MANIPAL SCHOOL
OF ARCHITECTURE AND PLANNING
MANIPAL
(A constituent unit of MAHE, Manipal)

COURSE OUTCOMES

M.DES. (PRODUCT DESIGN)

SEMESTER: I

PD 6501 PRODUCT DESIGN STUDIO – I (SOCIAL INNOVATION)

After completion of this course the student will be able to:

- CO1: Understand the theoretical foundations of social innovation and its relevance to product design.
- CO2: Develop research skills to identify societal gaps and problems.
- CO3: Interpret and communicate research findings effectively.
- CO4: Generate innovative design opportunities.
- CO5: Develop a paper prototype with a detailed user journey.

PD 6503 DESIGN CULTURE

After completion of this course the student will be able to:

- CO1: Explain the historical evolution of design movements.
- CO2: Interpret the influence of the design movements within the cultural context.
- CO3: Outline the interplay between design and diverse cultural contexts, integrating cultural sensitivity into product design.
- CO4: Identify the emerging theoretical perspectives to address contemporary challenges and opportunities in product design.
- CO5: Develop a product design based on the design perspectives.

PD 6505 DESIGN AESTHETICS

After completion of this course the student will be able to:

- CO1: Relate various disciplines of design with contemporary aesthetics.
- CO2: Explain the role of perceptual design principles in product design.
- CO3: Identify the factors contributing to the aesthetics of a design.
- CO4: Analyze product designs based on concept and design derivation, consumer preference, automation, and end use.
- CO5: Criticize product designs based on principles of aesthetics.

PD 6507 PRODUCT REPRESENTATION AND TECHNICAL DRAWING

After completion of this course the student will be able to:

- CO1: Apply fundamental technical drawing techniques, demonstrating basic proficiency in orthographic projection and isometric drawing.
- CO2: Interpret complex product structures through detailed exploded views, assembly drawings, and sectional views, showcasing proficiency in advanced drawing concepts.
- CO3: Apply CAD software to develop and showcasing practical skills in utilizing digital tools for product representation.
- CO4: Create industry-standard technical documentation with detailed drawings and specifications, meeting requirements for effective communication in manufacturing processes.
- CO5: Develop a comprehensive product design portfolio, integrating various drawing techniques.

PD 6509 PRODUCT DEVELOPMENT WORKSHOP

After completion of this course the student will be able to:

- CO1: Explain prototyping methodologies to create design outcome.
- CO2: Compare various prototyping techniques.
- CO3: Choose prototyping materials based on their properties and application.
- CO4: Examine manufacturing processes based on competence & application.
- CO5: Evaluate iterative optimization of prototypes through analysis for further refinement.

PD 6511 RESEARCH METHODOLOGY

After completion of this course the student will be able to:

- CO1: Explain the basic concepts and understand the characteristics of research.
- CO2: Identify the research methods in Product Design.
- CO3: Evaluate the procedure for hypothesis.
- CO4: Analyse the data collection and sampling methods and illustrate the method of data collection.
- CO5: Propose and communicate a feasible research report.

COURSE OUTCOMES

M.DES. (PRODUCT DESIGN)

SEMESTER: II

PD 6502 PRODUCT DESIGN STUDIO - II (ACCESSIBILITY DESIGN)

After completion of this course the student will be able to:

- CO1: Demonstrate knowledge of foundational concepts in accessibility design.
- CO2: Apply inclusive design thinking and ethical considerations in practice.
- CO3: Develop skills in empathy-driven design and problem-solving.
- CO4: Evaluate and improve the usability of designed products for diverse user needs.
- CO5: Develop mastery in prototyping, design refinement, and effective presentation skills.

PD 6504 USABILITY ENGINEERING

After completion of this course the student will be able to:

- CO1: Understand user-centered design, human-computer interaction, and usability engineering concepts.
- CO2: Employ research methodologies for user needs analysis and visualize user experiences.
- CO3: Conduct product and market analyses for informed design decisions.
- CO4: Investigate psychological aspects in design through various research techniques.
- CO5: Utilize heuristic evaluations for comprehensive system assessments and improvements.

PD 6506 DESIGN ISSUES

After completion of this course the student will be able to:

- CO1: Demonstrate an understanding of various design thoughts, perspectives, and movements
- CO2: Identify and describe different concerns and issues within the context of design.
- CO3: Explain the relevance of design in the specific context of India, considering cultural and societal factors.
- CO4: Comprehend the importance of sustainable design practices and their impact on the environment and society.
- CO5: Evaluate theoretical models to develop a holistic approach to design challenges.

