J.C. BOSE UNIVERSITY OF SCIENCE AND TECHNOLOGY, YMCA, FARIDABAD (HARYANA)

DEPARTMENT OF COMMUNICATION & MEDIA TECHNOLOGY

3/4 YEARS UNDERGRADUATE PROGRAMME

BACHELOR OF SCIENCE VISUAL COMMUNICATION & MULTIMEDIA TECHNOLOGY (Courses effective from Academic Year 2023-24)

According to National Education Policy (NEP: 2020)



SCHEME AND SYLLABUS OF COURSE TO BE OFFERED

Discipline Specific Course (DSC), Minor (MIC), Multidisciplinary Course (MDC)

Ability Enhancement Courses (AEC), Skill Enhancement Course (SEC), Value-Added

Course (VAC)

VISION

"J.C. Bose University of Science and Technology, YMCA Faridabad aspires to be a nationally and internationally acclaimed leader in technical and higher education in all spheres which transforms the life of students through integration of teaching, research and character building."

MISSION

- To contribute to the development of science and technology by synthesizing teaching, research and creative activities.
- To provide an enviable research environment and exposure to its scholars.
- To develop human potential to its fullest extent and make them emerge as world class leaders in their professions and enthuse them towards their social responsibilities.

ABOUT THE DEPARTMENT

The Department of Communication and Media Technology offers competitive programs for Undergraduate and Postgraduate students seeking interdisciplinary degrees in Journalism & Mass Communication, Social Work and Visual Communication and Multimedia. The Department which was earlier integrated with Sciences, started Master's degree in Journalism and Mass Communication in the year 2016. In 2018, the department re-established as Department of Humanities. B.A. (Journalism and Mass Communication) was introduced in the year 2019. In the year 2021, the department is renamed as Department of Communication and Media Technology (CMT) and with these achieved new millstones by introducing Bachelor in Social Work (BSW) and Ph.D. Programme in Journalism & Mass Communication. In the year 2023 department introduce cutting-edge Bachelor of Science (B.Sc.) program in Visual Communication and Multimedia Technology. In the same year department also introduce two minor degree programme Fashion Communication and Acting & Film making. Department is dedicated to nurturing creative minds and empowering students to become skilled professionals in the dynamic world of visual communication and multimedia technology. The department imparts knowledge of both theory and practical aspects of Communication and allied fields. From time to time the department keeps organizing events, seminars, conferences, workshops and expert lectures by eminent media personalities/Industry experts. Organizing educational visits and tours are an essential part of the department's curriculum. The department also organizes various extracurricular activities like debates, photography, film making, and content creating competition etc. to encourage students. In a very short time, the department has taken an initiative in imparting quality education in the field of Visual Communication & Multimedia, Journalism & Mass Communication & Social Work.

ABOUT THE PROGRAM

The Bachelor of Science (B.Sc.) in Visual Communication & Multimedia Technology is an innovative and dynamic undergraduate program designed to align with the objectives of the National Education Policy (NEP) 2020. This program integrates the principles of visual communication with cutting-edge multimedia technology to prepare students for a wide range of creative and technical roles in the media, 2D & 3D Animation, Game Design, Graphics, VFX and entertainment industry. With the implementation of NEP 2020, education in India is undergoing transformative changes to foster holistic and multidisciplinary learning. The B.Sc. Visual Communication & Multimedia Technology program embraces these changes by offering a curriculum that focuses on experiential learning, critical thinking, and skill development. The program aims to nurture students into well-rounded professionals who not only possess technical prowess but also a deep understanding of the social, cultural, and ethical dimensions of media and technology.

Key Features of the B.Sc. Visual Communication & Multimedia Technology Program:

Interdisciplinary Approach: The program blends concepts from Visual Communication, Graphic Design, Artificial Intelligence, 2D & 3D Animation, VFX, Game design, Film-making, Multimedia Production, and technology to provide students with a comprehensive skill set that meets the demands of a rapidly evolving media landscape.

Project-based Learning: Emphasis is placed on hands-on projects that allow students to apply theoretical knowledge to real-world scenarios. This approach fosters creativity, problem-solving skills, and teamwork.

