GYANMANJARI INNOVATIVE UNIVERSITY   GYANMANJARI INSTITUTE OF TECHNOLOGY

Gyanmanjari
Innovative University

Subject: Responsive Web & Mobile UI Design-BETCE15324

Type of course: Skill Based Courses

Prerequisite: A basic understanding of UI/UX design, web and mobile interfaces, logical thinking, and familiarity with design tools or programming concepts helps in effectively using Justinmind for creating interactive and user-friendly prototypes.

Rationale:

Prototyping is essential in web and mobile app development, enabling designers to visualize, test, and refine applications before coding. Justinmind is a powerful tool for creating interactive, high-fidelity prototypes with dynamic components and real-world user interactions. This course equips learners with UI/UX principles, usability testing, and responsive design skills. Students will develop navigation systems, animations, forms, and dashboards, ensuring industry readiness. The capstone project reinforces practical application, preparing learners for careers in UI/UX design, front-end development, and software engineering, enhancing their ability to create intuitive, user-friendly applications.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P	C	Theory Marks		Practical Marks		CA	
				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; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Course Content:

Sr. No	Course Content	Hrs.	% Weightage
1	**Introduction to UI/UX & Justinmind Basics:** This unit introduces students to UI/UX principles and the role of prototyping in app development. They will learn to set up Justinmind, navigate its interface, and create basic wireframes using essential UI elements like buttons, text fields, and images. Basic screen linking and navigation will also be covered.	12	20%
2	**Interaction Design & Advanced UI Components:** Students will explore interaction design by implementing click events, hover effects, and mobile gestures like swipe and tap. They will work with templates, UI components, and form fields to create dynamic user interfaces, focusing on navigation design and interactive menus.	14	25%
3	**High-Fidelity Prototyping & Responsive Design:** This unit covers high-fidelity prototyping, including responsive design for different devices, flexible grid layouts, and adaptive UI structures. Students will learn to enhance user experience with animations, micro-interactions, and transition effects, creating polished prototypes.	12	20%
4	**Data-Driven Prototyping & Usability Testing:** Students will integrate dynamic data into their prototypes, simulating login systems, search functions, and filtering options. They will conduct usability testing, collect user feedback, and refine their prototypes based on interaction analysis, improving overall UX.	10	15%
5	**Integrated App Prototyping & UI/UX Industry Practices:** The final unit focuses on building a complete web or mobile app prototype, applying all learned skills. Students will prepare their prototypes for developer handoff using tools like Figma and Sketch. Industry applications, case studies, and career opportunities in UI/UX will also be explored.	12	20%

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**UI/UX Reimagine: Wireframing an Existing App** Students 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 wire framing techniques. Make a report of it and Upload the PDF. Students can perform this task in group (Each group will consist of a maximum of 3 students).	10
2	**Interactive Form Design & Usability Testing** Students design a login/signup form with validation in Justinmind, including error messages and success feedback. They test each other's Prototypes to identify usability issues, reinforcing interaction design and form validation concepts. Take Screenshots and make a report. This is a individual activity.	10
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 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 develop a full web or mobile app prototype integrating all learned concepts. They also learn 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): NA

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

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.	Description	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 tests on a peer's prototype.	4	3
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 a 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 depend upon the requirement of content and the needs of students. The teacher, in addition to conventional teaching methods by black board, may also use any tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.

Practical examination will be conducted at the end of semester for evaluation of performance of students in the laboratory.

Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual 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).