PD 6508 APPLIED ERGONOMICS

After completion of this course the student will be able to:

- CO1: Demonstrate understanding of foundational principles of anthropometry and ergonomics in product design.
- CO2: Comprehend methodologies for conducting user research to gather insights into user needs, preferences, and behaviors, informing design decisions.
- CO3: Apply design principles for creating products prioritizing functionality and comfort.
- CO4: Examine the principles of inclusivity and universal design, for creating products accessible and usable for diverse users.
- CO5: Synthesize iterative design optimization and evaluation methods to continuously improve solutions, aiming for enhanced user satisfaction.

SEMESTER: III

PD 7001 PRODUCT DESIGN STUDIO - III (HEALTHCARE DESIGN)

After completion of this course the student will be able to:

- CO1: Demonstrate an understanding of human- centered design principles and their application in healthcare contexts.
- CO2: Analyse and visualize the healthcare experience acquire proficiency in patient journey mapping.
- CO3: Generate innovative design solutions tailored to patient-centric needs.
- CO4: Synthesize knowledge of UX design principles with healthcare contexts, demonstrating the ability to integrate technology effectively for enhanced user experiences in healthcare applications.
- CO5: Design and develop a novel product or service in the healthcare context. Synthesize insights into a cohesive and innovative solution, considering the intrinsic aspects of patient-centric design.

PD 7003 DESIGN DISSERTATION

After completion of this course the student will be able to:

- CO1: Define the scope of the research.
- CO2: Outline the gaps in the domains of the interests.
- CO3: Develop research methodology and examine and research on an identified domain.
- CO4: Analyse and interpret data adeptly for insightful

conclusions.

- CO5: Explain research findings effectively through presentations.

PD 7005 PRACTICAL TRAINING

After completion of this course the student will be able to:

- CO1: Understand the organizational structure, ethics, and aspects of teamwork to coordinate and execute various tasks assigned in an Architect / Interior Design office.
- CO2: Take part in the process of design and decision making through various tools for effective communication.
- CO3: Apply acquired learning to carry out tasks assigned at the firm.
- CO4: Relate to the challenges of professional practice.
- CO5: Develop and represent the design knowledge gained from the internship experiences.

PD 7007 INTERFACE DESIGN

After completion of this course the student will be able to:

- CO1: Identify key concepts and terminology associated with user-centered design.
- CO2: Explain the importance of user research in interface design.
- CO3: Apply principles of visual design to create aesthetically pleasing interfaces.
- CO4: Analyse user behaviour data to identify areas for interface optimization
- CO5: Design innovative user interfaces that effectively address user needs.

SEMESTER: IV

PD 7002 THESIS

After completion of this course the student will be able to:

- CO1: Demonstrate the ability to critically select the product design topic with design objectives.
- CO2: Develop a comprehensive design process providing a structured roadmap for inquiry and innovation.
- CO3: Analyze gathered data to derive meaningful insights on the project.
- CO4: Justify the translation of ideas into tangible design solution aligned with objectives and user needs.
- CO5: Design and develop a product through the iterative process of prototyping and refinement.

ELECTIVES

ELECTIVE I - ANALOGOUS TO DIGITAL

PD 6510 VISUAL IDEATION

After completion of this course the student will be able to:

- CO 1: Demonstrate the ability to apply foundational sketching techniques.
- CO 2: Apply geometry in object drawing.
- CO 3: Experiment with diverse mediums for ideation.
- CO 4: Make use of appropriate graphic aids for clear communication.
- CO 5: Organize the learnt techniques for effective visual presentation.

PD 6512 PRODUCT MODELLING

After completion of this course the student will be able to:

- CO1: Understand the principles and importance of product modelling in the design process.
- CO2: Master advanced 3D visualization techniques for creating realistic product models.
- CO3: Demonstrate proficiency in various prototyping methods for product development.
- CO4: Develop skills in digital sculpting for creating organic shapes and intricate details.
- CO5: Apply learned skills in practical projects, translating design concepts into visually compelling product models.

PD 6514 PRODUCT EXPERIENCE

After completion of this course the student will be able to:

- CO1: Relate the importance of creating mindful product experience.
- CO2: Explain the factors of User-Centered Design.
- CO3: Interpret the emotional aspects of product experience in product design.
- CO4: Make use of case studies to understand and evaluate product experience.
- CO5: Identify advanced technologies to improve product experience.

ELECTIVE II – DESIGN SENSITIVITY

PD 6516 COGNITIVE PSYCHOLOGY

After completion of this course the student will be able to:

- CO1: Explain cognitive psychology and their application to product design.

