | 1 | 1 | 1 | 1 | 2 | 2 |
| CO5 | 3 | 1 | - | 2 | 1 | 1 | 2 | 2 | 3 | 3 |
| **W. AV** | **3** | **1.6** | **0.2** | **0.8** | **0.4** | **1** | **1.2** | **1.8** | **2** | **2.2** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| CO1 | 3 | 3 | 2 | 1 | 1 |
| CO2 | 2 | 3 | 3 | 3 | 1 |
| CO3 | 2 | 2 | 3 | 3 | 3 |
| CO4 | 2 | 2 | 3 | 3 | 2 |
| CO5 | 2 | 2 | 3 | 3 | 2 |
| **W. AV** | **2.2** | **2.4** | **2.8** | **2.6** | **1.8** |

| Semester I | | | | | |
|---|---|---|---|---|---|
| **CC** | **60914** | **Foundation Drawing** | **P** | **Credits - 4** | **Hours - 5** |
| **Objectives** | 1. To understand and appreciate drawing as a medium of communication.<br>2. To gain insights into personal drawing capabilities through basic exercises.<br>3. To understand the various perspectives in drawing.<br>4. To familiarize with the techniques to create authentic drawings of objects in natural settings.<br>5. To gain a critical appreciation for the expressive power of drawing to communicate significant content and form. | | | | |
| **Unit I** | Elements of Art – Line. Exercise with different types of lines, i.e., Horizontal lines, Vertical Lines, Diagonal lines, understanding its applications and design orientations. Realization of personal style. | | | | |
| **Unit II** | Perspective drawing study - 1 point, 2 points, and 3 points perspectives, (Arial View- Bird Eye View, Worm Eye View, Foreshortening). Understanding the design drawing with perspective applications. | | | | |
| **Unit III** | Understanding Light and Shadow, Gray Scale - basic geometrical forms- Cuboid, Cone, Sphere, and others. Rendering natural and man-made objects using traditional and novel mediums. | | | | |
| **Unit IV** | Nature drawing study - Drawing organic forms from life and/or images.Understanding the light and shadow, textures, materials, rendering styles and techniques.Indoor / Outdoor Study. | | | | |
| **Unit V** | Study of human body, develop a Male and female proportion understanding, study the basic anatomy, understand the humans in motions and poses Sketching. | | | | |
| **Reference and Text books**<br>Scott Robertson & Thomas Bertlin (2013), How to Draw: Drawing And Sketching Objects and Environments From Your Imagination, , Design Studio Press<br>KoosEissen&RosilinSteur (2009), Sketching: Drawing Techniques for Product Designers, BIS Publishers<br>Steven B. Reddy (2018), Everyday Sketching and Drawing: Five Steps to a Unique and Personal Sketchbook Habit, Monacelli Press<br>Andrew Loomis (2011), “Drawing the Head and Hands”, Titan Publisher<br>Alan Pipes (1990), Drawing for 3-dimensional design: Concepts, Illustration, Presentation, Thames & Hudson Publication. | | | | | |
| **Web Resources**<br>https://artmuseum.princeton.edu/learn/art-making/online-drawing-classes | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| CO1 | Understand and realize personal drawings styles and skills. | K2 |
| CO2 | Create authentic perspective drawings of objects. | K6 |
| CO3 | Create drawing compositions with vivid emphasis on the basic visual constituents of an object. | K6 |
| CO4 | Demonstrate skills to draw in natural settings. | K2 |
| CO5 | Show skills in drawing human figures. | K2 |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | - | - | - | 2 | 1 | 2 | 2 | 2 |
| CO2 | 3 | 3 | - | - | - | 2 | 1 | 2 | 2 | 2 |
| CO3 | 3 | 3 | 1 | - | - | 2 | 1 | 2 | 2 | 2 |
| CO4 | 3 | 3 | 1 | - | 2 | 1 | 1 | 2 | 2 | 2 |
| CO5 | 3 | 2 | - | 3 | 1 | 1 | 1 | 1 | 2 | 2 |
| **W. AV** | **3** | **2.8** | **0.4** | **0.6** | **0.6** | **1.6** | **1** | **1.8** | **2** | **2** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| CO1 | 2 | 3 | 1 | 3 | 3 |
| CO2 | 3 | 3 | 1 | 1 | 2 |
| CO3 | 3 | 3 | 3 | 1 | 2 |
| CO4 | 3 | 3 | 1 | 1 | 2 |
| CO5 | 1 | 2 | 3 | 2 | 1 |
| **W. AV** | **2.4** | **2.8** | **1.8** | **1.6** | **2** |

| Semester I | | | | | |
|---|---|---|---|---|---|
| **CC** | **60915** | **Elements of Design – I** | **P** | **Credits - 4** | **Hours - 5** |
| **Objectives** | 1. To educate about the elements of Design.<br>2. To educate about the Principles of Design.<br>3. To emphasize on the cognitive theories governing design.<br>4. To develop a practical understanding of order and space in design.<br>5. To learn the foundations of aesthetics in design. | | | | |
| **Unit I** | Elements of design: Point – Lines – Straight, curvy, bold and expressive lines; Shapes – Geometric, Organic and Abstract shapes; Form – Contours; Space – Negative-Positive space; Value – high value, low value; Colors – hue and shades; and Texture - patterns. | | | | |
| **Unit II** | Principles of design: Emphasis - Balance and Alignment - Repetition – Unity - Proportion- Movement - White Space. Figure-Ground Relationship- 2D monochrome/colour model creations to understand space. | | | | |
| **Unit III** | Gestalt theory; Principles- Applications of principles in design; Law of closure, Law of common region, Figure-Ground, Law of proximity, Symmetry, and order. Basic introduction to the human senses – visual, aural, and haptic- physiology | | | | |
| **Unit IV** | Order and Space: Fibonacci curve - Platonic solids - Archimedean solids – Polyhedral Fractals – Constructing solids with paper - Wire. Fusion of symmetric and asymmetric objects. | | | | |
| **Unit V** | Aesthetics: Hierarchy, Balance, Scale, Repetition, Contrast, Proximity, Pattern. Golden Ratio, Von Restorff Effect – Cognitive understanding. Aesthetics and Usability. | | | | |

**Reference and Textbooks**


William Lidwell, Kritina Holden & Jill Butler (2010), Universal Principles of Design, 2nd Edition, Rockport Publishers

Agoston (1987), G. A., Color Theory and Its Application in Art and Design, Springer, Berlin, Heidelberg

Hisako Ichiki& Takao Umehara (2005), Extra Ordinary: An amusing way for unleashing your creativity, Rockport Publishers

Joyce Wycoff (1991), Mind Mapping: your Personal guide to Exploring Creativity and Problem-Solving, Berkley Books, New York

Ed Catmull (2014), Creativity, INC: Overcoming the unseen forces that Stand in the way of True Inspiration, Bantam Press


**Web Resources**

https://www.extension.iastate.edu/4hfiles/statefair/eehandbook/eehjpdesign4h634.pdf
https://guides.lib.berkeley.edu/c.php?g=920740&p=6634741
https://www.wichita.edu/services/mrc/OIR/Creative/1Design/design-elements.php

| Course Outcomes | | Knowledge Level |
|---|---|---|
| CO1 | Demonstrate thorough knowledge in elements of design. | K3 |
| CO2 | Demonstrate thorough knowledge in principles of design | K3 |
| CO3 | Adept in utilizing Gestalt theory for design applications. | K3 |
| CO4 | Create designs using order and space effectively. | K6 |
| CO5 | Analyze designs for their aesthetic content. | K4 |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 3 |
| CO2 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 3 |
| CO3 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 3 |
| CO4 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 3 |
| CO5 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 3 |
| **W. AV** | **3** | **2** | **2** | **2** | **1** | **1** | **2** | **1** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| CO1 | 3 | 1 | 2 | 1 | 2 |
| CO2 | 3 | 1 | 2 | 1 | 2 |
| CO3 | 3 | 1 | 2 | 1 | 2 |
| CO4 | 3 | 1 | 2 | 1 | 2 |
| CO5 | 3 | 1 | 2 | 1 | 2 |
| **W. AV** | **3** | **1** | **2** | **1** | **2** |

| Semester I | | | | | |
|---|---|---|---|---|---|
| **CC** | **60916** | **Colour Theory** | **P** | **Credits -2** | **Hours - 3** |
| **Objectives** | 1. To educate on the basics of colour theory.<br>2. To familiarize on the basics of values of colour.<br>3. To understand the emotional aspects of colour.<br>4. To recognize the sensitivity to the importance of colour in daily life.<br>5. To develop designs by employing colour theories. | | | | |
| **Unit I** | Introduction to Colour and its Uses - Primary & Secondary Colours - Understanding Hue, Value, Tint, and shade - Meaning and understanding of colour intensity by making a chart. | | | | |
| **Unit II** | Greyscale, Tonal values - 2D Achromatic Composition- High, Middle, and Low contrast - Space Division, Emphasis, Balance. Colour schemes - Analogous, Complimentary, Monochrome, Achromatic, Adjacent, Warm and Cool Colours. | | | | |
| **Unit III** | Physical and emotional reaction of colours. - Colour Balance - Colour Interpretation–Expression, Mood, Seasons. Introduction to Josef Alber's Interaction of Colour. Introduction to the Bezold Effect. | | | | |
| **Unit IV** | Visual compositions derived from themes -Colour harmony - Colour symbolism in various cultures and ethnicities with marked differences. Colour as signifiers in multiple contexts: Colour and emotions, Colours and seasons, Colour and Food, Colour and Spaces. | | | | |
| **Unit V** | Colour in popular media and films - Colours and genres – Colour in publication design – Colour coding in signage and wayfinding, colour in web/app designing for digital media. Colour as a dominant aspect of fashion. - Gender classification of colour. – Colour sophistication and colour trends in fashion. Colour signifiers in products and and their psychological influences, colour coding in industrial processes. (factory/workplace, machine, equipment, uniforms, tools etc.) | | | | |
| **Reference and Textbooks**<br>Patti Mollica (2013), Colour Theory, Walter Foster Publishing<br>Jose Maria Parramon (1993), The Book of Color: The History of Color, Color Theory, and Contrast; The Color of Forms and Shadows; Color Ranges and Mixes; And the Practice of Pai, Watson-Guptill Publications<br>Faber Birren (2013),Colour Psychology and Colour Therapy: Faber Birren,Lushena Books<br>John Gage (1995),Colour and Culture, Thames & Hudson<br>Kassia St Clair (2017),The Secret Lives of Colour, Penguin Books | | | | | |
| **Web Resources**<br>https://web.mit.edu/22.51/www/Extras/color_theory/color.html<br>https://online.maryville.edu/liberal-arts-degrees/the-art-of-color/ | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| CO1 | Utilize the basics of colour theory in design creations | K3 |
| CO2 | Employ/evaluate values of colour in designs | K3 |
| CO3 | Apply/ Assess emotional aspects of colour in designs | K3 |
| CO4 | Identify the effects of colour in daily life. | K1 |
| CO5 | Create designs with colour as an important factor of consideration. | K6 |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 3 |
| CO2 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 3 |
| CO3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 3 |
| CO4 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 3 |
| CO5 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 3 |
| **W. AV** | **3** | **3** | **2** | **1** | **1** | **1** | **1** | **2** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| CO1 | 3 | 3 | 2 | 2 | 2 |
| CO2 | 3 | 3 | 2 | 2 | 2 |
| CO3 | 3 | 3 | 2 | 2 | 2 |
| CO4 | 3 | 3 | 2 | 2 | 2 |
| CO5 | 3 | 3 | 2 | 2 | 2 |
| **W. AV** | **3** | **3** | **2** | **2** | **2** |

| Semester I | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60917** | **Introduction to Materials** | **P** | **Credits -4** | **Hours - 4** |
| **Objectives** | 1. To educate the characteristics of materials such as clay, plaster of paris, wood and metal.<br>2. To understand the methods of preparations and relevant tools of operation based on the material.<br>3. To develop basic forms/structures out of various materials using appropriate tools and machines.<br>4. To recognize the right choice of material based on the job.<br>5. To apply material know-how to develop a basic form. | | | | |
| **Unit I** | Introduction to materials – Materials suitable for prototyping – Material study based on products and industry- Traditional materials – hybrid materials – composites – applications. Methods of handling each material. Material Operations | | | | |
| **Unit II** | Workshop Practices – Safety Equipments - tool handling – Machine handling- Measuring Instruments – Sketches and Documentation – Workshop Etiquettes – Workspace Management | | | | |
| **Unit III** | Metal– working with Aluminium, Steel – Sheet Metal – Wire- Welding – Bending Operations - Creating a simple form – Surface Treatments in Metal - Buffing Painting - Polishing | | | | |
| **Unit IV** | Wood: - types of wood – Hard, Soft, Man made wood – Grains, Tone, Density – Joints – Types of joints – Wooden block, cutting in various angles, interlocking method – Surface Treatment in wood – Polishing and Painting. | | | | |
| **Unit V** | Traditional/Common Plastic Materials - Plaster of paris - carving, making basic forms. Clay- Types of Clay - Kneading – Curing – Natural Composites - Pottery – carving – toys and sculptures- Display. | | | | |
| **Reference and Textbooks**<br>Chris Lefteri (2005), Wood: Materials for Inspirational Design, Rotovision Publication<br>Mike Ashby & Kara Johnson (2014), Materials and Design: Art and science of material selection in product design, 3rd Edition, Butterworth – Heinemann<br>Inna Alesina and Ellen Lupton (2010), Exploring Materials: Creative Design for Everyday Objects, Princeton Architectural Press<br>Chris Lefteri, Metals (2004): Material for Inspirational Design, Rotovision Publication | | | | | |
| **Web Resources**<br>http://www.ijdesign.org/index.php/IJDesign/article/view/129/78<br>https://www.sciencedirect.com/journal/materials-and-design | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| CO1 | Understand the various types of material based on its characteristics and applications. | K2 |
| CO2 | Demonstrate good workshop and material handling practices | K2 |
| CO3 | Demonstrate material specific processes in prototype making. | K2 |
| CO4 | Create basic models using various types of materials like clay, metal and wood. | K6 |
| CO5 | Demonstrate product finishing skills appropriate to the material used. | K2 |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | 3 | 1 | 2 | 2 | 2 | 1 | 2 | 3 |
| CO2 | 3 | 3 | 3 | 1 | 2 | 1 | 1 | - | 2 | 3 |
| CO3 | 3 | 3 | 3 | 1 | 2 | 1 | 1 | - | 2 | 3 |
| CO4 | 3 | 3 | 3 | 1 | 2 | 1 | 1 | - | 2 | 3 |
| CO5 | 3 | 3 | 3 | 1 | 2 | 1 | 1 | - | 2 | 3 |
| **W. AV** | **3** | **3** | **3** | **1** | **2** | **1.2** | **1.2** | **0.2** | **2** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| CO1 | 3 | 3 | 2 | 3 | 2 |
| CO2 | 3 | 3 | 1 | 3 | 2 |
| CO3 | 3 | 3 | 1 | 1 | 2 |
| CO4 | 3 | 3 | 1 | 1 | 2 |
| CO5 | 3 | 3 | 1 | 1 | 2 |
| **W. AV** | **3** | **3** | **1.2** | **1.8** | **2** |

| Semester I | | | | | |
|---|---|---|---|---|---|
| **SEC-I** | **60918** | **Value Education** | **T** | **Credits -2** | **Hours -2** |

## SEMESTER II

| Semester II | | | | | |
|---|---|---|---|---|---|
| **T/OL** | **60921T/F/H/M/ TU/S/A** | **Tamil/Other Languages - II** | **P** | **Credits - 3** | **Hours -3** |

| Semester II | | | | | |
|---|---|---|---|---|---|
| **E** | **60922** | **General English – II** | **T** | **Credits - 3** | **Hours- 3** |

| Semester II | | | | | |
|---|---|---|---|---|---|
| **CC** | **60923** | **Introduction to Photography** | **P** | **Credits- 4** | **Hours -4** |
| **Objectives** | 1. To introduce the history and fundamentals of photography<br>2. To introduce the functions of camera and its handling.<br>3. To educate the elements and principles of photography<br>4. To familiarize with various types of photography<br>5. To explore the photography through a project. | | | | |
| **Unit I** | Introduction to Photography: Definition - History of photography, Black and White Photography, Colour Photography, Different genres of photography digital cameras – Types – Image editors – File formats. | | | | |
| **Unit II** | Types of cameras - Usage of lens, lights, filters, flash, and other useful accessories - Camera handling - usage of aperture, Shutter speed, ISO standards, Equipment maintenance | | | | |
| **Unit III** | Composition – frame, shot, angle, rule of third, light and shadow observations- lighting – nature light – studio light usages - exposures- depth of field and focusing. | | | | |
| **Unit IV** | Types of Photography – Project Documentation - Introduction to portrait - Landscapes – Street photography – Product photography – concept photography. | | | | |
| **Unit V** | Explore a selected genre through project - photograph curation and presentation. Photo exhibition of the course outcomes. | | | | |

**Reference and Text books**

David Prakel, (2010), Fundamentals of Creative Photography, AVA Publishing
Michael Freeman, (2005), Digital photography Expert Colour, Ilex Press Ltd
Michael Freeman, (2006), The complete guide to Light and Lighting in Digital Photography, Ilex Press Ltd.

