CODE	COURSE NAME	CATEGORY	L	T	P	CREDIT
ITT312	USER INTERFACE AND USER EXPERIENCE DESIGN	PEC	2	1	0	3

Preamble: User Interface and User Experience Design course is intended to deliver students the elementary concepts of User Interface Design, User Experience Design and their importance, thereby equipping them to develop great user interfaces which are appealing to users.

Prerequisite: nil

Course Outcome (CO): After completion of the course, the student will be able to

CO No.	Course outcomes (CO)	Bloom's Category Level
CO1	Outline the Basic Principles of Design and User Centered Design	Level 2: Understand
CO2	Infer the basic elements of User Experience Design	Level 2: Understand
CO3	Apply basic principles of Visual Design	Level 3: Apply
CO4	Discuss basic concepts in User Interface Design	Level 2: Understand
CO5	Develop Web and Mobile User Interface	Level 3: Apply

Mapping of Course Outcomes with Program Outcomes

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	-	-	-	-	-	2	2	3
CO2	3	1	1	1	-	-	-	-	-	2	2	2
CO3	3	3	3	1	-	-	-	-	-	2	1	2
CO4	3	1	2	1	-	-	-	-	-	2	1	2
CO5	3	3	3	1	-	-	-	-	-	3	2	3

3/2/1: High/Medium/Low

Assessment Pattern

Bloom's Category	Continuous Assessment Tests		End Semester Examination (Marks)
	Test 1 (Marks)	Test 2 (Marks)	
Remember	5	5	10
Understand	30	30	60
Apply	15	15	30
Analyze			
Evaluate			
Create			

Mark Distribution

Total Marks	CIE	ESE	ESE Duration
150	50	100	3 hours

Continuous Internal Evaluation Pattern:

Attendance   : 10 marks
Continuous Assessment Test (2 numbers)   : 25 marks
Assignment/Quiz/Course project   : 15 marks

End Semester Examination Pattern: There will be two parts; Part A and Part B. Part A contain 10 questions with 2 questions from each module, having 3 marks for each question. Students should answer all questions. Part B contains 2 questions from each module of which student should answer any one. Each question can have maximum 2 sub-divisions and carry 14 marks.

Sample Course Level Assessment Questions

Course Outcome 1 (CO1):
1. Explain the importance of seven stages of action in design.
2. Discuss Principles of design for understandability and usability

Course Outcome 2 (CO2):
1. Illustrate basic process components of UX.
2. Summarize basic process components of UX.

Course Outcome 3 (CO3):
1. Demonstrate the importance of typography with examples.
2. Summarize the basic process components of UX.

Course Outcome 4(CO4):
1. Explain the importance of a Good user interface design.
2. Differentiate two types of knowledge required for User Interface Design

Course Outcome 5 (CO5):
1. Create a web application for library with HTML and CSS.
2. List out any three mobile app designing tools.

Model Question Paper

<div align="center">

Course Code: ITT312
Course Name: User Interface and User Experience Design

</div>

Max.Marks:100   **Duration: 3 Hours**

<div align="center">

PART A
Answer all Questions. Each question carries 3 Marks

</div>

1. Define the terms understandability and usability in design.
2. Differentiate knowledge in the world and in the head in connection with design.
3. Explain User Experience.
4. Differentiate HCI and UX.
5. Differentiate Visual Design and fine arts.
6. Illustrate Iconography with an example.
7. Explain the importance of good user interface design.
8. Explain two types of knowledge needed for User Interface design.
9. What are the different design issues for websites?
10. Differentiate inline and block level elements.

