ALAGAPPA UNIVERSITY

(Accredited with A+ Grade by NAAC (CGPA: 3.64) in the Third Cycle, Graded as Category-I University and granted autonomy by MHRD-UGC)

DIRECTORATE OF COLLABORATIVE PROGRAMMES



B.Sc., UI Design and Development

Regulations and Syllabus [For those who join the Course in July 2023 and after] CHOICE BASED CREDIT SYSTEM

REGULATIONS AND SYLLABUS

[For the candidates admitted from the academic year 2023 - 2024 onwards]

Name of the Subject Discipline :UI DESIGN AND DEVELOPMENTProgramme of Level:Undergraduate programme - B.Sc., UI Design and Development

1. Choice-Based Credit System

A Choice-Based Credit System is a flexible system of learning. This system allows students to gain knowledge at their tempo. Students shall decide on electives from a wide range of elective courses offered by the Departments/institutions in consultation with the committee. Students undergo additional courses and acquire more than the required number of credits. They can also adopt an interdisciplinary and interdisciplinary approach to learning, and make the best use of the expertise of available faculty.

2. Programme:

"Programme" means a course of study leading to the award of a degree in a discipline. <u>B.Sc., UI</u> <u>Design and Development</u> is an undergraduate programme and duration is <u>Three years</u>, the duration that is spread over six semesters.

3. Courses

'Course' is a component (a paper) of a programme. Each course offered by the Department is identified by a unique course code. A course contains lectures / tutorials / laboratory work / seminars / project work / practical training /report writing / Viva- voice, etc, or a combination of these, to meet effective teaching and learning needs.

4. Credits

The term "Credit" refers to the weightage given to a course, usually about the instructional hours assigned to it. Normally in each of the courses credits will be assigned based on the number of lectures / tutorials / laboratory and other forms of learning required to complete the course contents in a 15-week schedule. One credit is equal to one hour of lecture per week. For laboratory / field work one credit is equal to two hours.

5. Semesters

An academic year is divided into two Semesters. In each semester, courses are offered in a minimum of 15 teaching weeks and the remaining 3-5 weeks are to be utilized for conduct of examination and evaluation purposes. Each week has 30 working hours spread over 5 days a week.

6. Departmental/institutional committee

The Departmental/Institutional Committee consists of the faculty of the Department/institution. The committee shall be responsible for admission to all the programmes offered by the Department including the conduct of entrance tests, verification of records, admission, and evaluation. The committee determines the deliberation of courses and specifies the allocation of credits semester-wise and course- wise. For each course, it will also identify the number of credits for lectures, tutorials, practicals, seminars, etc. The courses (Core / Discipline Specific Elective / Non-Major Elective) are designed by teachers and approved by the Committees. Courses approved by the committees shall be approved by the Board of Studies. A teacher offering a course will also be responsible for maintaining attendance and performance sheets (CIA -I, CIA-II, assignments, and seminar) of all the students registered for the course. The department coordinators for Non-major elective (NME) and MOOCs (SLC) courses are responsible to submit the performance sheet to the Head of the department. The Head of the Department consolidates all such performance sheets of courses about the programmes offered by the department. Then forward the same to be Controller of Examinations.

7. Programme Educational Objectives (PEO) :

The Program Educational Objectives (PEO's) describes the professional accomplishments and achievements of the graduates about three - five years after having completed the under-graduate program in UI Design and Development.

PEO1	Lead or Senior Designer Roles: With three to five years of experience, designers may be promoted to lead or senior designer roles. In these positions, they often lead design teams, mentor junior designers, and have a significant influence on the overall design direction of projects. Team lead in development.
PEO2	UI/UX Manager or Director: After gaining more experience and demonstrating leadership skills, some designers / developers move into management roles. They may become UI/UX managers, TL Managers or directors, overseeing design teams and guiding the strategic direction of design within a company.
PEO3	Further Education: Some designers choose to pursue further education, such as a master's degree in design or development, to deepen their knowledge and skills. This can open up opportunities for more specialized roles or teaching positions.
PEO4	Entrepreneurship : A few designers decide to start their design agencies or product startups. This path can be challenging but can also offer significant creative and financial rewards for those with an entrepreneurial spirit.
PEO5	Freelance or Independent Designer: After gaining some experience, some designers choose to work as freelancers or independent contractors. This allows them to have more control over their projects, clients, and work schedule. It can also be financially rewarding, but it comes with the responsibility of managing one's own business.

8. Programme Outcomes (PO)

Program Outcomes (PO's), are Graduates Attributes acquired by the graduate upon graduation. These relate to the skills, knowledge, and behavior that students acquire through the programme, based on initial capabilities, competence, skills, etc.

PO1	Design Knowledge: Should have a solid foundation in design principles, psychology, and human-computer interaction (HCI) to create effective and user-friendly interfaces. Additionally, they should be familiar with various design tools and materials
PO2	Problem Analysis & Solutions : Analyze design problems by researching users and assessing issues like usability and accessibility. They solve these problems by prioritizing user needs, improving design elements, and iteratively refining their interfaces while considering ethics and collaboration with developers. The goal is to create user-centered, efficient, and ethical user experiences.
РОЗ	Conduct Investigations of complex problems: Investigate complex design problems by researching user behaviors, identifying pain points, and analyzing competitors. They use methods like user interviews, surveys, and usability testing to gather insights. These investigations inform user-centered design solutions, iteratively refining interfaces for better user experiences
PO4	Modern Tool Usage: Should learn design tools like Figma and Adobe XD for creating interfaces and collaborate using platforms like Slack and Trello. They also need to understand coding basics like HTML,CSS, Javascript, Angular js, Node JS, Bootstrap, PHP and mysql and prioritize user research and ethical design practices
PO5	Designer - Society and sustainability : Should consider the impact of their designs on society and sustainability. This involves creating user experiences that promote ethical practices, accessibility, and environmental responsibility.
PO6	Ethics: Prioritize ethics in their design work by considering user privacy, inclusivity, and avoiding manipulative practices to create user experiences that are fair, respectful, and responsible
PO7	Individual and team Work: Excel in both individual and team work. Individually, they need to demonstrate strong design skills, problem-solving, and self-motivation. In team settings, they should collaborate effectively, communicate ideas, and respect diverse perspectives to deliver successful user-centered projects.
PO8	Communication: Effective communication is vital for UI/UX students. They must articulate design concepts clearly, actively listen to user feedback, collaborate with team members, and advocate for user-centered solutions, ensuring that their designs meet user needs and project goals.

PO9	Project Management and Finance: Develop project management skills to organize their design work, meet deadlines, and collaborate with teams effectively. Understanding basic finance concepts helps them assess the cost-effectiveness of design decisions and contribute to project budgeting and resource allocation.
PO10	Lifelong Learning: Should continuously update their skills, stay updated on design trends and emerging technologies, and seek new knowledge to remain competitive in the ever-evolving field of UI/UX design.

9. Programme Specific Outcomes (PSO)

Programme Specific Outcomes (PSO's) are what the graduates should be able to do upon graduation. At the end of the B.Sc., UI Design and Development program, the Graduates

PSO1	UI/UX Designer: As a UI/UX designer, students will focus on creating visually appealing and user-friendly interfaces for websites, web applications, and mobile apps. Graduates will conduct user research, design wireframes and prototypes, and work to improve user experiences.
PSO2	Front-End Developer: Front-end developers focus on implementing the visual aspects of user interfaces. They use HTML, CSS, and JavaScript to translate UI/UX designs into functional web applications. Proficiency in front-end development is valuable for UI/UX students
PSO3	Interaction Designer: Interaction designers specialize in creating interactive and engaging user experiences. They design the behaviors and interactions that users have with digital products, emphasizing usability and user engagement.
PSO4	Usability Analyst: Usability analysts evaluate the usability of digital products by conducting heuristic evaluations, usability testing, and user surveys. They provide recommendations to improve the user experience.
PSO5	Freelance Designer/Developer: Graduates can choose to work as freelancers, offering UI/UX design and development services to clients or companies on a project-by-project basis.

10. Eligibility for admission

A candidate who has passed Higher Secondary Examination (HSC) /Dip in UI Design and Development or Equivalent, or an examination accepted as equivalent as the main subject of study from any University/college shall be permitted to appear and qualify for the course.

11. Minimum Duration of Programme.

The programme is for three years. Each year shall consist of two semesters viz. Odd and Even semesters. Odd semesters shall be from June / July to October / November and even semesters shall be from November / December to April / May. Each semester there shall be 90 working days consisting of 4 teaching hours per working day (5 days/week).

12. Medium of instruction

The medium of instruction is English

13. Teaching Methods

The classroom teaching would be through conventional lectures, the use of OHP, PowerPoint presentation, and novel innovative teaching ideas like television, smart board, and computeraided instructions. Periodic field visit enables the student to gather practical experience and upto-date industrial scenarios. Student seminars would be arranged to improve their communicative skills. In the laboratory, safety measures instruction would be given for the safe handling instruments. The lab experiments shall be conducted with special efforts to teach scientific knowledge to students. The students shall be trained to handle advanced instrumental facilities and shall be allowed to do experiments independently. The periodic test will be conducted for students to assess their knowledge. Slow learners would be identified and will be given special attention by remedial coaching. Major and electives would be held in the Department and for Non-major electives students have to undertake other subjects offered by other departments.

14. Components

A UG programme consists of several courses. The term "course" is applied to indicate a logical part of the subject matter of the programme and is invariably equivalent to the subject matter of a "paper" in the conventional sense. The following are the various categories of the courses suggested for the PG programmes:

Core courses (CC)

"Core Papers" means "the core courses" related to the programme concerned including practicals and project work offered under the programme and shall cover core competency, critical thinking, analytical reasoning, and research skill.

Generic Elective (Allied)

Within the faculty, the students shall undergo two discipline-specific allied courses (one in the first year and another in the second year of his/her study except for computer application).

Discipline-Specific Electives (DSE)

DSE means the courses offered under the programme related to the major but are to be selected by the students, shall cover additional academic knowledge, critical thinking, and analytical reasoning.

Non-Major Electives (NME) - Exposure beyond the

discipline Self-Learning Courses from MOOCs platforms

- ♦ MOOCs shall be voluntary for the students.
- Students have to undergo a total of 2 Self Learning Courses (MOOCs) one in II semester and another in III semester.
- The actual credits earned through MOOCs shall be transferred to the credit plan of programmes as extra credits. Otherwise, 2 credits/course be given if the Self Learning Course (MOOC) is without credit.
- While selecting the MOOCs, preference shall be given to the course related to employability skills

Dissertation (Maximum Marks: 200)

The candidate shall undergo Dissertation Work during the fourth semester. The candidate should prepare a scheme of work for the dissertation and should get approval from the guide. The candidate, after completing the dissertation, shall be allowed to submit it to the departments at the end of the final semester.

No. of copies of the dissertation/internship report

The candidate should prepare three copies of the dissertation/report and submit the same for the evaluation of examiners. After evaluation, one copy will be retained in the department library, one copy will be retained by the guide and the student shall hold one copy.

15. Attendance

Students must have earned 75% of attendance in each course for appearing on the examination. Students who have earned 74% to 70% of attendance need to apply for condonation in the prescribed form with the prescribed fee. Students who have earned 69% to 60% of attendance need to apply for condonation in the prescribed form with the prescribed fee along with the Medical Certificate. Students who have below 60% of attendance are not eligible to appear for the End Semester Examination (ESE). They shall re-do the semester(s) after completion of the programme.

16. Examination

The examinations shall be conducted separately for theory and practicals to assess (remembering, understanding, applying, analyzing, evaluating, and creating) the knowledge required during the study. There shall be two systems of examinations viz., internal and external examinations. The internal examinations shall be conducted as Continuous Internal Assessment tests I and II (CIA Test I & II)

Internal Assessment:

The internal assessment shall comprise a maximum of 25 marks for each course

Theory - 25 marks

Sr. No.	Content	Marks
1	Average marks of two CIA test	15
2	Seminar/group discussion/quiz, etc.,	5
3	Assignment/field trip report/case study reports	5
	Total	25

Practical - 25 marks

Sr. No.	Content	Marks
1	Average marks of two CIA tests (Practical)	15
1	Experiments - Major, Minor, and Spotter	
2	Observation notebook	10
	Total	25

Internship - 25 Marks (assess by Guide/ In-charge/HOD/supervisor)

Sr. No.	Content	Marks
1	Presentation	15
2	Progress report	10
	Total	25

Dissertation – 50 Marks (Guide/HOD)

Sr. No.	Content	Marks
1	Two presentations (mid-term)	30
2	Progress report	20
	Total	50

External Examination

- There shall be examinations at the end of each semester, for odd semesters in October / November; for even semesters in April / May.
- A candidate who does not pass the examination in any course(s) may be permitted to appear in such failed course(s) in the subsequent examinations to be held in October / November or April / May. However, candidates who have arrears in practical shall be permitted to take their arrear Practical examination only along with regular practical examination in the respective semester.

- A candidate should get registered for the first-semester examination. If registration is not possible owing to a shortage of attendance beyond the condonation limit / regulation prescribed OR belated joining OR on medical grounds, the candidates are permitted to move to the next semester. Such candidates shall re-do the missed semester after completion of the programme.
- For the Dissertation Work, the maximum marks will be 100 marks for thesis evaluation and the Viva-Voce 50 marks.
- For the internship, the maximum mark will be 50 marks for project report evaluation and for the Viva-Voce it is 25 marks
- Viva-Voce: Each candidate shall be required to appear for the Viva-Voce Examination (in defense of the Dissertation Work/internship)

17. Passing minimum

- ♦ A candidate shall be declared to have passed each course if he/she secures not less than 40% marks in the End Semester Examinations and 40% marks in the Internal Assessment and not less than 40% for UG and PG 50% in the aggregate, taking Continuous assessment and End Semester Examinations marks together.
- The candidates not obtained 40% for UG and PG 50% in the Internal Assessment are permitted to improve their Internal Assessment marks in the subsequent semesters (2 chances will be given) by writing the CIA tests and by submitting assignments.
- Candidates, who have secured the pass marks in the End Semester Examination and the CIA but failed to secure the aggregate minimum pass mark (E.S.E + C I.A), are permitted to improve their Internal Assessment mark in the following semester and/or in University examinations.
- A candidate shall be declared to have passed the Project Work if he /she gets not less than 40% in each of the Project Report and Viva-Voce and not less than 40 % UG and in PG 50% in the aggregate of both the marks for Project Report and Viva-Voce.
- ✤ A candidate who gets less than 40% for UG and PG 50% in the Project Report must resubmit the Project Report. Such candidates need to take again the Viva-Voce on the resubmitted Project

	MODEL SYLLABUS UNDER CBCS PATTERN w.e.f.2023-24)									
	B.sc UI Design and Development									
Sem.	Part	Courses	Course	Title of the Paper	T/P	Cr.	Hrs./ Week	M	lax. Ma	arks
		82711T/H/F/	Coue				WEEK	Int.	Ext.	lotal
	Ι	M/TU/A/S/	T/OL	Tamil /Other Languages -I	L	3	4	25	75	100
	II	82712	Е	General English-I	L	3	4	25	75	100
		82713	Core 1	Programming and Scripting	Т	4	4	25	75	100
		82714	Core 2	Programming and Scripting - Practical	Р	4	6	25	75	100
I	III	82715	Allied 1	Communication and Media Design	Т	3	3	25	75	100
		82716	Allied 2	Visualization for Interactive Media- Practical	Р	3	6	25	75	100
	IV	<mark>82717</mark>	SEC –I	Value Education	T	<mark>2</mark>	<mark>2</mark>	<mark>25</mark>	<mark>75</mark>	<mark>100</mark>
				Library			1			
				Total		22	30	175	525	700
	Ι	21T/H/F/M/ TU/A/S	T/OL	Tamil/Other Languages-II	L	3	4	25	75	100
	II	82722	Е	General English - II	L	3	4	25	75	100
	III	82723	Core 3	UI Development I	Т	4	4	25	75	100
		82724	Core 4	UI Development I - Practical	Р	4	6	25	75	100
		82725	Allied 3	UX Design - I	Т	3	3	25	75	100
		82726	Allied 4	Design for Interactive media- Practical	Р	3	6	25	75	100
	IV	<mark>82727</mark>	SEC –II	Environmental Studies	T	<mark>2</mark>	<mark>2</mark>	<mark>25</mark>	<mark>75</mark>	<mark>100</mark>
				Library			1			
		82728A/ 82728B		Internship/ Mini Project	I/ PR	2		25	75	100
				Total		24	30	200	600	800
	Ι	82731T/H/F/ M/TU/A/S	T/OL	Tamil/Other Languages-III	3	4	25	75	100	
	II	82732	Е	General English – III	L	3	4	25	75	100
		82733	Core 5	UI Visual Design	Т	3	3	25	75	100
		82734	Core 6	UI Development II	Т	3	3	25	75	100
	III	82735	Core 7	UI Development II - Practical	Р	3	5	25	75	100
		82736	Allied 5	UX Design II	Т	3	3	25	75	100
III		82737	Allied 6	UI Visual Design - Practical	Р	2	4	25	75	100
		<mark>82738</mark>	SEC-III	Entrepreneurship	T	<mark>2</mark>	<mark>2</mark>	<mark>25</mark>	<mark>75</mark>	<mark>100</mark>
		<mark>82739A</mark>		1.Adipadai Tamil	P					
	w	82739B		2.Advance Tamil	T	<mark>2</mark>	<mark>2</mark>	<mark>25</mark>	<mark>75</mark>	<mark>100</mark>
		027390	NME-1	3.IT Skills for Employment	T					
				4. MOOC'S	T					
				Total		24	30	225	675	900