**Web Resources**

http://edit.educ.ttu.edu/site/jcheon/manual/digital_photography.pdf
https://www.cs.cmu.edu/afs/cs/academic/class/15462-f09/www/lec/lec4.pdf
https://www.nfi.edu/when-was-the-camera-invented/

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Understand the history and fundamentals of photography | **K2** |
| **CO2** | Utilize the learnt functions /handling of camera. | **K3** |
| **CO3** | Demonstrate the knowledge of elements and principles of photography | **K3** |
| **CO4** | Utilize the knowledge to practice the various genres of photography | **K3** |
| **CO5** | Explore a selected genre through a project. | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 3 |
| **CO2** | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 3 |
| **CO3** | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 3 |
| **CO4** | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 3 |
| **CO5** | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 3 |
| **W. AV** | **3** | **2** | **2** | **2** | **1** | **1** | **1** | **2** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 2 | 2 | 2 |
| **CO2** | 3 | 2 | 2 | 1 | 1 |
| **CO3** | 3 | 3 | 3 | 3 | 2 |
| **CO4** | 3 | 3 | 3 | 3 | 1 |
| **CO5** | 3 | 2 | 2 | 2 | 2 |
| **W. AV** | **3** | **2.6** | **2.4** | **2.2** | **1.6** |

| Semester II | | | | | |
|---|---|---|---|---|---|
| **CC** | **60924** | **Product Sketching and Drawing** | **P** | **Credits -4** | **Hours- 6** |
| **Objectives** | 1. Educate about the various types of sketches involved in product development.<br>2. Learn to express product evolution through sketches.<br>3. Learn product rendering to authentically express the details of a product.<br>4. Develop capabilities to present a product through sketches.<br>5. Demonstrate skills to render an ideated product. | | | | |
| **Unit I** | Types of Sketches: Ideation Sketches - Process Sketches - Explanatory Sketches and Persuasive or Presentation Sketches - Scale and proportion – viewing angles. | | | | |
| **Unit II** | Retrospective sketching of a product - Process, Ideation and Explanatory Sketches - Analytical object drawing – product user flow sketches – parts to whole sketches – product ecosystem sketches. | | | | |
| **Unit III** | Traditional medium rendering techniques: Water colour, poster colour, markers, pen and ink. Digital techniques - Elements of shadow, depth and texture in product rendering. | | | | |
| **Unit IV** | Presentation Sketches – Detailed drawing of a product. Rendering using manual and digital methods. Emphasis on choice of visual angle, source of light and product feature to assert, material emphasis through textural rendering. | | | | |
| **Unit V** | Final Project – Presentation of detailed sketches and final rendered drawing of an ideated product- Feedback Analysis – Critical Analysis – role of sketches in product planning and prototype improvement. | | | | |

**Reference and Text books**

James Craig, (1990), Production for the Graphic Designers, Watson-Guptill
Francis D K Ching with steven P. Juroszek, (2019) Design Drawing, 3rd Edition, John Wiley Publication
KoosEissen&RosilinSteur (2009), Sketching: Drawing Techniques for Product Designers, BIS Publishers
Erik Olofsson&KlaraSjölén, (2005), Design Sketching
RoselienSteur&KoosEissen, (2011), Sketching: The Basics (2nd printing) [Hardcover], BIS Publishers

**Web Resources**

http://www.delftdesigndrawing.com/uploads/2/0/4/9/20493508/reader_final5_lqq.pdf

| Course Outcomes | | Knowledge Level |
|---|---|---|
| CO1 | Demonstrate skills to communicate product evolution through sketches. | K2 |
| CO2 | Outline product formulation stages in detail through sketches. | K4 |
| CO3 | Explore best fit sketching mediums for the product being developed. | K5 |
| CO4 | Develop skills to render and present a product authentically and appropriately. | K3 |
| CO5 | Relate the importance of sketches with product planning and prototyping. | K2 |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | 3 | 1 | 1 | 2 | 2 | 3 | 3 | 3 |
| CO2 | 3 | 3 | 3 | 1 | 1 | 2 | 2 | 3 | 3 | 3 |
| CO3 | 3 | 3 | 3 | - | 1 | 1 | 1 | 2 | 3 | 3 |
| CO4 | 3 | 2 | 1 | 1 | - | 1 | 2 | 3 | 3 | 3 |
| CO5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.8** | **2.6** | **1** | **1** | **1.6** | **2.2** | **2.8** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| CO1 | 3 | 3 | 3 | 1 | 2 |
| CO2 | 3 | 3 | 3 | 1 | 2 |
| CO3 | 3 | 3 | 2 | 1 | 2 |
| CO4 | 3 | 3 | 2 | 1 | 2 |
| CO5 | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **3** | **2.6** | **1.4** | **2.2** |

| Semester II | | | | | |
|---|---|---|---|---|---|
| **CC** | **60925** | **Design Process** | **P** | **Credits - 4** | **Hours-6** |
| **Objectives** | 1. Educate on the details of design process<br>2. Familiarize with various data presentation and abstraction techniques<br>3. Develop an understanding of various brain storming techniques<br>4. Familiarize with methods to present a concept.<br>5. Employ design process techniques to conduct a mini project. | | | | |
| **Unit I** | Introduction to design process, design premise, design brief, constraints, and criteria for designing. User Studies- Maps – ecosystem map- affinity map- empathy map. Design space, solution space, prototyping, iterative design , divergence and convergence in design process. User in design. | | | | |
| **Unit II** | Working board: Preliminary concepts using storyboard, material board, form board, Mood boards. User flow, Context mapping, Primary research, Secondary research data, Data analysis and synthesis, basic statistics, sample space. | | | | |
| **Unit III** | Brain storming, mind mapping, research, market study, forecast, inspiration and doodling – field visit and case study, prototypes – rough- medium- high fidelity prototypes. User testing – KPI. Sustainability. | | | | |
| **Unit IV** | Concept of presentation, surface development, exploratory drawings, illustration, specification sheet, cost sheet and technical packages. Product rendering. | | | | |
| **Unit V** | Development of a product through detailed practice of design, Creating mock-up, Design drawing , Presentation, Transition from brief to detailed design brief | | | | |
| **Reference and Text books**<br>Bryan Lawson, (2005), How Designers Think: The Design Process Demystified, Om Books<br>Richard Morris, (2009), Fundamentals of Product Design, Academic Press<br>Tim Parsons, (2009), Thinking: Objects Contemporary Approaches to Product Design, Academic Press. | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf<br>https://web.stanford.edu/~mshanks/MichaelShanks/files/509554.pdf | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Demonstrate knowledge of design process | **K2** |
| **CO2** | Effectively collect, group, analyse data and synthesize information | **K3** |
| **CO3** | Concretization of information as prototypes | **K4** |
| **CO4** | Development and presentation of the final concept | **K6** |
| **CO5** | Effectively employ design process to execute a project. | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | - | - | 2 | 1 | 1 | 2 | 3 | 3 |
| CO2 | 3 | 3 | - | - | 1 | - | 1 | 2 | 3 | 3 |
| CO3 | 3 | 3 | - | - | - | 1 | 1 | 2 | 3 | 3 |
| CO4 | 3 | 3 | - | - | - | - | - | 3 | 3 | 3 |
| CO5 | 3 | 3 | - | - | 1 | 1 | 2 | 2 | 3 | 3 |
| **W. AV** | **3** | **3** | **-** | **-** | **0.8** | **0.6** | **1** | **2.2** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | **3** | **2** | **2** | **3** | **2** |
| **CO2** | **3** | **2** | **2** | **3** | **2** |
| **CO3** | **3** | **2** | **2** | **3** | **2** |
| **CO4** | **3** | **2** | **2** | **3** | **2** |
| **CO5** | **3** | **2** | **2** | **3** | **2** |
| **W. AV** | **3** | **2** | **2** | **3** | **2** |

| Semester II | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60926** | **Elements of Design - II** | **P** | **Credits- 4** | **Hours - 4** |
| **Objectives** | 1. Educate the various attributes of colour.<br>2. Educate space and form through 3D compositions.<br>3. Understand the importance of forms in nature and their relevance to design.<br>4. Understanding of minimalism and aesthetics in design.<br>5. Explore form synthesis. | | | | |
| **Unit I** | Attributes of Colours; 2D Achromatic and Chromatic Schemes; Compositions, Values, Colour Saturation, Colour temperature, Gray Scale. Colour on various surfaces, Effects on Textures. Effects of colours on Forms. Creating a colour palate for a 3D Object. | | | | |
| **Unit II** | 3D Composition: 3D composition using various materials and forms – Balance – Emphasis - Shape language – Form language – Space understanding. Study of organic and geometric forms. Hybrid forms. Tessellation: Techniques and application – Tiling – Symmetry- Translation, Reflection, Rotation, Glide reflection. Rectangle, triangle, and other shapes. Metamorphosis and form Transformation. Fractals | | | | |
| **Unit III** | Effect of form in human behaviour. Visual and Physical affordance. Form and emotion. Form and Space, Emphasis and Movement. Rhythm. Symmetry-Form and Time Forms in nature- Bio Mimicry. Nature inspired forms. Form and material relationship. | | | | |
| **Unit IV** | Minimalism, Fluency and Aesthetics. Form identity and communication. Brand Identity- Minimalism-Maximum Utility. Noise Limitation. Product form manipulation and translation. Context based form synthesis and design. | | | | |
| **Unit V** | Execute the synthesis of a Form and present it by charting its each evolutionary stage. Development of form based on a theme. | | | | |

**Reference and Text books**


Wucius Wong, (1993), Principles of form and design,John Wiley & Sons, Inc.

Wucius Wong, (1972), Principles of Two-Dimensional Design, John Wiley & Sons, Inc.

Pipes & Alan, (1990), Drawing for 3-dimensional design: Concepts, Illustration, Presentation, Thames & Hudson, New York, NY, U.S.A.

Weinschenk Susan, (2011), 100 Things Every Designer Need to Know about People, 1st edition, New Riders


**Web Resources**

https://guides.lib.berkeley.edu/design

https://www.wichita.edu/services/mrc/OIR/Creative/1Design/design-elements.php

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Demonstrate capabilities to employ appropriate color schemes in product creation. | **K2** |
| **CO2** | Demonstrate capabilities to synthesize 3D forms | **K2** |
| **CO3** | Interpret the essence of natural forms through 3D form synthesis | **K4** |
| **CO4** | Design products that are aesthetically pleasing. | **K6** |
| **CO5** | Design a form based on a theme | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | 2 | - | 1 | 2 | 2 | 3 | 3 |
| **CO2** | 3 | 3 | 1 | 2 | - | 1 | 2 | 2 | 3 | 3 |
| **CO3** | 3 | 3 | 1 | 2 | 3 | 1 | 2 | 2 | 3 | 3 |
| **CO4** | 3 | 3 | 1 | 2 | 3 | 1 | 2 | 2 | 3 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 1 | 2 | 2 | 2 | 3 | 3 |
| **W. AV** | **3** | **3** | **1.2** | **2** | **1.4** | **1.2** | **2** | **2** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | 1 | 2 |
| **CO2** | 3 | 3 | 1 | 1 | 2 |
| **CO3** | 3 | 3 | 2 | 3 | 3 |
| **CO4** | 3 | 2 | 3 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 3 |
| **W. AV** | **3** | **2.8** | **1.8** | **1.8** | **2.6** |

| Semester II | | | | | |
|---|---|---|---|---|---|
| **SEC-II** | **60927** | **Environmental Studies** | **T** | **Credits -2** | **Hours - 2** |

## SEMESTER III

| Semester III | | | | | |
|---|---|---|---|---|---|
| **T/OL** | **60931T/F/H/M/ TU/S/A** | **Tamil/Other Languages- III** | **T** | **Credits -3** | **Hours - 3** |

| Semester III | | | | | |
|---|---|---|---|---|---|
| **E** | **60932** | **General English- III** | **T** | **Credits -3** | **Hours - 3** |

| Semester III | | | | | |
|---|---|---|---|---|---|
| **CC** | **60933** | **Art Design and Culture** | **P** | **Credits- 2** | **Hours - 3** |
| **Objectives** | 1. To familiarize art and design movements and their impact in our daily life.<br>2. To educate about the cultural elements and their influence in contemporary societies.<br>3. To impart the constructs of semiotics and their ubiquitousness.<br>4. To develop skills to appreciate and employ ethnographic research practices.<br>5. To demonstrate learnings of this course by gathering and synthesis of information to curate cultural edifices of a society. | | | | |
| **Unit I** | Different type of Art & Design movements - Indian Art History-History of design – Bauhaus. Introduction to Ethnography – Society – Community- Groups – culture – subculture People and consumers – type of consumers and cultures | | | | |
| **Unit II** | Cultural Elements :artifacts, stories, rituals, symbols, beliefs, values, social organization and language. Cultural collaborations - Regional design Elements and practices –Indian Design. Study of material and cultural edifices. | | | | |
| **Unit III** | Introduction to SemioticsSigns and interpretation theory and its uses in design - Social semiotics – Cultural semiotics – Semiotics in language, industry, education, science, tradition, anthropology - Semiotics in design – Basic semiotics theory (Signifier, Signified, Connotation, Denotation, Index, Icon, Symbol) – Design case studies in semiotics – Iconography | | | | |
| **Unit IV** | Stages of ethnographic research - Selection of area to study – Review of literature – Sample selection - observations and data collections- Research and analysis – Cultural impact in design - Design impact in culture.Design Culture: Importance of human behavior in designing public spaces. | | | | |
| **Unit V** | Field Visit: The ethnographical aspect of the place – Visual documentations – Photographs – Sketches – Visual notes.Compilation and presentation of the data. | | | | |

**Reference and Textbooks**


Keith Negus & Michael Pickering (2004), Creativity, Communication and Cultural Value, Sage Publications

Nigel Rapport & Joanna Overing (2014), Key Concepts in Social and Cultural Anthropology, Routledge, London

JasleenDhamija (2005), Handicrafts of India Our Living Cultural Tradition, National Book Trust

Tim Ingold, (2007), Lines: A brief History, Routledge Publication

Marcus Banks & David Zeitlyn, (2015), Visual Methods in Social research, 2nd Edition, SAGE Publications

Sara Pink, (2015), Doing Sensory Ethnography, 2nd Edition, SAGE Publications


**Web Resources**

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Evaluate contemporary artifacts for their aesthetic and functional elements through the lens of "Design in culture". | **K5** |
| **CO2** | Describe the elements of culture and relate them to daily life. | **K1** |
| **CO3** | Examine the symbols around and interpret the semiotics behind them | **K4** |
| **CO4** | Formulate and conduct ethnographic research to study a society | **K6** |
| **CO5** | Determine the cultural symbols of a society by detailed curation. | **K5** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 2 | 2 | - | 1 | 3 | 3 | 2 | 1 | 1 |
| **CO2** | 3 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 1 | 2 |
| **CO3** | 3 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 1 | 2 |
| **CO4** | 3 | 3 | 1 | - | 1 | 1 | 1 | 1 | 1 | 3 |
| **CO5** | 3 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 |
| **W. AV** | **3** | **2** | **1.6** | **0.6** | **1.8** | **2** | **2** | **1.8** | **1.4** | **2.2** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 2 | 2 | 2 |
| **CO2** | 3 | 3 | 3 | 2 | 2 |
| **CO3** | 3 | 3 | 3 | 2 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 2 | 3 |
| **W. AV** | **3** | **3** | **2.8** | **2.2** | **2.6** |

| Semester III | | | | | |
|---|---|---|---|---|---|
| **CC** | **60934** | **User Interface and User Experience** | **P** | **Credits -3** | **Hours- 4** |

| | |
|---|---|
| **Objectives** | 1. To introduce students to the constructs of UI and its various facets<br>2. To familiarize students about the constructs of User Experience<br>3. To impart the knowledge about Cognitive Ergonomic principles.<br>4. Provide avenues to develop and test a basic UI ptoject<br>5. Learn to critically appraise an UI design. |
| **Unit I** | User Interfaces:command line - graphical user interface -menu driven - form based - natural language. Human Machine Interaction – Human Robot Interaction – Assistive Devices – sensor-based Interactions |
| **Unit II** | User Experience – basic Cognition, task-based attention. Emotion and experience. Learning and memory formation. Reward systems and Addiction. |
| **Unit III** | Basic principles of Cognitive Ergonomics.Cognitive bias in User Interface design |
| **Unit IV** | Design and development of a small-scale project with User Interface for a particular application. |
| **Unit V** | Design assignment: take a product or item interface. identify and solve violations of cognitive design principles. |

**Reference and Text books**

Cognitive Ergonomics and Human-Computer Interaction, Cambridge University Press - J long, A Whitefield (2011).