Industry-relevant Skills: Students will gain proficiency in various software tools, multimedia production techniques, visual storytelling, digital marketing, and interactive media creation, making them well-prepared for careers in diverse sectors.

Ethical and Cultural Awareness: The curriculum promotes critical thinking and ethical considerations in media creation and consumption. Students will learn to analyze the social impact of media content and make responsible choices in their work.

Digital Literacy and Innovation: In alignment with the digital era, the program will equip students with the ability to adapt to emerging technologies, ensuring they remain competitive in the ever-evolving field of multimedia.

Communication and Soft Skills: Beyond technical expertise, the program focuses on enhancing students' communication, teamwork, and presentation skills, which are essential for effective collaboration and career advancement.

Industry Exposure: Guest lectures, workshops, internships, and industry partnerships will provide students with valuable insights into the professional world, helping them bridge the gap between academia and industry.

Research and Creativity: Students will have opportunities to explore their creative potential and conduct research in areas such as media trends, user experience, and multimedia innovations.

The B.Sc. Visual Communication & Multimedia Technology program aligns with the spirit of NEP 2020 by fostering holistic education, promoting creativity, and preparing students for a technology-driven future. Graduates of this program will be equipped to contribute meaningfully to the media and entertainment industry while being conscious of their roles in shaping society's perceptions and interactions with multimedia content.

CHOICE BASED CREDIT SYSTEM (CBCS):

The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising core, elective/minor or skill based courses. The courses can be evaluated following the grading system, which is considered to be better than the conventional marks system. Therefore, it is necessary to introduce uniform grading system in the entire higher education in India. This will benefit the students to move across institutions within India to begin with and across countries. The uniform grading system will also enable potential employers in assessing the performance of the candidates. In order to bring uniformity in evaluation system and computation of the Cumulative Grade Point Average (CGPA) based on student's performance in examinations, the UGC has formulated the guidelines to be followed.

COURSE STRUCTURE

According to National Education Policy (NEP: 2020)

Sr. No.	Course Name	Course Code	Credits
Disciplin	ne- Specific Courses (DSC)	I	
1.	Communication Skills	B.Sc. VCMT 101-23	4
2.	Fundamentals of Multimedia	B.Sc. VCMT 102-23	4
3.	Introduction to Drawing	B.Sc. VCMT 103-23	4
4.	Fundamentals of Visual Communication	B.Sc. VCMT 201-23	4
5.	Digital Photography Technique	B.Sc. VCMT 202-23	4
6.	Design Fundamentals	B.Sc. VCMT 203-23	4
7.	Animation Techniques	B.Sc. VCMT 301-23	4
8.	Film Appreciation Technique	B.Sc. VCMT 302-23	4
9.	Graphic Design	B.Sc. VCMT 303-23	4
10.	Video Production	B.Sc. VCMT 401-23	4
11.	Fundamentals of Game Design	B.Sc. VCMT 402-23	4
12.	Fundamental of Typography	B.Sc. VCMT 403-23	4
13.	2 D Character Design for Animation	B.Sc. VCMT 501-23	4
14.	Audio Production	B.Sc. VCMT 502-23	4
15.	Web Design and Development	B.Sc. VCMT 503-23	4
16.	3D Modeling & Visual Effect	B.Sc. VCMT 601-23	4
17.	Tools for Visual Analytics	B.Sc. VCMT 602-23	4
18.	Project Work & Viva	B.Sc. VCMT 603-23	4
19.	Rigging, Skinning & Animation	B.Sc. VCMT 701-23	4
20.	Advance 2 D Animation Studio	B.Sc. VCMT 702-23	4
21.	3D Animation – Studio	B.Sc. VCMT 703-23	4
22.	Corporate Communication	B.Sc. VCMT 704-23	4
23.	Multimedia Portfolio Development	B.Sc. VCMT 705-23	4
24.	Basic 3D modelling & texture	B.Sc. VCMT 801-23	4
25.	Information Security	B.Sc. VCMT 802-23	4
26.	Introduction to Architeure Modelling	B.Sc. VCMT 803-23	4
27.	Fundamental of UX Design	B.Sc. VCMT 804-23	4