	Ι	82741T/H/F/ TU/A/S	T/OL	Tamil /Other Languages -IV	L	3	4	25	75	100															
	II	82742	Е	General English – IV	L	3	4	25	75	100															
		82743	Core 8	Web Application Development	Т	4	4	25	75	100															
		82744	Core 9	Human Centered Design	Т	4	4	25	75	100															
	- III	82745	Core 10	Web Application Development - Practical	Р	3	5	25	75	100															
	111	82746	Allied 7	Mobile Application Development	Т	3	3	25	75	100															
IV		82747	Allied 8	Mobile Application Development- Practical	Р	2	4	25	75	100															
		<mark>82748A</mark>		1.Adipadai Tamil	P																				
		82748B		2.Advance Tamil	T																				
	IV	<u>02/40</u>	<mark>NME- II</mark>	3. Small Business Management	T	2	<mark>2</mark>	<mark>25</mark>	<mark>75</mark>	<u>100</u>															
				4. MOOC'S	T																				
		82749	Ι	2		25	75	100																	
				Total		26	30	225	675	900															
		82751	Core 11	Emerging Technologies	Т	4	4	25	75	100															
	Ш	82752	Core 12	Software Quality Assurance	Т	4	4	25	75	100															
		82753A 82753B 82753C DSE 1	DSE 1	 Human Computer Interaction AR and VR in UX Design Brand Designing 	Т	4	4	25	75	100															
v		III	III	III	III	III	III	III	III	III	III	III	III	III	III	III	82754A 82754B 82754C	DSE 2	 Information Architecture Digital Marketing Design Issues 	Т	4	4	25	75	100
													82755A 82755B 82755C	DSE 3	 Prototyping-Practical Software Testing-Practical Usability Evaluation-Practical 	Р	4	8	25	75	100				
		82756	Core 13	Portfolio & Presentation -Practical	Р	2	4	25	75	100															
				Career Development / Employability Skills			2																		
				Total		22	30	150	450	600															
		82761	Core 14	Web Development Using React	Т	4	4	25	75	100															
		82762	Core 15	Advanced Framework- Tailwind	Т	4	4	25	75	100															
		82763	Core 16	Web Development Using React	Р	4	6	25	75	100															
VI	III	III	82764A 82764B 82764C	DSE 4	 Word press-Practical SEO Strategy-Practical Motion Design and Animation-Practical 	Р	4	4	25	75	100														
		82765A 82765B	Core 17	Project/ Dissertation	PR/ D	6	12	25	75	100															
				Total		22	30	125	375	500															
				Grand Total		140	180	1100	3300	4400															

DSE – Student Choice and it may be conducted by parallel sections.

** NME –Students have to select courses offered by other (Faculty) departments.

*** SLC - Voluntary basis T - Theory P - Practical

			I-Seme	ester						
Core	82713		Programmi	ing and Scr	ripting]	Credits	: 4	Hours: 4	
	 To tea function To pro World like be 	ach essential pons, OOP, and ovide an introd Wide Web, w	programmin exception hauctory under veb standard ting links	ng concepts andling for erstanding o ds, HTML b images and	including pro- a solid foundat f web technolo pasics, tags, att	oblem-s ion in p ogy, cov tributes,	solving, corrogramming vering the and esser	odin ng. hist ntial	ng basics, ory of the l elements	
Objective	3. To tea entities 4. To imp	addings, format ach advanced s, emojis, and i part fundamen	web develo multimedia i atal web sty	ppment, inc integration ling skills,	luding tables, with HTML me including usin	frames, edia ele ng Style	, forms, se ments. e Sheets, l	ema ayo	untic tags, ut design,	
	5. To ena styling	able learners to g features, respo	onsive desig	eb layout de gn principles	sign, incorpora s, and CSS tech	and gro ating im miques.	age galler	ies,	advanced	
Unit I	Introduction to Programming - Logical Thinking & Problem Solving - Algorithms & Pseudo code - Programming Basics - Programming Hello World - Data types - Variables - Constants - Operators - Conditional Statements – Looping - Functions - Understanding Functions - Pass values to functions – Inline function - Recursive functions - Arrays - Pointers - Union &									
Unit II	Introduction to Web Technology - World Wide Web - History & Evolution - Web Standards - Web Applications - Web Development - Markup Languages - Hyper Text Markup Language - Basics - Tags - Attributes - Head Tag & its elements - Body Tag & its elements - Heading Tags - Formatting Tag - Font Tag - Links - Lists - Paragraph Tag - Image - Div - Span - Rulers									
Unit III	Tables - Fran Semantic Ta Html Media	mes - Forms - gs Article - Se Tags - Audio 7	Form Attrib ession - Asio Fag - Video	outes - Elem de - Header Tag.	ents - Input At - Footer - Nav	tribute - Entiti	- Input For es - Symb	m 4 ols	Attribute - - Emojis -	
Unit IV	Html Media Tags - Audio Tag - Video Tag.Style Sheets - Cascading Style Sheets - Types of Style Sheet - Syntax - Selectors - Properties - Background - Font - Text - Image - Border and Outline - Margin & Padding - Position - Alignment - Float - Navigation Design - Hover and Active - Icons - Overflow - Opacity - Layout design - Introduction to Flexible design - Intro to Flex box - Flex box Properties - Grid system - Grid Container - Grid Item - Icons - Overflow - Opacity - Layout design - Introduction to Flexible design - Intro to Flex box - Flex box properties - Grid System - Grid Container -									
Unit V	Website Lay Shadows - To - CSS Variab	out - Image Ga ext Effect – W oles - Introduct	allery - Adva Teb font - Tra tion to Resp	anced Prope ansform - T onsive Desi	erties - Backgro ransition - Anir gn - Viewport	ound Co mation - Media	olor - Grad - Masking Query.	ient - Pa	t - agination	
Reference	and Text Boo	oks:								
• <u>Strou</u> <u>Profe</u> • <u>Lear</u> Jenn	<u>astrup, B. (2</u> essional. ning Web Des ifer Robbins	008). Program ign A Beginne	nming: Prin	nciples and HTML, CS	<u>l Practices us</u> S, JavaScript, a	sing C- and We	++. Addis	son-	Wesley	
 Power Educe Robs 	ell, T. A. (2017 <u>cation.</u> son, E., & Free	7). The Comple eman, E. (2012	ete Referend). Head Firs	ce HTML & st HTML an	<u>c CSS (5th ed.)</u> <u>d CSS (2nd ed.</u>	<u>. McGra</u> . <u>). O'Re</u>	aw Hill <u>illy.</u>			
			Cours	e Outcome						

CO1	Empower learners with foundational programming skills, enabling them to tackle problems, code effectively, understand OOP concepts, and handle exceptions proficiently.	K1
CO2	Acquired a solid foundation in web technology, enabling them to create structured web content, work with HTML tags and attributes, and understand the evolution of the World Wide Web.	K3&K6
CO3	skills to effectively employ advanced web development techniques including tables, frames, forms, semantic tags, entities, emojis, and multimedia elements.	K4
CO4	Equip learners to skillfully style web elements, create layouts, add interaction effects, include icons, and apply flexible design using Style Sheets, flex box, and grids.	K5
CO5	Empower learners to expertly design website layouts, including image galleries, advanced styling, responsive design principles, and dynamic CSS techniques.	K2&K6

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	L(1)	S(3)	M(2)	L(1)	L(1)	M(2)	L(1)	L(1)
CO2	S(3)	M(2)	L(1)	M(2)	L(1)	L(1)	M(2)	L(1)	L(1)	S(3)
CO3	M(2)	S(3)	S(3)	S(3)	L(1)	M(2)	M(2)	M(2)	M(2)	M(2)
CO4	M(2)	M(2)	L(1)	M(2)	M(2)	L(1)	L(1)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

S-Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	L(1)	L(1)	L(1)	M(2)
CO2	L(1)	M(2)	L(1)	M(2)	S(3)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	L(1)	M(2)	L(1)	L(1)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

				I-Semest	er				
Core	Course Coo 82714	de:	Programm	ing and Sci	ripting - Practi	ical	Р	Credits: 4	Hours: 6
Object 1. Imp 2. Imp 3. Creat 4. Des 5. Creat	1. Ap fun2. De na2. De na1. Ap fun2. De na4. En fon5. De wiblement the prop plement the Sear ate a program to ign a Web form ate a Web page	pply pray nctional evelop C wigation rengther nhance w rm. emonstra ithin a w posed m rch, Left o find if n for use and der	ctical implen designs. CSS proficien a arrows. n programmin veb design ca ate expertise reb page. ock-up given t and Right at the given nu r registration nonstrate tran	nentation sk cy by creat ng skills by pabilities th in CSS anir by the tuto rows using mber is Pro	ills by translating interactive of designing a proprough the created anations by created r. CSS nic or not the created anation created anation created anation created anation created analysis of the created anation created anation created analysis of the created analysi	ng prov elemen ogram t tion of ting en	vided ts suc to ide a use gagir	mock-ups i ch as search entify Pronic er-friendly re ng transition	nto bars and numbers. egistration effects
	1. Ex sh 2. Di	xhibit pro owcasin isplay ac	oficiency in t g practical in lvanced CSS	ranslating r nplementati knowledge	nock-ups into f on skills. by successfully	unctior y imple	nal de	esigns, ting	
Outco	me int 3. De act 4. Sh int 5. Hi	 interactive components like search bars and navigation arrows. 3. Demonstrate strong programming skills by creating a program to accurately identify Pronic numbers. 4. Showcase enhanced web design abilities through the creation of an intuitive and user-friendly registration form. 5. Highlight expertise in CSS animation by effectively implementing 							

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	L(1)	M(2)	M(2)	M(2)	L(1)
CO2	M(2)	L(1)	M(2)	S(3)	M(2)	M(2)	L(1)	M(2)	S(3)	M(2)
CO3	L(1)	S(3)	S(3)	M(2)	L(1)	L(1)	L(1)	L(1)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	L(1)	M(2)	M(2)	M(2)	M(2)
CO5	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

Mapping Course Outcome VS Programme Specific Outcomes

		I-Semester							
Allied	Course Code: 82715	Communication and Media Design	T	Credits: 3	Hours: 3				
		Unit - I	I		1				
Objective	 Discover psycholog in one eng Gain a the Interaction Representa Explore U trends, U understand To Diverse role of se content creation Broad und process, so future tren 	the essentials of communication, inclu- y, along with interactive multimedia's history aging course. rough grasp of Interactive and New Media, , User Interface, Ethics, Cultural dif- tion. ser Experience Design comprehensively, enc X vs. UI, Design Thinking, and related ing. e idea generation techniques, content improv- miotics in multimedia, fostering a holistic ration. derstanding of Project Management, enco oftware development, Agile, version control, ds.	iding y, con cove ference compa areas vemer c und mpas Ubiq	types, mon ponents, an ring Human ces, and I ssing princip s, for a we nt, ergonomi erstanding o sing objecti uitous Comp	odels, and d role – all -Computer Knowledge ples, future ell-rounded cs, and the of creative ves, UXD puting, and				
Unit I	Introduction to Communication - Types of Communication, Communication Models, Psychological Principles involved in Communication, Case study of Skinner Box, User Centric Design. What is interactive Multimedia : Multimedia-Interaction- A Brief History of Computers & Multimedia- A Brief History of Computers and Interaction - What is IMM? Communicative Interaction ? Objects and Agents- Channels of Communication - Artificial Language - Natural Communication - meta								
Unit II	Interactive and Interface, Behav Acceptances & D and Moral Right and Codes of Pra	New Media - Human Computer Interactional Studies - Ethics of New Media - Configuration - Configuration - Software Rating Board – Intellects - Contracts – Ethics - Freedom of Speech ctice - Knowledge Representation Technique	ction pywr ctual l 1 - Fro es .	Fundamenta iter, Patent, Property - Co eedom of Ex	als, User Cultural opyrights xpression				
Unit III	User Experience design - Importance - User-Centered Design, UX vs UI, Future of UX, UX Design Thinking, Data Driven Design, Elements of UX, Fundamental of User Experience(UX), Customer Experience (CX), Customer Digital Touch Points, User Interface Design (UI), Interaction Design (IxD), Human computer interaction (HCI), Design Process, Experimental Animation, Design Management, Research Methodology, History, Theory & Dhilosophy, Science and Liberal Arts								
Unit IV	Idea Generatio Improving Exis Content - What Media.	n and content creation - Pilot study, Min ting Products / Services, Ergonomics - S is Semiotics- The Idea of Assign- More Com	id ma Semio iplex	p, 6 Thinkin tics - Mu Signs Semic	ng Hats, ltimedia otics and				
Unit V	Project Manage Life Cycle - Sof Software Versie Conceptual - Cu	ement - Project Objectives - UXD Process ware Development Methods - Introduction t on Control System - Ubiquitous Compu- tural - Technological Topics	- Soft to Agi uting	ware Develo le - Introduc - Future 7	opment ction to Frends:				

Reference and Text Books:

- Rollings, A., & Morris, D. (2003). Game Architecture and Design A New Edition (1st edition). New Riders
- Fromme, J., & Unger, A. (2012). Computer Games and New Media Cultures: A Handbook of Digital Game Studies. Springer Science & Business Media.
- Chandler, H. M. (2013). The Game Production Handbook (3rd edition). Jones & Bartlett Publishers.
- Fromme, J., & Unger, A. (2012). Computer Games and New Media Cultures: A Handbook of Digital Games Studies. Springer Science & Business Media.
- Kovacevic, R. M., Pflug, G. C., & Vespucci, M. T. (2013). Handbook of Risk Management in Energy Production and Trading. Springer

Online Resources

- <u>User-Centred Graphic Design Mass Communication And Social Change By Jorge Frascara,</u> <u>Bernd Meurer, Jan van Toorn, Dietmar Winkler</u> (<u>https://www.amazon.in/User-Centred-Graphic-Design-Communication-Social/dp/0748406727</u>)
- <u>Design for Communication: Conceptual Graphic Design Basics Elizabeth Resnick</u> (<u>https://www.amazon.in/Design-Communication-Conceptual-Graphic-Basics/dp/0471418293</u>)

Course Outcome VS Programme Outcomes

Outcome 1	Solid understanding of various communication types, models, and psychological principles, as well as insights into the history, components, and significance of interactive multimedia.	K1
Outcome 2	comprehensive understanding of Interactive and New Media, including Human-Computer Interaction, Ethics, Cultural awareness, and Knowledge Representation.	K3&K6
Outcome 3	Comprehensive understanding of User Experience Design, covering principles, future trends, UX vs. UI, Design Thinking, and related areas.	K4
Outcome 4	Empower learners to proficiently generate ideas, enhance content, consider ergonomics, and leverage semiotics for compelling multimedia creation.	K5
Outcome 5	Adeptly navigate Project Management, integrating objectives, UXD, software development, Agile, version control, Ubiquitous Computing, and future trends for proficient project execution.	K2&K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	M(2)	M(2)	L(1)	L(1)	M(2)	L(1)	S(3)	M(2)	L(1)
CO2	M(2)	M(2)	M(2)	L(1)	M(2)	M(2)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)	S(3)
CO4	S(3)	S(3)	M(2)	M(2)	L(1)	L(1)	M(2)	S(3)	M(2)	M(2)
CO5	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)	M(2)
W.AV	2.6	2.6	2.2	1.6	1.6	2	1.8	2.8	2.4	2

Course Outcome VS Programme Outcomes

S-Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	M(2)	M(2)	L(1)
CO2	M(2)	L(1)	S(3)	M(2)	L(1)
CO3	S(3)	L(1)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	S(3)	M(2)	M(2)	M(2)	S(3)
W.AV	2.8	1.4	2.2	2.2	1.8

		I-Semester								
Allied	Course Code:	Visualization for Interactive Media -		Credits: 3	Hours 6					
	82716	Practical	P	Cicuits. 5	110015.0					
 Enhance creative design skills through tasks involving image manipulation and composition. Develop proficiency in using design software tools to create visually appealing and innovative content. Gain practical experience in various design aspects, such as photo enhancement, poster creation, logo redesign, and character design. Foster critical thinking and problem-solving abilities by creatively merging elements from different sources. Cultivate imagination and artistic expression by engaging in tasks that encourage the creation of unique and imaginative visual concepts. 										
1. Create	e a face using imag	es of fruits and vegetables.								
2. Use a	close up photo of y	you and enhance one half of your face.								
3. Create	e a poster for the M	ovie / Game title specified by the tutor.								
5 Down	load photographs c	f two animals and create a new animal using	o feat	ures from the	-					
down	loaded animals.	T two animals and create a new animar using	5 Ioan		0					
6. Create	e a Manga characte	r using your photographs for reference.								
Outcome	 Acquire pro Develop a applications Enhance p enhancemes Cultivate cr sources to c Gain configure 	ficiency in image manipulation and compose solid understanding of design software aractical skills in diverse design tasks, nt, poster creation, logo redesign, and charact eativity and innovation by combining eleme reate new visuals. dence in expressing artistic ideas through stering a well-rounded skill set in visual com-	ition tool inclu eter de ents fr	techniques. s and their uding photo esign. om different ctical design	K6					