Laws of UX : Using Psychology to Design Better Products & Services ,Jon Yablonski,O'riely,2020

Designing Interfaces: Patterns for Effective Interaction Design,Jenifer Tidwell, Charles Brewer, Aynne Valencia,O'riely,2020

**Web Resources**

https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Define the elements of UI that are applicable for any given application | **K1** |
| **CO2** | To identify the various facets of User Experience for any built UI | **K3** |
| **CO3** | To asses a given application for its cognitive ergonomic conformance | **K5** |
| **CO4** | Develop a basic UI application | **K3** |
| **CO5** | Classify the elements of a UI application for its violations and complexity | **K4** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO2** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO3** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO4** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO5** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **W. AV** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester III | | | | | |
|---|---|---|---|---|---|
| **CC** | **60935** | **Visual and Heuristic Principles** | **P** | **Credits-3** | **Hours- 4** |
| **Objectives** | 1. To introduce students to basic heuristics and their relevance in interface design.<br>2. To familiarize students to the relevance between real world and built world with respect to system interaction.<br>3. Educate students about task flow and its relationship to UI design<br>4. Learn to employ basic design elements in UI design<br>5. To educate students about the visual order and hierarchy for UI design. | | | | |
| **Unit I** | Heuristic Principles: Nielsen's Ten Heuristics - Gerhardt-Powals' cognitive engineering - Shneiderman's Eight Golden Rules of Interface Design - Weinschenk and Barker classification - Pros and Cons of Heuristic Evaluation - Cognitive Psychology Heuristics: Overview - Models & Types | | | | |
| **Unit II** | Visibility of System Status - Match between system and the real world - User Control and Freedom - Consistency and Standards - Error Prevention - Recognition rather than recall - Flexibility and Efficiency of use UX Law's:Fitts's Law - Hick's Law - Miller's Law. | | | | |
| **Unit III** | Rules of user interface design – Consistency – Navigation system – Prevent Error - Design dialog (Beginning, Middle and End) – sense of closure (Thank You page or acknowledgement) - Creating Visual design for key screens – Button structures - Icons – signs – Symbols. | | | | |
| **Unit IV** | Clarity – Familiarity – User Control – Hierarchy – Negative Space – Flexibility - Usage of Elements of Design and GESTALT principle – Colour palette and Mood board. | | | | |
| **Unit V** | Visual Hierarchy: Introduction – Characteristics of Visual Hierarchy – Significance of Visual Hierarchy - Foundation of Visual Hierarchy - Viewing Patterns - Squint Test – Tools of Visual Hierarchy. - Aspect Ratio of Devices: Laptop, TV, iOS devices & Android devices. | | | | |
| **Reference and Text books**<br>Kevin Mullet, Darrell Sano (1995), Designing Visual Interfaces: Communication Oriented Techniques, 1st Edition, Prentice Hall;, ISBN-10: 0133033899.<br>Rudolf Arnheim (2004), Art and Visual Perception – A Psychology of the Creative Eye, Edition, University of California Pres, ISBN-10 :*978* 0520243835.<br>Donald A. Norman (2013), The Psychology of Everyday Things, Edition, Cambridge, Massachusetts : MIT Press. | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Understand the fundamentals of heuristics in Interface design | **K2** |
| **CO2** | Evaluate UI design based on real world relevance | **K5** |
| **CO3** | Develop UI task flow that is not redundant | **K3** |
| **CO4** | Apply basic design elements in UI design | **K5** |
| **CO5** | Create UI complying to the principles of Visual hierarchy | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |
| CO2 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |
| CO3 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |
| CO4 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |
| CO5 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |
| W. AV | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 2 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| CO1 | 3 | 3 | 3 | 3 | 3 |
| CO2 | 3 | 3 | 3 | 3 | 3 |
| CO3 | 3 | 3 | 3 | 3 | 3 |
| CO4 | 3 | 3 | 3 | 3 | 3 |
| CO5 | 3 | 3 | 3 | 3 | 3 |
| W. AV | 3 | 3 | 3 | 3 | 3 |

| Semester III | | | | | |
|---|---|---|---|---|---|
| **CC** | **60936** | **Typography** | **P** | **Credits- 3** | **Hours - 4** |
| **Objectives** | 1. Introduction to Calligraphy and Typography<br>2. Educate students about the elements of Typeface and Font<br>3. Emphasize the relationship between Typeface and Layout design.<br>4. Enhance typefaces based on a hypothetical application.<br>5. Gain applied exposure to typeface and layout design by creating a book | | | | |
| **Unit I** | Elements of Typography and Calligraphy: Type families – Serif – Non-Serif – Fancy fonts – Basic tools and techniques of Calligraphy. Introduction to Typography - Typeface and Font | | | | |
| **Unit II** | The anatomy of typeface - Construction of Letter: Ascender, Height, Base line, Descender, Serif Etc. Anatomy of Typeface (base line, mean line, x height, ascender, descender, cap height, cross bars, loops, windows etc.) – Letter construction (geometry of types) – Premises of type design (grids, proportions, letter width table etc.) – Primary type categories (serif, sans serif, slab serif, humanist, calligraphic, decorative, handwritten etc.) - Classification of types (classic, modern, retro etc.) – Types and their characteristics (readability, clarity, simplicity, sophistication etc.) – Type styles (type weight, type size (point) etc.) | | | | |
| **Unit III** | Layouts - Typographic hierarchy in layouts – Character and Word space - Paragraph spacing – Alignment - Line breaks and Rag hyphens - Line space – Leading - Character spacing – Kerning. Introduction to layouts – Format – Grid – Margin – Alignment – Columns and Rows – Gutters. Clarity and readability of types – Type combinations – Typeface personalities and how they affect a layout – line breaks, page breaks, hyphenation – widows and orphans – column width.(Print and Digital Media): Newspaper and Magazine layouts, Front page - Editorial page - Sports pages / Special pages - Inner pages. Layout for webpage – Layout for Mobile Apps. | | | | |
| **Unit IV** | . Using various types for creating identity design like logos icons etc. – Case studies of typographic logos – designing a communication using only typography as primary visual element – Type modification to suit design goals. | | | | |
| **Unit V** | Design of a Children's book | | | | |
| **Reference and Textbooks**<br>Hapercollins, Typography 23: The Annual of the Type Directors Club, Watson-Guptill Publication Inc., U.S.<br>Alexander Branczyk&JuttaNachtwey, Emotional Digital: Source Book of Contemporary Typographics, Thames & Hudson.<br>Rob Carter, Ben Day & Philip Meggs, Typographic Design: Form and Communication, Rockport Publishers. | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Show skills in doing calligraphy. | **K2** |
| **CO2** | Demonstrate knowledge in analyzing Type fonts | **K2** |
| **CO3** | Illustrate skills to develop layouts with appropriate fonts as per the task | **K3** |
| **CO4** | Modify existing fonts to match a need. | **K5** |
| **CO5** | Develop a book exercising the learning using appropriate types, fonts and layouts | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **CO2** | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **CO3** | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **CO4** | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **CO5** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **W. AV** | **2.8** | **2.8** | **2.8** | **1.2** | **1.2** | **1.2** | **2** | **1.2** | **1.2** | **1.2** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 2 | 2 | 2 |
| **CO2** | 2 | 2 | 2 | 2 | 2 |
| **CO3** | 2 | 2 | 2 | 2 | 2 |
| **CO4** | 2 | 2 | 2 | 2 | 2 |
| **CO5** | 2 | 2 | 2 | 2 | 2 |
| **W. AV** | 2 | 2 | 2 | 2 | 2 |

| Semester III | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60937** | **Product Experience** | **P** | **Credits -4** | **Hours-5** |
| **Objectives** | 1. Introduce students to the basics of human experience.<br>2. Educate students about the role of culture in forming experiences.<br>3. Familiarize students with product experience<br>4. Educate students to demarcate between product experience and user experience<br>5. Provide insights into product experience design though a project | | | | |
| **Unit I** | What is experience? What is its role in daily life? How do experiences get formed? Implicit and procedural memory. Role of perception and cognition. | | | | |
| **Unit II** | The role of culture and aesthetics in the formation and exercise of experiences. Activity based experience vs Aesthetic experiences. | | | | |
| **Unit III** | What is product experience? The role of five senses in creating experiences. The role of task completion in product experience | | | | |
| **Unit IV** | Product experience vs User Experience. Dyadic interactions versus multi user scenarios. | | | | |
| **Unit V** | A minor project that explores a hypothesis that was formulated during course work. | | | | |
| **Reference and Text books**<br>Hendrik N. J. Schifferstein, Paul Hekkert, Product Experience, Elsevier Science<br>Nynke Tromp, Paul Hekkert, Designing for Society: Products and Services for a Better World,Bloomsbury Visual Arts<br>Deana McDonagh Design and Emotion,CRC press | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Describe human experiences | **K1** |
| **CO2** | Explain the role of culture in creating experiences | **K2** |
| **CO3** | Determine the influence of task flow in product experience | **K3** |
| **CO4** | Classify experiences as product and user experience | **K4** |
| **CO5** | Develop a product interaction to spawn a desired experience | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 1 | 1 | 1 |
| **CO2** | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 1 | 1 | 1 |
| **CO3** | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 1 | 1 | 1 |
| **CO4** | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 1 | 1 | 1 |
| **CO5** | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 1 | 1 | 1 |
| **W. AV** | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 1 | 1 | 1 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester III | | | | | |
|---|---|---|---|---|---|
| SEC-III | 60938 | Entrepreneurship | T | Credits -2 | Hours - 2 |

| Semester III | | | | | |
|---|---|---|---|---|---|
| NME -I | 60939A<br>60939B<br>60939C | Non Major Elective -I | | Credits -2 | Hours - 2 |
| | | Adipadai Tamil - I | P | | |
| | | Advance Tamil - I | T | | |
| | | IT Skills for Employment | T | | |
| | | MOOC's | | | |

## SEMESTER IV

| Semester IV | | | | | |
|---|---|---|---|---|---|
| **T/OL** | **60941T/F/H/M/ TU/S/A** | **Tamil/Other Languages- IV** | **T** | **Credits -3** | **Hours - 3** |

| Semester IV | | | | | |
|---|---|---|---|---|---|
| **E** | **60942** | **General English- IV** | **T** | **Credits -3** | **Hours -3** |

| Semester IV | | | | | |
|---|---|---|---|---|---|
| **CC** | **60943** | **Aesthetics in Design** | **P** | **Credits -2** | **Hours - 3** |
| **Objectives** | 1. To familiarize with the history of design and the evolution of aesthetic sensibilities.<br>2. To understand the role of aesthetics in present design and development.<br>3. To develop an appreciation for the contributions of culture in aesthetics.<br>4. To educate about the elements of Vernacular and Indian aesthetics.<br>5. To learn the role of aesthetics in product design through practice. | | | | |
| **Unit I** | Design history. The historical social and cultural developments that punctuated the birth and development of design as a discipline.<br>Understanding the term 'aesthetics', different designs in the world, Scandinavian, Modern, Minimal, Bauhaus, and Bohemian.<br>Evolution of aesthetics across the world, history of various designs, Implementation and innovations in various aesthetics and its history. - World aesthetics in Art, architecture, Music, Fashion, Dance, Religion & Folk. | | | | |
| **Unit II** | Product Aesthetics-product identity-Useability-Aesthetics of flow-Emotional aspects of product aesthetics. | | | | |
| **Unit III** | Cultural aspects of aesthetics, Global culture - social customs, family life, Housing, Clothing, food, Class structure, Value system, and study of design festivals. | | | | |
| **Unit IV** | Indian Aesthetics - Different types of Indian paintings, Handicrafts across India, Sculpture styles varying across India, Indian languages and scripts, Traditional dance forms – Tamil Aesthetics | | | | |
| **Unit V** | Aesthetics in design – Sketch, ideation of inspired design, case studies. | | | | |
| **Reference and Text books**<br>S.G.Kulkarni, Art, Aesthetics and Philosophy: Reflections on Coomaraswamy, D.K Printworld (P)Ltd<br>PriyadarshiPatnaik (2013), Rasa in Aesthetics: An Application of Rasa Theory to Modern western Literature, DK Printworld (p) Ltd.,<br>Shyamala Gupta (1991), Art, Beauty and Creativity: Indian and Western Aesthetics, DK Printworld (p) Ltd. | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Relate and classify the aesthetic components of a product based on its design evolution. | **K2** |
| **CO2** | Assess and appreciate the effect of aesthetics in a product. | **K5** |
| **CO3** | Interpret the cultural ingredients in the aesthetic elements of a product. | **K5** |
| **CO4** | Develop an appreciation for the role of regional aesthetics in product design. | **K6** |
| **CO5** | Construct a product to demonstrate to emphasize the role of aesthetics in product design. | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 2 | 1 | - | 1 | 3 | 3 | 1 | 2 | 3 |
| **CO2** | 3 | 2 | 1 | 1 | 1 | 3 | 3 | 1 | 2 | 3 |
| **CO3** | 3 | 1 | 1 | - | 1 | 3 | 3 | 1 | 2 | 3 |
| **CO4** | 3 | 1 | 1 | - | 1 | 3 | 3 | 1 | 2 | 3 |
| **CO5** | 3 | 2 | 1 | 2 | 1 | 3 | 3 | 2 | 2 | 3 |
| **W. AV** | **3** | **1.6** | **1** | **0.6** | **1** | **3** | **3** | **1.2** | **2** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 3 | 3 | 3 | 3 |
| **CO2** | 2 | 3 | 3 | 2 | 3 |
| **CO3** | 2 | 3 | 3 | 2 | 3 |
| **CO4** | 2 | 3 | 2 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 2 |
| **W. AV** | **2.2** | **3** | **2.6** | **2.2** | **2.8** |

