

Academic Year: 2025-26

Date: 12/12/2025

Institute Name & Code: K. K. Wagh Polytechnic, Nashik-3 (0078)

Program & Code:: Artificial Intelligence and Machine Learning (AN)

Course Code & Abbr.: 314005 (UID)

Course Name: User Interface Design

Name of Faculty: Mrs. J. S. Mahajan

Class: SYAN

Semester: IVrd

Course Index: 406

Scheme: 'K'

Allocated Hrs: 15

● **Teaching-Learning and Assessment Scheme**

Course Code	Course Title	Abbr	Course Category/s	Learning Scheme					Credits	Assessment Scheme													
				Actual Contact Hrs./Week			SLH	NLH		Paper Duration	Theory				Based on LL & TL				Based on SL				Total Marks
				CL	TL	LL									Practical								
											FA-TH	SA-TH	Total		FA-PR		SA-PR		SLA				
													Max	Max	Max	Min	Max	Min	Max	Min	Max	Min	
314014	USER INTERFACE DESIGN	UID	DSC	1	-	4	1	6	3	-	-	-	-	-	25	10	25@	10	25	10	75		

Abbreviations: CL- ClassRoom Learning , TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours, FA - Formative Assessment, SA -Summative assessment, SLA - Self Learning Assessment

Legends: @ Internal Assessment.

● **Course Outcomes (COs) and Theory Learning Outcomes (TLOs):**

By learning course User Interface Design (UID-314005), Second Year students will be able to:

CO No.	TLO No.	Course Outcomes (COs) / Theory Learning Outcomes (TLOs)
CO406.1		Explain design thinking concept.
	1.1	Explain design thinking concepts.
	1.2	Define User Interface.
	1.3	Describe User experience.
CO406.2		Interpret user requirements.
	2.1	Explain research methods for user requirements.
	2.2	Describe requirement analysis techniques.
	2.3	Identify user persona.
CO406.3		Select appropriate visual design for given problem.
	3.1	Demonstrate storyboarding for given problem.
	3.2	Demonstrate User journey mapping for given problem.
	3.3	Describe graphic design principles.
	3.4	Explain visual communication.
CO406.4		Create interactions using design tool.
	4.1	Explain User Experience design.
	4.2	Describe steps to create gamification techniques.
	4.3	Describe steps to create micro-animation.
	4.4	Write steps to create interactions using buttons, navigations etc. in any design tool.
CO406.5		Create innovative design prototype for given applications.
	5.1	Create low fidelity prototyping of design on paper.
	5.2	Create medium fidelity prototype on paper.
	5.3	Write steps to create high fidelity prototype using design tool.
	5.4	Test the design prototype.

● **Teaching Plan:**

Unit No. (Allotted Hrs.)	Theory Learning Outcomes (TLO)	Title/Topic Details and Course Outcome [CO]	Plan (From -To & No. of Lectures)	Actual Execution (From-To & No. of Lectures)	Pedagogy used (Teaching Method/ Media)	Remark
01 (02 hrs)	1.1	Unit - I Design Thinking Fundamentals [CO406.1] 1.1 Introduction to Design Thinking – Concept, Purpose 1.1.1 5 stages of design thinking – Empathize, Define, Ideate, Prototype, Test	18/12/25 (01)		Chalk, Board, PPTs, Web References	
	1.2,1.3	1.2 Introduction to User Interface / User Experience (UI/UX) – Definition of Design with respect to digital media, 1.2.1 UserInterface,Userexperience, 1.2.2 Difference between UI and UX. History of UX. Need of UI and UX	01/01/26 (01)		Chalk, Board, PPTs, Web References	
02 (03hrs)	2.1	Unit - II User Requirements and its Analysis[CO406.2] 2.1 Introduction to research and analysis tool (freeware) such as FigJam	08/01/26 (01)		Chalk, Board, PPTs, Web References	
	2.2	2.2 User requirements – Definition, Types of user research - Qualitative research, Quantitative research. 2.2.1 Tools to collect user requirements–personal observation,interviews,questionnaire, User/ Expert reviews	15/01/26 (01)			
	2.3	2.3 User requirement analysis - Understanding target audience and client requirements, Competitive analysis, Affinity mapping, Defining User Persona	22/01/26 (01)			
03 (04hrs)	3.1	Unit - III User Interface Design[CO406.3] 3.1 Storyboarding, User journey mapping	29/01/26 (01)		Chalk, Board, PPTs, Web References	
	3.2	3.2 Gestalt principles of design - Aesthetics in UI design - Using Light, Color and Contrast Effectively in UI Design	05/02/26 (01)			
	3.3	3.3 Introduction to any freeware design tool such as Figma	12/02/26 (01)			
	3.4	3.4 Visual Communication Design - effective visual	19/02/26 (01)			