28.	Visual Design & UI	B.Sc. VCMT 805-23	4
29.	Media Research & Practices*	B.Sc. VCMT 801(A)-23	4
30.	3D Modelling & Texturing Specializing*(A)	B.Sc. VCMT 802(A,B,C,D)-23	4
	3D Lighting and Composition Specializing*(B)		
	3D Character Animation Specializing*(C)		
	Visual Effects Specializing*(D)		
Minor (Courses (MIC)		
1.	Writing for Media	B.Sc. VCMT 104-23	2
2.	Audio-Video Editing	B.Sc. VCMT 204-23	2
3.	Art Design & Aesthetics	B.Sc. VCMT 304-23	4
4.	Concept of Story Board& Scripting	B.Sc. VCMT 404-23	4
5.	Artificial Intelligence (AI) & Multimedia	B.Sc. VCMT 504-23	4
6.	Augmented & Virtual Reality	B.Sc. VCMT 604-23	4
7.	New Media Applications	B.Sc. VCMT 706-23	4
8.	Product Photography	B.Sc. VCMT 805-23	4
9.	Digital Entertainment	B.Sc. VCMT 803(H)-23	4
Multidis	ciplinary C <mark>ourse</mark> s (MDC)		
1.	Start-ups and Entrepreneurship	B.Sc. VCMT 105-23	3
2.	Indian Constitution	B.Sc. VCMT 205-23	3
3.	Soft Skills	B.Sc. VCMT 305-23	3
4.	Digital Product Design FAR DABAD	B.Sc. VCMT 605-23	4
Ability E	Chhancement Courses (AEC)		
1.	English-1	AEC-105-N1	2
2.	Digital Photography Techniques Studio	B.Sc. VCMT 206-23	2
3.	Animation & Graphic Studio	B.Sc. VCMT 306-23	2
4.	Game Design Studio	B.Sc. VCMT 405-23	2
Skill Enl	nancement Courses (SEC)/Internship/ Dissertation		
1.	Drawing Studio	B.Sc. VCMT 107-23	3
2.	Adobe Suite- Basic Level	B.Sc. VCMT 207-23	3
3.	Adobe Suite Studio	B.Sc. VCMT 307-23	3
4.	Internship	B.Sc. VCMT 505-23	4
5.	Research Project/ Dissertation	B.Sc. VCMT 804(H)-23	12
Value – A	dded Courses (VAC)	1	

1.	Cultural Heritage & Nation Building	VAC-109-N1	2
2.	Environmental Studies	VAC-101-N1	2
3.	Indian Knowledge System	VAC-104-N1	2

^{*} Students pursue Honors degree with Research will opt one Specialization & Research Subject



PROGRAMME EDUCATION OBJECTIVES

PEO1	To nurture creative individuals who can think innovatively and express ideas effectively through
	various multimedia channels & demonstrate proficiency in visual storytelling, design aesthetics,
	and multimedia content creation.
PEO2	To acquire a strong foundation in multimedia technology, including graphic design, 2D &3D
	animation, video production, interactive media, and user experience (UX) design.
PEO3	To prepared students to embrace new technologies and industry trends, ensuring their continued
	relevance in the digital media landscape & ever-evolving field of visual communication and
	multimedia technology.
PEO4	To encourage critical thinking, research aptitude, ethics and social responsibility related to media in
	the students.

PROGRAMME OUTCOMES

PO1	Students will demonstrate proficiency in visual design principles, including composition, color
	theory, typography, and layout, to create visually appealing and impactful multimedia content.
PO2	Students will acquire proficiency in using industry-standard software and tools for graphic design,
	animation, audio-video editing, and interactive media production, among others.
PO3	Students will demonstrate their ability to anticipate and contribute to the future evolution of the
	industry through innovative ideas and design concepts.
PO4	Students will critically assess the impact of new technologies on visual communication and
	multimedia practices, considering ethical, social, and cultural implications.

