DSCE
Dept. of Information Science & Engg

DAYANANDA SAGAR COLLEGE OF ENGINEERING
(An Autonomous Institution affiliated to VTU, Belagavi)
Department of Computer Science and Design

COURSE INFORMATION SHEET

PROGRAMME: Computer Science and Design / Bachelors in Engineering	

COURSE NAME: UI & UX Design	**COURSE CODE: 21CG44**

COURSE TYPE (CORE / ELECTIVE): PCC-Core	**CONTACT HOURS: 40**					
CORRESPONDING LAB COURSE (IF ANY): Informal Lab		**L**	**T**	**P**	**S**	**Total**
	CREDIT	3	-		-	3

COURSE INSTRUCTOR(S) NAME: Dr. Vinod H C	**CONTACT DETAILS:** **Dr. Vinod H.C** **vinodhc-csd@dayanandasagar.edu** Cabin No. 4, 4th Floor, 22nd Block

CLASS ROOM POLICY:

1) Students should come with their laptops (for hands-on sessions) and use them only when instructed. (H)
2) Students should be on time for their classes. (H)
3) When classes are missed, the student may discuss it with the course instructor during all working days after 4.00pm with prior permission. It is the obligation of the students to obtain copies of the class materials and students are responsible for all materials covered in the lectures. An excused absence does not excuse the student from completing work and exams.
4) All forms of academic misbehavior such as cheating, fabrication and plagiarism are prohibited.
5) Students are requested to adhere to the CIA deadline and assignment submission. Failing which the retest or re-submission can be considered only for 80% of marks.
6) It is mandatory to use Blue Book for Closed/Open Book Tests, Hand written assignments and Library hour self-study notes submission.
7) Mode of communication for all course related information: College Mail, LMS, Google Classroom

Mode of Synchronous Learning: Classroom / Google Meet.

Mode of Asynchronous Learning: LMS / Google Classroom

SYLLABUS: Detailed syllabus to be entered as per the approved BoS document

Module	DETAILS	HOURS
Module-1	**Visual Elements of UI design** Defining and Understanding UI and UX; Relationship between UI and UX; Roles in UI and UX; Historical overview of Interface Design; Conventions and Approaches to Screen Based UI; Formal and Active Elements of Interface Design; Composing the elements of Interface Design.	8
Module-2	**Fundamentals of UX design** Foundation of UX design – Good and Poor design; Ideation, Articulation and Development of UX; Understanding the audience; Introduction to Wireframes and	8

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Module	DETAILS	HOURS
	Interfaces; Nielsen's usability Heuristics; Consistency and details; Visual Details; Developing and Refining UI.	
Module-3	**Web design – Strategies and Information Architecture** The user experience process – User centric design; Phases in UX; Waterfall vs Agile; Web vs App; User research and Analytics; User and Client needs; The target Audience; Outlying the Scope, Content and Functionality; Introduction to Sitemaps, Sitemap – concerns, elements and processes; Treejack – introduction and Analysis.	8
Module-4	**Web design I – Wireframes** Responsive design; Introduction and Primary Navigation; Secondary and Utility Navigation - Related content, inline links, indexes, and search, Wayfinding, Page Layouts; Common Form Elements; Wireframing Tools;	8
Module-5	**Web design II – Prototyping** Visual Mock-ups; Designing Principles; Using whitespace to style a form; Web Fonts & Web Typography; Modboards and Homepage Mockup; Web History; Skeuomorphs & Flat Design, Introduction to the basics of coding – HTML, CSS & Javascript; Importing and Exporting Assets, Creating Hotspots.	8
	TOTAL HOURS:	40

1) LIST OF EXPERIMENTS (IF ANY)

Expected Tools (Software / Hardware) to be used : *Mention major tools which are required for the execution of these experiments*		
Sl No	**EXPERIMENT NAME**	**CO**
	NA	

2) TEXT BOOKS

1. Unger, R. and Chandler, C., 2012. A project guide to UX design. Berkeley, CA: New Riders.
2. Garrett, J., 2010. The Elements of User Experience: User-Centered Design for the Web and Beyond. 2nd ed. New Riders.