<div align="center">

PART B
Answer all questions. Each question carries 14 Marks

</div>

11. Illustrate the importance of seven stages of action as design aids with examples.

<div align="center">

OR

</div>

12. Explain seven principles for transforming difficult tasks into simple one.

13. Illustrate funnel model for Agile UX with example.

<div align="center">

OR

</div>

14. Explain 6D UX process.

15. Illustrate visual design process with example.

OR

16. Demonstrate the importance of any three visual design tools.

17. How to gather requirements for user interface designing?

OR

18. Demonstrate the importance of any three visual design tools.

19. Illustrate different ways for applying css with example.

OR

20. Differentiate stateful and stateless widgets in flutter.

Syllabus

Module 1: INTRODUCTION TO DESIGN (7 Hours)
Fundamentals of Design: Principles of design for understandability and usability, The Principle of mapping, How people do things: the seven stages of action, The seven stages of action as design aids, The trade of between knowledge in the world and in the head, Classification of everyday constraints, Applying affordance and constraints to everyday objects, The structure of tasks, The natural evolution of design, The complexity of design process **User Centered Design:** Seven Principles for transforming difficult tasks into simple one, Deliberately making the things difficult, Design and society, The design of everyday things
Module 2: FUNDAMENTALS OF USER EXPERIENCE DESIGN (7 Hours)
Basics of UX Design: The expanding concept of interaction, Definition of UX, UX Design, The components of UX, What UX is not, Kinds of interaction and UX, The basic process components of UX, UX Design techniques as life skills, Choosing UX Processes Methods and Techniques, The funnel model of Agile UX, Shifting paradigms in HCI and UX **Introduction To 6d:** 6D UX process – Discover, Design, Dream, Design, Develop, Deliver.
Module 3: VISUAL DESIGNING (7 Hours)
Introduction To Visual Design: The visual brain, Benefits to learning, The picture superiority effect, Visual design versus fine arts, The purpose of design, The role of the visual designer, A visual design process, The mindset of the visual designer, Build a graphic design

toolbox, Design with templates, Where to find visual inspiration, Know the technical terms, Use color with purpose, Establish a visual hierarchy, Tell stories with visuals, draft your verbal brand, Anatomy of typeface, color theory, understanding visual weight

VISUAL DESIGN TOOLS: visual design tools – Photoshop, Illustrator, Creating layouts, iconography, digital color schemes, infographics, typography

Module 4: USER INTERFACE DESIGNING (6 Hours)

Basics Of Ui Development: Why the user interface matters?, The importance of good user interface design, Designing for users, Evaluation, How to gather requirements: Observing your users, Interviewing users, Questionnaire and surveys; Finding out about users and domain: Users-finding out who they are, User's needs, The domain; Describing user's work, Two types of knowledge needed for User Interface design, Design principles and design rules, Usability requirements, The Modern day view of usability, wireframing, prototyping

Wireframing And Prototyping Tools: AdobeXD, Invision, AxureRP - overview

Module 5: UI DESIGNING FOR WEB AND MOBILE (8 Hours)

Designing for Web: Design principles for websites, Designing Websites, Designing Home pages and Interior pages, Design issues for web pages, Writing contents for web pages

Front End Development: Front-end development technologies – HTML, Structure of HTML Page, Mandatory tags in html page (html, head, body), Heading tags (H1…H6), Tags and attributes (Class, Id, style etc.). Inline and block level elements, CSS, Different ways of applying CSS for elements, Responsive Web Designing, Bootstrap, Material Design, DOM, JQuery- animations

Mobile Front End Development: Mobile App Designing tools- Sketch, Invisio, Adobe XD, Fluid; Mobile App Development- fundamentals, Android studio vs Flutter, Flutter framework- stateful and stateless widgets, Material icons, Basic app Development with Flutter

Textbooks
1. The Design of Everyday things- Donald A Norman, Currency and Doubleday, 2nd Edition
2. The UX Book-Rex Hartson and PardhaPyla, Morgan Kaufmann, 2nd Edition
3. Visual Design Solutions- Connie Malamed, Wiley, 1st Edition
4. User Interface Design and Evaluation - Debbie Stone,The Open University, 2nd Edition

Reference Books
1. Graphic Design For Everyone - Cath Caldwell, 2nd Edition
2. Adobe Photoshop, Illustrator, In-Design Basics - John Richards, 3rd Edition
3. Adobe XD classroom in a book - Brian Wood, 2nd Edition
4. How to build a web app in 4 stages -KarimAraoui
5. Axure RP Prototyping cookbook - John Henry Krahenbuhl