- CO2: Demonstrate the cognitive psychology principles to enhance user experience in product design.
- CO3: Make use of techniques for designing products to improve usability and engagement.
- CO4: Examine strategies to enhance user satisfaction through decision-making processes.
- CO5: Take part in usability testing and iterative design processes through user research, feedback gathering, and iterative design iterations.

PD 6518 UNIVERSAL DESIGN

After completion of this course the student will be able to:

- CO1: Outline the principles of universal design and its significance.
- CO2: Understand user diversity and apply human factors in design.
- CO3: Apply universal design guidelines effectively to meet accessibility standards.
- CO4: Analyse the user-centered design process through participatory methods.
- CO5: Evaluate and refine product designs for accessibility and usability.

PD 6520 DESIGN FOR SUSTAINABILITY

After completion of this course the student will be able to:

- CO1: Knowledge: Students will demonstrate understanding of sustainable design principles and their application in product development.
- CO2: Comprehension: Students will interpret the environmental impact of design choices and propose eco-friendly alternatives.
- CO3: Application: Students will apply life cycle analysis techniques to assess and improve the sustainability of products.
- CO4: Evaluate the effectiveness of eco-friendly materials in reducing environmental impact within a design context.
- CO5: Synthesis: Students will develop innovative solutions that integrate sustainable principles into product design, addressing real-world environmental challenges.

ELECTIVE III – VISUAL COMMUNICATION DESIGN

PD 7009 PRODUCT PHOTOGRAPHY

After completion of this course the student will be able to:

- CO1: Show the lighting, composition, and perspective to create stunning product photos highlighting design details.
- CO2: Apply practical skills with professional photography equipment and software for diverse product contexts.
- CO3: Examine how photography shapes branding and marketing strategies, aiding in strategic product positioning.
- CO4: Determine the aesthetic sense with attention to detail to capture products in visually appealing ways for target audiences.
- CO5: Design a portfolio showcasing expertise in visual storytelling for career growth in product design and marketing.

PD 7011 PRODUCT BRANDING

After completion of this course the student will be able to:

- CO1: Understanding of the principles and theories of product branding, including the historical context and its role in shaping consumer perceptions.
- CO2: Apply strategic thinking to develop effective brand strategies for different products, considering market dynamics and competitive positioning.
- CO3: Create visually appealing and conceptually sound brand identities for products, integrating principles of design and communication.
- CO4: Evaluate the effectiveness of brand communication strategies, employing metrics and analysis tools to measure impact.
- CO5: Demonstrate the ability to manage and maintain a brand over time, adapting strategies to changes in the market and ensuring consistency across various touchpoints.

PD 7013 PRODUCT PACKAGING

After completion of this course the student will be able to:

- CO1: Explain the significance of packaging in product marketing and protection.
- CO2: Apply design principles to develop innovative and functional packaging solutions for different products.

- CO3: Analize the environmental impact of various packaging materials and processes.
- CO4: Examine the effectiveness of packaging designs in enhancing brand recognition and consumer appeal.
- CO5: Create a prototype that effectively represents product attributes and brand identity.

ELECTIVE IV – DESIGN MANAGEMENT AND ENTERPERURSHIP

PD 7015 BUSINESS SYSTEM ANALYSIS

After completion of this course the student will be able to:

- CO1: Demonstrate proficiency in business systems concepts applied to product design scenarios.
- CO2: Analyse and evaluate strategic business decisions within the product design framework.
- CO3: Develop and implement effective brand communication strategies integrating business considerations.
- CO4: Critically assess product positioning strategies through business lenses.
- CO5: Develop comprehensive plans for product lifecycle management considering business implications.

PD 7017 PRODUCT VALIDATION

After completion of this course the student will be able to:

- CO1: Understand the ethical considerations and compliance requirements in healthcare and social contexts.
- CO2: Explain the importance of human-centered design principles in healthcare product development.
- CO3: Demonstrate the process of creating prototypes for products.
- CO4: Evaluate the risks associated with diverse products.
- CO5: Assess the success of product launches and post-market surveillance strategies.

PD 7019 ENTREPRENEURIAL FINANCE

After completion of this course the student will be able to:

- CO1: Demonstrate proficiency in entrepreneurial finance concepts applied to product design scenarios.
- CO2: Analyse and evaluate strategic financial decisions within the framework of product design.
- CO3: Develop and implement effective brand communication strategies integrating financial considerations.
- CO4: Critically assess product positioning strategies through financial lenses.
- CO5: Develop comprehensive plans for product lifecycle management considering financial implications.