3) REFERENCE BOOKS

1. Galitz, W., 2007. The essential guide to user interface design. 3rd ed. Indianapolis: Wiley.
2. Hartson, H. and Pyla, P., 2012. The UX Book. 5th ed. Amsterdam [etc.]: Elsevier.
3. Shneiderman, B., 2014. Designing the user interface. 5th ed. Harlow: Pearson.

4) OTHER RESOURCES

Online Resources & MOOC courses:

1) Swayam - . 2022. User Interface Design - Course. [online] Available at:

   https://onlinecourses.nptel.ac.in/noc22_ar02/preview

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2) Swayam - . 2022. User-centric Computing for Human-Computer Interaction - Course. [online] Available at: https://onlinecourses.nptel.ac.in/noc22_cs16/preview

3) Coursera. 2022. UI / UX Design Specialization. [online] Available at: https://www.coursera.org/specializations/ui-ux-design

5) COURSE PREREQUISITES

COURSE CODE	COURSE NAME	DESCRIPTION	SEMESTER
NA			

6) COURSE OBJECTIVES

- Understand the fundamental concepts of UI and UX design, including their definitions, relationship, and roles in creating effective digital interfaces.
- Explore the historical evolution of interface design, conventions, and approaches to screen-based UI, and how they influence current design practices.
- Gain knowledge and skills in the essential elements of interface design, both formal (such as layout, color, typography) and active (such as interactivity, feedback, navigation).
- Learn the principles and techniques of UX design, including ideation, user research, wireframing, prototyping, and refining UI based on usability heuristics and user feedback.
- Develop proficiency in web design strategies, information architecture, and the process of creating user-centric designs that meet the needs of target audiences and clients.

7) COURSE OUTCOMES

Sl NO	DESCRIPTION	REVISED BLOOM'S TAXONOMY (RBT) LEVEL
1.	**CO 1**. Students will be able to define and differentiate between UI and UX, and understand their interconnected roles in creating effective digital interfaces.	L2
2.	**CO 2.** Students will gain a historical overview of interface design and be able to apply conventions and approaches to design visually appealing and user-friendly screen-based UI.	L2
3	**CO 3.** Create high quality professional documents and artefacts related to the design process.	L5
4	**CO 4.** Students will develop the ability to ideate, articulate, and develop UX designs, considering the target audience,	L4

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Sl NO	DESCRIPTION	REVISED BLOOM'S TAXONOMY (RBT) LEVEL
	conducting user research, and applying usability heuristics to refine UI.	
5	**CO 5.** Students will acquire practical skills in web design, including wireframing, prototyping, and utilizing HTML, CSS, and JavaScript to create visually appealing and functional digital interfaces. They will also learn to analyze user research and create sitemaps for effective information architecture.	L3

8) CONTENT BEYOND THE SYLLABUS - TO MEET INDUSTRY / PROFESSIONAL REQUIREMENTS

Sl NO	DESCRIPTION	PROPOSED ACTIONS
1.	Online wireframe tools to develop web application	Webinar

9) DELIVERY / INSTRUCTIONAL METHODOLOGIES
(Tick ✓ the Relevant Methodologies)

Chalk & Talk ✓	PPT ✓	Student seminars	Guest Lecture	Industry Visit
Web resources ✓	MOOC / NPTEL	Group Activity ✓	Field Study	Master Classes

10) ASSESSMENT METHODOLOGIES – DIRECT
(Tick ✓ the Relevant Methodologies)

Assignments ✓	Closed book tests ✓	Open book tests
Case study	Student Presentation ✓	Mini projects ✓ / Model Building
MOOC	Quiz ✓	Any other *(Specify)* Video Documentation

11) FEEDBACK ASSESSMENT (INDIRECT) METHODOLOGIES
(Tick ✓ the Relevant Methodologies)

Student Feedback on Course ✓	Feedback from Senior Students / Alumni
Feedback from Industry Experts	Any other *(specify)*

12) COURSE PLAN (Should be equal to total no. of hours mentioned in syllabus)