Semester-I

B.Sc. VCMT 101-23 B.Sc. VCMT 102-23 B.Sc.	Courses (DSC) Communication Skills Fundamentals of Multimedia Introduction to	4	0	0	25 25	Exam Marks 75	100	4	Code
B.Sc. VCMT 101-23 B.Sc. VCMT 102-23 B.Sc.	Communication Skills Fundamentals of Multimedia					75		4	DSC
B.Sc. VCMT 101-23 B.Sc. VCMT 102-23 B.Sc.	Communication Skills Fundamentals of Multimedia							4	DSC
VCMT 101-23 B.Sc. VCMT 102-23 B.Sc.	Skills Fundamentals of Multimedia							4	DSC
B.Sc. VCMT 102-23 B.Sc.	Fundamentals of Multimedia	4	0	0	25	75			
B.Sc. VCMT 102-23 B.Sc.	Multimedia	4	0	0	25	75			l
VCMT 102-23 B.Sc.	Multimedia	4	0	0	25	75		1	1
102-23 B.Sc.						/3	100	4	DSC
B.Sc.	Introduction to								ı
	Introduction to								ı
VCMT	initioduction to	401	0	0	25	75	100	4	DSC
	Drawing	01 2			AND .				ı
103-23					E				ı
	78/		7						
B.Sc.	Writing For Media	2	0	0	15	35	50	2	MIC
VCMT	E L	Оп				96			
104-23	So					_			
nary Cour	rses (MDC)				一	\$L			
B.Sc.	Start-ups and	3	0	0	25	50	75	3	MDC
VCMT	Entrepreneurship								
105-23		FAI	RID	ABA					
cement (Courses (AEC)	HA		4 1 1 1					
AEC-	English -1	2	0	0	25	75	100	2	AEC
105-N1			170.1	T 937					
ement Co	urses (SEC)/Internship	/ Disser	tatio	n					
B.Sc.	Drawing Studio	0	0	3	25	50	75	3	SEC
VCMT	_								
107-23									
d Courses	s (VAC)	<u> </u>							
VAC-		2	0	0	15	35	50	2	VAC
109-N1	Nation Building								
							650	24	
1	B.Sc. VCMT 104-23 B.Sc. VCMT 105-23 Cement (COME) B.Sc. VCMT 105-N1 Coment COME B.Sc. VCMT 107-23 COME COME COME COME COME COME COME COME	B.Sc. Writing For Media VCMT 104-23 B.Sc. Start-ups and Entrepreneurship 105-23 Cement Courses (AEC) AEC- 105-N1 Ement Courses (SEC)/Internship B.Sc. Drawing Studio VCMT 107-23 d Courses (VAC) VAC- Cultural Heritage &	B.Sc. Writing For Media 2 VCMT 104-23 B.Sc. Start-ups and 3 Entrepreneurship 105-23 Cement Courses (AEC) AEC- English -1 2 105-N1 Cement Courses (SEC)/Internship/ Dissert B.Sc. Drawing Studio 0 VCMT 107-23 d Courses (VAC) VAC- Cultural Heritage & 2	B.Sc. Writing For Media 2 0	B.Sc. Writing For Media 2 0 0	B.Sc. Writing For Media 2 0 0 15	B.Sc. Writing For Media 2 0 0 15 35	B.Sc. Writing For Media 2 0 0 15 35 50	B.Sc. Writing For Media 2 0 0 15 35 50 2