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	L(1)	M(2)	M(2)	L(1)	L(1)	M(2)	M(2)	M(2)	L(1)
CO2	M(2)	M(2)	L(1)	S(3)	S(3)	M(3)	M(2)	M(2)	S(3)	S(3)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)
CO4	S(3)	S(3)	M(2)	S(3)	S(3)	L(1)	S(3)	M(2)	S(3)	M(2)
CO5	M(2)	M(2)	S(3)	S(3)	M(2)	L(1)	M(2)	M(2)	S(3)	M(2)
W.AV	2.6	2.2	2	2.8	2.2	1.6	2.4	2	2.8	2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	M(2)	L(1)	L(1)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	M(2)	L(1)	S(3)	S(3)	S(3)
CO4	S(3)	L(1)	M(2)	S(3)	M(2)
CO5	M(2)	L(1)	M(2)	M(2)	S(3)
W.AV	2.4	1.2	2.4	2.2	2.4

Mapping Course Outcome VS Programme Specific Outcomes

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester									
Core	Course	UI Development I	T	Credits: 4	Hours: 4				
	Code 82/23	Init I							
	1. To intro	duce learners to scripting, covering client-sic	le and	server-side	scripting,				
Objective	 fundamental scripting language concepts, program structure, data handling, functions, user-defined data types, and basic aspects of OOP and exception handling 2. To impart proficiency in advanced JavaScript concepts, covering the Document Object Model, array manipulation, form handling, event-driven programming, and interactions with HTML events, enabling effective web development 3. To provide learners with practical skills in using jQuery and JavaScript frameworks for creating interactive web elements, including animations, dynamic effects, image sliders, and client-side applications. 4. To equip learners with responsive design skills, encompassing principles, mobile-first approach, CSS3 media queries, viewport settings, grid systems, and handling responsive images and videos, for creating adaptable web layouts. 5. To provide learners with practical skills in utilizing responsive design frameworks, specifically CSS and JS frameworks like Bootstrap, encompassing grid systems, layouts, form integration, table usage, and image handling for efficient web 								
	developr	nent.	nanan		elent web				
Unit I	 Introduction to Scripting - Client Side scripting - Server Side Scripting - Introduction to scripting languages - Basics - Structure of a Program - Data types - Variables - Constants - Pointers- Operators - Unary - Binary - Ternary - Statements: Assignment - Conditional - Control - Arrays & Strings - Functions: Functions - Pass by Value - Pass by Reference - Call by Value - Call by Reference- Overloading - Overriding - Recursive - Derived data types - Array - User Defined Data types: Union- Enum - 								
Unit II	Advanced Jav Dimensional A Get/Post Meth Number Valida Events - Action	Structures - Object oriented programming - Exceptional Handling. Advanced Java Script - Document Object Model - Introduction - Arrays - One Dimensional Array- Two Dimensional Array - Callback Functions - Form Handling - Get/Post Method - Form Validation- Accessing form Data - Password Validation - Number Validation - HTML Events - Predefined Events- Event Driven Programming - Events - Actions - Listeners - Keyboard and Mouse Event							
Unit III	JQuery - Fran Functions - Sh an Image Slide Export Data - Dynamic Effect	JQuery - Frameworks - Javascript Frameworks - Introduction to JQuery - Jquery Functions - Show- Hide - Fadein - Fadeout - Smooth Scrolling using JQuery - Building an Image Slider – Developing Client Side Quiz Application - File Handling Import and Export Data - XML Parsing – JSON Parsing- Animation using Javascript and Jquery - Dynamic Effects using Scripts							
Unit IV	Responsive De Media Queries Rules – Break	sign - Introduction - Responsive Design Princ in CSS3 - Target Device Analysis - Viewport Points- Responsive Images and Videos	ciples - Grid	- Mobile Fin ls - Grid Vie	st Design- w - Media				
Unit V	Responsive D Introduction- I in Bootstrap - 1	esign Frameworks - CSS Frameworks & J Basics – Grid System - Layouts- Fixed, Fluid - Bootsrapelements - Image Handling in bootstra	S Fran Table ap	neworks -E s in Bootstra	lootstrap - ap - Forms				

Reference and Text Books:

- 1. McFarland, D. S. (2011). JavaScript & jQuery: The Missing Manual (2nd ed.). Pogue Press.
- 2. Crockford, D. (2008). JavaScript: The Good Parts. O'Reilly Media.
- 3. Lindley, C. (2009). jQuery Cookbook. O'Reilly Media.
- 4. Rahman, S. F. (2014). Jump Start Bootstrap. SitePoint.
- 5. Forbes, A. (2015). The Joy of Bootstrap. Createspace Independent Publishing.

Online Resources

- JavaScript: The Good Parts by D Crockford
- Jump Start Bootstrap by Rahman Syed

Course Outcome VS Programme Outcomes

Outcome 1	Solid understanding of various communication types, models, and psychological principles, as well as insights into the history, components, and significance of interactive multimedia.	K1
Outcome 2	comprehensive understanding of Interactive and New Media, including Human-Computer Interaction, Ethics, Cultural awareness, and Knowledge Representation.	K3&K6
Outcome 3	Comprehensive understanding of User Experience Design, covering principles, future trends, UX vs. UI, Design Thinking, and related areas.	K4
Outcome 4	Empower learners to proficiently generate ideas, enhance content, consider ergonomics, and leverage semiotics for compelling multimedia creation.	K5
Outcome 5	Adeptly navigate Project Management, integrating objectives, UXD, software development, Agile, version control, Ubiquitous Computing, and future trends for proficient project execution.	K2&K6

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	M(2)	L(1)	M(2)	L(1)	L(1)	M(2)	M(2)	M(2)	L(1)
CO2	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	L(1)
CO5	M(2)	S(3)	S(3)	S(3)	L(1)	M(2)	M(2)	M(2)	S(3)	M(2)
W.AV	2.2	2.4	2.2	2.6	1.6	1.8	2.4	2	2.4	1.6

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	L(1)	S(3)	L(1)	S(3)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	S(3)	S(3)
W.AV	2	2.6	1.8	2.6	2.6

Mapping Course Outcome VS Programme Specific Outcomes

	II-Semester									
Core	Course Code 82724	UI Development I - Practical	Р	Credits: 4	Hours: 6					
			1	1						
Objective 1. Implement 2. Develop 3. Design a 4. Create a so 5. Create a so	 Master JavaScript skills by creating an interactive image slider. Showcase web development proficiency through the creation of a site with smooth scrolling. Demonstrate dynamic web page design capabilities by incorporating JavaScript-based validation. Utilize HTML5 and CSS expertise to build a visually engaging website with parallax effects. Exhibit CSS animation skills by crafting a web page featuring loading animations for enhanced user experience. Implement a Image Slider using JS Develop a web site with smooth scrolling. Design a dynamic web page with validation using JavaScript. Create a website with parallax using html5 and css Create a web page with CSS Loading Animation. 									
Outcome	 Effectively implement image sliders using JavaScript, showcasing proficiency in interactive web features. Create web pages with smooth scrolling, demonstrating skills in web development and user-friendly navigation. Design dynamic web pages with JavaScript-based validation, showcasing expertise in form handling and user input. Develop visually captivating websites with parallax effects, displaying advanced knowledge of HTML5 and CSS styling techniques. Showcase proficiency in CSS animations by crafting web pages with loading animations, enhancing the overall user experience and engagement. 									

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	M(2)	S(3)	M(2)	L(1)	M(2)	M(2)	M(2)	M(2)	L(1)
CO2	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)	L(1)	S(3)	M(2)
CO3	M(2)	S(3)	S(3)	S(3)	M(2)	L(1)	S(3)	M(2)	S(3)	M(2)
CO4	M(2)	M(2)	S(3)	S(3)	M(2)	L(1)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)
W.AV	2.2	2.4	2.8	2.8	1.8	1.6	2.4	1.8	2.8	1.8

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	S(3)	M(2)	M(2)	M(2)
CO2	M(2)	S(3)	M(2)	M(2)	S(3)
CO3	M(2)	S(3)	L(1)	S(3)	S(3)
CO4	L(1)	S(3)	M(2)	S(3)	S(3)
CO5	M(2)	M(2)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.8	2.4	2.8

Mapping Course Outcome VS Programme Specific Outcomes

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester 11									
Allied	Course Code: 82725	UX Design I	Т	Credits: 3	Hours: 3				
Objective	 To teach learners essential UX design principles encompassing visual and interaction concepts, responsive design, and psychological effects for crafting effective user experiences. To introduce learners to user research methods, covering techniques like interviews, surveys, empathy maps, and focus groups, to foster effective user-centered research practices. To educate learners on data gathering techniques, including ethnography, research questions, user observation, anthropology disciplines, and persona creation, for effective user-centered design. To lead learners through the UX design ecosystem, covering project parameters, brand presence, stakeholder engagement, business goals, user analysis, usability criteria, and proposal creation for effective contributions to UX design processes. To educate learners about content strategy, covering personas, empathy maps, key UX design aspects, flexible content creation and delivery across devices and apps, and personalization for effective planning and implementation 								
Unit I	Unit I UX Design Principles - Golden rules of UX Design - Visual design - Unity and variety - Focal point -Economy of elements - Balance and proportion Interaction - Association and affordance - Economy of motion - Responsive Design - Psychology - The effects of good UX design - Flow And Interaction, Guiding principles								
Unit II	User Research Survey – Emp Research techn	methods - User interview - Contextual end athy Map - Focus group - Research basics - iques - Research Analysis - Quantitative and Q	quiry - Use pualita	- Heuristic r group defi tive research	Review- initions -				
Unit III	Data Gatherin Problem State Knowledge Anthropology Creating Perso	g - Introduction - Ethnography -Research Q ment- User Observation Methods - Ethnog Production - Anthropology-Social Anthr - Linguistic anthropology - User Profile - P nas	uestic graphic copolc erson	ons- Hypoth c Observatio gy - Cu a-User anal	esis - ons - ıltural ysis -				
Unit IV	The UXD Ecc campaign- Co Business/produ profile - User the proposal -	Creating Personas The UXD Ecosystem -Identify the project parameters - Brand presence - Marketing campaign- Content source - Project Discovery - Stakeholders meetings/interviews - Business/product goals-Competitor's Analysis - Market segment analysis - Persona/User profile - User group analysis-Usability criteria & CSF [Critical success factor] - Creating the proposal - Title page - Executive							
Unit V	Content Strategy - Personas - Advanced personas - The empathy map - When, where, who, what, why and how of UX Design - Content strategy longevity - Flexible Content Strategies - Approaching Content strategies - Flex content creation -, CMS's, delivering across devices - Delivering across apps- Flexible architecture - Personalizing content								
Reference1. Silbe2. Mille3. Grus,4. Beeg5. Helle	and Text Books rschatz, A. (2012 er, J. D. (2017). E , J. (2015). Data (el, J. (2014). Info er, S., & Landers,	: b). Operating System Concepts (9th ed.). Wiley big Data Visualization. Packt Publishing Limite Science from Scratch. O'Reilly Media. Ographics for Dummies (1st ed.). For Dummies R. (2014). Infographic Designers' Sketchbook	r. ed. s. Ada	ams Media.					

Online Resources <u>Google UX Design Professional Certificate</u> (<u>https://www.coursera.org/professional-</u> <u>certificates/google-ux-design</u>)

Outcome 1	Ability to apply fundamental UX design principles, enhancing user experiences through visual design, interaction concepts, responsive design, and psychological insights.	K1
Outcome 2	Students will be equipped with a diverse toolkit of user research methods, enabling them to conduct effective research through techniques such as interviews, surveys, empathy maps, and focus groups.	K3&K6
Outcome 3	Enables learners to proficiently gather and analyze data using ethnography, research questions, user observation, and anthropology concepts, facilitating user-centered design through effective persona creation.	K4
Outcome 4	Equip students to effectively navigate the UX design ecosystem, covering project aspects, stakeholder engagement, business goals, user analysis, usability criteria, and proposal creation.	K5
Outcome 5	Students will possess the skills to implement effective content strategies, utilizing personas, empathy maps, flexible content creation, and personalized delivery across devices and applications.	K2&K6

Course Outcome VS Programme Outcomes

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.6	2.6	2.6	2.6	2.2	2.6	2.4	2.6	2.6	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	M(2)	M(2)	S(3)
CO2	S(3)	L(1)	S(3)	M(2)	M(2)
CO3	M(2)	M(2)	M(2)	S(3)	S(3)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	S(3)	M(2)	S(3)	S(3)	S(3)
W.AV	2.8	2	2.4	2.6	2.6

Mapping Course Outcome VS Programme Specific Outcomes

II-Semester									
Allied	Course Code: 82726	Design for Interactive Media - Practical	Р	Credits: 3	Hours: 6				
1. Develop an understanding of color schemes, color perception, and color psychology to effectively use colors in design. 2. Apply typography principles to create visually appealing and readable text layouts. 3. Showcase layout and interface design skills by crafting functional and aesthetically pleasing designs. 4. Express creativity and social awareness by creating design work addressing a relevant social issue. 5. Demonstrate proficiency in digital advertising by designing compelling web banners for product promotion. 1. Create a Color schemes, Colour perception and Colour psychology 2. Create a typography in a layout 3. Design a layout/package/ Interface 4. Create a piece of work on social issue									
Outcome 1. Create harmonious color schemes and understand the psychological impact of colors in design. 2. Apply typography principles effectively to enhance visual communication within layouts. 3. Design functional and visually appealing layouts, interfaces, and packages. 4. Express creativity and social awareness by crafting impactful design work addressing pertinent social issues.									
	engaging	and visually compelling web banners for prod	luct pi	comotion.					

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	M(2)	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	S(3)	L(1)
CO2	S(3)	M(2)	S(3)	S(3)	S(3)	M(2)	M(2)	M(2)	S(3)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	M(2)	L(1)	M(2)	S(3)	M(2)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)
W.AV	2.6	2.4	2.4	2.6	2.4	1.8	2.2	2.2	2.8	2.2

Course Outcome VS Programme Outcomes

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	M(2)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	S(3)	L(1)	S(3)	S(3)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	S(3)
CO5	S(3)	L(1)	M(2)	S(3)	S(3)
W.AV	2.8	1.4	2.4	2.6	2.6

		III-Semester								
Core	Course Code: 82733	UI Visual Design	Т	Credits: 3	Hours: 3					
Objective	 Design Skil lighting, and Visual Ident visual brand Layout Prot responsivene Mobile Pric screens as a User-Centric global design 	 Design Skills: Build skills in graphic design, covering elements like masks, lighting, and button styles for user interfaces. Visual Identity: Learn to create memorable logos and icons to establish a strong visual brand identity. Layout Proficiency: Master layout design principles using grids, focusing on responsiveness for various screens. Mobile Priority: Embrace a mobile-first design approach, considering smaller screens as a priority. User-Centric Design: Develop designs that prioritize user experience and follow global design standards. 								
Unit I	Raster graphics - Masks in UI Design - Lights and Shadows - Emphasis and Blending - UI Theme- Color Scheme- Typography- Web Safe Fonts - Font Themes- Soft Buttons- 3D Buttons- RealisticButtons- Web Template Design - Components of a Web Page - Header - Navigation - Menus - Form Elements									
Unit II	Logo Design Principles - Icon Design Principles - Layout Design - Poster Design Principles- Magazine Design Principles - Web Layout Design - Grid Layout Design - Responsive Grids for Web- Perspective Views - Rasterization - Design Etiquette									
Unit III	Vector Graphics - Android UI Design- - UI Animations in I	Vector Graphics - UI Illustrations - Mobile GUI Design - Mobile GUI Guidelines - Android UI Design- IOS UI Design - Animations - Basics of Animations - Animated Icons - UI Animations in Raster - UI Animation in Vector.								
Unit IV	Web design Standards - Mobile first approach (design guideline), Responsive design, Global standards for Color, fonts, Style Guide & Assets - Mobile device platforms, screen sizes, Designing for Native Applications, Hybrid Applications, Designing for Android and iOS, Design Guidelines(Android and iOS), Mobile Design Patterns (Navigation, Forms, Tables, Search, Sort &Filter, etc.)									
Unit V	Mockup Design - W Design- Single Pag Mobile, Print - Desi	/eb Mockups - Mobile Mockups - Respons e Design - Metro UI Design - Mascot D gnOptimization	sive V Design	Veb Design - Exporting	- One page g for Web,					

Reference and Text Books:

- Connie Malamed, "Visual Design Solutions", John Wiley & Sons, 2015.
- Lesa Snider, "Photoshop CS6: The Missing Manual", O'Reilly Media Publisher, 2ndEdition, 2012.
- Moore R, "UI design with Adobe Illustrator", Berkely, California: Adobe Press, 2013.
- Paul Naas, "Autodesk Maya 2013 Essentials", 1st Edition. John Wiley & Sons, 2012.
- Scott Kelby, "The Adobe Photoshop Book for Digital Photographers", Peachpit PressPublications, 1st Edition, 2013.