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Planned Day	No of hours	Unit	Topic / Sub Topic	Details	Method	Reference
24/5/2023	2	1	Visual Elements of UI design	Defining and Understanding UI and UX; Relationship between UI and UX;	Black board, PPT	
29/5/2023	2	1		Roles in UI and UX; Historical overview of Interface Design;	Black board, PPT	
30/5/2023	2	1		Conventions and Approaches to Screen Based UI;	Black board, PPT	
31/5/2023	2	1		Formal and Active Elements of Interface Design;	Black board, PPT	
05/6/2023	2	1		Composing the elements of Interface Design.	Black board, PPT	
06/6/2023	2	1		Revision	Discussion	
07/6/2023	2	1		Online tools for design UI	PPT, Demo	
12/6/2023	2	2	Fundamentals of UX design	Foundation of UX design – Good and Poor design;	Black board, PPT	
13/6/2023	2	2		Ideation, Articulation and Development of UX;	Black board, PPT, Demo	
14/6/2023	2	2		Understanding the audience; Introduction to Wireframes and Interfaces;	Black board, PPT, Demo	
19/6/2023	2	2	Fundamentals of UX design	Nielsen's usability Heuristics;	Black board, PPT	
20/6/2023	2	2		Consistency and details; Visual Details	Black board, PPT	
21/6/2023	2	2		Developing and Refining UI	Black board, PPT, Demo	
26/6/2023	2	2		Revision, Online Wireframe tool	Discussion, Demo, PPT	
27/6/2023	2	3	Web design – Strategies and Information Architecture	The user experience process – User centric design; Phases in UX;	Black board, PPT	
28/6/2023	2	3		Waterfall vs Agile; Web vs App; User research and Analytics;	Black board, PPT	
03/7/2023	2	3		User and Client needs; The target Audience;	Black board, PPT	

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Planned Day	No of hours	Unit	Topic / Sub Topic	Details	Method	Reference
04/7/2023	2	3		Outlying the Scope, Content and Functionality;	Black board, PPT	
05/7/2023	2	3		Introduction to Sitemaps, Sitemap – concerns, elements and processes;	Black board, PPT, Demo	
6th July to 8th July	*IA 1: Internal Assessment Test-1					
10/7/2023	2	3		Treejack – introduction and Analysis.	Black board, PPT, Demo	
11/7/2023	2	4	Web design I – Wireframes	Responsive design; Introduction and Primary Navigation;	Black board, PPT	
12/7/2023	2	4		Secondary and Utility Navigation - Related content	Black board, PPT	
17/7/2023	2	4	Web design I – Wireframes	Secondary and Utility Navigation - Related content, inline links,	Black board, PPT	
18/7/2023	2	4		indexes, and search	Black board, PPT, Demo	
19/7/2023	2	4		Wayfinding, Page Layouts	Black board, PPT, Demo	
24/7/2023	2	4		Common Form Elements;	Black board, PPT, Demo	
25/7/2023	2	4		Wireframing Tools;	Demo	
26/7/2023	2	4		Wireframing Tools; Revision	Demo, Discussion	
31/7/2023	2	5	Web design II – Prototyping	Visual Mock-ups; Designing Principles;	Black board, PPT	
01/8/2023	2	5		Using whitespace to style a form; Web Fonts & Web Typography;	Black board, PPT	
02/8/2023	2	5		Modboards and Homepage Mockup; Web History	Black board, PPT	
7th Aug to 9th Aug	*IA 2: Internal Assessment Test-2					
14/8/2023	2	5		Skeuomorphs & Flat Design,	Black board, PPT	

Planned Day	No of hours	Unit	Topic / Sub Topic	Details	Method	Reference
16/8/2023	2	5		Introduction to the basics of coding – HTML	Black board, PPT, Demo	
21/8/2023	2	5		CSS	Black board, PPT, Demo	
22/8/2023	2	5		JavaScript	Black board, PPT, Demo	
23/8/2023	2	5	Web design II – Prototyping	Importing and Exporting Assets	Black board, PPT	
28/8/2023	2	5		Creating Hotspots	Black board, PPT, Demo	
29/8/2023	2	5			Black board, PPT, Demo	
4th Sep to 9th Sep	**IA 2: Internal Assessment Test-3**					
11/9/2023	2				Black board, PPT, Demo	
12/9/2023	2		Mini-Project Evaluation		Black board, PPT, Demo	
13/9/2023	2				Black board, PPT, Demo	
14/9/2023	Submission of Final CIA Marks to COE Office					
15/9/2023	Last Working Day					