| Semester IV | | | | | |
|---|---|---|---|---|---|
| **CC** | **60944** | **Research Methodology** | **P** | **Credits- 2** | **Hours - 3** |
| **Objectives** | 1. To familiarize with the types of research.<br>2. To educate the nuances of research in design.<br>3. To develop capabilities to formulate a research problem.<br>4. To understand the process of data collection, analysis and synthesis for research.<br>5. To design and develop a product to exercise learnings in design research | | | | |
| **Unit I** | Introduction to Research: Types of Research - Quantitative and Qualitative Research Methodology- Conducting the Literature Review | | | | |
| **Unit II** | Introduction to design research – difference between scientific research and design research – types of design research – research in design vs research by design – design premise and detailed design brief | | | | |
| **Unit III** | Selecting a research area - Writing an Abstract - Formulating research aim - Objectives and research questions - Developing Hypothesis - Questionnaire design –Psychophysical scales - Various methods of Data Collection - Collecting Primary data and Secondary data | | | | |
| **Unit IV** | Direct observation and activity analysis –Prototyping as a research tool - Photography as a data collection method - Data Analysis and Findings - Research Conclusion. | | | | |
| **Unit V** | Develop a simple product of choice and draw insights into design research by comparing and adding existing understanding on research by design - Documentation –Project Writing. | | | | |
| **Reference and Textbooks**<br>Qualitative Research & Evaluation Methods, Michael Quinn Patton, Sage Publications, 3rd edition , 2002<br>Case Study Research :what, why and how?, Peter Swanborn, Sage Publications, 2010<br>Research Design: Qualitative, Quantitative and Mixed Methods Approaches, John Creswell W, Sage Publications, 3rd edition , 2009<br>Wimmer& Dominic (2014) Mass media research, An introduction. Thomson publishing company. | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Express a know-how of the types of research methods. | **K2** |
| **CO2** | Determine and justify the choice of design research method | **K5** |
| **CO3** | Construct a design research problem | **K6** |
| **CO4** | Show capabilities to analyze and synthesize research data | **K2** |
| **CO5** | Interpret design research knowledge through project execution | **K5** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | - | - | 1 | 1 | 2 | 2 | 2 | 3 |
| **CO2** | 3 | 3 | 1 | - | 1 | 1 | 2 | 2 | 2 | 3 |
| **CO3** | 3 | 2 | 2 | - | 1 | 1 | 2 | 2 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 1 | 1 | 2 | 2 | 2 | 3 |
| **CO5** | 3 | 3 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1.2** | **0.2** | **1** | **1.2** | **2.2** | **2.2** | **2.2** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 1 | 3 | 2 | 2 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | 3 | 2 | 2 |
| **CO4** | 3 | 1 | 3 | 1 | 2 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2** | **3** | **2.2** | **2.4** |

| Semester IV | | | | | |
|---|---|---|---|---|---|
| **CC** | **60945** | **Digital Design Tools** | **P** | **Credits -3** | **Hours -4** |
| **Objectives** | 1. Introduce students to basic 2D graphic digital design tools, their use, possibilities and limitations<br>2. Introduce students to basic 3D graphic digital design tools, their use, possibilities and limitations<br>3. Introduce students to basic AI graphic digital design tools, their use, possibilities and limitations<br>4. Emphasise the commonalities and differences between conventional and AI design tools<br>5. Develop a comprehensive understanding of the use of digital design tools in product design through a project. | | | | |
| **Unit I** | Introduction to basic 2D graphic digital design tools – tools and techniques – digital representation techniques – optimize workflow – rendering techniques and applications. | | | | |
| **Unit II** | Introduction to basic 3D graphicdigital design tools – tools and techniques - skills for three - dimensional modelling – Understanding NURBS (Non-Uniform Rational Basis Spline) - 2D line drawings - 3D construction drawings - add materials on to the 3D model - Customize materials with textures, colours and labels. Rendering (with sunlight and materiality) - Parts Assemblies | | | | |
| **Unit III** | AI tools to generate graphic designs. Explore the various tools available. Generate both 2D and 3Dcompositions using AI tools. Evaluate the tools for their usage and effectiveness. | | | | |
| **Unit IV** | Project I: Use traditional digital design tools in the ideation, concept design, development and presentation. Use AI digital design tools in the ideation, concept design, development and presentation. Understand the gaps between conventional design tools and AI tools. Context pitfalls using AI tools by studying the output. | | | | |
| **Unit V** | Project II: Design a Product create visuals for the same. Create instruction manuals/ flyers/ propaganda visuals for the same product using conventional Design tools | | | | |
| **Reference and Text books**<br>K Balasundaram; S V Parthasarathy, Technical Drawing: With an Introduction to Autocad<br>Mark von Wodtke,Design with Digital Tools: Using New Media Creatively,Mc-Graw Hill,2000<br>ALBERT TETTEH ADJEI, Digital Artistry: Mastering Digital Tools and Techniques for Visual and Graphic Design: Mastering Visual Design with Efficient Tools, Techniques, and Creative Skills,2023<br>Barrett Williams, Digital Art and Illustrations: Master the Tools and Techniques for Creating Eye-catching Digital Artworks,2023 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Create designs using 2D digital design tools | **K6** |
| **CO2** | Create designs using 3D digital design tools | **K6** |
| **CO3** | Generate designs using AI design tools | **K4** |
| **CO4** | Develop an appreciation for the effectiveness of conventional vs AI digital design tools based on their applicability | **K6** |
| **CO5** | Express an understanding of the nuances of the digital design tools by executing a project. | **K2** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | - | - | 1 | 1 | 2 | 2 | 2 | 3 |
| **CO2** | 3 | 3 | 1 | - | 1 | 1 | 2 | 2 | 2 | 3 |
| **CO3** | 3 | 2 | 2 | - | 1 | 1 | 2 | 2 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 1 | 1 | 2 | 2 | 2 | 3 |
| **CO5** | 3 | 3 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1.2** | **0.2** | **1** | **1.2** | **2.2** | **2.2** | **2.2** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 1 | 3 | 2 | 2 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | 3 | 2 | 2 |
| **CO4** | 3 | 1 | 3 | 1 | 2 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2** | **3** | **2.2** | **2.4** |

| Semester IV | | | | | |
|---|---|---|---|---|---|
| **CC** | **60946** | **Applied Ergonomics** | **P** | **Credits- 4** | **Hours - 4** |
| **Objectives** | 1. To educate about the types and elements of ergonomics in play in daily life.<br>2. To explore the ergonomics and physiological factors in play during tool usage.<br>3. To understand the ergonomic factors and principles in play when designing for humans with various capacities.<br>4. To introduce ergonomic factors pertaining to the workspace under study.<br>5. To design and develop a product addressing an identified ergonomic factor to be improved. | | | | |
| **Unit I** | Introduction to ergonomics, history, types of ergonomics. Basic Physiology, Nervous system, Motor system, anthropometry, percentiles. Applicability of ergonomic principles in daily life – physical ergonomics. | | | | |
| **Unit II** | Percentiles. Types of body. Ergonomic stressors. Causes of Fatigue, Types of grips/holds. Gait analysis. Proprioception. Visual Ergonomics, Auditory ergonomics. Human Machine Interfaces – Product designs- domestic and industrial spaces. Ergonomic/Human factors tools in design. | | | | |
| **Unit III** | .Cognitive Ergonomics. Perception, Cognition, Cognitive load. Norman's seven stages of action. Ergonomic considerations for children, adults and the elderly. Ergonomic considerations for special people. Ergonomic factors in rehabilitation device design. | | | | |
| **Unit IV** | Ergonomic considerations in space design. Work spaces like shop floor, work benches, hospitals, schools etc., Ergonomic considerations in the kitchen and other domestic spaces. Agricultural tool design. | | | | |
| **Unit V** | Identification of a point of improvement in a product. Ergonomic factors to be improved- ergonomic stressors. Development and ergonomic testing of the envisaged product Presentation of the product developed. | | | | |
| **Reference and Textbooks**<br>Engr MD Nursyazwi Mohammad, GreannaFrivaJainal, Ergonomics In Design: Ergonomics Book For Beginners, CreateSpace,2013<br>Marcelo M. Soares (Editor), Francisco Rebelo, Ergonomics in Design, CRC press, 2019<br>Valerie J. Rice , Ergonomics in Health Care and Rehabilitation, Butterworth-Heinemann, 1998<br>Valerie J. Berg Lueder, Rani, Ergonomics for Children Paperback, CRC press,2019 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Describe the ergonomic principles that govern any product usage in our daily life | **K1** |
| **CO2** | Illustrate capabilities to evaluate a product or a task based on its ergonomic considerations. | **K2** |
| **CO3** | Examine an audience and identify the ergonomic factors that are applicable | **K4** |
| **CO4** | Choose relevant ergonomic factors to be considered to the space and product being designed | **K6** |
| **CO5** | Estimate the changes/improvements in a product based on ergonomic factors | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 1 | 2 | 2 | 2 | 3 | 3 |
| **CO2** | 3 | 3 | 2 | 3 | - | 1 | 2 | 1 | 2 | 2 |
| **CO3** | 3 | 2 | 1 | 3 | - | 2 | 2 | 1 | 3 | 3 |
| **CO4** | 3 | 2 | 1 | 3 | 1 | 2 | 3 | 2 | 3 | 3 |
| **CO5** | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1.8** | **3** | **0.8** | **2** | **2.4** | **1.6** | **2.8** | **2.8** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 2 | 3 | 2 | 2 |
| **CO2** | 3 | 3 | 3 | 2 | 2 |
| **CO3** | 3 | 3 | 3 | 2 | 2 |
| **CO4** | 3 | 3 | 3 | 2 | 2 |
| **CO5** | 3 | 3 | 3 | 3 | 2 |
| **W. AV** | **3** | **2.8** | **3** | **2.2** | **2** |

| Semester IV | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60947** | **Information Architecture** | **P** | **Credits 4** | **Hours-4** |
| **Objectives** | 1. Familiarize students with the principles of Information Architecture.<br>2. Provide insights into the various Information Architecture models.<br>3. Learn various content analysis techniques<br>4. Introduce various navigation design scenarios.<br>5. Educate students on Information Architecture synthesis from raw data through a project. | | | | |
| **Unit I** | Introduction to Information Architecture, what is information architecture: Organization Systems, Labelling Systems, Navigation Systems, Search Systems - Creating a solid foundation, creating strategy. | | | | |
| **Unit II** | Information Architecture Models- Creating the right mix for your project form these models: - The hierarchical tree model - Nested tree model - Hub and spoke model - Bento box model - Filtered view model. | | | | |
| **Unit III** | Card Sorting: Content identify, content requirement - Naming and labelling - Content grouping and classifying content. Data analysis and synthesis. Contextual analysis. | | | | |
| **Unit IV** | Navigation Design: Overview of Navigation design - Primary and secondary navigation - Global and local navigation - Navigation for user types - Validating your navigation screen | | | | |
| **Unit V** | Tree test – Optimal Workshop: Write your task - Recruit participants - Interpret your results. | | | | |
| **Reference and Text books**<br>P Louis Rosenfeld, Peter Morville& Jorge Arango (2015), Information Architecture, 4e: For the Web and Beyond, 4th Edition, O'Reilly, ISBN-10 :*.1491911689*<br>Steve Krug (2015), Don't Make Me Think, Revisited : A Common Sense Approach to Web & Mobile Usability, 3rd Edition, Pearson Education; ISBN-10 : *.9332542864*<br>NirEyal (2014), Hooked: How to Build Habit-Forming Products Hardcover, Edition, Portfolio Penguin, ISBN-10 :*.0241184835* | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | List the principles of Information Architecture | **K1** |
| **CO2** | Explain the various Information Architecture models. | **K2** |
| **CO3** | Analyze given data through contextual analysis | **K4** |
| **CO4** | Develop navigation designs | **K6** |
| **CO5** | Formulate an information architecture for a given data | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | 3 | 1 | 1 | 3 | 1 | 1 | 1 |
| **CO2** | 3 | 3 | 1 | 3 | 1 | 1 | 3 | 1 | 1 | 1 |
| **CO3** | 3 | 3 | 1 | 3 | 1 | 1 | 3 | 1 | 1 | 1 |
| **CO4** | 3 | 3 | 1 | 3 | 1 | 1 | 3 | 1 | 1 | 1 |
| **CO5** | 3 | 3 | 1 | 3 | 1 | 1 | 3 | 1 | 1 | 1 |
| **W. AV** | 3 | 3 | 1 | 3 | 1 | 1 | 3 | 1 | 1 | 1 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester IV | | | | | |
|---|---|---|---|---|---|
| **DSE** | **60948** | **Project- I Information and Data Visualization** | **P** | **Credits- 4** | **Hours - 4** |
| **Objectives** | 1. Apprise students about the different types of Data<br>2. Educate students about the fundamentals of Visualizing Data<br>3. Introduce students to the nuances of Giga Maps<br>4. Impart training of designing context based data visualization<br>5. Enhance the understanding of Data Visualization techniques through practice. | | | | |
| **Unit I** | Introduction to data - types of data –static and dynamic data- Introduction to data analysis | | | | |
| **Unit II** | Fundamentals of data visualization – data hierarchy-interaction and story building | | | | |
| **Unit III** | Giga maps-types of giga maps-content-structural and functional | | | | |
| **Unit IV** | Contextual data visualization nuances and details. | | | | |
| **Unit V** | Development of a data visualization poster/visual of a chosen data set. Display/Exhibition/ Presentation/Screening/Feedback. | | | | |
| **Reference and Textbooks**<br>Jeffrey D. Camm,James J Cochran/Michael J. Fry,Jeffrey W. Ohlmann, Data Visualization: Exploring and Explaining with Data,Cengage Learning India Pvt. Ltd.2022<br>Edward R. Tufte, Envisioning Information, Graphics Press USA,1990<br>Edward R. Tufte, The Visual Display of Quantitative Information, Graphics Press USA,2001 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Label the different types of Data. | **K1** |
| **CO2** | Illustrate skills in fundamentals of Visualizing Data | **K2** |
| **CO3** | Generate Giga Maps to visualize big Data | **K4** |
| **CO4** | Design data visualization concepts based on the context | **K6** |
| **CO5** | Practice Data Visualization techniques. | **K3** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **CO2** | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **CO3** | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **CO4** | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **CO5** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **W. AV** | **2.8** | **2.8** | **2.8** | **1.2** | **1.2** | **1.2** | **2** | **1.2** | **1.2** | **1.2** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 2 | 2 | 2 |
| **CO2** | 2 | 2 | 2 | 2 | 2 |
| **CO3** | 2 | 2 | 2 | 2 | 2 |
| **CO4** | 2 | 2 | 2 | 2 | 2 |
| **CO5** | 2 | 2 | 2 | 2 | 2 |
| **W. AV** | 2 | 2 | 2 | 2 | 2 |

| Semester IV | | | | | |
|---|---|---|---|---|---|
| NME -I | 60949A<br>60949B<br>60949C | Non Major Elective -I | | Credits -2 | Hours - 2 |
| | | Adipadai Tamil - II | P | | |
| | | Advance Tamil - II | T | | |
| | | Small Business Management | T | | |
| | | MOOC's | | | |