Semester-II

S. No.	Course	Course Title	L	Т	P	Sessional	Final	Total	Credit	Category
5.110.	Code	Course Title		-	-	Sessional	Exam	10441	or cuit	Code
							Marks			0 0 400
Discipline	- Specific	Courses (DSC)								
1.	B.Sc.	Fundamentals of	4	0	0	25	75	100	4	DSC
	VCMT	Visual								
	201-23	Communication								
2	B.Sc.		4	0	0	25	7.5	100	4	Dac
2.		Digital Photography	4	0	0	25	75	100	4	DSC
	VCMT	Techniques								
_	202-23									
3.	B.Sc.	Design Fundamentals	450	0	ICE	25	75	100	4	DSC
	VCMT	17	Ui			THO >				
	203-23	(0,5)				16				
Minor (MIC)										
1.	B.Sc.	Audio-Video Editing	2	0	0	15	35	50	2	MIC
	VCMT	H H					6			
	204-23									
Multidisciplin	nary Cour	rses (MDC)					3 L			
1.	B.Sc.	Indian Constitution	3	0	0	25	50	75	3	MDC
	VCMT					/1				
	205-23		FAF	RID.	ABA	D ////				
Ability Enhan	icement (Courses (AEC)	HA		ANIA					
1.	B.Sc.	Digital Photography	0	0	2	15	35	50	2	AEC
	VCMT	Technique Studio	ह्या ।	171	1 911	ALOHET.				
	206-23		91	1/,	<i>i</i> .r.	1-1-1				
Skill Enhance	ement Cou	urses (SEC)/Internship/	Disser	tatio	n					
1.	B.Sc.	Adobe Suite- Basic	0	0	3	25	50	75	3	SEC
	VCMT	Level								
	207-23									
Value – Adde	d Courses	s (VAC)								
1.	VAC-	Environmental	2	0	0	25	75	100	2	VAC
	101-N1	Studies								
								650	24	
Students exiting the	programme af	ter second semester and securing 5	2 credits in	cluding	g 4 credit	s of summer inter	 nship will be a	warded UG	 certificate in tl	ne B.Sc. Visual

Communication & Multimedia Technology. (48+4-52)

Semester-III

S. No.	Course Code	Course Title	L	Т	P	Sessional	Final Exam Marks	Total	Credit	Category Code
Discipline- Sp	 pecific Co	ourses (DSC)								
1.	B.Sc.	Animation Technique	4	0	0	25	75	100	4	DSC
	VCMT									
	301-23									
2.	B.Sc.	Film Appreciation	4	0	0	25	75	100	4	DSC
	VCMT	Technique								
	302-23		OF S	CIE	VCE.	ANIA				
3.	B.Sc.	Design & Graphics	4	0	0	25	75	100	4	DSC
	VCMT	182								
	303-23						51			
Minor (MIC))	3	0-11				8			
1.	B.Sc.	Art Design &	4	0	0	25	75	100	4	MIC
	VCMT	Aesthetics								
	304-23	4/5/4					3			
Multidiscipli	nary Cou	rses (MDC)					2/			
1.	B.Sc.	Soft Skills	3	0	0	25	50	75	3	MDC
	VCMT			RID	ABA	D				
	305-23		HA	PV	MA					
Ability Enha	ncement (Courses (AEC)								
1.	B.Sc.	Animation & Graphic	E0	0	2	15	35	50	2	AEC
	VCMT	Design Studio			1 0					
	306-23	<u> </u>								
Skill Enhanc	ement Co	urses (SEC)/Internship	/ Disser	tatio	n	<u> </u>	I		I	
1.	B.Sc.	Adobe Suite Studio	0	0	3	25	50	75	3	SEC
	VCMT	Advanced								
	307-23									
	1			1	1		1	600	24	

Semester-IV

S. No.	Course Code	Course Title	L	T	P	Sessional	Final Exam Marks	Total	Credit	Category Code
Discipli	ne- Specific	Courses (DSC)	1							
1.	B.Sc.	Video	4	0	0	25	75	100	4	DSC
	VCMT	Production								
	401-23									
2.	B.Sc.	Fundamentals of	4	0	0	25	75	100	4	DSC
	VCMT	Game Design			n /					
	402-23				WO.					
3.	B.Sc.	Fundamental of	043	0	0	4/1, 25	75	100	4	DSC
	VCMT	Typography				1/2				
	403-23	180								
Minor (MIC	C)						21-			
1.	B.Sc.	Concept of Story	04 _{TI}	0	0	25	75	100	4	MIC
	VCMT	Board & Scripting					X			
	404-23	18年				-				
Multidiscip	linary Cou	rses (MDC)				U /	5			
		-				/				
			FΔ	SID	ΔΕΔ	D				
Ability Enh	ancement (Courses (AEC)	Lia							
1.	B.Sc.	Game Design Studio	0	0	2	15	35	50	2	AEC
	VCMT				T 0.T					
	405-23		ह्या	449	1 मू	dolf				
Skill Enhan	cement Co	urses (SEC)/Internship	/ Disser	tatio	n					
Value – Ado	ded Course	es (VAC)	l	<u> </u>						
1.	VAC-	Indian Knowledge	2	0	0	15	35	50	2	VAC
	104-N1	System								
		_						500	20	
Q		gramme after fourth seme								

be awarded UG diploma in the B.Sc. Visual Communication & Multimedia Technology. (48+44+4= 96)