Online Resources

- <u>hackdesign.org</u> (<u>https://hackdesign.org/lessons#welcome</u>)
- <u>Graphic Design by Instructor: David Underwood</u> (<u>https://www.coursera.org/learn/presentation-design</u>)

Course Outcome

CO1	Design Basics: Learn how to use masks, lights, and shadows to create visual effects in UI design. Understand the importance of color schemes, typography, and fonts in creating appealing designs.	K1
CO2	Create various button styles like soft, 3D, and realistic buttons for user interfaces. Design web templates with headers, navigation menus, and form elements for web pages.	K3&K6
CO3	Logo and Icon Principles: Grasp the principles of designing memorable logos and clear, scalable icons.	K4
CO4	Learn layout design for posters, magazines, and websites using grids and hierarchy. Understand the concept of responsive design and how to apply it to various screen sizes.	K5
CO5	Apply a mobile-first approach to design for different screen sizes. Familiarize yourself with global design standards, mobile platforms (Android and iOS), and design patterns for UI elements.	K2&K6

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.A V	2.6	2.6	2.6	2.6	2.2	2.6	2.4	2.6	2.6	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	M(2)	M(2)	S(3)
CO2	S(3)	L(1)	S(3)	M(2)	M(2)
CO3	M(2)	M(2)	M(2)	S(3)	S(3)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	S(3)	M(2)	S(3)	S(3)	S(3)
W.AV	2.8	2	2.4	2.6	2.6

Mapping Course Outcome VS Programme Specific Outcomes

		III-Semester								
Core	Course Code: 82734UI Development IITCredits:									
Objective	 Equip learners with essential skills in web development, covering both front- end and back-end technologies. Focus on Bootstrap and Angular JS for creating responsive and interactive user interfaces. Teach Node.js for server-side development, emphasizing HTTP server setup, file handling, and database interaction. Introduce Express.js as a framework for building web applications, including routing and middleware. Provide a foundational understanding of Mongo DB for data storage and retrieval. API, data aggregation, and indexing capabilities. 									
Unit I	Advanced Bootstrap - Navbars using Bootstrap - Labels and Badges - Jumbotron - Pagination in Bootstrap - Bootstrap Plugins - Alert Plugins - Dropdown plugins - Tooltips Plugin - Modals Plugins- Carousel Plugins									
Unit II	Node JS - Introduction - Understanding the framework - Setting up the Environment - Node Package Manager – Angular JS & Node JS - HTTP Protocol - Building HTTP server - File Handling with Node Js- Buffers - Streams - Events - Modules - Express Web Framework - Database Handling with Node JS									
Unit III	AngularJS - Angular Filters- Form bindin Views - Controllers-	AngularJS - AngularJS Architecture - Directives - Data Bindings - Expressions - Iteration - Filters- Form binding - Form validation - Modules - Services - Templates - Routings - Views - Controllers- AngularJS for Client Side Development								
Unit IV	Express JS - Introduction - Environment - Routing - HTTP methods - URL Building - Middleware - Templating - Static Files - Form data - Database - Cookies - Session - Authentication - Restful API's - Scaffolding - Error handling- Debugging - Resources.									
Unit V	MongoDB - Introduc collection - Insert - Aggregation - index Driver - MongoDB (Authentication - Restful API's - Scaffolding - Error handling- Debugging - Resources. MongoDB - Introduction - Environment - MongoDB API Query - create Database - create collection - Insert - Find - Update - Delete - Query operators - Update operators - Aggregation - indexing / search - validation - Data API - Drivers – Mongo DB Node JS Driver - MongoDB Charts.								

Reference and Text Books:

- Adam Freeman, "Pro Angular 6", Apress, 3rd Edition, 2018.
- Lambert M, "Web development with Node and Express", Complete Bootstrap Packt Publishing, 2017.
- Stephen Radford, "Learning Web Development with Bootstrap and AngularJS" Packt Publishing Limited, 2015.
- Azat Mardan, "Express js Deep API Reference", Apress, 2014.
- Shannon Bradshaw, Eoin Braxie, Kristina chodorow, "MongoDB: The Definitive Guide", O'Reilly Media 3rd edition, 2019.

Online Resources

- getbootstrap.com (https://getbootstrap.com/docs/5.0/getting-started/introduction/)
- <u>Node Js</u> (https://nodejs.org/en/docs)
- <u>Angular.IO</u> (https://angular.io/docs)
- <u>expressjs.com</u> (https://expressjs.com/)
- <u>mongodb.com</u> (https://www.mongodb.com/docs/manual/)

Course Outcome

C01	Learn how to use Bootstrap to easily create attractive and responsive websites, including navigation bars, labels, badges, and interactive elements like modals and carousels	K1
CO2	Learn Node.js to build web applications, including setting up the environment, handling HTTP, files, and databases, and using the Express framework for efficient development.	K3&K6
CO3	Master AngularJS for creating interactive web applications by learning its architecture, directives, data bindings, form handling, routing, and controllers for client-side development	K4
CO4	Master Express.js to create web applications by learning its key features, including routing, middleware, templating, form handling, authentication, and error management for effective development.	K5
CO5	Learn MongoDB for data storage and manipulation, including database setup, data handling, querying, indexing, validation, and visualization with Node.js integration.	K2&K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.A V	2.6	2.6	2.6	2.6	2.2	2.6	2.4	2.6	2.6	2.2

Course Outcome VS Programme Outcomes

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	S(3)	L(1)	M(2)	M(2)	S(3)	
CO2	S(3)	L(1)	S(3)	M(2)	M(2)	
CO3	M(2)	M(2)	M(2)	S(3)	S(3)	
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	
CO5	S(3)	M(2)	S(3)	S(3)	S(3)	
W.AV	1.4	2.2	1.4	1.6	2.4	
	III-Semester					
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Core	Course Code: 82735UI Development II - PracticalPCredits: 3He	ours: 5				
Objective	 bjective 1. Responsive Branding Page with optimized images for effective branding. 2. Responsive Layout incorporating sidebars and navbars for seamless naviga 3. AngularJS Form Validation with validation, ensuring data accuracy. 4. Quote Viewer Web Page quotes from a database, enhancing data-driv development skills. 5. Tabbed Interface to organize and present information effectively on web page Create a branding web page that has responsive images in it. 					
 Create a I Create a I Develop Develop 	Form with AngularJs Validation. A quote viewer web page with all the quotes loaded in a database. A tabbed interface in it.					
Outcome	 Responsive Web Design: Learn to make web pages that work well on all screen sizes. Form Validation: Master AngularJS for accurate and user-friendly forms. Data-Powered Quotes: Create web pages that display quotes from a database. Smooth Navigation: Build pages with easy-to-use sidebars and navbars. Tabbed Content: Organize information neatly with tabbed interfaces. 	K6				

					1	1			1	1
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.A V	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	M(2)	M(2)	S(3)
CO2	S(3)	L(1)	S(3)	M(2)	M(2)
CO3	M(2)	M(2)	M(2)	S(3)	S(3)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	S(3)	M(2)	S(3)	S(3)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

Mapping Course Outcome VS Programme Specific Outcomes

		III-Semester					
Allied	Course Code: 82736	UX Design II	Т	Credits: 3	Hours: 3		
Objective	 Design Principles: Learn the basics of visual design, including contrast, alignment, and more. Prototyping and Communication: Understand how to create and enhance prototypes, improving communication with users. User Journey Mapping: Master the skill of mapping user journeys for better user experiences. Wire framing and Usability Testing: Develop wireframes, and learn how to conduct usability tests and create effective reports. Mobile User Experience: Explore mobile technology, usability, and design principles for creating user-friendly mobile interfaces. 						
Unit I	Visual design - typing not pape errors - Be visib Building - Stor management, Do	Contrast - Repetition - Alignment - Proximit er drawing - Adding interactivity to paper pro- ble- Be Precise - Give constructive help - Spear yboarding Essentials, Prioritization, Maintain ocumentation	ty - Parototyp rototyp k the ning g	aper prototy ping - Com user's langu good tension	pe – Proto munication age - Trust 1, Conflict		
Unit II	Card sorting for word elicitation what you're con the anatomy of a	r Information Architects - Exploratory card s - Web board - Function familiarity test - Ta municating - How to create task models in po a user journey - Validate user journey.	sorting sk mc ower j	g - Tree test odel - when point - User	t - Trigger to create - Journeys -		
Unit III	Wire framing - Low fidelity wireframes, Hi fidelity wireframes, Annotating essentials, Wire framing Essentials - Design principles for wire frames - Structure and style - Visual heat -when to use color-Feel - Stepping back to help focus – Wire framing tools - Mobile Wire framing – Representing Inputs- Representing Gestures - Representing Motion - Representing Multiple Devices – Representing Responsive Design.						
Unit IV	Usability Test reports - What makes a good test report? - When to create a test report - Anatomy Of the perfect test report - What makes a good funnel diagram- When to create a funnel diagram- What are you communicating? - Anatomy of a funnel diagram						
Unit V	Mobile UX - Te – Customers I Understanding T	cchnology - Users - User Experience - Mobile Determine Your User Mobile Experience - The Device- Prototype in Mobile - Desktop Pro	Usabi Retl totypi	lity - Layou nink Hyper ing.	t Adoption linking -		

- Dave Crane, Bear Bibeault, Tom Locke, "Prototype & Scriptaculous inAction, Dreamtech, 2007.
- John Henry Krahenbuhl, "Axure Prototyping Blueprints", Packt Publishing, 2015.
- Matthew J.Hamm, "Wireframing Essentials", Packt Publishing, 2014.
- Scott Faranello, Balsamiq, "Wireframes Quick Start Guide", Packt publishing, 2012.
- Pablo Perea, Pau Giner, "UX Design for Mobile", Paperback, 2017.

Online Resources

- <u>Udemy- User Experience (https://www.udemy.com/courses/design/user-experience/)</u>
- <u>Coursera (https://www.coursera.org/specializations/ui-ux-design)</u>
- <u>smashingmagazine.com</u> (<u>https://www.smashingmagazine.com/</u>)

Course Outcome

CO1	Learn visual design, paper prototyping, and user-centered design principles, including communication, trust-building, and documentation for effective design and development.	K1
CO2	The learning outcome for the content is to equip learners with expertise in information architecture techniques such as card sorting, task modeling, user journey mapping, and validation.	K3&K6
CO3	Learn information architecture techniques like card sorting, task modeling, and user journey mapping for effective design and validation.	K4
CO4	To develop the skills to create effective usability test reports and funnel diagrams.	К5
C05	Understand and apply mobile UX principles, adapting layouts, and considering user behavior and technology.	K2&K6

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	M(2)	M(2)	S(3)
CO2	S(3)	L(1)	S(3)	M(2)	M(2)
CO3	M(2)	M(2)	M(2)	S(3)	S(3)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	S(3)	M(2)	S(3)	S(3)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

Mapping Course Outcome VS Programme Specific Outcomes

S–Strong (3), M-Medium (2), L-Low (1)

		III-Semester			
Allied	Course Code: 82737	UI Visual Design - Practical	Р	Credits: 2	Hours: 4
 I. Icon Design Proficiency: Develop the skills to design a cohesive and visually appealing set of icons for a movie ticketing application, enhancing user experience. Illustration Creation Mastery: Gain expertise in creating custom illustrations for diverse product categories in e-commerce, enhancing product presentation and user engagement. Web Design and Mock-up Skills: Learn how to design an effective and attractive homepage for an event website, including creating a mock-up to visualize the layout. Dashboard Design Expertise: Acquire the ability to design a user-friendly and informative dashboard for an online tutoring tool, focusing on usability and data presentation. Payment Portal Development: Master the creation of a secure and user-friendly payment portal for an e-commerce application, ensuring seamless transactions and customer satisfaction. 					
 Create a 1 Design a Create a 1 	Home page for a dashboard for a payment portal t	n event web site and design the mock-up for it. online tutoring tool or an e-commerce application.			
Outcome	 Icon and Illustration Design: Develop proficiency in creating icons and illustrations to enhance the visual appeal of digital applications and product categories. Web Design and Mock-ups: Learn to design engaging and functional web pages, including the creation of mock-ups for effective planning. Dashboard Design: Master the art of designing user-friendly dashboards for data presentation and navigation within educational tools. Payment Portal Development: Acquire the skills to build secure and user-centric payment portals for seamless transactions in e-commerce. Enhanced User Experience: Overall, gain the expertise to elevate user experiences by applying design principles and creating effective digital interfaces and solutions. 				

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	L(1)	M(2)	M(2)	M(2)	L(1)
CO2	M(2)	L(1)	M(2)	S(3)	M(2)	M(2)	L(1)	M(2)	S(3)	M(2)
CO3	L(1)	S(3)	S(3)	M(2)	L(1)	L(1)	L(1)	L(1)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	L(1)	M(2)	M(2)	M(2)	M(2)
CO5	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

		IV-Semester					
Core	Course Code: 82743	Web Application Development	T	Credits: 4	Hours: 4		
 The objective is to teach server-side development with PHP, covering syntax, arrays, functions, HTML form handling, file uploads, and data management. Object-Oriented Programming (OOP) in PHP, including classes, inheritance, functions, state management, web frameworks, expressions, patterns, and image manipulation. To provide a comprehensive understanding of Database Management Systems (DBMS), covering architecture, modeling, SQL operations, and MySQL usage. To teach database functions, stored procedures, query optimization, normalization, transactions, and PHP database connectivity, including import and export operations. Introduce web services, types of web services, and AJAX, including asynchronous methods, database interaction, unique identity handling, and AJAX script management. 							
Unit I	Server Side Dev Understanding Th Methods - Arrays Handling with PH	velopment -Introduction to PHP - Sett ne Syntax - Arrays, Conditional and Contro s , Types Of Array - Strings - PHP Glob P - File Uploads –Form Data Handling -File	ng up l State al Var Hand	o the Envi ments - Fur riables - HT ling	ronment - nctions and FML Form		
Unit II	OOPS with PHP Functions - PHPE - MVC - Web Fra	- Classes and Namespaces - Inheritance mail Function - State Management - URL R meworks- Expressions in Php - Patterns in F	e and ewritin hp - Ir	Polymorphi 1g - Cookies nage Manipi	sm - PHP - Sessions ulation		
Unit III	DBMS - Database Architecture - Data Modelling - DDL - DML - Database Operations, Constraints- MySQL DB - DDL using MySQL - DML using MySQL - Views - Joins and Order - Limits and Distinct - Group by, Union - Procedures						
Unit IV	Database Functions - Stored Procedures - Managing Multiple Queries - Optimizing the database- Normalization - Transactions - Database Connectivity with PHP - Different Methods – Importing and Exporting Database						
Unit V	Web Services - In - Concept of Asyn Interaction with A Ajax Script manag	troduction - Types of Web Services - Conne ichronous Method - Ajax using JavaScript, 2 JAX- Unique Identity through AJAX - Upo ger	cting v KML, J late Pa	veb services Ison - Databa nel design b	– AJAX ase y AJAX-		

- Lynn Beighley, Michael Morrison, "Head First PHP & MySQL", O'Reilly Media, 2008.
 M.T. Savaliya, "Developing Web Applications", 2nd Edition, Wiley, 2013.
- Nixon, R. "Learning PHP, MySQL, JavaScript, and CSS: A step-by-step guide to creating dynamic websites", O'Reilly Media, Inc. 2012.
- Rasmus Lerdorf, Kevin Tatroe, Peter MacIntyre, "Programming PHP", O'Reilly Media, 2nd Edition, 2009.
- Welling, L., & Thomson, L. "PHP and MySQL Web development", Sams Publishing, 2003.

Online Resources

- <u>Php.net Tutorial(https://www.php.net/manual/en/getting-started.php)</u>
- <u>MySql Tutorial</u> (https://dev.mysql.com/doc/)

Course Outcome

CO1	Gain proficiency in server-side development using PHP, including syntax, array manipulation, functions, HTML form handling, file uploads, and data management.	K1
CO2	Proficiently apply OOP principles in PHP, create web applications, manage states, utilize web frameworks, and manipulate images effectively.	K3&K6
CO3	Acquire the knowledge and skills to design and manage databases, perform SQL operations using MySQL, and work with complex queries and procedures.	K4
CO4	Proficiency in using database functions, optimizing queries, ensuring data integrity through normalization, handling transactions, and connecting databases with PHP, including data import and export	K5
CO5	Understand various web service types, master AJAX for asynchronous web communication, and effectively interact with databases using AJAX, updating panels and managing scripts.	K2&K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

		IV-Semester									
Core	Course Code: 82744	Human Centered Design	Т	Credits: 4	Hours: 4						
Objective	 To explore emotional design, including attraction, emotions in design practice, three design levels, and designing product personalities through case studies. To impart understanding of interaction design, including computation, operations, aesthetics, communication, and its applications through case studies. To explore tangible user interfaces (TUIs), their history, frameworks, embodiment, types, and playful interfaces through case studies. To teach user experience design for ubiquitous computing, including cultural theory, designing for children, contextual technology, and immersive experiences with real-world case studies. Introduce human factor engineering, covering physical, visual, and mental comfort, workload management, and real-world case studies. 										
Unit I	Emotional Design - Designing attraction - Multiple Faces of Emotions and Design - Design Practice - Three Levels of Design - Visceral design - Behavioral design - Reflective design – Designing Personality for Products - Case Studies										
Unit II	Understanding Inter- Engineering Centric Aesthetics to inform Design and Commun	action Design - Computation - Operation world - Managing Complexities - Design experience - Interaction Design as Busin ication- Interactions as a Language - Case	ons - gning ness] Studi	Interaction Interactions Lubricant - ies.	Design in - Shaping Interaction						
Unit III	Tangible User Interfa & Metaphor - Conta surfaces- Constructiv Studies	ices - History - Overview - Frameworks & iners, Tools & Tokens - Tangible User ve Assembly - Tokens & Constraints - Pl	z Taxo Interfi layful	onomies - En ace types - user interfa	mbodiment Interactive .ces - Case						
Unit IV	User Experience Design for Ubiquitous Computing - Cultural Theory and Design - Designing Products for Kids - Context Technology - Contextual Application Development – Immersive Experience Design - Case Studies.										
Unit V	Human Factor Engin Stress & Fatigue - H Design - Mental com	eering - Introduction - Physical Comfort Iot and Cold Work spaces - Visual Com fort -Metal Workload - Case Studies	- Phy Ifort -	sical work (Display an	Comfort – d Control						

- Beyer H and Holtzblatt K, "Contextual design", San Francisco, Calif. [u.a.]: MorganKaufmann, 2009.
- Kolko J, "Thoughts on Interaction Design", Morgan Kaufmann. Burlington, 2011.
- Kuniavsky Mike, "User experience design for ubiquitous computing", ACMInteractions, 2008.
- Norman, Donald, "Emotional Design", 2004.
- Saffer D, "Designing for interaction", Berkeley, Calif: New Riders., 2007.