## SEMESTER V

| Semester V | | | | | |
|---|---|---|---|---|---|
| **CC** | **60951** | **Sustainable Design** | **P** | **Credits- 4** | **Hours - 6** |
| **Objectives** | 1. To educate about the relevance of human evolution and design of tools.<br>2. To familiarise with the elements of sustainable design practices.<br>3. To emphasize about the types of sustainable design.<br>4. To familiarise with the material considerations in sustainable design.<br>5. To comprehend sustainable design in contemporary times through a project. | | | | |
| **Unit I** | The evolution of Design as a discipline and its relationship to the environment. The important tools that shaped humankind. The discoveries and inventions that have influenced the world.The relationship of design to technology, art and craft and our daily life. | | | | |
| **Unit II** | Introduction to Sustainable design – Definition – applications sustainable materials and practices. | | | | |
| **Unit III** | Design for recycle - design for up-cycle - design for re-use. | | | | |
| **Unit IV** | Sustainable materials and practices- choice of materials | | | | |
| **Unit V** | Presentation in the form of a seminar/ poster that depicts the sustainable practices in contemporary world. | | | | |
| **Reference and Textbooks**<br>David Raizman; History of Modern Design, Prentice Hall, 2004 - Cross, N; Design Thinking: John Heskett, Industrial Design, Thames, and Hudson,1987<br>Victor Papanek, Design for the real world: Human Ecology and Social change, Academy Chicago Publishers, 1971<br>http://designhistorytimeline.com/ - Journal of Design History, Oxford Journals<br>Charles Darwin, The Origin of Species, Fingerprint publications,2013<br>Richard Levins,Biology as Ideology: The Doctrine of DNA,HarperPerinnial, 1993<br>JC Wandemberg. (2015), Sustainable by design<br>Fuad-Luke Alastair. (2010), ecoDesign: The Sourcebook: Third Fully Revised Edition, Chronicle Books<br>McLennan Jason. (2004), The Philosophy of Sustainable Design, Ecotone Publishing Company LLC | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Relate products in daily use to their evolutionary roots | **K2** |
| **CO2** | Expresses knowledge about sustainable design practices in daily life | **K2** |
| **CO3** | Assess the applicability of the type of sustainable design practices for a given problem | **K5** |
| **CO4** | Choose the appropriate material for the designed sustainable solution | **K6** |
| **CO5** | Develop a product with sustainable design considerations | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 3 |
| **CO2** | 3 | 2 | 3 | 2 | 3 | 2 | 1 | 2 | 3 | 3 |
| **CO3** | 3 | 2 | 3 | 2 | 3 | 1 | 2 | 2 | 3 | 3 |
| **CO4** | 3 | 2 | 3 | 2 | 3 | 2 | 1 | 2 | 3 | 3 |
| **CO5** | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 3 |
| **W. AV** | **3** | **2** | **3** | **2** | **3** | **1.8** | **1.6** | **2** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **3** | **3** | **3** | **3** |

| Semester V | | | | | |
|---|---|---|---|---|---|
| **CC** | **60952** | **Microinteractions** | **P** | **Credits -2** | **Hours- 2** |
| **Objectives** | 1. Educate students about the basic elements of microinteractions.<br>2. Familiarize students with the nuances of content in microinteractions.<br>3. Introduce students to multimodal microinteractions.<br>4. Provide insights into the effects of microinteractions in Human machine interfaces.<br>5. Learn the nuances of microinteractions design by executing a basic project. | | | | |
| **Unit I** | Micro interactions: Introduction to Microinteractions. The basic elements like triggers, loops, rules, feedback. Types of triggers | | | | |
| **Unit II** | MicroContent and Language: Conversational Writing - Simple and natural language - Engagement - sign-up forms and Newsletter - Buttons-functional buttons, persuasive support messages - Error Messages. Success Messages, Empty States - Loading Time. | | | | |
| **Unit III** | Multimodal microinteractions. Use of aural and tactile feedbacks in product interactions. Effect of micro interactions in user and product experience | | | | |
| **Unit IV** | Microinteractions in product design. Design of tangible interfaces for domestic products.Microinteractions and man machine interfaces. | | | | |
| **Unit V** | Develop a basic prototype to depict the elements of micro interactions learnt. The product developed shall be tested for its hypothesis. | | | | |
| **Reference and Text books**<br>Dan Saffer(2013), Microinteractions, O'Reilly, Cambridge.<br>Colin Bendell, Tim Kadlec, Yoav Weiss, Guy Podjarny (2016), High Performance Images, 1st Edition, O'Reilly, ISBN-10 :*1491925809*<br>KinneretYifrah (2019), Microcopy: The Complete Guide, 2nd Edition, Nemala, ISBN-10 :*9655727947*<br>Torrey Podmajersky (2019), Strategic Writing for UX, Edition, O'Reilly Media, ISBN-10 :*1492049395* | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | List the elements of microinteractions | **K1** |
| **CO2** | Explain the importance of contents | **K2** |
| **CO3** | Develop multimodal interactions | **K6** |
| **CO4** | Determine microinteractions for HMI | **K5** |
| **CO5** | Develop an effective microinteractions scheme for a given context | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 1 |
| **CO2** | 3 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 1 |
| **CO3** | 3 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 1 |
| **CO4** | 3 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 1 |
| **CO5** | 3 | 1 | 1 | 1 | 1 | 3 | 3 | 2 | 2 | 2 |
| **W. AV** | **3** | **1** | **1** | **1** | **1** | **3** | **3** | **1.2** | **1.2** | **1.2** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester V | | | | | |
|---|---|---|---|---|---|
| **CC** | **60953** | **Useability Testing** | **P** | **Credits -4** | **Hours-6** |
| **Objectives** | 1. Familiarize students with useability testing.<br>2. Educate about the process of recruitment of users for test runs.<br>3. Learn to setup a useability test lab.<br>4. Provide insights in to the various useability testing parameters and tools<br>5. Learn useability testing by conducting a test run | | | | |
| **Unit I** | Planning and Preparation – Steps involved in conducting usability studies - Differences between quantitative and qualitative studies - Testing at every stage of the project lifecycle - Determining scope of study - What to test and observe - Where and when do users encounter errors. | | | | |
| **Unit II** | Recruiting and Moderating Test/Mock Users: Targeting and recruiting the right participant-Developing recruitment screeners - Recruiting methods - Agencies, Panels, Payment and incentives - Moderated and un-moderated testing, Test plans. | | | | |
| **Unit III** | Lab Set-up: Testing setup, Remote, locations, and spaces, testing mobile devices - Online and remote user testing - user feedback on - Tools and techniques for video recording, screen sharing and note taking - Writing tasks (scenarios) to avoid bias - Writing guidelines for tasks - Techniques for getting participants' feedback. | | | | |
| **Unit IV** | Psychophysical testing: Eye Tracking - Heat Mapping - Alpha/Beta testing platform.Employinguseability testing tools to analyse UI design. | | | | |
| **Unit V** | Creating a UI design and testing it for its useability. Generating and analysing Useability test report. | | | | |
| **Reference and Text books**<br>Bryan Lawson, (2005), How Designers Think: The Design Process Demystified, Om Books<br>Richard Morris, (2009), Fundamentals of Product Design, Academic Press<br>Tim Parsons, (2009), Thinking: Objects Contemporary Approaches to Product Design, Academic Press.<br>Karl T. Ulrich, Steven D. Eppinger, Maria C. Yang (2020), Product Design and Development, McGrawhill<br>Karl Aspelund (2015), DESIGN PROCESS, Fairchild Books | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Describe the useability techniques based on the context | **K1** |
| **CO2** | Arrange an audience for user testing | **K1** |
| **CO3** | Develop a useability testing lab | **K3** |
| **CO4** | Create a useability test suite to examine appropriate psychophysical parameters | **K6** |
| **CO5** | Construct and conduct a Useability test | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO2** | 3 | 2 | - | 2 | - | - | - | - | - | - |
| **CO3** | 1 | - | 2 | 2 | 2 | - | - | - | - | - |
| **CO4** | 1 | - | 2 | 2 | 2 | - | - | - | - | - |
| **CO5** | 1 | - | 2 | 2 | 2 | - | - | 1 | 2 | 2 |
| **W. AV** | **1.6** | **0.6** | **1.4** | **1.8** | **1.8** | **0.6** | **0.6** | **0.4** | **0.6** | **0.6** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 1 | 1 | 3 | 3 | 1 |
| **CO2** | 1 | 1 | 3 | 3 | 1 |
| **CO3** | 1 | 1 | 3 | 3 | 1 |
| **CO4** | 1 | 1 | 3 | 3 | 1 |
| **CO5** | 1 | 1 | 3 | 3 | 1 |
| **W. AV** | **1** | **1** | **3** | **3** | **1** |

| Semester V | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60954** | **Data Analytics and SEO** | **P** | **Credits 4** | **Hours-6** |
| **Objectives** | 1. Introduction to basics of Data Analytics<br>2. Educate students in the basics of user engagement reports<br>3. Introduce students to the basics of Search Engine Optimization (SEO).<br>4. Provide insights into Off Page SEO<br>5. Learn the nuances of Data analytics and SEO by executing a basic project. | | | | |
| **Unit I** | Data Analytics: Overview – Measuring website traffic - New capabilities to bring app and web analytics together - Digital Analytics. | | | | |
| **Unit II** | Orientation of dashboard and interface design to improve user engagements. Basics of analyzing the audience, acquisition, and behavior reports - sites effect on content and navigation Strategy. Use of AI tools to improve hits | | | | |
| **Unit III** | SEO Search Engine Optimization: Introduction - Relation between UX Strategy and SEO Impact – Selection of keywords - Perform keyword research - Consumer Psychology and search behavior - Conducting on-page SEO analysis to identify opportunities to improve a website's search optimization. | | | | |
| **Unit IV** | Off -Page SEO: Introduction - Set up – Measurements of Off-page SEO. Analysis of user data and strategy formulation. Social network content and site interfaces. | | | | |
| **Unit V** | Develop a strategy and implement the same to improve/increase the engagement time of a site. | | | | |
| **Reference and Text books**<br>Amerland (2014), Google Semantic Search, 1st Edition, Pearson Education India, ISBN-10 :.*9332539588*<br>UpendraRana (2018), Step By Step Guide to Seo, 1st Edition, PrabhatPrakashan, ISBN-10 :.*8184305516*<br>Eric Enge , Stephan Spencer , Jessie Stricchiola (2016), Art of SEO: Mastering Search Engine Optimization, 3rd Edition, Shroff/O'Reilly, ISBN-10 : .*9789352133673* | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Analyze a given website traffic data | **K1** |
| **CO2** | Show capabilities to perform data analytics on human behavior data | **K1** |
| **CO3** | Choose the right SEO technique based on the context | **K1** |
| **CO4** | Create Off page SEO strategies for effective use engagement | **K6** |
| **CO5** | Design and Develop a SEO strategy for a given context | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | - | 3 | - | - | - | - | - | - | - | - |
| CO2 | - | 3 | - | - | - | - | - | - | - | - |
| CO3 | - | 3 | - | - | - | - | - | - | - | - |
| CO4 | - | 3 | - | - | - | - | - | - | - | - |
| CO5 | - | 3 | - | - | - | - | - | - | - | - |
| W. AV | - | 3 | - | - | - | - | - | - | - | - |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| CO1 | 2 | 2 | 2 | 2 | 2 |
| CO2 | 2 | 2 | 2 | 2 | 2 |
| CO3 | 2 | 2 | 2 | 2 | 2 |
| CO4 | 2 | 2 | 2 | 2 | 2 |
| CO5 | 2 | 2 | 2 | 2 | 2 |
| W. AV | 2 | 2 | 2 | 2 | 2 |

| Semester V | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60955** | **AI for Design** | **P** | **Credits-2** | **Hours -2** |
| **Objectives** | 1. Enhance understanding of design process by doing a low fidelity project<br>2. Introduce students to the history and evolution of AI<br>3. Familiarize students about the different types of AI<br>4. Emphasise the effect of AI by executing a design project using AI tools<br>5. Enhance the understanding of AI tools in design by comparing the results with conventional design process methods. | | | | |
| **Unit I** | Project I : conduct a design project. Design and develop a product with conventional design process. | | | | |
| **Unit II** | History of AI. Hot does AI work ?. AI applications-self driving cars, personalised services and products, Intelligent and responsive spaces. Context sensitive devices. | | | | |
| **Unit III** | Types of AI – Narrow AI, General AI, Learning Engines - Supervised, Unsupervised, Reinforced and Transfer. Cognitive Computing. AI tools and their applications. | | | | |
| **Unit IV** | Project II. Use AI tools in the Design process for the same brief as Project I. Use AI tools in user survey, data analysis, idea generation, product development. | | | | |
| **Unit V** | Catalogue the differences between Project I and Project II in design process, Idea generation and evaluation and product development. Develop insights about application of AI in design | | | | |
| **Reference and Textbooks**<br>Oliver Theobald, AI for Absolute Beginners: A Clear Guide to Tomorrow, Kindle edition, 2023<br>Nick Bostrom,Superintelligence: Paths, Dangers, Strategies, Oxford University Press,2016<br>Max Tegmark, Life 3.0, Vintage, 2018<br>Stuart Russell, Human Compatible: Artificial Intelligence and the Problem of Control, Penguin Books, 2020<br>Helen Armstrong , Keetra Dean Dixon,Big Data, Big Design: Why Designers Should Care about Artificial Intelligence, Princeton Architectural Press,2021<br>David Jacobson, Human Factors and UX in the Age of AI: User Experience Design in the Age of Artificial Intelligence Paperback, 2023 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Recall conventional Design process through practice | **K1** |
| **CO2** | Outline the history and evolution of AI | **K2** |
| **CO3** | Illustrate knowledge of the different types and flavors of AI tools | **K2** |
| **CO4** | Solve a design problem using AI tools in design process | **K6** |
| **CO5** | Identify the avenues for AI tools in design. | **K3** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester V | | | | | |
|---|---|---|---|---|---|
| **DSE** | **60956** | **Project II – System Design** | **P** | **Credits- 4** | **Hours -6** |
| **Objectives** | 1.To enable the students to realise the relevance between design and systems view.<br>2.To address design problems through systems design.<br>3.To emphasize the interactions between subsystems and systems.<br>4.To understand systems in daily life through design analysis.<br>5. To create a system design intervention in an identified system to develop systems thinking. | | | | |
| **Unit I** | System Thinking - Design Thinking and System Thinking from Design perspective - The Fifth Discipline approach - Scenario Maps and Metaphors | | | | |
| **Unit II** | Problem Solving - Design of system level solutions | | | | |
| **Unit III** | Complex Systems Understanding – strategizing - conceptualizing and designing for complex systems- system -subsystem interaction | | | | |
| **Unit IV** | System Design - Designing complex artefacts - Design solutions that are suitable for transportation – education – publishing - retailing | | | | |
| **Unit V** | Project – with system level design solution - Research - Systems model - System design - Detail design – Giga Map – Final documentation | | | | |
| **Reference and Textbooks**<br>Ulrich Fleischmann, (2013), BurkhardtLeitner System designer, Av Edition Gmbh<br>Bryan Lawson, (2005), How designers think: the design process demystified, 4th edition, Architectural Press<br>Richard Morris, (2009), Fundamentals of Product Design, Academic Press | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Express the importance of synthesizing design through system analysis | **K2** |
| **CO2** | Explain design problems through the lens of system design | **K5** |
| **CO3** | Determine design problems as an interaction between its subsystems | **K5** |
| **CO4** | Identify the systems in play in our daily life | **K3** |
| **CO5** | Create a design intervention with systems considerations | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | - | 1 | 2 | 2 | 3 | 2 | 3 |
| **CO2** | 3 | 3 | - | - | 2 | 2 | 2 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | - | - | 1 | 3 | 2 | 3 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 2 | 2 | 2 | 3 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1** | **0.4** | **1.6** | **2.2** | **2.2** | **3** | **2.4** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 3 | 3 | 3 |
| **CO2** | 2 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 2 | 3 | 2 | 3 |
| **W. AV** | **2.6** | **2.6** | **3** | **2.8** | **3** |

| Semester V | | | | | |
|---|---|---|---|---|---|
| **OE** | **60957A** | **Theatre for Design** | **P** | **Credits- 2** | **Hours -30** |
| **Objectives** | 1. Educate about the history of world drama<br>2. Familiarize with the various regional traditions of drama<br>3. Introduce set Design<br>4. Educate about the use of drama techniques in user research in Design<br>5. Learn Drama by practice | | | | |
| **Unit I** | History of world drama and theatre. National and regional history of drama. Commedia dell'arte, Greek Theatre Tradition, Medieval and Modern Theatre principles. South Asian Theatre, Ancient Tamil performing arts tradition. | | | | |
| **Unit II** | Study Therukoothu, Yakshaghana, Koodiyattam theatre. Social, cultural and political influences in Drama | | | | |
| **Unit III** | Design : Motifs, techniques, boundaries ( what can be done and what cannot be ) Materials and process involved in set and prop preparation. Context based design. | | | | |
| **Unit IV** | Use of drama in Design process. Role play in User research. Useability testing. Voice training, Mind Training. | | | | |
| **Unit V** | Project: Develop a Theatrical presentation for a given topic | | | | |
| **Reference and Textbooks**<br>Howard Risatti, A Theory of Craft: Function and Aesthetic Expression, The university of North Carolina Press,2013<br>Laura Price, Geographies of Making, Craft and Creativity, Routledge,2018<br>Gustav Freytag, Technique of the Drama: An Exposition of Dramatic Composition and Art, University Press of the Pacific, December 2004<br>Brenda Laurel and Peter Lunenfeld,Design Research: Methods and Perspectives, The MIT Press, October 2003 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Express the importance of understanding the history of drama | **K2** |
| **CO2** | Explain the various regional drama/ theatre genres | **K5** |
| **CO3** | Determine design elements of drama. | **K5** |
| **CO4** | Identify the methods and practices to tailor a user study using techniques from theatre | **K3** |
| **CO5** | Create a skit | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | - | 1 | 2 | 2 | 3 | 2 | 3 |
| **CO2** | 3 | 3 | - | - | 2 | 2 | 2 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | - | - | 1 | 3 | 2 | 3 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 2 | 2 | 2 | 3 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1** | **0.4** | **1.6** | **2.2** | **2.2** | **3** | **2.4** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 3 | 3 | 3 |
| **CO2** | 2 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 2 | 3 | 2 | 3 |
| **W. AV** | **2.6** | **2.6** | **3** | **2.8** | **3** |