Semester-V

S. No.	Course Code	Course Title	L	T	P	Sessional	Final Exam	Total	Credit	Category Code
							Marks			
Disciplin	ie- Specific	c Courses (DSC)	1							
1.	B.Sc.	2 D Character Design	4	0	0	25	75	100	4	DSC
	VCMT	for Animation								
	501-23									
2.	B.Sc.	Audio	4	0	0	25	75	100	4	DSC
	VCMT	Production			WO.					
	502-23		of S	CIE	NCE,	AND				
3.	B.Sc.	Web Design and	4	0	0	25	75	100	4	DSC
	VCMT	Development								
	503-23						21-			
Minor (MIC			0-1			-	6			
1.	B.Sc.	Artificial Intelligence	4	0	0	25	75	100	4	MIC
	VCMT	& Multimedia								
	504-23					U/				
Multidiscipl	inary Cou	rses (MDC)								ı
			EAI	RÐ.	AEA	D//				
			HA	DV	AND					
Ability Enha	ancement (Courses (AEC)		MI.	AIN					l
		10	-11	d1	T T	alolf-				
Skill Enhan	cement Co	urses (SEC)/Internship	/ Disse	rtatio	n					
	B.Sc.	Internship	0	0	4		100	100	4	SEC
	VCMT									
	505-23									
Value – Add	led Course	es (VAC)	1	I	1	<u> </u>	1		I	l
	•		•	•	•	•		500	20	

Semester-VI

S. No.	Course	Course Title	L	T	P	Sessional	Final	Total	Credit	Categor
	Code						Exam			Code
							Marks			
Disciplin	ie- Specific	Courses (DSC)		1		I			I	I
1.	B.Sc.	3D Modeling &	4	0	0	25	75	100	4	DSC
	VCMT	Visual Effect								
	601-23									
2.	B.Sc.	Tools for Visual	4	0	0	25	75	100	4	DSC
	VCMT	Analytics								
	602-23		of S	ÇIE	NCE	AMA				
3.	B.Sc.	Project Work	4	0	0	25	75	100	4	DSC
	VCMT	&								
	603-23	Viva					2			
Minor (MIC	<u>'</u> ')		0-1			-	8			
1.	B.Sc.	Augmented & Virtual	4	0	0	25	75	100	4	MIC
	VCMT	Reality					3			
	604-23					U/	5			
Multidiscipl	inary Cou	rses (MDC)								
1.	B.Sc.	Digital Product	4 A	(0)	ΔΙΟΔ	25	75	100	4	
	VCMT	Design	110							
	605-23		MA	RY	AN					
Ability Enha	ancement (Courses (AEC)	ieii i	IJI	I OI	NICHT			I.	<u> </u>
Skill Enhan	cement Co	urses (SEC)/Internship	/ Disser	rtatio	n				I	
Value – Add	led Course	es (VAC)		I		1			I	l
	1		<u> </u>	1		<u> </u>		500	20	1

Students will be awarded 3-years UG degree in the B.Sc. Visual Communication & Multimedia Technology upon securing 132 credits. (48+44+40=132)

Semester-VII

S. No.	Course Code	Course Title	L	Т	P	Sessional	Final Exam Marks	Total	Credit	Category Code
Disciplin	ie- Specific	Courses (DSC)		1	l	L				I.
1.	B.Sc.	Rigging, Skinning &	4	0	0	25	75	100	4	DSC
	VCMT	Animation								
	701-23									
2.	B.Sc.	Advance 2 D	4	0	0	25	75	100	4	DSC
	VCMT	Animation Studio								
	702-23									
3.	B.Sc.	3D Animation –	4	0	0	25	75	100	4	DSC
	VCMT	Studio	OF SI	;IEI	ICE.	4111				
	703-23	YTIL	O.			1110 7				
4.	B.Sc.	Corporate	4	0	0	25	75	100	4	DSC
	VCMT	Communication								
	704-23	3	0-11			\	5			
5.	B.Sc.	Multimedia Portfolio	4	0	0	25	75	100	4	DSC
	VCMT	Development					~ _			
	705-23	4					3			
Minor (MIC										
1.	B.Sc.	New Media	4	0	0	25	75	100	4	MIC
	VCMT	Applications	FAI	RID.	ABA					
	706-23	**	HA	RY	ANA					
Multidiscipl	inary Coui	rses (MDC)								<u> </u>
			E 1	1+	J -T	ania.				
Ability Enh	ancement (Courses (AEC)								
Skill Enhan	cement Co	urses (SEC)/Internship	/ Disser	tatio	n					
Value – Add	 led Course	s (VAC)								
								600	24	