		communication for graphical user interface				
04 (03hrs)	4.1	Unit - IV User Experience Design Tool [CO406.4] 4.1 Introduction to User Experience design	26/02/26 (01)		Chalk, Board, PPTs, Web References	
	4.2	4.2 UX design open source tool such as - Figma features – Navigations, interactions, Buttons Creating library	26/02/26 (01)			
	4.3	4.3 Gamification, micro-animation	05/03/26 (01)			
	4.4	4.4 Creating visual identity of the project – design system, design theme	05/03/26 (01)			
05 (03hrs)	5.1	Unit - V Database Administration [CO301.5] 5.1 Introduction to Wireframing - Purpose of wireframing, Types – low fidelity, medium fidelity, high fidelity	12/03/26 (01)		Chalk, Board, PPTs, Web References	
	5.2	5.2 Basics of sketching, Creating low fidelity wireframes, medium fidelity and high fidelity in Figma	12/03/26 (01)			
	5.2,5.3	5.3 Basic considerations in wireframing – device, size, behavior, interaction	26/03/26 (01)			
	5.3	5.4 Elements used in wireframing – visual design, high fidelity elements	28/03/26 (01)			
	5.3,5.4	5.5 Prototyping and Testing	02/03/26 (01)			

● **COs – POs & PSOs MATRIX:**

Course Outcomes (COs)	Programme Outcomes (POs)							Program me Specific Outcomes * (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability & Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO- 1	PSO- 2
CO1	2	1	2	1	-	1	1	2	3
CO2	3	2	2	2	-	-	2	1	2
CO3	3	3	3	3	1	-	1	2	2
CO4	2	3	3	3	2	1	1	2	2
CO5	2	3	3	3	2	2	1	3	3

Legends :- High:03, Medium:02,Low:01, No Mapping: -

PSO1: Apply fundamental concepts of Computer Engineering and Artificial Intelligence and machine learning to solve technical problems.

PSO2: Implement the domain knowledge to achieve a successful career as an engineering professional.

- **Formative Assessment(FA-TH):**

There is no Formative Assessment for UID subject

- **Summative Assessment(SA-TH):**

There is no Summative Assessment for UID subject

- **Self Learning Activities**

1. **Micro project**

- a. Prepare a prototype for online blog:
- b. Reconstruct given user interface such as kiosk system:
- c. Prepare a prototype for food ordering App:
- d. Rebuild smart TV user interface layout
- e. Prepare a case-study report -
- f. Prepare user storyboard and user journey mapping for given user interface -
- g. Prepare low, medium, and high fidelity prototype for given user interface -

2. **Other**

Infosys Springboard Course on Figma Tool

- **References:**

A. Books:

Sr.No	Author	Title	Publisher with ISBN Number
1	Jesse James Garrett	The Elements of User Experience: User-Centered Design for the Web and Beyond	New Riders Publishing, 201 West 103 Street, Indianapolis, IN 46290 800-545- 5914 ISBN:978-0-321-68368-7
2	Falk Uebernickel, Li Jiang, Walter Brenner, Britta Pukall, Therese Naef	Design Thinking: The Handbook	World Scientific Publishing Co Pte Ltd, No.16, South West Boag Road T. Nagar, Chennai 600017, INDIA \ISBN-10: 9811203504 ISBN-13: 978-9811203503
3	Fabio Staiano	Designing and Prototyping Interfaces with Figma	Packt Publishing Ltd, Grosvenor House, 11 St Paul's Square, Birmingham, B3 1RB ISBN-10: 180056418X ISBN-13: 978-1800564183
4	Kilian Langenfeld	Design Thinking for Beginners	Personal Growth Hackers ISBN-10: 3967160629 ISBN-13: 978-3967160628

B. Software Learning Websites :

Sr.No	Link / Portal	Description
1	https://aim.gov.in/pdf/Design_Thinking.pdf	Design thinking phases and learning resources
2	https://www.ideo.com/pages/design-thinking-resources	Design thinking resources
3	https://www.figma.com/resource-library/what-is-design-thinking/	Design thinking and its stages

4	https://www.figma.com/resource-library/what-is-ui-design/	Key elements of UI design
5	https://youtu.be/-wzNTPXVIyM?si=zET5z3GpIPl-cAry	User Experience and research methods
6	https://youtu.be/XT152i5asdQ?si=jPdLFFExnaZO8NRs	User Experience and research methods

● **Tools :**

1. Google Classroom to share subject material to students.
2. MKCL ERA LMS
3. Infosys Springboard Portal

Mrs. J. S. Mahajan
(Name & signature of Staff)

Mrs. R. Y. Thombare
(Name & signature of HOD)

Cc: Course File – UID(314005)