| Semester V | | | | | |
|---|---|---|---|---|---|
| **OE** | **60957B** | **Craft Study - I** | **P** | **Credits- 2** | **Hours -30** |
| **Objectives** | 1. Educate about the history of the craft under study<br>2. Introduce the materials and their properties appropriate for the craft being studied<br>3. Educate by learning the foundation techniques of the craft.<br>4. Familiarize with methods to tailor the craft to user needs.<br>5. Educate comprehensively about the craft under study through a project<br><br>This course "Craft Study I" shall be an avenue to explore indigenous and regional craft practices | | | | |
| **Unit I** | Historic and cultural aspects of the craft | | | | |
| **Unit II** | Materials and process involved in material preparation | | | | |
| **Unit III** | Design: Motifs, techniques, boundaries (what can be done and what cannot be) | | | | |
| **Unit IV** | User preferences from the craft's person's perspective. | | | | |
| **Unit V** | Project: Develop an artefact and present it. | | | | |
| **Reference and Textbooks**<br>Howard Risatti, A Theory of Craft: Function and Aesthetic Expression, The university of North Carolina Press,2013<br>Laura Price,Geographies of Making, Craft and Creativity, Routledge,2018 | | | | | |
| **Web Resources** | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Express the importance of understanding traditional craft practices | **K2** |
| **CO2** | Explain the choice of materials for the craft under study | **K5** |
| **CO3** | Determine design elements in the craft under study | **K5** |
| **CO4** | Identify the methods and practices to tailor a craft practice matching a user's need. | **K3** |
| **CO5** | Create a design using the craft under study | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | - | 1 | 2 | 2 | 3 | 2 | 3 |
| **CO2** | 3 | 3 | - | - | 2 | 2 | 2 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | - | - | 1 | 3 | 2 | 3 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 2 | 2 | 2 | 3 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1** | **0.4** | **1.6** | **2.2** | **2.2** | **3** | **2.4** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 3 | 3 | 3 |
| **CO2** | 2 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 2 | 3 | 2 | 3 |
| **W. AV** | **2.6** | **2.6** | **3** | **2.8** | **3** |

| Semester V | | | | | |
|---|---|---|---|---|---|
| **OE** | **60957C** | **Clay Modelling** | **P** | **Credits- 2** | **Hours -30** |
| **Objectives** | 1. Educate about the history of clay<br>2. Introduce the preparation methods of clay<br>3. Introduce the various techniques and methods involved in clay modelling<br>4. Educate about clay modelling through personal explorations<br>5. Educate clay modelling by doing a major team project | | | | |
| **Unit I** | Clay as a material. History of clay. Clay's role in cultures. Types of clay. Curation of clay. Clay and societies. Clay and tradition. Terracotta. Clay as building material. | | | | |
| **Unit II** | Use of clay. Curation and mixing of additives. Natural fibre reinforcement. Clay throwing. Clay throwing. Potter's wheel. Burning. Conventional and Modern Kilns. | | | | |
| **Unit III** | Techniques in clay. Additive and Elimination. Slabs. Carving. Clay Reliefs. Sculpting using clay. | | | | |
| **Unit IV** | Project I : Basic projects in clay. Individual exploration | | | | |
| **Unit V** | Project II : Team Project. Develop an artefact using clay as a team | | | | |
| **Reference and Textbooks**<br>• *Howard Risatti, A Theory of Craft: Function and Aesthetic Expression, The university of North Carolina Press,2013*<br>• *Laura Price,Geographies of Making, Craft and Creativity, Routledge,2018*<br>• *Mary Louisa Hermione Unwin, A Manual of Clay-Modelling,November 2022*<br>• *Alice North and Halsey North, Listening to Clay: Conversations with Contemporary Japanese Ceramic Artists, Monacelli press, May 2022* | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Express the importance of understanding traditional clay modelling practices | **K2** |
| **CO2** | Explain the methods of preparing clay | **K5** |
| **CO3** | Determine the appropriate clay modeling technique | **K5** |
| **CO4** | Identify the methods and practices to tailor a clay model | **K3** |
| **CO5** | Create a complex design using the clay as a material | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | - | 1 | 2 | 2 | 3 | 2 | 3 |
| **CO2** | 3 | 3 | - | - | 2 | 2 | 2 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | - | - | 1 | 3 | 2 | 3 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 2 | 2 | 2 | 3 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1** | **0.4** | **1.6** | **2.2** | **2.2** | **3** | **2.4** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 3 | 3 | 3 |
| **CO2** | 2 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 2 | 3 | 2 | 3 |
| **W. AV** | **2.6** | **2.6** | **3** | **2.8** | **3** |

## SEMESTER VI

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **CC** | **60961** | **UX Ethics and Security** | **P** | **Credits 4** | **Hours-4** |
| **Objectives** | 1. Introduce students to the Cyber Security laws in force<br>2. Educate students about the importance of Ethics in UX design and practices<br>3. Provide insights into the importance of data privacy<br>4. Learn about cybercrimes, abuse and digital addiction<br>5. Familiarize with Ethics and security by making a case study | | | | |
| **Unit I** | Cyber Security:Security in enterprise and infrastructure setting - Cyber Threat/ attack/ detection & mitigation - Cyber security laws in India - data breach, identity theft, financial theft, and internet time thefts - Cyber security Framework (NCFS), Authorized by the National Institute of Standards and Technology (NIST). | | | | |
| **Unit II** | Ethics in UX:Informed consent. - Voluntary participation. - Do no harm - Confidentiality – Anonymity – Sensitization towards Gender – Religion – Race. | | | | |
| **Unit III** | Introduction to the website terms and conditions agreement - Introduction to Data privacy – Plagiarism – Bias Electronic documents, Digital Signatures, Digital certificates, electronic contracts, | | | | |
| **Unit IV** | Dark Patterns in websites and apps. Issues related to cybercrime; privacy and cybercrime - Obscenity and Vulgarity, Criticism of Public Figure.Digitaladdiction | | | | |
| **Unit V** | Submitting a project report - case study – Interviews of victims/ practitioner/cyber cell. | | | | |
| **Reference and Text books**<br>Cennydd Bowles (2018), Future Ethics, Edition, NowNext Press, ASIN : *S1X9HLT07B*<br>Karen Lawrence Öqvist&FilipJohnssén (Year), Privacy Principles and Data Protection Practices: A Professional's Guide to EU GDPR, Edition, BCS, The Chartered Institute for IT, ISBN-10 :*.1780173717*<br>Rodney D Ryder & Nikhil Naren (2020), Internet Law: Regulating Cyberspace and Emerging Technologies, Edition, Bloomsbury, ISBN-10 :*.9389714958* | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | List the cyber-crime laws in force | **K1** |
| **CO2** | Illustrate Ethical practices while designing UI/UX | **K2** |
| **CO3** | Understand the importance of Data privacy | **K2** |
| **CO4** | Distinguish the various facets of cyber-crimes and digital addiction | **K4** |
| **CO5** | Explain Ethics and security in UX through a case study | **K5** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 2 | - | - | - | - | - | 2 | - | - | - |
| **CO2** | 2 | - | - | - | - | - | 2 | - | - | - |
| **CO3** | 2 | - | - | - | - | - | 2 | - | - | - |
| **CO4** | 2 | - | - | - | - | - | 2 | - | - | - |
| **CO5** | 2 | - | - | - | - | - | 2 | - | - | - |
| **W. AV** | **2** | **-** | **-** | **-** | **-** | **-** | **2** | **-** | **-** | **-** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 1 | 1 | 2 | 1 | 1 |
| **CO2** | 1 | 1 | 2 | 1 | 1 |
| **CO3** | 1 | 1 | 2 | 1 | 1 |
| **CO4** | 1 | 1 | 2 | 1 | 1 |
| **CO5** | 1 | 1 | 2 | 1 | 1 |
| **W. AV** | **1** | **1** | **2** | **1** | **1** |

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **CC** | **60962** | **Inclusive User Experience** | **P** | **Credits -4** | **Hours-6** |
| **Objectives** | 1. Educate students about assistive technology<br>2. Provide insights into the various types of disabilities<br>3. Familiarize students with the laws and policies applicable to the physically challenged.<br>4. Learn about the principles of universal design.<br>5. Introduce the building blocks in accessibility design | | | | |
| **Unit I** | Understanding Disability and Assistive Technology: the major disability types - functional challenges and related assistive technologies. | | | | |
| **Unit II** | Disability types - Visual Disability - Hearing Disability - Mobility Disability - Cognitive Disabilities - Disability Etiquette. | | | | |
| **Unit III** | Legal Landscape and workplace law: Legal Landscape & workplace law - Accessibility Policy - Web Development - Text Conversion service, Captioning services. | | | | |
| **Unit IV** | Universal Design: Universal Design - Principles of Universal Design - Guidelines WCAG, 508 Compliance & POUR principles. | | | | |
| **Unit V** | Coding for Accessibility: HTML basics for Structuring Content, Tables & links, Images, Charts & graphs - ColorContrast, Audio Description & Captioning - Screen Reader & Accessible Word Document & PDF document - Tools for Evaluating Accessibility - Certification in Accessibility. | | | | |
| **Reference and Text books**<br>Katie Cunningham (2012), Accessibility Handbook, 1st Edition, O'Reilly Media, ASIN :.*U21UB0092B*<br>Wendy Chisholm (2008), Universal Design for Web Applications, 1st Edition, O′Reilly, ISBN-10 :.*0596518730*<br>Regine M. Gilbert (2019), Inclusive Design for a Digital World: Designing with Accessibility in Mind, 1stEdition, Apress, ISBN: 9781484250167. | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Develop assistive devices | **K6** |
| **CO2** | Express knowledge about the various types of disabilities | **K2** |
| **CO3** | Recall the laws that are applicable to challenged people | **K1** |
| **CO4** | Practice the various principles of universal design | **K3** |
| **CO5** | Choose the right tool for the assistive device being built | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO2** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO3** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO4** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **CO5** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| **W. AV** | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **CC** | **60963** | **Toy and Game Design** | **P** | **Credits- 4** | **Hours -6** |
| **Objectives** | 1. Introduce students to play theories<br>2. Impart an understanding of the relationship between cognition and play<br>3. Emphasise about the details of toy design and development<br>4. Familiarize students with the constituents of Game design<br>5. Learn to design and develop a toy or a a game to practice the theories learnt in the course | | | | |
| **Unit I** | What is play ? Types of play. Play theories. - Play Pyramid. Child and adult play. Play and learning. Play therapy, play for diagnosis and rehabilitation. Culture, society and play. Dyadic play, Play spaces. Play rhythms. | | | | |
| **Unit II** | Cognitive development theories. Jean piaget's development milestones. Transitional object – Winnicot. Play and learning. Vygotsky's Zone of proximal development. Flow theory. | | | | |
| **Unit III** | What is a toy?. Types of toys. Toys for children. Basics of toy design, Aesthetics, and form. Ergonomics in Toy design. Therapeutic toys. Toys for the elderly. Toy as a tool. | | | | |
| **Unit IV** | Elements of Game design. Themes and aesthetics in Games. Story telling for games. Goal oriented behaviour. Reward systems. Pleasure vs addiction. Game aesthetics. Social and cultural influences in games. Hybrid games. | | | | |
| **Unit V** | Design a game or a toy for a target group/user. Design a toy/game for a target group/user. User survey, ideation. Material Selection. Development. User testing. Iterative design. Presentation. | | | | |
| **Reference and Textbooks**<br>D.W.Winnicot, Playing and Reality,Routledge,1971<br>Johan Huizinga, Homo LeudensA Study of the Play-Element in Culture, Angelico Press, 2016<br>Jean Piaget, Play, Dreams and Imitation in Childhood,Hassell Street Press,2021<br>Chris van, Toy Design, Thames and Hudson,2009<br>GísliThorsteinsson (Author), Dr Tom Page,The Value of Good Toy Design for Children,Lambert,2012<br>Jesse Schell, The Art of Game design, CRC Press,2019<br>Colleen Macklin, John Sharp, Games, Design and Play: A detailed approach to iterative game design, Addison-Wesley,2016 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Define play, its types and constructs | **K1** |
| **CO2** | Relate to the cognitive aspects during play with a toy | **K1** |
| **CO3** | Express a thorough understanding of toy design and developmen2 | **K5** |
| **CO4** | Explain the details of game design and its strategy | **K5/K2** |
| **CO5** | Develop a toy or a game for a given audience/user | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 |
| **CO2** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 |
| **CO3** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 |
| **CO4** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 |
| **CO5** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **3** | **3** | **3** | **3** | **2.2** | **2.2** | **1.4** | **1.4** | **1.4** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60964** | **Interaction in Virtual Environment** | **P** | **Credits-4** | **Hours-6** |
| **Objectives** | 1. To introduce virtual reality (VR)<br>2. To educate about the elements of virtual reality technology<br>3. To familiarize with the challenges of using VR<br>4. To learn about the various avenues of application of VR<br>5. To provide an opportunity to practice VR by executing a basic project. | | | | |
| **Unit I** | Virtual reality - virtual world(medium), immersion, sensory feedback, and interactivity, non-immersive, semi-immersive and fully immersive experiences. | | | | |
| **Unit II** | Elements of Virtual reality - Viewing System, Tracking System, Interaction, Artistic influence, Sensory Management System. Presence in VR, Tracking, Latency, Field of View in Real life, HMDs, Caves, Desktop VR, Fidelity, depth, isolation, smell, range of motion (DoF) Sensory Influence: Kinetics, Spatial Audio, Haptics, Other senses. | | | | |
| **Unit III** | Problems with movement - interaction, limited area of movement, VR sickness. | | | | |
| **Unit IV** | Augmented reality, application domains of VR – medical, educational and entertainment. See-through vs screens vs projection | | | | |
| **Unit V** | Design and develop a small-scale VR project | | | | |
| **Reference and Text books**<br>Jason Jerald,The VR Book: Human-Centered Design for Virtual Reality, Morgan & Claypool Publishers, 2015<br>Nynke Tromp & Paul Hekkert (2018), Design for Society: Products and services for a Better world, Blumsbury Publication.<br>Paul Mealy, Virtual & Augmented Reality For Dummies, Wiley,2015 | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Explain the nuances of Virtual reality and its applications | **K2** |
| **CO2** | Categorize the elements of VR application | **K2** |
| **CO3** | List the drawbacks of using VR | **K1** |
| **CO4** | Distinguish the various ways VR can be applied | **K4** |
| **CO5** | Construct a basic VR application | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 2 | - | 2 | 2 | 3 | 3 | 2 | 2 | 3 |
| **CO2** | 3 | 2 | 1 | 1 | 1 | 3 | 3 | 2 | 2 | 2 |
| **CO3** | 3 | 3 | - | 2 | 2 | 3 | 3 | 2 | 3 | 2 |
| **CO4** | 3 | 2 | - | 3 | 1 | 3 | 3 | 2 | 3 | 2 |
| **CO5** | 3 | 3 | - | 2 | 1 | 3 | 3 | 2 | 3 | 3 |
| **W. AV** | **3** | **2.4** | **0.2** | **2** | **1.4** | **3** | **3** | **2** | **2.6** | **2.4** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 2 | 2 | 2 | 2 |
| **CO2** | 3 | 3 | 2 | 2 | 3 |
| **CO3** | 2 | 3 | 3 | 3 | 3 |
| **CO4** | 2 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **2.6** | **2.8** | **2.6** | **2.6** | **2.8** |