Semester-VIII (4 Years UG Honors Degree)

S. No.	Course Code	Course Title	L	T	P	Sessional	Final Exam Marks	Total	Credit	Category Code
Disciplin	e- Specific	Courses (DSC)	1	1	ı				1	
1.	B.Sc.	3D modelling &	4	0	0	25	75	100	4	DSC
	VCMT	Texture								
	801-23									
2.	B.Sc.	Information Security	4	0	0	25	75	100	4	DSC
	VCMT	(B.Sc. VCMT 802-23)								
	802-23									
3.	B.Sc.	Introduction to	45	0	0	25	75	100	4	DSC
	VCMT	Architecture	V.			1110				
	803-23	Modelling								
4.	B.Sc.	Fu <mark>ndame</mark> ntal of UX	4	0	0	25	75	100	4	DSC
	VCMT	Design	0-1			H/	9 1			
	804-23						X			
5.	B.Sc.	Visual Design & UI	4	0	0	25	75	100	4	DSC
	VCMT	۲ این ۲					5			
	805-23									
Minor (MIC)		EAL							I
1.	B.Sc.	Product Photography	4	0	0	25	75	100	4	MIC
	VCMT		HA	RY	ANA					
	806-23									
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Semester-VIII UG Honors with Research

S. No.	Course Code	Course Title	L	T	P	Sessional	Final Exam Marks	Total	Credit	Category Code
Disc	cipline- Specific	Courses (DSC)								
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1.	B.Sc. VCMT	Media Research &	4	0	0	25	75	100	4	DSC
	801A-23	Practices								
2.	B.Sc. VCMT	Specialization – 1*	4	0	0	25	75	100	4	DSC
	802 A-23	3D Modelling &								
		Texturing								
3.	B.Sc. VCMT	Specialization – 2*	4	0	0	VGI 251	75	100	4	DSC
3.	802 B-23	3D Lighting and	10							
	002 B 23	Composition Composition			_/		150			
4.	B.Sc. VCMT	Specialization – 3*	4	0	0	25	75	100	4	DSC
	802C-23	3D Character					151			
		Animation				-	9			
5.	B.Sc. VCMT	Specialization – 4*	4	0	0	25	75	100	4	DSC
	802D-23	Visual Effects					中/多/			
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		unication & Media Te	chn	alog:	-					Page XV

Semester-1

COMMUNICATION SKILLS (B.Sc. VCMT 101-23)

L T P
I.A. :25Marks
4 0 0 Theory:75Marks
Time Allowed: 3 Hours
Total Credits: 4
Max. Marks: 100

COURSE OBJECTIVES

1. To impart knowledge about the elements of effective communication skills

- 2. To create understanding of impactful writing & speech communication
- 3. To develop the knowledge of employment communication about resumes
- 4. To inculcate the knowledge of employment communication about job interview

UNIT-I: BASICS OF COMMUNICATION

- 1.1 Components of effective Communication
- 1.2 Verbal and Non-verbal communication
- 1.3 Barriers to effective communication
- 1.4 Improving Writing skills
- 1.5 Essentials of good Writing styles expressions & words to be avoided

UNIT-II: LISTENING SKILLS & PRESENTATION SKILLS

- 2.1 Art of Listening, Types of listening, listening skills
- 2.2 Barriers of effective listening
- 2.3 Reading Skills: Purpose & Types, Steps in making presentation
- 2.4 Techniques for Effective reading
- 2.5 Oral presentation, body language & public Speaking skills

