Gyanmanjari
Innovative University

Course Syllabus
Gyanmanjari College of Computer Science
Semester-2 (MSC IT)

Subject: Responsive Web and Mobile UI Design - MSCIT12303
Type of course: Skill Enhancement Course
Prerequisite: A basic understanding of UI/UX principles, web and mobile interfaces, and logical thinking, along with familiarity with design tools or basic programming, will help learners effectively use Justinmind to create interactive and user-friendly prototypes.

Rationale:

This course focuses on the importance of prototyping in web and mobile app development using Justinmind to create interactive, high-fidelity prototypes. It equips learners with essential UI/UX principles, usability testing, and responsive design skills, along with hands-on experience in building industry-ready interfaces, preparing them for careers in UI/UX design, front-end development, and software engineering.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
				Theory Marks		Practical Marks			
CI	T	P	C	ESE	MSE	V	P	ALA	
0	0	4	2	0	0	10	40	50	100

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; SEE - Semester End Evaluation; MSE- Mid Semester Examination; LWA - Lab Work Assessment; V – Viva voce; CCE-Continuous and Comprehensive Evaluation; ALA- Active Learning Activities.

Course Content:

Sr. No	Course content	Hrs	% Weightage
1	**Introduction to UI/UX & Just in mind Basics** This unit introduces students to fundamental UI/UX concepts and highlights the importance of prototyping in web and mobile application development. Learners will become familiar with the Just in mind tool by setting up the environment, understanding its interface, and creating basic wireframes using essential UI elements. The unit also covers simple screen linking and navigation, enabling students to design and preview interactive user flow with clarity and	12	20%

	purpose.		
2	**Interaction Design & Advanced UI Components** This unit focuses on interaction design by enabling students to implement click events, hover effects, and mobile gestures such as swipe and tap. Learners will work with templates, advanced UI components, and form elements to build dynamic and responsive user interfaces, with special emphasis on intuitive navigation structures and interactive menu design.	14	20%
3	**High-Fidelity Prototyping & Responsive Design** This unit introduces students to high-fidelity prototyping with a focus on responsive design across multiple devices. Learners will explore flexible grid systems and adaptive UI layouts while enhancing user experience through animations, micro-interactions, and smooth transition effects, enabling them to create visually polished and professional prototypes.	12	20%
4	**Data-Driven Prototyping & Usability Testing** This unit focuses on integrating dynamic data into prototypes to simulate real-world features such as login systems, search functionality, and data filtering. Students will conduct usability testing, gather and analyze user feedback, and iteratively refine their prototypes based on interaction insights to enhance overall user experience and usability.	10	20%
5	**Integrated App Prototyping & UI/UX Industry Practices** This final unit emphasizes the development of a complete web or mobile application prototype by integrating all previously learned UI/UX and prototyping skills. Students will learn best practices for preparing prototypes for developer handoff using industry-standard tools such as Figma and Sketch, while also exploring real-world applications, case studies, and career opportunities in the UI/UX industry.	12	20%

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**UI/UX Reimagine: Wireframing an Existing App** Students will select an existing app (e.g., Instagram, Amazon), analyze its UI elements, and recreate its wireframe in Justinmind. They compare their design with the original and discuss improvements, helping them understand UI/UX principles and wireframing techniques. Make a report of it and upload the PDF. Students can perform this task in groups (Each group will consist of a maximum of 3 students).	10
2	**Interactive Form Design & Usability Testing**	10

	Students will create a login/signup form in Justinmind with proper validation, including error messages and success notifications. They will test each other's prototypes to identify usability issues, reinforcing their understanding of interaction design and form validation principles. Capture screenshots, prepare a report, and then upload it on the GMU web portal.	
3	**Responsive Shopping Cart Design & Prototype Testing** Students create an interactive shopping cart system with add/remove functionality and real-time updates. They test their prototypes across different screen sizes, learning about responsive UI and high-fidelity prototyping. Screenshots of the shopping cart on different screen sizes (mobile, tablet, desktop) and make a report. This activity can be done in a group Students can perform this task in group (Each group will consist of a maximum of 3 students).	10
4	**Usability Testing & Iterative Design Refinement** Students will conduct peer usability tests on their prototypes, documenting user challenges and making necessary design refinements. This activity emphasizes real-world testing and iterative design improvements. Submit in the form of PDF. This activity is a individual activity.	10
5	**Capstone Prototype Development & Industry Handoff** Students will develop a full web or mobile app prototype integrating all learned concepts. They also lea to export and share prototypes for developer handoff, preparing them for industry applications. This activity can be done in a group Students can perform this task in group (Each group will consist of a maximum of 3 students).	10
Total		50