Online Resources

- <u>Human-Centered Service Design</u> (<u>https://www.ideou.com/collections/featured-design-thinking/products/human-centered-service-design</u>)
- <u>Human-Centered Design: an Introduction</u> (<u>https://www.coursera.org/learn/human-computer-interaction</u>)

Course Outcome

CO1	Understand emotional design principles, apply them across design levels, and create products with appealing personalities through real- world case studies.	K1
CO2	Grasp interaction design concepts, manage complexities, and apply design principles in engineering, business, and communication contexts, with insights from case studies.	K3&K6
CO3	Understand TUI concepts, frameworks, and playful design, apply them to interactive surfaces, and gain insights from real-world case studies.	K4
CO4	UX design for ubiquitous computing, cultural considerations, child- friendly design, contextual app development, and immersive experiences, with insights from practical case studies.	K5
CO5	Understand human factor engineering principles, assess and enhance physical and mental comfort in workspaces, and gain insights from practical case studies.	K2&K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

		IV-Semester					
Core	Course Code: 82745	Web Application Development - Practical	Р	Credits: 3	Hours: 5		
 Objective 1. Imple 2. Imple 3. Create in the 4. Create and fi 5. Desig 	1. Develop2. Create a3. Build anpanel for4. Establishand disp5. Design aament Sign up anament a Productage.e an Event Regisadmin panel.e a Table and inltering options.m a web page that	user authentication pages for signup and sign i dynamic product page fetching data from a dat event registration system storing user input viewing. a table for employee data storage, implement ay the data on a webpage. webpage for cookie storage and management. d Sign in Page. page that pushes product info from the data stration Page that stores User input in the datal ert employee data in it. Display the data in We at stores and handles cookies.	n. abase in a c sortin base base a eb Pag	for display. latabase and g and filterin and displayand presents ge and provi	l an admin ng options, s it on the it de sorting		
Outcome	 Mastery of user authentication implementation. Proficiency in database integration for dynamic product pages. Ability to create a user-friendly event registration system with an admin panel. Skill in managing employee data, offering sorting and filtering functionality, and data display. Competence in designing web pages for effective cookie storage and handling. 						

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

Mapping Course Outcome VS Programme Specific Outcomes

S-Strong (3), M-Medium (2), L-Low (1)

IV-Semester											
Allied	Course Code: 82746	Mobile Application Developme	ent	Т	Credits: 3	Hours: 3					
Objective	 To teach basic programming in Java, including fundamental functions, object- oriented programming, tool setup, and program compilation. Provide a comprehensive introduction to Java programming, including data types, variables, arrays, control statements, object-oriented concepts, applets, and threads. Introduce open source software, license issues, compare it with traditional methodologies, and provide an overview of mobile application development targeting Android. To teach user interfaces, activity life cycle, layout design, widgets, menus, dialogs, data storage, and inter-process communication in Android. Android app development topics, including multiple activities, threads, services, UI layout, widgets, events, multimedia, and hardware interfaces. 										
Unit I	 Basic Programming in JAVA: Basic functions in JAVA - OOPS Programming in JAVA Abstraction Java - Creating First Java Program - Introduction to Development tools - Installing and setting up Java Development Kit - Introduction to tools in JDK - Compiling and Building the Java Program Command Line - Introduction to Eclipse IDE Setting up Java in Eclipse IDE - Compiling and Building in Eclipse 										
Unit II	Introduction to Pri Type Casting In J Using Selection S Continue and Ret Garbage Collectio – Interface	imitive Data types - Working with V lava - Working with Operators - Working teration Statements- Statements- Using Iteration Stateme urn - Understanding Objects in Java n - Understanding 'this' and finalize(Variables Vorking ents - I a – Cor () - App	s - In with Defin nstruc olets-	troduction t Control Stand ting Jump ctors - Intro Threads - I	o Arrays - atements - – Break - duction to inheritance					
Unit III	Introduction: Ove Contrasting and c Mobile Applicatio - Options for deve Stacking up And Development Envi - The Android Em	 Interface Introduction: Overview of open source - License Issues - MPL - GPL - LGPL etc., - Contrasting and comparing open source vs. traditional development methodologies - Mobile Application Development Overview - Mobile Devices Profiles - Mobile Software Options for development. Targeting Android : The Big Picture - Introducing Android - Stacking up Android - Booting Android Development - An Android application - Development Environment - The Android SDK - Building Android application in Eclipse 									
Unit IV	User interfaces - interfaces Using X - Using Fonts - Th & Toast - Using re in with broadcar Communication - Using the File Sys	Activity Life Cycle - Creating the ML Layouts - Selection Widgets - D he Web View And the Web Kit Brow esources - Intents and services- Work st receivers - Building a Servic Storing and retrieving data – SQ I stem - Persisting data to a database	Activit Date and wser - I king wit ce – I Lite Da - Work	y - A Dialo h Int Perfo ataba	An Overvie e Tabs - Us g Boxes: Al ent classes - rming Inte se-Using pr with Conter	w of User ing Menus lert Dialog - Listening r Process references- nt Provider					

Multiple Activities – Threads - Messages Between Threads - Handlers -Services - App Widgets –Alerts- User Interface Layout - Resource Directories and General Attributes - Text Manipulation-Other Widgets - User Interface Events-Event Handlers and Event Listeners - Advanced User Interface Libraries - Implementing Game Play Components - Sprite Drawing – Movements - Animation- Score Updation - Life Updation - Setting Timer - Multimedia Techniques - Images - Audio - Video- Hardware Interface- Mouse and Key events

Reference and Text Books:

- Belen Cruz Zapata, "Android Studio Application Development", Packt publishing, 2013.
- Erik Hellman, "Android Programming: Pushing the Limits", Wiley, 2014
- Jeff Mcwherter, Scott Gowell, "Professional Mobile Application Development", WROX, 2012.
- Pradeep Kothari, "Android Application Development Black Book", Kogent LearningSolutions Inc, 2014.
- Shroff, "Head First Android Development", 2015.

Online

- Kotlin for JAVA Developers (https://www.coursera.org/learn/kotlin-for-java-developers)
- <u>Android Development (https://www.coursera.org/learn/android-app)</u>

Course Outcome

C01	Acquire foundational Java programming skills, set up development tools, compile programs using command line and Eclipse IDE, and build their first Java application.	K1
CO2	Proficiency in Java programming, including data manipulation, control structures, object-oriented principles, and multi-threading, to build Java applications.	K3&K6
CO3	Insight into open source principles, licensing, mobile application development basics, Android development environment setup, and debugging techniques.	K4
CO4	Grasp Android UI development, activity management, resource utilization, data storage, and inter-app communication, using SQ Lite, preferences, and content providers.	K5
C05	Expertise in Android app development, including UI design, thread management, multimedia integration, and hardware interface interactions for creating interactive applications.	K2&K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

		IV-Semester						
Allied	Course Code: 82747	Mobile Application Development - Practical	P Credits: 2	Hours: 4				
Objective 1. Devel 2. Devel 3. Devel 4. Demo 5. Create	 Create a camera-based application for capturing and managing photos. Develop a media player application for playing audio and video files. Build a contact application for managing and storing contact information. Implement sensor interactions, including tilting and other gestures, within the application. Create a database system to store and retrieve messages. Develop a list view to display all messages stored in the database. Develop a camera based application. Develop a contact application. 							
stored	in the database.	6	1 5	0				
Outcome	 Proficience Skill in but Competen Understan mobile app Ability to retrieval. Capability 	y in developing camera functionalities for mobile ilding a media player with audio and video play ce in creating contact management applications. ding and implementation of sensor-based in os. design and manage databases for message to display data in list views within mobile applic	e applications. yback features. nteractions in e storage and cations.	K6				

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

Mapping Course Outcome VS Programme Specific Outcomes

S-Strong (3), M-Medium (2), L-Low (1)

V-Semester										
Core	Course Code: 82751	Emerging Technologies	Т	Credits: 4	Hours: 4					
Objective	 Introduce Artificial Intelligence (AI) concepts, including AI problems, techniques, problem formulation, control strategies, and search strategies. To teach search algorithms, knowledge representation, logic, inference, production and frame-based systems, and machine learning concepts. Provide an introduction to Virtual Reality (VR), covering goals, definitions, hardware, perception, geometric modeling, and transformation techniques. Introduce Augmented Reality (AR), its classification based on tracking methods, and key techniques like image acquisition, feature extraction, and matching. Introduce the Internet of Things (IoT), covering sensing, actuation, networking, communication protocols, data handling, analytics, and applications. 									
Unit I	Unit I Intro. to Artificial Intelligence - AI Problems - AI Techniques - Problem Formulation - Control Strategies - Search Strategies - Characteristics of problems - Problem solving methods – problem graphs Matching - Indexing - Heuristic functions - Hill Climbing - DFS - BFS									
Unit II	Search Algorithm Knowledge Infer Backward Chainin Theory - Learning	s - Knowledge Representation - Predicate ence -Production based system - Frame b ng- Forward Chaining - Fuzzy Reasoning - – Machine Learning - Adaptive Learning - K	Logic based Certai Knowl	, Predicate system - I inty factors edge Acquis	Calculus – nference - - Bayesian sition.					
Unit III	Theory - Learning – Machine Learning - Adaptive Learning - Knowledge Acquisition. Introduction - Goals and VR Definitions - Birds-eye view - Birds-eye view Software - Bird's-eye view Hardware - Birds-eye view Sensation and Perception - Geometric modeling - Transformation- Matrices and rotation - Pitch Yaw and Roll - Axis-Angle Representations - Quaternions – Converting and Multiplying Rotations - Homogeneous Transformations - Viewing Transforms - Eye Transforms- Canonical View Transform - Viewport Transformation									
Unit IV	Introduction to AI Acquisition- Featu Information Retrie	R - Classification based on Sensor, Vision and re extraction - Feature Matching - Geometric eval - Feature Extraction Techniques - SIFT -	l Hyb v Veri SUR	rid Tracking fication - As F	g - Image ssociated					
Unit V	Introduction to Io Sensor Networks Data Handling and	 Sensing - Actuation - Networking - Comn Machine-to-Machine Communication - BCI Analytics - Sensor Cloud - Smart Grid 	nunica - Net	ation Protoco aro Gaming	ols — -					

- Doug A. Bowman, Ernst Kruijff, Joseph J. LaViola, and Ivan Poupyrev, "3DUser Interfaces", Addison-Wesley, 2005.
- George Mather, "Foundations of Sensation and Perception: Psychology Press", 2nd edition, 2009.
- K. S. Hale and K. M. Stanney, "Handbook on Virtual Environments", 2nd edition, CRCPress, 2015.
- Peter Shirley, Michael Ashikhmin, and Steve Marschner, "Fundamentals of ComputerGraphics", A K Peters/CRC Press; 3 edition, 2009.
- Pethuru Raj and Anupama C Raman, "The Internet of Things: Enabling Technologies, Platforms, and Use Cases", CRC Press.

Online Resources

- <u>AR (Augmented Reality) & Video Streaming Services Emerging Technologies</u>
- Introduction to Machine Learning (https://www.coursera.org/learn/machine-learning-duke)
- <u>Unity (https://learn.unity.com/</u>)

Course Outcome

CO1	Acquire foundational knowledge of AI, problem-solving techniques, and search strategies, enabling them to address a variety of AI challenges.	K1
CO2	Knowledge of search algorithms, logic, inference techniques, and machine learning, enabling them to develop AI systems and make data-driven decisions.	K3&K6
CO3	Understand VR concepts, geometric modeling, and transformations, enabling them to create immersive virtual environments and manipulate 3D graphics.	K4
CO4	Comprehend AR concepts, tracking methods, and feature extraction techniques such as SIFT and SURF, enabling them to develop AR applications.	K5
CO5	IoT fundamentals, including sensing, data communication, analytics, and real-world applications like smart grids and neuro gaming.	K2&K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

V-Semester										
Course Code	Course Code: 82752	Software Quality Assurance	T	Credits: 4	Hours: 4					
Objective	 Introduce quality concepts in software development, including modeling, criteria, and improving both product and process quality. To teach the selection of quality goals, measurement principles, metrics, Quality Function Deployment, and the Goal/Question/Measure paradigm. To cover elements of quality including control, assurance, reliability, and standards like ISO9000, and tools for quality management. Software testing rules, phases, techniques, including combinatorial testing, test automation, and defect triggers. To prepare for usability testing, create test plans, use testing tools, conduct usability tests, and analyze results for design improvement. 									
Unit I	Concepts of Quality Its Interrelation – Quality Improvement	Concepts of Quality – Hierarchical Modeling – Quality Models – Quality Criteria And Its Interrelation – Fundamentals Of Software Quality Improvement – Concepts Of Quality Improvement – Concepts Of Process Maturity–Improving Process Maturity.								
Unit II	Selecting Quality Goals And Measures – Principles Of Measurement – Measures And Metrics–Quality Function Deployment – Goal/Question/Measure Paradigm – Quality Characteristics Tree–Quality Prompts.									
Unit III	Elements of a Qua Verifiability, Testa Of QMS – Hum Assurance – ISO90 Quality.	ality – Quality Control, Assurance – Re bility, Safety And Supportability – Histor an Factors–Time Management – QM 000 Series–A Generic Quality Manageme	liabili ical Pe S For ent Sta	ty, Maintair erspective E Software– andard – To	nability, lements Quality ols For					
Unit IV	Rules of Software Techniques- Comb Trees - Play Testi Automation - Captu	Testing - Why Testing? - Test Phase inatorial Testing - Test Flow Diagrams - ng- Ad- Hoc Testing - Effective Testin are / Playback Testing.	es - T - Clea ng - I	èst Process n room Tes Defect Trigg	- Testing ting - Test gers - Test					
Unit V	Preparation for Us Testing Tools - Us How to capture dat Choosing a Design person and Remot testing - Research recommendations.	ability test (Screeners, Scenario) -How ability Testing - Remote Usability Testin a & Prepare Test Report - Visual Design Testing Approach - Qualitative And Qua e Research - Moderated and automated n - Logistics - Facilitation - Analyzi	to cree ng - U Mock ntitati techn ng re	eate a Test sability Met ups Explora ve Research iques - Usa sults - Cra	Plan- rics - tion - - In- bility afting					

- Gryna F, Chua R, De Feo J, and Juran J, "Juran's quality planning and analysis", McGraw-Hill., 2007.
- Nance R and Arthur J, "Managing software quality", Springer, 2002.
- O'Regan, G, "Introduction to Software Quality", Springer. 2014.
- Roger S. Pressman, "Software Engineering A Practitioner's Approach", Fifth Edition, McGraw Hill, 2001.
- Tian, J, "Software quality engineering", Wiley. 2015.