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60965** | **Portfolio Skills** | **P** | **Credits- 2** | **Hours -2** |
| **Objectives** | • To familiarise students to the constructs of a portfolio.<br>• To educate the students to appropriately curate the contents of a portfolio.<br>• To emphasize the importance of multimedia portfolio presentations.<br>• To impart training to make an effective portfolio.<br>• To highlight the importance of making effective portfolio presentations. | | | | |
| **Unit I** | Introduction to Portfolio Making – Different styles – Websites and Portals | | | | |
| **Unit II** | Collection and preparation of the resources- Layout & compositions | | | | |
| **Unit III** | Presentation of the Design Process - Show-Reel of the Animation work | | | | |
| **Unit IV** | Portfolio development exercises | | | | |
| **Unit V** | Mock presentations and submissions | | | | |
| **Reference and Textbooks**<br>Debbie Rose Myers &Graphic Designer, (2009), Guide to Portfolio Design, John Wiley & Sons, Inc.<br>Sara Eisenman, (2006), Building Design Portfolios (Innovative Concepts for Presenting Your Work), Rockport Publishers<br>Craig Welsh, (2013), Design: Portfolio: Self-promotion at its best, Rockport Publisher. | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Define the contents of a designer's portfolio | **K1** |
| **CO2** | Determine the appropriate contents of a portfolio | **K5** |
| **CO3** | Express portfolio through multimedium means | **K2** |
| **CO4** | Create a model portfolio | **K6** |
| **CO5** | Practice portfolio presentations | **K3** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **CO2** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **CO3** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **CO4** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **CO5** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **W. AV** | **2** | **-** | **-** | **1** | **1** | **1** | **2** | **2** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 1 | 1 | 3 | 2 | 1 |
| **CO2** | 1 | 1 | 3 | 2 | 1 |
| **CO3** | 1 | 1 | 3 | 2 | 1 |
| **CO4** | 1 | 1 | 3 | 2 | 1 |
| **CO5** | 1 | 1 | 3 | 2 | 1 |
| **W. AV** | **1** | **1** | **3** | **2** | **1** |

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **DSE** | **60966** | **Project III – Application Design** | **P** | **Credits -4** | **Hours-4** |
| **Objectives** | 1. Familiarize with field research and user study<br>2. Provide situations to create personas as a part of design process<br>3. Learn story boarding<br>4. Introduce the importance of proto-typing by developing wireframes<br>5. Educate about complete application development by developing one. | | | | |
| **Unit I** | Research and gathering information of the domains: User study and Interviews – Empathize understanding the ecosystem and stack holders - Market study. | | | | |
| **Unit II** | Persona and User Scenarios: Introduction to Persona – Motivation – Goals, Needs and expectation - Reveal universal features and functionality. | | | | |
| **Unit III** | Storyboarding: Visual representation of UX stories – Provide clarity – Storyboarding with devise form factor, User requirement and persona. | | | | |
| **Unit IV** | Paper wireframes: Sketch paper wireframes with one action per screen - Block diagrams and place holders - High Fidelity Wireframes: Create screens and show navigation. | | | | |
| **Unit V** | Project Submission: Final Working prototype of the application. | | | | |
| **Reference and Text books**<br>Whitney Quesenbery& Kevin Brooks (2010), Storytelling for User Experience: Crafting Stories for Better Design,1st Edition, Rosenfeld Media; ISBN-10 : *1933820470*<br>Steve Portigal (2013), Interviewing Users: How to Uncover Compelling Insights, 1st Edition, Rosenfeld Media Publisher Name, ISBN-10 :*X193382011*<br>Kevin P. Nichols & Donald Chesnut (2014), UX For Dummies, 1st Edition, For Dummies, ASIN :*8RG52JN00B* | | | | | |
| **Web Resources**<br>https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Construct an elaborate user study for the task in hand | **K3** |
| **CO2** | Justify design approach by developing personas | **K5** |
| **CO3** | Create storyboards to depict user flow | **K3** |
| **CO4** | Develop prototypes | **K6** |
| **CO5** | Design and Develop applications | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **CO2** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **CO3** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **CO4** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **CO5** | 2 | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| **W. AV** | **2** | **-** | **-** | **1** | **1** | **1** | **2** | **2** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 1 | 1 | 3 | 2 | 1 |
| **CO2** | 1 | 1 | 3 | 2 | 1 |
| **CO3** | 1 | 1 | 3 | 2 | 1 |
| **CO4** | 1 | 1 | 3 | 2 | 1 |
| **CO5** | 1 | 1 | 3 | 2 | 1 |
| **W. AV** | **1** | **1** | **3** | **2** | **1** |

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **OE** | **60967A** | **Puppetry** | **P** | **Credits- 2** | **Hours -2** |
| **Objectives** | • Educate about the history of Puppetry<br>• Introduce the types of puppets in India<br>• Introduce the various techniques and methods involved<br>• Educate about the production and performing of the puppet show<br>• Conducting the performance | | | | |
| **Unit I** | History of puppets. Puppets and human civilizations. International, National and regional puppetry. Social, cultural and political impacts and interactions with puppetry | | | | |
| **Unit II** | Types of puppets: Shadow Puppets (Thol pavaikoothu ),Glove Puppets, Rod and stick Puppets, Finger Puppets, Ventriloquist Puppets, Marionettes, | | | | |
| **Unit III** | Design of puppets. Techniques, Set design. Story telling through puppets. Voice and light training. | | | | |
| **Unit IV** | Development of puppet characters using a traditional technique. | | | | |
| **Unit V** | Project: Team Project. Develop puppet play | | | | |
| **Reference and Textbooks**<br>Howard Risatti, A Theory of Craft: Function and Aesthetic Expression, The university of North Carolina Press,2013<br>Laura Price,Geographies of Making, Craft and Creativity, Routledge,2018<br>Liam Jarvis, Sue Buckmaster,Theatre-Rites: Animating Puppets, Objects and Sites, July 2021<br>Arthur B. Allen ,Puppetry for Beginners (Puppets & Puppetry Series),Read Books, April 2006 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Express the importance of understanding traditional puppetry practices | **K2** |
| **CO2** | Explain the various types of puppets | **K5** |
| **CO3** | Determine the appropriate puppet and set design | **K5** |
| **CO4** | Identify the methods and practices to develop a puppet character | **K3** |
| **CO5** | Create a puppet skit | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | - | 1 | 2 | 2 | 3 | 2 | 3 |
| **CO2** | 3 | 3 | - | - | 2 | 2 | 2 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | - | - | 1 | 3 | 2 | 3 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 2 | 2 | 2 | 3 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1** | **0.4** | **1.6** | **2.2** | **2.2** | **3** | **2.4** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 3 | 3 | 3 |
| **CO2** | 2 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 2 | 3 | 2 | 3 |
| **W. AV** | **2.6** | **2.6** | **3** | **2.8** | **3** |

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **OE** | **60967B** | **Craft Study - II** | **P** | **Credits- 2** | **Hours -2** |
| **Objectives** | 1. Educate about the history of the craft under study<br>2. Introduce the materials and their properties appropriate for the craft being studied<br>3. Educate by learning the foundation techniques of the craft.<br>4. Familiarize with methods to tailor the craft to user needs.<br>5. Educate comprehensively about the craft under study through a project<br><br>This course "Craft Study II" shall be an avenue to explore indigenous and regional craft practices | | | | |
| **Unit I** | Historic and cultural aspects of the craft | | | | |
| **Unit II** | Materials and process involved in material preparation | | | | |
| **Unit III** | Design : Motifs, techniques, boundaries ( what can be done and what cannot be ) | | | | |
| **Unit IV** | User preferences from the craft's person's perspective. | | | | |
| **Unit V** | Project: Develop an artefact and present it. | | | | |
| **Reference and Textbooks**<br>Howard Risatti, A Theory of Craft: Function and Aesthetic Expression, The university of North Carolina Press,2013<br>Laura Price,Geographies of Making, Craft and Creativity, Routledge,2018 | | | | | |
| **Web Resources** | | | | | |

| **Course Outcomes** | | **Knowledge Level** |
|---|---|---|
| **CO1** | Express the importance of understanding traditional craft practices | **K2** |
| **CO2** | Explain the choice of materials for the craft under study | **K5** |
| **CO3** | Determine design elements in the craft under study | **K5** |
| **CO4** | Identify the methods and practices to tailor a craft practice matching a user's need. | **K3** |
| **CO5** | Create a design using the craft under study | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | - | 1 | 2 | 2 | 3 | 2 | 3 |
| **CO2** | 3 | 3 | - | - | 2 | 2 | 2 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | - | - | 1 | 3 | 2 | 3 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 2 | 2 | 2 | 3 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1** | **0.4** | **1.6** | **2.2** | **2.2** | **3** | **2.4** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 3 | 3 | 3 |
| **CO2** | 2 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 2 | 3 | 2 | 3 |
| **W. AV** | **2.6** | **2.6** | **3** | **2.8** | **3** |

| Semester VI | | | | | |
|---|---|---|---|---|---|
| **OE** | **60967C** | **Storytelling** | **P** | **Credits- 2** | **Hours -2** |
| **Objectives** | 1. Educate about the history of Storytelling.<br>2. Introduce the elements of a story.<br>3. Educate about story telling design for targeted audience.<br>4. Introduce the various techniques and methods involved in storytelling and product design.<br>5. Educate story telling by doing a major team project | | | | |
| **Unit I** | Storytelling as an art. History of storytelling traditions. Fiction and nonfiction genres. Regional story telling traditions. | | | | |
| **Unit II** | Narratives, character building and emphasis, plot design. | | | | |
| **Unit III** | User based story telling. Story telling for children, adults, and elderly. Voice training, pausing, and timing in storytelling. Set design. Multi modal (visual, aural and other sensual) narratives | | | | |
| **Unit IV** | Use of storytelling techniques in product design. Design process, product abstraction and presentation techniques | | | | |
| **Unit V** | Project II: Team Project. Develop story and present it | | | | |
| **Reference and Textbooks**<br>Howard Risatti, A Theory of Craft: Function and Aesthetic Expression, The university of North Carolina Press,2013<br>Laura Price,Geographies of Making, Craft and Creativity, Routledge,2018<br>Will Storr, The Science of Storytelling: Why Stories Make Us Human, and How to Tell Them Better,William Collins, March 2020<br>Ellen Lupton, Design is Storytelling, Cooper-Hewitt Museum, November 2017 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Express the importance of history of story telling | **K2** |
| **CO2** | Explain the elements of story telling | **K5** |
| **CO3** | Determine the appropriate story telling technique for the identified audience | **K5** |
| **CO4** | Identify the methods and practices of story telling and use them in Design | **K3** |
| **CO5** | Create a story. | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | - | 1 | 2 | 2 | 3 | 2 | 3 |
| **CO2** | 3 | 3 | - | - | 2 | 2 | 2 | 3 | 3 | 3 |
| **CO3** | 3 | 2 | - | - | 1 | 3 | 2 | 3 | 2 | 3 |
| **CO4** | 3 | 2 | 2 | - | 2 | 2 | 2 | 3 | 2 | 3 |
| **CO5** | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **2.6** | **1** | **0.4** | **1.6** | **2.2** | **2.2** | **3** | **2.4** | **3** |

**Mapping Course Outcome V SProgramme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 3 | 3 | 3 |
| **CO2** | 2 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 2 | 3 | 2 | 3 |
| **W. AV** | **2.6** | **2.6** | **3** | **2.8** | **3** |

## SEMESTER VII

| Semester VII | | | | | |
|---|---|---|---|---|---|
| **CC** | **60971** | **Internship** | **I** | **Credits- 2** | |
| **Objectives** | To get exposed to industrial practices in Design | | | | |
| | 1. This internship is aimed at a short exposure to the practices in a design studio.<br>2. The students are expected to get exposed to design practices in a studio.<br>3. The improve their soft skills, like time management, project planning and execution. Use of new tools.<br>4. Improve presentation skills. | | | | |
| **Reference and Textbooks**<br>Brian Sullivan, The Design Studio Method: Creative Problem Solving, Routledge,2015 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Define the role of a designer in a studio | **K2** |
| **CO2** | Determine the appropriate plan and resources for a design project | **K5** |
| **CO3** | Express improvements or innovations to design process based on pragmatic needs of the job in hand | **K5** |
| **CO4** | Create a project report | **K3** |
| **CO5** | Practice Presentation techniques | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester VII | | | | | |
|---|---|---|---|---|---|
| **CC** | **60972** | **New Media Design** | **P** | **Credits- 4** | **Hours -6** |
| **Objectives** | 1.To educate students about the evolution of new media.<br>2.To familiarise with contemporary new media practices through exercises.<br>3.To introduce to innovation trends in new media.<br>4.To learn to integrate new media constructs through a project.<br>5.To emphasise the essence of new media by building application specific prototype. | | | | |
| **Unit I** | Introduction of the New Media Arts and its History- Case studies of New Media Artists- Research and Documentation. | | | | |
| **Unit II** | Exploration of the topic through basic Exercises and Discussions. | | | | |
| **Unit III** | Introduction to AR, VR, MR and XR | | | | |
| **Unit IV** | Development of new media application prototype | | | | |
| **Unit V** | New Media ArtsDisplay/Exhibition/ Presentation/Screening/Feedback. | | | | |
| **Reference and Textbooks**<br>Richard L. Lewis & James Luciana, (2004), Digital Media: An Introduction, Prentice Hall.<br>Christiane Paul, New Media (2009), New Media in the White Cube and Beyond - Curatorial Models for Digital Art, University of California Press<br>Mark Tribe, (2006), New Media Art (Taschen Basic Art Series), Taschen GmbH<br>Lisa Nakamura, (2007), Digitizing Race: Visual Cultures of the Internet, Univ of Minnesota Press. | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Relate contemporary new media applications with their roots. | **K1** |
| **CO2** | Develop designs incorporating new media elements | **K3** |
| **CO3** | Identify novel improvements in contemporary new media applications | **K3** |
| **CO4** | Create an application using new media | **K6** |
| **CO5** | Construct a product using appropriate new media element | **K3** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 3 |
| **CO2** | 2 | 2 | - | - | 1 | 2 | 3 | 2 | 3 | 3 |
| **CO3** | 2 | 1 | - | - | 1 | 2 | 3 | 2 | 3 | 3 |
| **CO4** | 2 | 2 | - | - | 1 | 2 | 3 | 2 | 3 | 3 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO5** | 2 | 2 | 1 | - | 1 | 2 | 3 | 2 | 3 | 3 |
| **W. AV** | **2** | **1.8** | **0.4** | **0.2** | **1.2** | **2** | **3** | **2** | **2.8** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 2 | 2 | 2 | 2 |
| **CO2** | 3 | 2 | - | 1 | 3 |
| **CO3** | 3 | 2 | - | 1 | 3 |
| **CO4** | 3 | 2 | - | 1 | 3 |
| **CO5** | 3 | 2 | 1 | 2 | 3 |
| **W. AV** | **3** | **2** | **0.6** | **1.4** | **2.8** |