13) TUTORIAL DETAILS

Sl No	TOPICS	REFERENCE
	NA	

14) CIA ASSESSMENT DETAILS - THEORY

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Sl No	CIA Component	Unit(s) Covered	CO	RBT Level
1	CIA 1- (Component 1) MCQ or Closed book test	Unit -1	CO1	L1
2	CIA 1- (Component 2) Mini Project Blueprint design	Unit -1 and Unit-2	CO2	L3
3	CIA2- Closed book Test	Unit -1, Unit-2 and Unit-3	CO1, CO2	L2, L3
4	CIA 3-(Component 1) Mini Project (Design and implementation) and Closed book test	Unit-4, and Unit-5	CO3	L6
5	CIA 3-(Component 2) Assignment	Unit-5	CO1, CO2	L3

15) LAB ASSESSMENT DETAILS

Sl No	Lab Component	CO	RBT Level
	NA		

16) CIA COMPONENTS – EVALUATION RUBRICS

17 A - Assessment Description: Individual Assignment Details (CIA I /II/III)

Assessment	Type of Assignment	Mode of submission	Deadline for submission
CIA 1– Component-1	Individual: Quiz- MCQ	Online: - Google Form	
CIA 1–Component-2	Individual: Design	Offline: - Hardcopy Online: - Google classroom	
CIA- 2	Individual: Closed book	Offline: - Hardcopy	
CIA 3- Component-1	Group: UI Design and experience using wireframe tool	Offline: - Hardcopy Presentation and demo	
CIA 3– Component-2	Individual: case study on Basic HTML CSS UI Design	Online- LMS/Google Classroom	

17 B - Learning Outcome(s)

Assignments	Learning Outcomes of the assignment	Method of assessment	Component of the evaluation rubrics
LO 1- CIA 1– Component 1	Students will understand the roles and concepts in UI and UX interface design.	MCQ	Correct answer – 1 Mark Wrong answer – 0 Mark

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Assignments	Learning Outcomes of the assignment	Method of assessment	Component of the evaluation rubrics
LO 2- CIA 1– Component 2	Understanding the concept of web page design	Design	Design and result demonstration of UI
LO 3- CIA 3 - Component 1	• Understand and interpret the design of real time web application • Analyze real time problem and create web application pages using wireframe tool	Group Mini-project	Design and result demonstration, documentation and presentation. Teamwork
LO 4- CIA 3– Component 2	Understand how to use HTML and CSS to develop web applications	Case study	Requirement identification. Mapping the requirement to tool specific components, and presentation

17 C - Evaluation Rubrics

CRITERIA	EXCELLENT	GOOD	SATISFACTORY	UNSATISFACTORY
	Above 75%	75% - 60%	60% - 50%	Below 50%
Design	Efficient design and user experience based on real time scenario	Efficient design but lacking in experience on real time scenario	Good design and experience (need to improve status)	Poor design and poor experience
Result and demonstration	Appropriate results, able to change different parameters and design No plagiarism	Good result, able to change different parameters and design 10-20% plagiarism	Good result and not able to change different parameters and design 20-30 % plagiarism	Unable to run or create and unable to change >30% plagiarism

17 D - LAB Component Evaluation Rubrics

1. Assessment Outline [Refer 17A/B]

2. Evaluation Rubrics [Refer 17 C]

17) CO-PO MAPPING

PO	PO	PSO

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CO	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1						3		3						3	
CO2	2					3				2				2	
CO3	2		3											3	
CO4			3	3										3	
CO5	3	3	3	3	3		2		2	3	2	1		3	
Average	**2.3**	**3**	**3**	**3**	**3**	**3**	**2**	**3**	**2**	**2.5**	**2**	**1**		**2.8**	

Mention 3 for HIGH, 2 for MODERATE, 1 for LOW and '-'for Nil

Prepared by (Faculty in-charge) **Dr. Vinod H C**	**Reviewed by**	**Approved by HoD**