Online <u>Introduction to Software Testing (https://www.coursera.org/learn/introduction-software-testing)</u> <u>Google Project Management (https://www.coursera.org/professional-certificates/google-project-management)</u>

Course Outcome

CO1	Grasp the fundamentals of software quality, quality improvement, and process maturity, enabling them to enhance software development practices.	K1
CO2	Gain the ability to select quality goals and metrics, apply measurement principles, and use techniques like Quality Function Deployment for improved software quality.	K3&K6
CO3	Understand elements of quality, quality management standards, and tools, enabling them to ensure reliable and maintainable software products.	K4
CO4	software testing principles, phases, techniques, and automation, enabling them to conduct effective and systematic testing of software products.	K5
C05	Acquire skills in usability testing preparation, planning, execution, and result analysis, enhancing design decision-making through qualitative and quantitative research methods.	K2&K6

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

Mapping Course Outcome VS Programme Specific Outcomes

		V-Semester			
DSE 1	Course Code: 82753A	Human Computer Interaction	Т	Credits: 4	Hours: 4
Objective	 To introduction channels, m To teach navigation, techniques. To explore communication. To introductive types of modified for the second sec	ice the interaction between humans and nemory, processing, networks, and interaction interactive design fundamentals, including screen design, usability engineering, p re cognitive models, social and org tion models, hypertext, multimedia, and the ce the mobile ecosystem, including platform bile apps, and mobile design principles. eb interface design techniques, including dra lays, virtual pages, and process flow, throug	l con n moong th rototy aniza Worl ms, aj ag-ance th cas	nputers, co dels. /ping, and tional cons d Wide Web oplication fr l-drop, direc e studies.	vering I/O scenarios, evaluation siderations, o. ameworks, et selection,
Unit I	The Human: I/O o Devices–Memory Ergonomics – style	channels – Memory – Reasoning and prob – processing and networks; Interaction: es–elements – interactivity- Paradigms.	lem s Mo	olving; The dels – fran	computer: neworks –
Unit II	Interactive Design and prototyping. H – Prototyping in Guidelines – Evalu	basics – Process – Scenarios – Navigation – CI in software process – Software life cycle practice – Design Rationale. Design rules ation Techniques – Universal Design.	Scree e – U – Pr	en design – 1 sability Eng inciples, Sta	lteration ineering andards,
Unit III	Cognitive models Communication A Wide Web.	- Social - Organizational issues and stakeho nd collaboration models – Hypertext - Mul	lder r ltimeo	equirements lia and Wor	 1d
Unit IV	Mobile Ecosystem Widgets, Applicat Design: Elements of	: Platforms, Application frameworks- Type ions, Games- Mobile Information Architec of Mobile Design, Tools.	es of l eture,	Mobile App Mobile 2.0	lications: , Mobile
Unit V	Designing Web Int Overlays, Inlays ar	erfaces – Drag & Drop, Direct Selection, Co d Virtual Pages, Process Flow. Case Studies	ontext 5.	tual Tools,	
 Reference : Alan 3rd E Bill : 2009 Brian Dix, : Kent Camb 	and Text Books: Dix, Janet Finlay, Edition, Pearson Edu Scott and Theresa n Fling, "Mobile De Human-Computer I L. Norman, Cyber bridge University Pr	Gregory A bowd, Russell Beale, "Human C acation, 2004. Neil, "Designing Web Interfaces", 1st Ed sign and Development", 1st Edition, O'Reil nteraction", 3rd Edition, Paperback, 2004. r psychology: "An Introduction to Human- ress, 2nd Edition, 2017.	Compu lition, lly Me -Com	oter Interacti O'Reilly M edia Inc, 200 puter Intera	.on", ⁄IediaInc, 19. ction",

Online

- <u>Interaction Design Specialization (https://www.coursera.org/specializations/interaction-design)</u>
- <u>META : Principles of UX/UI Design</u> (<u>https://www.coursera.org/learn/principles-of-ux-ui-design</u>)

CO1	Understand the fundamentals of human-computer interaction, including models, ergonomics, and interaction paradigms, to design effective user interfaces.	K1
CO2	Proficiency in interactive design, applying principles, standards, and evaluation techniques to create user-friendly and universally accessible interfaces.	K3&K6
CO3	Understand cognitive and collaborative aspects of interface design, including multimedia and web-related considerations for effective user experiences.	K4
CO4	Knowledge of mobile platforms, app types, information architecture, and design elements, using relevant tools for mobile application development.	K5
CO5	Master web interface design methods, enabling them to create user- friendly and interactive web experiences, with insights from practical case studies.	K2&K6

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

Mapping Course Outcome VS Programme Specific Outcomes

		V-Semester								
DSE 1	Course Code: 82753B	AR and VR in UX Design	Т	Credits: 4	Hours: 4					
Objective	 You will learn the origins of AR, what makes it unique, and its colossal impact on human-computer interaction. You will dive into user research practices tailored to AR and its unique characteristics. You will dig into how to prototype for AR and create low-fi but testable prototypes. You will learn the heuristics and guidelines to test your designs and ensure they are practical and user-friendly. 									
Unit I	Introduction to AR and VR -Understanding Augmented Reality (AR) - Virtual Reality (VR) - History and Evolution of AR and VR - Key Concepts and Terminology - Applications of AR - Application of VR in User Experience (UX) Design									
Unit II	AR and VR Interaction Design - Principles of Interaction Design for AR and VR - User- Centered Design - Navigation - Interaction Techniques - Creating Immersive Experiences - Hands-on Design Exercises									
Unit III	Prototyping and Do Interactive prototy Practical Prototypin	evelopment - Tools and Software for AR an pes - Testing - Iterating Prototypes - Diffe ng Projects	d VR rent A	Prototyping R and VR I	- Building Hardware -					
Unit IV	UX Challenges and - Comfort - Access Discussions	l Solutions - Common UX Challenges in A sibility - Inclusivity - Solutions - Best Prac	R and tices -	VR - Motic Case Studi	on Sickness es - Group					
Unit V	Future Trends and Design - Final Pro Projects - Course V	Final Projects - Emerging Trends - Ethica ject: Designing an AR - VR Experience - Vrap-Up - Resources	l Cons Preser	siderations: ating - Critic	AR - VR quing Final					

- Prabhakar, B., Billinghurst, M., & Papagiannis, H. (2021). *Designing for Mixed Reality: Blending Data and the Physical World*. Addison-Wesley
- Fuchs, P., Moreau, G., & Hugues, O. (2018). *Virtual Reality and Augmented Reality: Myths and Realities*. Wiley-ISTE; 1st edition.
- Coleman, B., & Goodwin, D. (2017). *Designing UX: Prototyping*. SitePoint; 1st edition.
- Pangilinan, E., Lukas, S., & Mohan, V. 2019). Creating Augmented and Virtual Realities: Theory and Practice for Next-Generation Spatial Computing. O'Reilly.
- Fictum, C., & Dow, T. (2016). VR UX: Learn VR UX, Storytelling & Design. Createspace Independent Pub.

Online

- <u>Virtual Reality Specialization (https://www.coursera.org/specializations/virtual-reality</u>)
- <u>VR and 360 Video Production</u> (<u>https://www.coursera.org/learn/360-vr-video-production</u>)

Course Outcome

CO1	Understand the fundamentals of AR, its application across various industries, and its impact on human-computer interactions.	K1						
CO2	Discover user research methods specific to AR, including user needs analysis, place research, and user testing in AR environments.							
CO3	Explore principles and techniques to design intuitive and immersive interaction in AR, including spatial mapping, gesture-based input, and object manipulation.	K4						
CO4	Examine the ethical implications and societal impact of AR and understand how to design with empathy, inclusivity, and privacy in mind.	K5						
CO5	Stay ahead of the curve and explore emerging trends and technologies in AR, such as spatial computing, wearable AR, and multimodal interactions.	K2&K6						

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W. AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

Mapping Course Outcome VS Programme Specific Outcomes

		V-Semester	-							
DSE 1	Course Code: 82753C	Brand Designing	Т	Credits: 4	Hours: 4					
Objective	 Understanding the fundamental principles of branding, including the role of b identity, brand positioning, and brand image in the marketplace. Learn how to develop a comprehensive brand strategy that aligns with the ov business goals. This involves market research, target audience analysis, competitive positioning. Explore the visual aspects of brand design, including the creation of logos, or schemes, typography, and other design elements that contribute to a cohesive memorable brand identity. Learn how to manage and maintain a brand over time. This involves understan the dynamics of brand equity, brand extensions, and how to adapt a bran changing market conditions. Understand how brand design intersects with other disciplines such as marke advertising, and business strategy. Encourage collaboration between designers professionals from different fields. 									
Unit I	Introduction to Bra Branding vs. Marke	nding - Understanding the Concept - Imp ting - Historical Evolution - Role of Brandi	oortan ng in	ce of Brand Business	l Identity -					
Unit II	Brand Identity Dev Identity: Logo - Co Brand Personality -	relopment - Building a Strong Brand Ide lor - Typography - etc - Crafting a Brand M Practical Branding Exercises	entity Messa	- Elements ge - Creatin	s of Brand g a Unique					
Unit III	Visual Branding - Typography - Desig Visual Branding Pro	Visual Branding - Visual Elements - Logo Design Principles - Choosing Colors - Typography - Designing Brand Collateral: Business Cards - Letterheads - etc - Hands-on Visual Branding Projects								
Unit IV	Branding in Digital Design and Brandin	Age - Online Branding Strategies - Social g - Branding in E-commerce - Case Studies	Medi s in D	a - Branding igital Brandi	g - Website ing					
Unit V	Branding Implemen a New Brand - Brar Brand Design Proje	tation and Management - Brand Guideline nding Evaluation - Feedback - Branding for et	s - Co r Diff	onsistency - erent Indust	Launching ries - Final					

- Designing Brand Identity: An Essential Guide for the Whole Branding Team by Alina Wheeler
- Brand Thinking and Other Noble Pursuits by Debbie Millman
- How to Launch a Brand by Fabian Geyrhalter
- Logo Design Love: A Guide to Creating Iconic Brand Identities by David Airey
- Brand A-Z: Understanding the Ever-Changing Landscape of Branding by Alex Murrel and Clay Stanton

Online

- <u>Brand Identity and Strategy</u> (<u>https://www.coursera.org/learn/brand-identity-strategy</u>)
- <u>Print and Digital Elements of Design: Branding and User Experience</u> (https://www.coursera.org/learn/designing-print-digital-media)

Course Outcome

CO1	Effective communication of design concepts through presentations and pitches, demonstrating the ability to articulate and defend design decisions.	K1
CO2	Critical thinking skills to evaluate design choices in the context of business objectives, market trends, and consumer behavior. Ability to solve branding challenges creatively.	K3&K6
CO3	Understanding of brand management principles, including strategies for maintaining and enhancing brand equity over time.	K4
CO4	Proficiency in communicating brand messages through various channels, considering the target audience, cultural nuances, and the overall brand narrative.	K5
CO5	Awareness of ethical considerations in brand design, including social and environmental responsibility, and the ability to make ethical decisions in the design process.	K2&K6

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.A V	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2
			0 0							

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

Mapping Course Outcome VS Programme Specific Outcomes

S-Strong (3), M-Medium (2), L-Low (1)

V-Semester									
DSE 2	Course Code: 82754A	Information Architecture	Т	Credits: 4	Hours: 4				
Objective	 To introduce information architecture, covering user experience design, organization, labeling, taxonomies, metadata, and content management systems. To cover navigation systems, types of navigation, search systems, and methods like stakeholder interviews, content inventory, and heuristic analysis. To focus on user-centered design, research methods, card sorting, usability testing, user requirements, and site organization techniques. To teach web page design, including home, navigation, and destination pages, focusing on knowledge organization, metadata, and advanced search techniques. To cover content design, search engine optimization (SEO), algorithms, web crawling, page rank, and information hierarchy. 								
Unit I	Unit I Introduction to information architecture - user experience design, and user behavior - IA organization and labeling systems - taxonomies and metadata - content management systems								
Unit II	IA navigation systems and conventions - Types of navigations - global, local, and contextual navigation - IA search systems - context and content - stakeholder interviews - competitive analysis- business requirements - content inventory - heuristic analysis								
Unit III	Users - user-centered design - user research methods - card sorting - usability testing - user requirements - IA strategy - user modeling and groups - personas & scenarios - site organization-conceptual blueprints/site maps - Sitemaps and flow tasks - Tools of the trade, Pagestack, Decision Points, Conditions, Common errors, Misalignment Typographic considerations, Task flows, Swimlanes								
Unit IV	Web page design - home page - navigation page - destination page - Knowledge organization- databases - metadata - advanced search based on metadata - user tagging & rating - Knowledge Organization systems - taxonomies, thesauri, & controlled vocabulary strategies								
Unit V	Content Design for Web sites - Search engine Optimization - Search Engine Architecture – Search Operators - Search Engine Algorithms - On Page SEO - Off Page SEO - Web Mining - Web Crawling-Page Rank - Google Keywords - Information Hierarchy.								
Reference and Text Books:

- Debra Shepard, "The Information Architecture Handbook Everything You Need to Know About Information Architecture", Emereo Publishing, 2016.
- Donna Spencer, Derek Featherstone, "A Practical Guide to Information Architecture, FiveSimple Steps", 2010.
- Louis Rosenfeld, Peter Morville, Jorge Arango, "Information Architecture for the WebandBeyond", O'Reilly Media, 4th Edition, 2015.
- Peter Morville & Louis Rosenfeld, "Information Architecture for the World Wide Web: Designing Large-Scale Web Sites", 3rd Edition, O'Reilly Media; 3rd edition, 2006.
- Wodtke, C. and Govella, A. "Information architecture. Noida: Dorling Kindersley India", 2011.

Online

- <u>UX Design: From Concept to Prototype (https://www.coursera.org/learn/ux-design-concept-wireframe</u>)
- Introduction to UX Design Master Track Certificate Program

Course Outcome

CO1	Understand information architecture principles, create effective organization and labeling systems, and manage content using taxonomies and metadata for improved user experiences.	K1
CO2	master navigation design, search systems, and analysis techniques to create effective information architecture solutions, aligning with business needs.	K3&K6
CO3	Proficient in user-centered design, research, and information architecture strategies, creating user-friendly solutions and avoiding common errors.	K4
CO4	Gain expertise in web page design and knowledge organization using databases, metadata, advanced search, user tagging, and controlled vocabulary strategies.	K5
CO5	Understand content design, SEO techniques, search engine algorithms, web crawling, and information hierarchy, optimizing web content for better visibility and user experience.	K2&K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.A V	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

		V-Semester		1						
DSE 2	Course Code: 82754B	Digital Marketing	Т	Credits: 4	Hours: 4					
Objective	 Familiarize technologies How to deve target audier Cover strate across varion analytics. Emphasize t valuable, relevent Explore the creating con- metrics. Cover mobili and responsi Develop pro- campaign per 	the digital landscape, including the evolu , and the impact of online communication of elop effective digital marketing strategies are characteristics, and market trends. Togies for creating and managing impact as platforms, considering audience engage he importance of content marketing, teac evant content to attract and retain a target a principles of effective email marketing, inc apelling content, segmenting audiences, le marketing strategies, including mobile ve design considerations. ficiency in using analytics tools to track rformance, and make data-driven decisions	ation on ma aligne ful so ement hing udien luding and a adver and is.	of the inter- arketing. ed with busi ocial media c, content cro students how ce. g designing po analyzing po rtising, app interpret dat	net, digital ness goals, campaigns eation, and w to create campaigns, erformance marketing, a, measure					
Unit I	Introduction to Dig Evolution - Importa Business Growth - I	gital Marketing - Understanding the Dig nce of Digital Marketing - Key Digital M Digital Marketing Trends - Innovations	ital N Iarket	Aarketing La ing Channel	andscape - s - Role -					
Unit II	Website and Conter Engine Optimizatio Distribution - Measu	nt Marketing - Website Development - Op n Strategies - Content Creation - Marke aring Website Performance	otimiz ting -	zation - SEC - Blogging) - Search - Content					
Unit III	Social Media Mark Social Media Cam Advertising - Social	ocial Media Marketing - Leveraging Social Media Platforms - Creating - Managing ocial Media Campaigns - Engaging Audiences on Social Media - Social Media dvertising - Social Media Analytics - Reporting								
Unit IV	Email Marketing a Segmenting Email Campaign Planning	nd Online Advertising - Email Marketin Lists - Online Advertising: Pay-Per-Click - Management - Measuring Advertising R	ng Ca t - D OI	ampaigns - Display Ads	Building - - etc - Ad					

	Data Analytics and Strategy - Data Analytics in Digital Marketing - Google Analytics -
Unit V	Other Analytics Tools - Marketing Automation - Creating a Digital Marketing Strategy -
	Case Studies - Real-World Applications
Reference	and Text Books:
Chaf	for D & Ellis Chadwight E (2012) Digital Marketing, Stuaton, Innlowentation and

- Chaffey, D., & Ellis-Chadwick, F. (2012). *Digital Marketing: Strategy, Implementation, and Practice*. Pearson Education; 5th edition.
- Deiss, R., & Henneberry, R. (2020). *Digital Marketing for Dummies*. For Dummies; 2nd edition .
- Enge, E., Spencer, S., & Stricchiola, J. (2015). *The Art of SEO: Mastering Search Engine Optimization*. O'Reilly Media; 3rd edition.
- Berger, J. (2016). *Contagious: How to Build Word of Mouth in the Digital Age*. Simon & Schuster; Reprint edition .
- Cialdini, R. B. (2006). *Influence: The Psychology of Persuasion*. Harper Business; Revised edition.

Online Resources

- <u>Google Digital Marketing & E-commerce</u> (<u>https://www.coursera.org/professional-certificates/google-digital-marketing-ecommerce</u>)
- <u>Google Ads for Beginners (https://www.coursera.org/projects/google-ads-beginner</u>)

CO1	Understanding of the core concepts, principles, and components of digital marketing, including online channels, strategies, and tools.	K1
CO2	Learn to create and distribute valuable and relevant content to attract and engage a target audience, contributing to brand awareness and lead generation.	K3&K6
CO3	Understand the principles of email marketing, including campaign planning, design, segmentation, and analytics.	K4
CO4	Explore various forms of digital advertising, including display ads, video ads, and native advertising, understanding their benefits and best practices.	K5
CO5	Understand the unique aspects of marketing to mobile audiences, including mobile advertising, app marketing, and responsive design.	K2&K6

Course Outcome

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

		V-Semester			
DSE 2	Course Code: 82754C	Design Issues	Т	Credits: 4	Hours: 4
Objective	 Exploring considering Investigatin website nav Considering design can Analyzing promote cu Addressing understandi feedback. 	ways to make design practices more e materials, production processes, and end-of g challenges in creating seamless and intuit igation to app interfaces. g the unique needs and challenges of an contribute to creating age-friendly products instances of cultural appropriation in des tural sensitivity and respect in creative worl challenges in adopting a human-centered ng user needs, conducting effective use	nviron F-life c ive di aging and er ign a k. desig r rese	nmentally s consideration gital experie g population nvironments nd discussin gn approach earch, and	ustainable, ns. ences, from a and how ang how to , including integrating
	1				
Unit I	Introduction to De Understand The Import Historical E Balancing A	esign Issues ing the Scope of Design Issues ance of Design in Various Fields evolution of Design Challenges Aesthetics and Functionality			
Unit II	User-Centered De Principles of Identifying Usability T Designing f	sign f User-Centered Design User Needs and Expectations esting and User Feedback for Accessibility and Inclusivity			
Unit III	Sustainability and Sustainable Ethical Con Environmen Case Studie	Ethical Design Design Practices siderations in Design ntal Impact of Design Choices s in Sustainable and Ethical Design			
Unit IV	Technology and In • Keeping Up • Designing f • Ethical Use • Design Cha	nnovation with Technological Advances for Emerging Technologies (AI, VR, IoT) of Technology in Design llenges in the Digital Age			
Unit V	Global Design and Designing f Cultural Co Addressing Cross-Cultural	Cultural Sensitivity For a Global Audience nsiderations in Design Cultural Sensitivity and Bias aral Design Challenges			

Reference and Text Books:

- Norman, D. A. (2013). The Design of Everyday Things. Basic Books; Revised edition.
- Norman, D. A. (2005). *Emotional Design: Why We Love (or Hate) Everyday Things*. Basic Books; 1st edition.
- Lidwell, W., Holden, K., & Butler, J. (2015). Universal Principles of Design. Rockport Publishers; Illustrated edition.
- Ambrose, G., & Harris, P. (2019). *Design Thinking for Visual Communication*. Bloomsbury Visual Arts; Reprint edition .
- Anderson, S. (2011). Seductive Interaction Design: Creating Playful, Fun, and Effective User *Experiences*. New Riders Pub; 1st edition.