Suggested Specification table with Marks (Theory):75

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weight age%	NA	NA	NA	NA	NA	NA

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course the students should be able to:	
CO1	Understand and apply basic UI/UX principles by creating interactive wireframes using Justinmind, including essential UI elements and simple screen navigation.
CO2	Design and implement interactive user interfaces using advanced UI components and mobile gestures in Justinmind, focusing on dynamic navigation and responsive

	interaction design.	
CO3	Develop high-fidelity, responsive prototypes with adaptive layouts and enhanced user experiences using animations, micro-interactions, and transition effects in Justinmind.	
CO4	Create data-driven prototypes with simulated functionalities and improve user experience through usability testing, feedback analysis, and iterative refinement.	
CO5	Design and present a complete, industry-ready web or mobile app prototype, demonstrating end-to-end UI/UX skills and understanding of professional tools and career applications.	

List of Practical

Sr. No	Descriptions	Unit No	Hrs
1	Understanding UI/UX Principles — Study and analyze good and bad UI/UX design examples.	1	2
2	Getting Started with Justinmind — Explore the interface, tools, and basic wire framing concepts.	1	2
3	Creating a Simple Wireframe — Design a low-fidelity wireframe for a basic web page layout.	1	2
4	Navigation Design & User Flow — Develop a simple user flow using linked screens.	1	2
5	App UI Analysis & Redesign — Select an existing app, analyze its UI elements, and recreate the wireframe.	1	2
6	Creating an Interactive Landing Page - Add buttons, hover effects, and interactive elements.	2	2
7	Designing a Multi-Step Form with Validation — Create a signup/login form with error handling and feedback.	2	3
8	Implementing Dynamic UI Components — Add dropdown menus, sliders, and modals to a prototype.	2	3
9	Interactive Mega Menu Design — Design and implement an advanced navigation system.	2	2
10	Mobile UI Interactions — Create a mobile app screen with interactive elements. .	2	2
11	High-Fidelity Wireframe for an E-Commerce Website — Design a realistic homepage with product listings.	3	3
12	Shopping Cart System with Add/Remove Functions — Create an interactive shopping cart with dynamic updates.	3	3
13	Responsive Web Design Implementation -- Design a webpage that adapts to mobile, tablet, and desktop.	3	3
14	Creating Interactive Product Pages — Design a detailed product page with hover effects and animations.	3	2
15	Prototyping a Social Media Feed — Develop an interactive scrolling feed with posts and comments.	3	3
16	Dynamic Data Implementation — Simulate real-time data updates in a prototype (e.g., live search).	4	3
17	User Feedback Collection & Usability Testing – Conduct usability	4	3

	tests on a peer's prototype.		
18	Iterative Design Improvements — Refine a prototype based on usability test results.	4	2
19	Accessibility Testing & Enhancements — Check a prototype for accessibility compliance and improve it.	4	2
20	Design Handoff & Documentation - Export and document a prototype for developers.	4	2
21	Mid-Semester Mini Project - Develop simple app prototype incorporating previous concepts.	5	3
22	Full-Scale Web or Mobile App Prototype — Design a complete UI/UX project integrating all learned skills.	5	6
23	Industry Application & Presentation — Prepare a final presentation, explain design choices, and demonstrate the prototype.	5	3
		Total	60

Instructional Method:

The course delivery method will be adapted to the content and the needs of the students. In addition to conventional teaching using the blackboard, the teacher may employ various tools such as demonstrations, role play, quizzes, brainstorming, MOOCs, and other resources.

Students will also use supplementary materials, including online videos, NPTEL videos, e-courses, and Virtual Laboratories.

Internal evaluation will be based on the continuous assessment of students in the classroom and laboratory, while the practical examination at the end of the semester will assess their performance in the laboratory.

Reference Books

[1] Mastering Prototyping with Justinmind — (Justinmind Documentation & Tutorials) (Justinmind's official resources for mastering the tool).

[2] Effective Prototyping for Software Makers — Jonathan Arnowitz, Michael Arent, Nevin Berger (Focuses on prototyping best practices).

[3] Prototyping: A Practitioner's Guide - Todd Zaki Warfel (Practical approach to prototyping, including interactive elements.

[4] Designing Interfaces: Patterns for Effective Interaction Design — Jenifer Tidwell (A comprehensive guide on UI design patterns and interaction principles).

[5] The Design of Everyday Things — Don Norman (Classic work on design principles, focusing on usability and user-centered design).