| Semester VII | | | | | |
|---|---|---|---|---|---|
| **CC** | **60973** | **Film Design** | **P** | **Credits- 4** | **Hours -6** |
| **Objectives** | 1. Apprise students about the evolution and history of world cinema.<br>2. Educate students in the constructs of film and film making<br>3. Familiarize students to the process of making films (production)<br>4. Introduce the modes and elements of a documentary film.<br>5. Enable an understanding of film making by making a short film. | | | | |
| **Unit I** | History of world cinema. History of Indian film making. The socio-political contextual influences. Appreciating and understanding the unique stylistic and aesthetic tendencies of different movies and documentaries.History of documentary cinema worldwide and the history of Indian documentary cinema. | | | | |
| **Unit II** | Film constructs - - Process of filmmaking - roles of artists, technicians. Writing - Observation of Characters and Situations. Continuity, shot division, spatial and temporal narrative. Mis-en-scene. | | | | |
| **Unit III** | Conceptualization, plot, and story development. Story boarding and script writing. Character development, light and sound recording and design. Production planning. | | | | |
| **Unit IV** | Elements of a documentary film.Modes of documentaries: Linear, Discursive, episodic, poetic and hybrid mode. Analysis of documentaries from different cultures.<br>Project I : Creation of a 10 minute documentary of a social phenomenon/problem. | | | | |
| **Unit V** | Project II : Creation of a shortfilm - maximum of 10 minutes. | | | | |
| **Reference and Textbooks**<br>Documentary Film Classics, William Rothman, Cambridge University Press, 2004<br>Film Theory And Philosophy, Richard Allen; Murray Smith Eds., Oxford University Press, 2003<br>Technique of film Editing, KarelReisz; Gavin Millar, Focal Press: anImprint of Elsevier, 2nd, 2008<br>The Documentary Film Reader, Jonathan Kahana, Oxford University Press | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Relate the stages of film evolution and the contribution of cultural context in films | **K2** |
| **CO2** | Illustrate knowledge about the phases of film making/production | **K2** |
| **CO3** | Generate the constructs of a film like story, character and elements of light and sound | **K4** |
| **CO4** | Illustrate expertise in developing a documentary film showcasing a phenomena | **K2** |
| **CO5** | Design and develop a short film | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | - | 2 | 2 | 3 | 3 | 1 | 1 | 1 |
| **CO2** | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 1 | 1 | 1 |
| **CO3** | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 1 | 1 | 1 |
| **CO4** | 3 | 3 | - | 2 | 2 | 3 | 3 | 1 | 1 | 1 |
| **CO5** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 |
| **W. AV** | **3** | **3** | **1.8** | **2.2** | **2.2** | **3** | **3** | **1** | **1** | **1** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

| Semester VII | | | | | |
|---|---|---|---|---|---|
| **CC** | **60974** | **ProjectIV- Interaction Design** | **P** | **Credits- 4** | **Hours -6** |
| **Objectives** | 1.To familiarize students with the foundations of interaction design<br>2.To educate students about different facets of interaction design<br>3.To emphasize about user centricity in interaction design<br>4.To recognise the role of cognitive design in interaction<br>5. To align practice with learning through an interaction design project | | | | |
| **Unit I** | Basic concepts in Interaction Design - Interaction Models – issues in man-machine interface - ergonomic considerations - dialog | | | | |
| **Unit II** | Paradigms for interaction – time sharing - Video display units - Programming toolkits - Sensor based context aware interaction - Multi-modal displays etc. | | | | |
| **Unit III** | Interaction Design Process: User focus – Scenarios - Navigation Design - Screen Design and Layout - Iteration and Prototyping. | | | | |
| **Unit IV** | Rules and Heuristics Principles –Cognitive design – sensation -perception – multisensory design | | | | |
| **Unit V** | Design project: design of an interactive product for a selected requirement - Deliverables will include research and insights - feature map - site map - page layouts – storyboard - visual design and style guide. | | | | |
| **Reference and Textbooks**<br>Theo Mandel (1997), The Elements of User Interface Design, John Wiley & Sons<br>Alan Cooper, Robert Reimann& David Cronin, (2016), About face: The Essentials of Interface Design, Wiley, p 720.<br>Louis Rosenfield (2015), Information Architecture for the Web and Beyond, Schroff | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Show familiarity with interaction design concepts | **K2** |
| **CO2** | Relate interaction design scenarios with theory | **K2** |
| **CO3** | Demonstrate the importance of user studies in interaction design | **K3** |
| **CO4** | Prioritize user cognitive factors in deigning interactions | **K5** |
| **CO5** | Construct am interaction design application to exercise theory | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 2 | - | 2 | 2 | 3 | 3 | 2 | 2 | 3 |
| **CO2** | 3 | 2 | 1 | 1 | 1 | 3 | 3 | 2 | 2 | 2 |
| **CO3** | 3 | 3 | - | 2 | 2 | 3 | 3 | 2 | 3 | 2 |
| **CO4** | 3 | 2 | - | 3 | 1 | 3 | 3 | 2 | 3 | 2 |
| **CO5** | 3 | 3 | - | 2 | 1 | 3 | 3 | 2 | 3 | 3 |
| **W. AV** | **3** | **2.4** | **0.2** | **2** | **1.4** | **3** | **3** | **2** | **2.6** | **2.4** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 2 | 2 | 2 | 2 |
| **CO2** | 3 | 3 | 2 | 2 | 3 |
| **CO3** | 2 | 3 | 3 | 3 | 3 |
| **CO4** | 2 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **2.6** | **2.8** | **2.6** | **2.6** | **2.8** |

| Semester VII | | | | | |
|---|---|---|---|---|---|
| **CC** | **60975** | **Visual Merchandising** | **P** | **Credits- 4** | **Hours -6** |
| **Objectives** | 1. To introduce the evolution of visual merchandising<br>2. To familiarize with branding and its elements<br>3. To impart the nuances of visual identity<br>4. To learn the facets of visual merchandising by designing collaterals<br>5. To gain a complete understanding of branding through a collective project | | | | |
| **Unit I** | Introduction to branding - Definition, History, and developments - Steps involve - Various branding strategies. | | | | |
| **Unit II** | Branding for existing or hypothetical company – Research and identifying attributes – Target audience – Market study. | | | | |
| **Unit III** | Create a visual identity – logo – Graphic design and Typographical exploration. | | | | |
| **Unit IV** | Applying to collaterals – VC – Letterhead – Envelope – Tabletop – T-shirt – Cap -3D explorations. | | | | |
| **Unit V** | Developing a Brand manual and Display/mock-ups -Display Fixtures - Signage and Graphics program. Window Displays that are dramatic, powerful, and engaging, efficient lighting program, Colour and Materials selections. | | | | |

**Reference and Textbooks**


Melissa Davis, more than a Name: An Introduction to Branding, Academic Press.

Jeff Fisher (2007), Identity Crisis: 50 redesigns that transformed stale identities into successful brands, How Books.

Kevin Budelman, Yang Kim & Curt Wozniak, Brand Identity Essentials:100 Principles foe Designing Logos and Building Brands, Rockport Publishers.

Huckerby, P(2015).“Easy Visual Merchandising: An Outstanding Visual Guide For 21st Century Retail”.

Schielke, T; Leudesdorff, M (2015). "Impact of lighting design on brand image for fashion retail stores". Lighting Research and Technology. 46 (6): 672–692. doi:10.1177/1477153514541831.


**Web Resources**

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Generate appropriate visual merchandising strategies as applicable | **K4** |
| **CO2** | Critically assess a branding practice | **K5** |
| **CO3** | Interpret the core characteristics of a product by creating an effective visual identity | **K5** |
| **CO4** | Compile relevant branding collaterals for a product under study | **K6** |
| **CO5** | Develop a comprehensive branding strategy for a product/service | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **3** | **3** | **2** | **2** | **3** | **3** | **3** | **3** | **3** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 2 | 2 |
| **CO2** | 3 | 3 | 3 | 2 | 2 |
| **CO3** | 3 | 3 | 3 | 2 | 2 |
| **CO4** | 3 | 3 | 3 | 2 | 2 |
| **CO5** | 3 | 3 | 3 | 2 | 2 |
| **W. AV** | **3** | **3** | **3** | **2** | **2** |

| Semester VII | | | | | |
|---|---|---|---|---|---|
| **Allied** | **60976** | **Design Management and Professional Practice** | **P** | **Credits- 2** | **Hours -3** |
| **Objectives** | 1.To educate students about the nuances of Management in design.<br>2.To emphasize the importance of interpersonal communication and synergy in teams.<br>3.To develop an understanding of basic management tools and techniques.<br>4.To create an awareness about the importance of intellectual property rights governing design creations<br>5. To apply the learning through project/case studies. | | | | |
| **Unit I** | Introduction to design management, skills, knowledge and learning style evaluation, personal goal setting and professional development planning – leadership skill | | | | |
| **Unit II** | Collaboration of businesses and technical teams, Motivated individuals - Face-to-face conversation - Functional products - Technical excellence – Simplicity - Self-organized teams - Regulation, reflection, and adjustment. | | | | |
| **Unit III** | Strategy - strategy to sell idea/convince client. Predictive analytics and operative techniques – SWOT analysis - Project management Tools. Proposal - Quotations, Estimates, and Budgeting for a studio setup or a project. | | | | |
| **Unit IV** | Introduction to intellectual property rights: Definition - Administration offices and services - Copyright societies - IPR in India and Abroad - Laws related with copyrights and intellectual property rights: The Copyright Act-1957, Designs Act-2000 - The way from WTO to WIPO –TRIPS.Process of Patenting and Development - Research and innovation – Patents – Designs - Trade Mark and Copyright - Geographical Indications.<br>Ethics in Product design:Informed consent. - Voluntary participation. - Do no harm - Confidentiality – Anonymity – Sensitization towards Gender – Religion – Race. | | | | |
| **Unit V** | Present a Project / case study. | | | | |
| **Reference and Textbooks**<br>David Hands (2009), Vision and Values in Design Management, Academic Press.<br>Kathryn Best (2006), Design Management: Managing Design Strategy, Process and Implementation, Academic Press.<br>Peter Gorb (1990), Design Management, Architecture design and technology press. | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Understand the importance of management in design | **K2** |
| **CO2** | Develop interpersonal communication skills | **K3** |
| **CO3** | Apply the appropriate management tools and techniques | **K3** |
| **CO4** | Illustrate knowledge about IPR | **K2** |
| **CO5** | Develop a case study on good management practices | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |
| **CO2** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |
| **CO3** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |
| **CO4** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |
| **CO5** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |
| **W. AV** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 1 | 1 | 1 | 1 | 1 |
| **CO2** | 1 | 1 | 1 | 1 | 1 |
| **CO3** | 1 | 1 | 1 | 1 | 1 |
| **CO4** | 1 | 1 | 1 | 1 | 1 |
| **CO5** | 1 | 1 | 1 | 1 | 1 |
| **W. AV** | **1** | **1** | **1** | **1** | **1** |

| Semester VII | | | | | |
|---|---|---|---|---|---|
| **DSE** | **60977** | **Design for Future** | **P** | **Credits-2** | **Hours -3** |
| **Objectives** | 1. Develop an understanding of the contemporary opinions and commentaries about the designed world.<br>2. Impart an understanding as well as the importance of design for the future.<br>3. Analyse the ramifications rationally in creating a designed future for the planet.<br>4. Identify design interventions and develop bonafide convictions and ideas about future<br>5. Comprehend the planet 25 years hence, through design. | | | | |
| **Unit I** | Study of theories and commentaries about contemporary world through design. Evolution of objects, Consumerism, Media evolution, evolution of space, Evolution of systems in daily life. | | | | |
| **Unit II** | Study of futuristic design thoughts. Speculative Design, "what if" of Design. Critic a Design. Dyamaxion and Ephemeralization, Fiction and Future. Design Fiction. | | | | |
| **Unit III** | Taxonomy of future. Intellectual and Rationale grounding of future. Design for people. Design for planet. | | | | |
| **Unit IV** | Generating one's own ideas/views of "what is design? ". Predicted future based on current trends. Desired future. Design interventions to a forecasted future. | | | | |
| **Unit V** | Project. Study a product service or a system and hypothesise its future through design 25 years hence. Present it in the form of a presentation | | | | |

**Reference and Textbooks**


R Buckminster Fuller, Utopia or Oblivion: The Prospects for Humanity,Lars Muller Publishers,2008.

Jean Baudrillard,System of Objects: Reflections from Damaged Life,Verso, 2020

Henri Lefebvre,The Production of Space, Wiley-Blackwell,1991

Henri Lefebvre,Critiqueof Everydaylife,Verso,2014

Anthony Dunne& Fiona Raby , Speculate Everything: Design, Fiction, and Social Dreaming, The MIT press 2013

Matt Malpass, Critical Design in Context: History, Theory, and Practice, Bloomsbury Visual Arts 2019


**Web Resources**

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Express knowledge about the attempts and efforts by designers to forecast a future through design. | **K2** |
| **CO2** | Relate the contemporary commentaries about a designed future based on identified parameters. | **K2** |
| **CO3** | Predict the future of the world through design | **K3** |
| **CO4** | Create design interventions that are aimed at a healthier planet in the future. | **K6** |
| **CO5** | Elaborate the influence of design in creating a sustainable and healthy world in 25 years | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |
| **CO2** | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |
| **CO3** | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |
| **CO4** | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |
| **CO5** | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |
| **W. AV** | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |

## SEMESTER VIII

| Semester VIII | | | | | |
|---|---|---|---|---|---|
| **CC** | **60981** | **Degree Project** | **PR** | **Credits-10** | **Hours -24** |
| **Objectives** | To learn to execute a complete design project in a professional design studio/industry | | | | |
| | Project Phase 1 (Research and Design Brief).<br>Project Phase 2 (Ideation and Conceptual Design/Preproduction).<br>Project Phase 3 (Final Design solution/Prototype/Production).<br>Project Phase 4 (Documentation).<br>Project Phase 5 (Project Report Submission). | | | | |
| **Reference and Textbooks**<br><br>Bryan Lawson, How Designers Think: The Design Process Demystified, Om Books.<br>Tim Parsons, Thinking: Objects Contemporary Approaches to Product Design, Academic Press.<br>Adedeji B. Badiru, Christina F. Rusnock&Vhance V. Valencia, Project Management for Research: A Guide for Graduate Students, CRC Press. | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | Express professional capabilities to embark on a design practice or research | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO 1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | **3** | **3** | **3** | **3** | **3** |

| Semester VIII | | | | | |
|---|---|---|---|---|---|
| **DSE** | **60982** | **Design Research Report Writing** | **P** | **Credits- 4** | **Hours -6** |
| **Objectives** | • Introduce students to Design Research<br>• Develop capabilities to read and synthesise the jist of a research paper<br>• Enhance the capabilities to write a research paper<br>• Learn the methods to conduct design research and gather them in a research paper.<br>• Educate students about Research presentation techniques. | | | | |
| **Unit I** | What is Design Research? Research in Design. Research by Design. Contemporary commentaries in Design Research. Wicked problems. Sociology, ethnography and scientific research elements in Design. Their appropriateness and differences. | | | | |
| **Unit II** | Design Research paper reading. Synthesising of information from text. Summarising a chapter, a book and a research paper. Case study. | | | | |
| **Unit III** | Case study. Design Research paper writing. The constructs of a design research paper. Write summaries of research papers and texts. | | | | |
| **Unit IV** | Project : Study a product and the research that has gone behind it. Write a research paper on it. | | | | |
| **Unit V** | Presentation of research effort. | | | | |
| **Reference and Textbooks**<br>Wendy Laura Belcher, Writing Your Journal Article in Twelve Weeks, Chicago Guides to Writing, Editing, and Publishing,2019<br>Kate L. Turabian (Author), Wayne C. Booth, A Manual for Writers of Research Papers, Theses, and Dissertations, University of Chicago Press,2018 | | | | | |
| **Web Resources** | | | | | |

| Course Outcomes | | Knowledge Level |
|---|---|---|
| **CO1** | List the different avenues of design research efforts | **K1** |
| **CO2** | Illustrate capabilities to read and summarize a research content. | **K2** |
| **CO3** | Generate a research paper for a given case study | **K4** |
| **CO4** | Explain a design research conduct through a research paper | **K5** |
| **CO5** | Formulate a presentation for a research paper/ study | **K6** |

**Mapping Course Outcome VS Programme Outcomes**

| CO | PO 1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **CO3** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 |
| **CO4** | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 |
| **CO5** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 |
| **W. AV** | **2.4** | **2.4** | **2.4** | **2.2** | **2.4** | **2.4** | **2.4** | **2.8** | **2.4** | **2.4** |

**Mapping Course Outcome VS Programme Specific Outcomes**

| CO | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 3 | 3 | 3 |
| **CO2** | 3 | 3 | 3 | 3 | 3 |
| **CO3** | 3 | 3 | 3 | 3 | 3 |
| **CO4** | 3 | 3 | 3 | 3 | 3 |
| **CO5** | 3 | 3 | 3 | 3 | 3 |
| **W. AV** | 3 | 3 | 3 | 3 | 3 |