Online Resources

- <u>Print and Digital Elements of Design: Branding and User Experience</u> (https://www.coursera.org/learn/designing-print-digital-media)
- <u>Experimental Design Basics</u> (<u>https://www.coursera.org/learn/introduction-experimental-design-basics</u>)

Course Outcome

CO1	Learn to identify and define design problems effectively, recognizing the underlying issues and challenges in various design contexts.	K1
CO2	Gain an understanding of ethical considerations in design and develop the ability to make ethically sound decisions in the design process.	K3&K6
CO3	Foster awareness of cultural diversity and sensitivity, understanding how cultural factors can influence design choices and impact user experiences.	K4
CO4	Acquire skills in conducting research related to design issues, including literature reviews, user studies, and trend analysis.	K5
CO5	Understand the principles of sustainable design and how design choices can contribute to or mitigate environmental impacts.	K2&K6

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

Mapping Course Outcome VS Programme Specific Outcomes

		V-Semester							
DSE 3	Course Code: 82755A	Prototyping - Prac	etical	P Credits: 4	Hours: 8				
Objective	 Prototype a payment module for an e-commerce app and perform a comparant analysis. Design two workflows for posting and answering questions in a forum app 3. Wireframe the homepage of a website, highlighting hot and cold spots interaction. Create a paper prototype for a chat application, including a group chat inter 5. Develop a user manager for a resource management app and create a prot it. 								
 Protot Desig applic Wiref Paper Create 	 Prototype a payment module for an e-commerce application and propose the analysis of it. Design two work-flows for posting a question and answering the question in a forum application. Wireframe the home page for a website and design the hot and cold spots in it. Paper prototype a chat application including the group chat interface. Create a user manager for a resource management application and prototype it. 								
Outcome	1. Proficiency in prototyping and analyzing payment modules for e-commerce. 2. Competence in workflow design for forum applications. 3. Skill in wire framing web pages and identifying interaction hotspots. 4. Ability to paper prototype chat applications, including group chat interfaces. 5. Capability to design and prototype user management systems for resource management applications.								

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

Mapping Course Outcome VS Programme Specific Outcomes

S–Strong (3), M-Medium (2), L-Low (1)

		V-Semester			
DSE 3	Course Code: 82755B	Software Testing - Practical	Р	Credits: 4	Hours: 8
Objective	 Enable parti This involve Practice creat specification cases that co Execute test verify that the Emphasize t and test reat comprehensis Explore scal increases, and 	cipants to identify, document, and report s understanding the bug life cycle and using ating comprehensive and effective test ca s, and use cases. Participants should und ver various scenarios. cases on actual software applications to e software meets the specified requirement he importance of test documentation, incl eports. Participants should learn how ve testing documentation. ability testing, focusing on how software d identifying potential bottlenecks.	t soft g bug uses b derstar o obso s. luding to e perf	ware bugs of tracking too ased on req nd how to of erve the bel g test plans, create and forms as the	effectively. ls. uirements, design test navior and test cases, maintain user load
1. Cross	-Browser Testing:				
a.	How do you mak	e sure a website works well in different	web ł	prowsers lik	e Chrome,
3 II	Firefox, Edge, and	Safari?			
2. User	How would you to	ogin resting:	0 000	ire they was	rk coursin
a.	and smoothly?	ist a website's sign-up and login realities it	o ensi	are mey wor	ik securely
3. E-con	nmerce Cart Testir	g:			
a.	Describe how you	u'd test an online store's shopping cart to	o con	firm it lets	users add,
	remove, and updat	e items correctly.			
4. Perfo	rmance and Load	Testing:			
a.	Explain how you' and numbers woul	d test a website's speed and ability to han d you check?	dle m	any users.	What tools
5. Secur	ity Testing for Use	r Input:			
a.	Why is it crucial t common issues an	o test a web app's input fields for security d how to test for them?	? Can	you give ex	xamples of
Outcome	 Demonstrate the effectively, inclure reproduce it. Create well-desire verify that the sepositive and neg Gain an understrand ensure the set Develop skills documentation, industry standard Demonstrate configuration 	e ability to identify, document, and report ading clear and detailed information on the gned test cases based on requirements and oftware meets specified criteria. This incl ative test scenarios. anding of security testing principles, identi- oftware's resilience against potential securit in creating and maintaining con- including test plans, test cases, and test re- ds.	ort so issue d exect ludes fy vu ty three ports, ing the	ftware bugs and steps to cute them to coverage of Inerabilities, eats. ensive test adhering to he software	K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2. 8	1.2	2	2.2

		V-Semester								
DSE 3	Course Code: 82755C	Usability Evaluation - Practical	Р	Credits: 4	Hours: 8					
Objective	 Gain a deep understanding of usability principles and their significance in design and development of interactive systems. Familiarize participants with various usability evaluation methods, inclu usability testing, heuristic evaluation, cognitive walkthroughs, and expert review Develop practical skills in planning, conducting, and analyzing usability tests real users to identify usability issues and gather valuable feedback. Understand and apply Nielsen's usability heuristics and other established usab principles for heuristic evaluation of interfaces. Learn how to conduct cognitive walkthroughs, a method for systematic analyzing the usability of a system by simulating the user's thought processes. 									
 Navig a. Form a. Acces a. Mobi a. Feedl a. 	 gation and Structure Is it easy for use simpler? a Usability: Are online forms a Sibility: Can everyone, in more inclusive? Ie-Friendliness: Does the design screens? back and Errors: Does the UI give enhance user guided 	re: ers to move around the website or app? easy to use? What can we do to improve the cluding those with disabilities, use the inte work well on mobile devices? What need re clear feedback and handle errors effect lance and error handling?	How em? rface? ds imp ctively	can we ma ' How can w provement f	ke it even ve make it °or smaller anges can					
Outcome	 Acquire kr moderated person testi Develop th objectives, scenarios at Develop sk testing proc Master the notes, and c Understand informing d and refinem 	and unmoderated usability testing mo and unmoderated usability testing, remote ng. e ability to plan usability tests, includi selecting appropriate participants, and ad tasks. ills in creating detailed usability test protoc ess and ensure consistency across multiple s art of observing participant behavior, takir apturing key insights during usability test set the iterative nature of usability testing esign improvements, encouraging an ongoir ent.	ethods e testi ing d l des cols th session ng cor ession and ng cyc	s, including ng, and in- efining test igning test at guide the ns. nprehensive s. its role in le of testing	K6					

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

		V-Semester						
Core	Course Code: 82756	Portfolio & Presentation - Practical	Р	Credits: 2	Hours: 4			
Objective	 Showcase your practical skills and expertise in the subject. Include tangib examples of projects, tasks, or assignments that highlight your ability to app theoretical knowledge to real-world situations. Illustrate your problem-solving abilities by presenting challenges you've face within the practical subject and how you overcame them. This can include innovative solutions, critical thinking, and adaptability. Clearly demonstrate your understanding and mastery of key concepts in the practical subject. This might involve discussing relevant coursework, independent research, or any additional certifications or training you've pursued. If applicable, showcase your creativity and innovative thinking within the practic subject. Highlight any unique approaches, creative solutions, or projects the demonstrate your ability to think outside the box. Outline your progression and growth over time in the practical subject. This cout involve a timeline of projects, skills acquired, and how you've evolved in you understanding and application of the subject matter. Structure your portfolio in a logical and easy-to-follow manner. Use clear section 							
1. For se	contents if	the portfolio is extensive. create a logo and a graphic signature.	ur wo	rk. Include	a table of			
 Prepar Estable Use an Demo increa 	re a respectable co ish a blog to display ny authoring tool to nstrate your skills sed professional re-	rporate firm CV. ay your growth as a person. o create and author an interactive portfolio. and achievements effectively in your port ecognition and opportunities.	folio v	vhich shoul	d result in			
Outcome	 A well-prepositive fe positive fe grades, awa A strong Employers capabilities internships A compelliused durind demonstrat subject. The proce compile y understand awareness 	pared portfolio and presentation can lead to edback from academic institutions. This contained and so or recommendations from professions are portfolio can open doors to profession often review portfolios to assess the pre- s of potential candidates. This could lead , or collaborations on real-world projects. ing portfolio can contribute to career advar- age performance reviews, job interviews, e your expertise and accomplishments with ss of creating a portfolio requires self-re- rour achievements and experiences, you ing of your strengths and areas for improv- can guide your future endeavors and learning	to reco build res and men mal op vactical ad to neemen or pro ithin th effection gain vement g objection	gnition and sult in high ators. portunities. skills and job offers, at. It can be protions to be practical on. As you a deeper c. This self-	K6			

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

		VI-Semester								
Core	Course Code: 82761Web Development using ReactTCredits: 4Hours: 4									
Objective	 Gain a solid understanding of the fundamental concepts of React, including components, state, props, and the virtual DOM. Learn how to design and build applications using a component-based architecture, a core paradigm in React development. Explore and understand the broader React ecosystem, including tools like React Router for navigation and Redux for state management (or other state management libraries). Understand and utilize React Hooks to manage state and side effects in functional components, promoting a more modular and readable code structure. Develop skills in creating responsive web designs that adapt to different screen sizes and devices. 									
Unit I	Introduction to Re Overview of Setting Up t JSX (JavaSo Creating and Understandi	act React.js and Its Benefits he Development Environment cript XML) Syntax I Rendering React Components ng React State and Props								
Unit II	Component-Based Building Re Component Handling Us State Manag Practical Ex	Development usable React Components Lifecycle and Hooks ser Events and Interactions gement with React Context ercises in Component Development								
Unit III	Routing and Navig Implementin Creating Na Dynamic Ro Building a N Hands-On R	ation g Client-Side Routing with React Router vigation Menus and Links puting and Route Parameters fulti-Page React Application outing Projects								
Unit IV	State Management Managing C Connecting Making API Handling As Real-World	and APIs omplex State with Redux React with Redux Requests with Axios or Fetch synchronous Operations Applications of State Management								
Unit V	Advanced Topics a Testing Read Styling Read Performance Preparing fo Deploying a	and Deployment et Components et Applications (CSS-in-JS, Styled Compor e Optimization Techniques r Production Deployment React App to Hosting Platforms	ients)							

Reference and Text Books:

- Banks, A., & Porcello, E. (2020). *Learning React*. O'Reilly Media.
- Stefanov, S. (2021). *React Up and Running*.O'Reilly Media.
- Accomazzo, A., Lerner, A., Murray, N., Allsopp, C., & Guttman, D. (2017). *Fullstack React: The Complete Guide to ReactJS and Friends*.Fullstack.io.
- Roldán, C. S. (2023). React Design Patterns and Best Practices. Packt Publishing.
- Antonio, C. S., Wanyoike, M., & Bray, T. (2019). Pro React. Apress.

Online Resources

- <u>React Native</u> (<u>https://www.coursera.org/learn/react-native-course</u>)
- <u>Introduction to the React Challenges (https://www.freecodecamp.org/learn/front-end-development-libraries/react/</u>)
- Build a Website using React

Course Outcome

CO1	Develop the ability to design and build applications using a component- based architecture, promoting code reusability and maintainability.	K1
CO2	Gain proficiency in leveraging tools and libraries within the React ecosystem, such as React Router for navigation, Redux for state management (or alternatives), and other relevant packages.	K3&K6
CO3	Master the use of React Hooks to manage state and side effects in functional components, fostering a modern and concise coding style.	K4
CO4	Implement responsive design principles to ensure that React applications are visually appealing and functional across different devices and screen sizes.	K5
CO5	Understand the deployment process and host React applications on various platforms, demonstrating the ability to make a project publicly accessible.	K2&K6

Course Outcome VS Programme Outcomes

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

Mapping Course Outcome VS Programme Specific Outcomes

S–Strong (3), M-Medium (2), L-Low (1)

		VI-Semester			
Core	Course Code: 82762	Advanced Framework - Tailwind	T	Credits: 4	Hours: 4
Objective	 Grasp the cutility class Familiarize the use of u Explore the to configure Learn how advantage configure Understand components Learn tech project to p 	oncept of utility-first CSS, which involves es, offering a highly modular and flexible a yourself with the syntax and conventions tility classes for styling elements. customization options provided by Tailwin e the framework to match project-specific de to create responsive designs effortlessly of its responsive utility classes. how Tailwind CSS provides flexibles, allowing for rapid iteration and design cha- niques for optimizing and purging unuse roduction, ensuring minimal CSS file size.	s build pproad of Ta nd CS esign using ility anges.	ding styles u ch to styling. ailwind CSS S, including requirements Tailwind C in styling les when de	using small , including the ability s. SS, taking individual eploying a
	I				
Unit I	 Overview o Setting Up Understand Exploring t Building a S 	f Tailwind CSS f Tailwind CSS and Its Philosophy a Tailwind CSS Project ing Utility-First CSS he Tailwind CSS Documentation Simple Responsive Layout			
Unit II	Customization and Customizin Creating an Theming w Integrating Designing a	d Theming g Tailwind CSS Configurations d Managing Custom Utility Classes ith Tailwind CSS Third-Party Plugins and Extensions Custom UI Kit with Tailwind CSS			
Unit III	Responsive Design Implementi Building M Advanced C Media Quert Practical Ex 	a with Tailwind ng Responsive Design Patterns obile-First Interfaces Grid Systems and Layouts ries and Breakpoints cercises in Responsive Design			
Unit IV	Optimizing Perfor Optimizing Reducing U Building Ef Workflow I Version Co	mance and Workflow CSS for Production Inused CSS with PurgeCSS ficient and Lightweight UIs Enhancements with JIT (Just-in-Time) Mod ntrol and Collaboration in Tailwind Projects	e		

	Real-World Applications and Best Practices							
	Building Complex Web Applications with Tailwind							
	• Integrating Tailwind CSS with JavaScript Frameworks (e.g., React, Vue)							
Unit V	Accessibility Considerations and Best Practices							
	Performance Optimization Strategies							
	Deployment and Maintenance of Tailwind CSS Projects							
Reference a	nd Text Books:							
• Noel 2	Rappin. (2021). Modern CSS with Tailwind: Flexible Styling without the Fuss.Pragmatic							
Books	shelf.							
 Kartik 	Bhat. (2023). Ultimate Tailwind CSS Handbook. Orange Education Pvt Ltd.							
• Rober	to Rescigno . (2023). Tailwind CSS: a guide to using the popular utility-first CSS							
frame	work. Publisher.							
 Ivayle 	o Gerchev. (2022). Tailwind CSS. SitePoint.							
• BAD	AL TRIPATHY . (2023). Tailwind CSS. Publisher.							
Online Reso	Durces							
• Advar	nced Framework Tailwind (https://tailwindcss.com/)							

• Tailwind CSS

Course Outcome

CO1	Gain a deep understanding of the utility-first CSS approach and its benefits in terms of rapid development and easy customization.	K1
CO2	Develop proficiency in creating responsive designs using Tailwind CSS, utilizing responsive utility classes for various screen sizes.	K3&K6
CO3	Understand and implement techniques for optimizing Tailwind CSS for production, including the removal of unused styles to minimize the CSS file size.	K4
CO4	Explore and apply additional features provided by Tailwind CSS, such as animations, transitions, and other utility classes to enhance the user interface.	K5
CO5	Apply acquired skills and knowledge in a real-world project, developing a responsive and visually appealing user interface using Tailwind CSS.	K2&K6

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.6	1.6	2.6	1.6	1.4	1.6	1.8	1.9	2.2

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.4	2.2	1.4	1.6	2.4

		VI-Se	mester							
Core	Course Code: 82763	Web Develop	oment using React	Р	Credits: 4	Hours: 6				
Objective	 Gain practical experience in working with React fundamentals, including components, JSX syntax, state, and props. Implement client-side routing using React Router for building single - page applications with smooth navigation. Gain practical skills in handling user input and building controlled forms in React. Develop practical skills in testing React components using popular testing libraries like Jest and React Testing Library. Understand practical project structure and organization strategies for scalable and maintainable React applications. Learn to implement practical user authentication and authorization features in React applications. 									
1. Comp a.	oonent Reusability How do you make you give an exam	e sure React compo ble of this?	onents can be used in dif	ferent	t parts of the	e app? Can				
2. State a.	Management: How do you hand or methods do you	le and share data b 1 use?	between components in a	a big l	React app?	What tools				
3. Perfo a.	rmance Improvem How do you mal complex features?	ent: ke a React app fa	ster, especially when d	ealing	g with lots	of data or				
4. Rout ia.	ing and Navigation How do you creat routing works.	: e links and move b	etween different pages i	n a R	eact app? Ex	xplain how				
5. Testi n a.	ng and Debugging: How do you test l any special tools o	React components a or libraries for this?	and find and fix problem	ıs in y	vour code? I	Do you use				
Outcome	 Understand syntax, and Learn how to Create React Understand them for task Learn how React composition Gain knowl React Testint Adopt best common dest 	the fundamentals the virtual DOM. to set up a React d t App. the lifecycle metho to handle user inponents. edge of testing Re g Library. practices for stru-	of React, including c levelopment environmen ods of a React componer g and cleanup. out through forms and r act components using to ucturing React applicat	compo at usir nt and manag pols 1 cions	onents, JSX ng tools like how to use ge events in ike Jest and and follow	K6				