6. UI/UX Sketchbook for wireframing and prototyping - Amazon Digital Services LLC
7. Mobile UI/UX Sketchbook - (Independently published)
8. HTML and CSS: Design and Build Websites - Jon Duckett, Wiley
9. Flutter: for absolute beginners -PouyaHosseini
10. Seductive Interaction Design: Creating Playful, Fun, and Effective User Experiences - Stephen P Anderson,

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures
1	**INTRODUCTION TO DESIGN**	**7 Hours**
1.1	**Fundamentals of Design:** Principles of design for understandability and usability, The Principle of mapping, How people do things: the seven stages of action	2 Hours
1.2	The seven stages of action as design aids, The trade of between knowledge in the world and in the head, Classification of everyday constraints	2 Hours
1.3	, Applying affordance and constraints to everyday objects, The structure of tasks, The natural evolution of design, The complexity of design process	1 Hour
1.4	**User Centered Design:** Seven Principles for transforming difficult tasks into simple one, Deliberately making the things difficult, Design and society, The design of everyday things	2 Hours
2	**FUNDAMENTALS OF USER EXPERIENCE DESIGN**	**7 Hours**
2.1	**Basics Of UX Design:**The expanding concept of interaction, Definition of UX, UX Design, The components of UX	2 Hours
2.2	What UX is not, Kinds of interaction and UX, The basic process components of UX,	1 Hour
2.3	UX Design techniques as life skills, Choosing UX Processes Methods and Techniques, The funnel model of Agile UX, Shifting paradigms in HCI and UX	2 Hours
2.4	**Introduction To 6d:** 6D UX process – Discover, Design, Dream, Design, Develop, Deliver.	2 Hours
3	**VISUAL DESIGNING**	**7 Hours**
3.1	**Introduction To Visual Design:** The visual brain, Benefits to learning,	2 Hours

	The picture superiority effect	
3.2	Visual design versus fine arts, The purpose of design, The role of the visual designer, A visual design process, The mindset of the visual designer	1 Hour
3.3	, Build a graphic design toolbox, Design with templates, Where to find visual inspiration, Know the technical terms, Use color with purpose, Establish a visual hierarchy, Tell stories with visuals, draft your verbal brand, Anatomy of typeface, color theory, understanding visual weight	3 Hours
3.4	**VISUAL DESIGN TOOLS:** visual design tools – Photoshop, Illustrator, Creating layouts, iconography, digital color schemes, infographics, typography	1 Hour
4	**USER INTERFACE DESIGNING**	**6 Hours**
4.1	**Basics Of Ui Development:** Why the user interface matters?, The importance of good user interface design, Designing for users, Evaluation,	1 Hour
4.2	How to gather requirements: Observing your users, Interviewing users, Questionnaire and surveys; Finding out about users and domain: Users-finding out who they are, User's needs, The domain; Describing user's work,	2 Hours
4.3	Two types of knowledge needed for User Interface design, Design principles and design rules, Usability requirements, The Modern day view of usability, wireframing, prototyping	2 Hours
4.4	**Wireframing And Prototyping Tools:** AdobeXD, Invision, AxureRP - overview	1 Hour
5	**UI DESIGNING FOR WEB AND MOBILE**	**8 Hours**
5.1	**Designing for Web:** Design principles for websites, Designing Websites, Designing Home pages and Interior pages, Design issues for web pages, Writing contents for web pages	1 Hour
5.2	**Front End Development:**Front-end development technologies – HTML, Structure of HTML Page, Mandatory tags in html page (html, head, body), Heading tags (H1…H6), Tags and attributes (Class, Id, style etc.), Inline and block level elements,	2 Hours
5.3	CSS, Different ways of applying CSS for elements, Responsive Web Designing, Bootstrap, Material Design, DOM, JQuery- animations	2 Hours

5.4	**Mobile Front End Development:** Mobile App Designing tools- Sketch, Invisio, Adobe XD, Fluid; Mobile App Development- fundamentals,	1 Hour
5.5	Android studio vs Flutter, Flutter framework- stateful and stateless widgets, Material icons, Basic app Development with Flutter	2 Hours