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.A V	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

		VI-Semester	1							
DSE 4	Course Code: 82764A	Wordpress - Practical	Р	Credits: 4	Hours: 4					
Objective	 Successfully install word Press on a local server or a web hosting environment. Understand the basic configuration settings and options available in the Word Press dashboard. Create and manage different types of content, including posts, pages, and custor post types. Learn how to use the Word Press editor for content creation and formatting. Understand the structure of Word Press themes and create a custom theme fror scratch. Customize existing themes and understand the use of child themes for safe modifications. Learn how to customize the look and feel of a Word Press site using them customization options. Explore the use of custom CSS, widgets, and the Theme Customizer. 									
1) Plugi	n Selection ·									
a)	How do you cho	ose the right add-ons to improve a Word P	ress v	vebsite's fea	tures? Can					
2) Thom	you share an examination	nple of when you did this?								
a)	How do you char What tools or me	ge the look of a Word Press site to match a thods do you use?	clien	t's design pr	eferences?					
3) Secur	ity Measures:									
a)	What do you do t approach to site s	o keep a Word Press site safe from hackers ecurity.	and r	nalware? Ex	xplain your					
4) SEO	Optimization:									
a)	How do you main plugins or technic	te a Word Press site more visible in search use for better search engine rankings?	h eng	ines? Do yo	ou use any					
5) Perfo	rmance Improven	ient:								
a)	When a Word Pro an example of ho	ess site is slow, what actions do you take to n w you've improved site speed?	make	it faster? Ca	n you give					
Outcome	 Ensure that screen sizes Acquire the maintain the Develop sk plugin confi Understand configure the Customize using the The 	the Word Press site is responsive, adapt and devices. e ability to train clients or end-users on eir Word Press websites. ills in identifying and resolving common licts and theme-related problems. the purpose of plugins and learn how to instead the functionality of a Word Pr the appearance of a Word Press site by m meme Customizer, and adding custom CSS.	bting how issue stall, a ress si nodify	to different to use and s, including activate, and te. ving themes,	K6					

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

		VI-Semester	1	1							
DSE 4	Course Code: 82764B	SEO Strategy - Practical	Р	Credits: 4	Hours: 4						
Objective	 Identify relevant and high-performing Keywords related to the website's content and target audience. Optimize individual web pages to improve their relevance and visibility. Develop high-quality, relevant, and engaging content that satisfies user intent. Ensure that the website is technically sound and optimized for search engines. Build a diverse and high-quality back link profile to improve the website's authority. Optimize the website for local search if the business has a physical presence. Stay up-to-date with industry changes and continuously improve the SEO strategy. Improve the website's ability to convert visitors into customers or leads. 										
1. Keyw	ord Research:										
a.	How do you find	I the best words to improve a website's se	earch	engine rank	ing? What						
	tools do you use?										
2. On-P	age Optimization:	· · · · · · · · · · · · · · · · · · ·	1.	14-9 C	•						
a.	examples?	on a weopage to make it rank higher in s	earch	results? Ca	n you give						
3. Link	Building Strategie	s:									
a.	How do you get	other websites to link to your site to boo	st its	credibility v	with search						
	engines? Share so	me successful methods.		•							
4. Conte	ent Strategy:										
a.	How do you crea balance user-frier	te and adjust content to help it show up in dly content with SEO?	searc	h results? H	ow do you						
5. SEO	Performance Trac	king:									
a.	How do you know	v if your SEO efforts are working? What to	ools ai	nd numbers	do you use						
	to see how keywo	ords, rankings, and traffic are doing?									
Outcome	 Ability to identify rele Proficiency Ability to content that Proficiency technically Proficiency strategy. Understand into custom 	conduct comprehensive keyword research want and high-performing keywords. in optimizing individual web pages for sear create and optimize high-quality, releva satisfies user intent. in implementing technical SEO eleme sound website. in tracking and analyzing the perform ing of how to improve the website's ability ers or leads.	n and rch en nt, ar ents t ance to cor	analysis to gines. nd engaging o ensure a of an SEO nvert visitors	K6						

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.A V	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

VI-Semester											
DSE 4	Course Code: 82764C	Motion Design and Animation - Practical	P Credits:	4 Hours: 4							
Objective 1. Plann	 2. Become proficient in using industry-standard animation software. 3. Master character animation techniques for bringing characters to life. 3. Master character animation techniques for bringing characters to life. 4. Learn to design and animate engaging motion graphics. 5. Gain proficiency in creating 3D animations. 6. Explore the creation of interactive animations. 7. Learn the process of rendering and exporting animations for various platforms. 1. Planning Animations: a. How do you prepare and organize your animation projects before starting? Explain your 										
a. 2. Anim	approach to getti ation Tools:	ng ready.	fore starting? E	xpiain your							
 a. What software and tools do you use for making animations? Share your favorite software and why you like it. 3. Timing and Transitions: a. How do you decide when animations should happen and how they should transition? Give tips for creating smooth and engaging animations. 4. Interactive Animations: a. How do you add interactive elements to animations, like clickable or hover effects? Share your favorite software animation of interactive damage. 											
5. Perfo a.	rmance Optimiza What do you do still looking grea	tion: to ensure animations work well on different of t?	levices and scre	ens while							
Outcome	 Create ar movements Successfull Effects, Bi animations Create cor flow, timin Produce ch natural inte Develop 3 lighting, tex Regularly a awareness 	imations that showcase smooth trans, and effective use of principles. y navigate and utilize features in software ender, Autodesk Maya, or other relevant nprehensive storyboards that effectively of g, and key elements of an animation project. haracter animations that convey personality ractions. D animations that showcase understanding turing, and camera movements. experiment with new tools and techniques, of current industry trends.	sitions, realist like Adobe Aft t tools to crea communicate th y, emotions, an ng of modelin and demonstra	ic er te ne K6 nd g, te							

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	S(3)	S(3)
W.AV	2.2	2.4	2.4	2.6	1.8	1.4	1.6	1.8	2.4	1.8

Course Outcome VS Programme Outcomes

S-Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L(1)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	S(3)	L(1)	M(2)	M(2)
CO3	L(1)	M(2)	L(1)	M(2)	M(2)
CO4	S(3)	S(3)	L(1)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	1.8	2.8	1.2	2	2.2

VI-Semester										
Co	ore Course Code	Dusis 4/ Discusses from		Credits: 6	Hours.17					
	82765A/ 82765B	Project/ Dissertation	PR/D	Creans. o	110013.12					
Obje	 Develop the ability to formulate a well-defined research problem and articulate clear research questions or objectives. Demonstrate proficiency in conducting a comprehensive literature review to situate the dissertation within the broader academic context. Acquire advanced research and analytical skills to design and implement a robust methodology for data collection and analysis. Cultivate effective academic writing skills, including the synthesis and communication of complex ideas and findings in a coherent manner. Demonstrate a critical understanding of ethical considerations in research and apply ethic principles throughout the dissertation process. 									
Disser	tation for Major Project									
1.	Introduction and Backg	cound: Clearly define the scope and	purpose of the c	lissertation	Provide a					
	brief overview of the back	ground literature and the research gap	being addressed							
2.	2. Research Objectives: Clearly state the research questions or objectives that the dissertation aims to									
	address Align the objectives with the broader goals of the M.Sc. Multimedia program.									
3.	Literature Review: Con	duct a thorough review of relevant	literature in th	e field of m	nultimedia,					
	highlighting key theories,	frameworks, and previous research	studies Identi	fy gaps in th	ne existing					
	literature that the dissertati	on seeks to fill.								
4.	Methodology: Detail the r	esearch design, methods, and tools em	nployed in the stu	ıdy Justify	the chosen					
_	methodology and discuss i	ts appropriateness for the research que	estions.							
5.	Data Collection: Describe	the process of data collection, inclu	iding the types o	f data gather	ed and the					
	rationale for selecting - spe	cific sources or participants								
6.	Analysis and Findings:	Present and analyze the data collecte	ed, demonstratin	g how it add	tresses the					
7	research questions Discu	ss any unexpected findings and their i	implications for t	the overall stu	idy.					
/.	Discussion: Interpret the r	esults in the context of the existing life	erature Discus	s the significa	ance of the					
o	Conclusions Summarize t	tions to the field of multimedia.	Duravida naca	mmon dations	for future					
8.	Conclusion: Summarize t	he key findings and their implications	s Provide reco	mmendations	for future					
0	research or practical applications based on the results.									
9.	how these limitations may	have influenced the study's outcomes	ight of data coned	tion process.	Discuss					
10	Deferences: Compile a c	nave influenced the study's outcomes.	ad in the discor	tation adher	ing to the					
10.	required citation style (a g	APA MIA)	cu ili ule ulsser	tation, auner	ing to the					
	required entition style (e.g.	, , , , , , , , , , , , , , , , , , ,								

Outcome

- 1. Demonstrate the ability to formulate and articulate a well-defined research problem within the scope of multimedia studies for the dissertation project.
- 2. Apply advanced research methodologies and analytical techniques to investigate and address research questions in the field of multimedia.
- 3. Develop proficiency in critically reviewing and synthesizing existing literature to establish a strong theoretical foundation for the dissertation.
- 4. Showcase effective written communication skills through the production of a comprehensive and scholarly dissertation document that adheres to academic standards.
- 5. Demonstrate ethical research practices and a critical awareness of ethical considerations, ensuring the integrity and validity of the dissertation work in the context of multimedia studies

СО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	L(1)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)	L(1)	M(2)	M(2)	S(3)	S(3)
CO3	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	L(1)	L(1)	M(2)	M(2)	S(3)	M(2)	M(2)
CO5	M(2)	S(3)	S(3)	M(2)	M(2)	S(3)	M(2)	M(2)	S(3)	S(3)
W.AV	2.4	2.6	2.4	2	2	2.2	2.2	2.2	2.4	2

Course Outcome VS Programme Outcomes

S-Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

СО	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	M(2)	M(2)	M(2)	M(2)
CO2	M(2)	S(3)	S(3)	M(2)	S(3)
CO3	M(2)	M(2)	M(2)	M(2)	M(2)
CO4	S(3)	L(1)	S(3)	S(3)	M(2)
CO5	S(3)	M(2)	M(2)	M(2)	S(3)
W.AV	2.4	2	2.4	2.2	2.4

UG Programme

Passing minimum

A candidate shall be declared to have passed in each course if he/she secures not less than 40% marks in the End Semester Examinations and 40% marks in the Internal Assessment and not less than 40% in the aggregate, taking Continuous assessment and End Semester Examinations marks together.

The passing minimum for CIA shall be 40% out of 25 marks (i.e.10 marks) in Theory/ Practical Examinations.

The passing minimum for University Examinations shall be 40% out of 75 marks (i.e. 30 marks) for Theory /Practical papers.

The candidates not obtain 40% in the Internal Assessment are permitted to improve their Internal Assessment marks in the subsequent semesters (2 chances will be given) by writing the CIA tests or by submitting assignments.

 \succ Candidates, who have secured the pass marks in the End-Semester Examination and in the CIA but failed to secure the aggregate minimum pass mark (E.S.E + C I.A), are permitted to improve their Internal Assessment mark in the following semester and/or in University examinations.

A candidate shall be declared to have passed in the Dissertation/Project report/Internship report if he/she gets not less than 40% marks in the Internal Assessment and End Semester Examinations and not less than 40% in the aggregate, taking Continuous assessment and End Semester Examinations marks together.

A candidate who gets less than 40% in the Dissertation / Internship/ Project Report must resubmit the thesis. Such candidates need to take again the Viva-Voce on the resubmitted report/thesis.

18.2 Grading of the Courses

The following table gives the marks, Grade points, Letter Grades, and classifications meant to indicate the overall academic performance of the candidate.

RANGE OF MARKS	GRADE POINTS	LETTER GRADE	SCRIPTION
- 100	9.0 - 10.0	0	tstanding
- 89	8.0 - 8.9	D+	ellent
- 79	7.5 - 7.9	D	tinction
- 74	7.0 – 7.4	A+	y Good

Conversion of Marks to Grade Points and Letter Grade (Performance in Course / Paper)

- 69	6.0 - 6.9	Α	od
- 59	5.0 - 5.9	В	erage
- 49	4.0 - 4.9	С	isfactory
- 39	0.0	U	appear
SENT	0.0	AAA	SENT

- a) Successful candidates passing the examinations and earning a GPA between 9.0 and 10.0 and marks from 90 100 shall be declared to have Outstanding (O).
- b) Successful candidates passing the examinations and earning GPA between 8.0 and
 8.9 and marks from 80 89 shall be declared to have Excellent (D+).
- c) Successful candidates passing the examinations and earning GPA between 7.5 7.9 and marks from 75 79 shall be declared to have Distinction (D).
- d) Successful candidates passing the examinations and earning GPA between 7.0 7.4 and marks from 70 74 shall be declared to have Very Good (A+).
- e) Successful candidates passing the examinations and earning GPA between 6.0 6.9 and marks from 60 69 shall be declared to have Good (A).
- f) Successful candidates passing the examinations and earning GPA between 5.0 5.9 and marks from 50 59 shall be declared to have Average (B).
- g) Successful candidates passing the examinations and earning GPA between 4.0 4.9 and marks from 40 49 shall be declared to have Satisfactory (C).
- h) Candidates earning GPA between 0.0 and marks from 00 39 shall be declared to have Re-appear (U).
- i) Absence from an examination shall not be taken as an attempt.

From the second semester onwards the total performance within a semester and continuous performance starting from the first semester are indicated respectively **by** Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA).

These two are calculated by the following formulate

GRADE POINT AVERAGE (GPA) = $\Sigma_i C_i G_i / \Sigma_i C_i$

GPA = <u>Sum of the multiplication of grade points by the credits of the courses</u> Sum of the credits of the courses in a Semester

18.3 Classification of the final result

The final result of the candidate shall be based only on the CGPA earned by the candidate.

- a) Successful candidates passing the examinations and earning CGPA between 9.5 and 10.0 shall be given Letter Grade (O+) and those who earned CGPA between 9.0 and 9.4 shall be given Letter Grade (O) and declared to have First Class –Exemplary*.
- b) Successful candidates passing the examinations and earning CGPA between 7.5 and 7.9 shall be given Letter Grade (D), those who earned CGPA between 8.0 and 8.4 shall be given Letter Grade (D+) and those who earned CGPA between 8.5 and 8.9 shall be given Letter Grade (D++) and declared to have First Class with Distinction*.
- c) Successful candidates passing the examinations and earning CGPA between 6.0 and 6.4 shall be given Letter Grade (A), those who earned CGPA between 6.5 and 6.9 shall be given Letter Grade (A+), and those who earned CGPA between 7.0 and 7.4 shall be given Letter Grade (A++) and declared to have First Class.
- d) Successful candidates passing the examinations and earning CGPA between 5.0 and 5.4 shall be given Letter Grade (B) and those who earned CGPA between 5.5 and 5.9 shall be given Letter Grade (B+) and declared to have passed in the Second Class.
- e) Successful candidates passing the examinations and earning CGPA between 4.0 and 4.4 shall be given Letter Grade (C) and those who earned CGPA between 4.5 and 4.9 shall be given Letter Grade (C+) and declared to have passed in the Third Class.
 - f) Absence from an examination shall not be taken as an attempt.

CGPA	Grade	Classification of Final Result
9.5 – 10.0 9.0 and above but below 9.5	0+ 0	First Class – Exemplary*
 8.5 and above but below 9.0 8.0 and above but below 8.5 7.5 and above but below 8.0 	D+++ D+ D	First Class with Distinction*
 7.0 and above but below 7.5 6.5 and above but below 7.0 6.0 and above but below 6.5 	A++ A+ A	First Class
 5.5 and above but below 6.0 5.0 and above but below 5.5 	B+ B	Second Class

Final Result

4.5 and above but below 5.0 4.0 and above but below 4.5	C+ C	Third Class
0.0 and above but below 4.0	U	Re-appear

CUMULATIVE GRADE POINT AVERAGE (CGPA) = $\Sigma_n \Sigma_i C_{ni} - G_{ni} / \Sigma_n \Sigma_i C_{ni}$

CGPA = Sum of the multiplication of grade points by the credits of the entire programme

Sum of the credits of the course for the entire Programme

Where 'Ci' is the Credit earned for Course i in any semester; 'Gi' is the Grade Point obtained by the student for Course <u>i and 'n' refers to the semester</u> in which such courses were credited.

CGPA (Cumulative Grade Point Average) = Average Grade Point of all the Courses passed starting from the first semester to the current semester.

Note: * The candidates who have passed in the first appearance and within the prescribed Semesters of the UG Programme (Major, Allied, and Elective courses alone) are eligible for this classification.