UNIT-III: RESUME AND COVERING LETTER

- 3.1 Content of good resume
- 3.2 Guidelines for writing resume
- 3.3 Types & style of resume
- 3.4 Different types of Cover letter

3.5 Emails & Power Point Presentation

UNIT-IV: INTERVIEW AND ETIQUETTES

- 4.1 Importance job Interview
- 4.2 Characteristics of job Interview
- 4.3 Interview process
- 4.4 Techniques Manners and Etiquettes
- 4.5 Common questions during interview

ASSIGNMENTS

- 1. Submit any five case study assignment that illustrates effective communication.
- 2. Classroom presentations on contemporary issues.
- 3. Practice active listening skills by maintaining eye contact, nodding in agreement, and providing verbal and non-verbal cues to show that you are attentive.
- 4. Speaking practice: Role play and communicative activities.
- 5. Interpersonal communication: Ice breakers, Jumble story etc.

COURSE OUTCOMES

- 1. Students will have the knowledge about the elements of effective communication skills.
- 2. Students will be able to have the understanding of impactful writing.
- 3. Students would be able to understand the significance of speech communication.
- 4. Students will be having the knowledge of employment communication.

SUGGESTED READINGS

- 1. Soft skills and professional communication, Francis Peters SJ, 1st Edition, McGraw Hill Education, 2011
- 2. Effective communication, John Adair, 4th Edition, Pan Mac Millan, 2009
- 3. Bringing out the best in people, Aubrey Daniels, 2nd Edition, McGraw Hill, 1999
- 4. Koneru Aruna, Professional Communication McGraw Hill Pub. 1998,
- 5. Murphy Herta, Herbert WHidderbrandt, Jane P Thomas Effective Business Communication, 1997
- 6. Petit Lesikkar, Business Communication, 1994
- 7. Rai and Rai, Business Communication, 1999

FUNDAMENTALS OF MULTIMEDIA (B.Sc. VCMT 102-23)

L T P I.A.: 25Marks

4 0 0 Theory: 75Marks

Time Allowed: 3 Hours Total Credits: 4

Max. Marks: 100

COURSE OBJECTIVES

1. To enumerate and describe the multimedia components

- 2. To understand students with basics of text & fonts in multimedia
- 3. To generate, manipulate and use audio, video & images in multimedia
- 4. To provide Software basic skills and hands on work on digital media

UNIT-I: MULTIMEDIA BASICS

- 1.1 Evolution of multimedia technology
- 1.2 Definition and characteristics of multimedia.
- 1.3 Components of multimedia systems
- 1.4 Applications of multimedia
- 1.5 Media Convergence & Multimedia

UNIT-II: TEXT, FONTS AND HYPERTEXT IN MULTIMEDIA

- 2.1 Usage of text in Multimedia
- 2.2 Fonts & Type Face
- 2.3 Fonts editing & designing tools
- 2.4 Hypermedia & Hypertext
- 2.5 Digital font's techniques

UNIT-III: PROJECT MULTIMEDIA

- 3.1 Stages of a multimedia project
- 3.2 Requirements to make good multimedia
- 3.3 Hardware peripherals connections, memory and storage devices
- 3.4 Multimedia authoring basics and authoring tools.
- 3.5 Making of some Multimedia with animations

UNIT-IV: AUDIO -VIDEO & IMAGE FUNDAMENTALS AND REPRESENTATION

- 4.1 Digital audio, MIDI audio, audio file formats
- 4.2 Analogue video, digital video, video file formats
- 4.3 Still images bitmaps, vector drawing
- 4.4 Image Compression & file formats
- 4.5 White balance correction, Dynamic range correction, Photo Retouching

ASSIGNMENTS

- 1. Design an interactive website using Word Press
- 2. To Modify the document (changing background color etc.) using the various tool
- 3. Create an scene to show the sunrise (using multiple layers and motion twining)
- 4. Create a short in which text Hello gets converted into Good Bye
- 5. Create a short video having five images having fade-in fade-out effect

COURSE OUTCOMES

- 1. Students will have the knowledge about the basics of multimedia
- 2. Students will be able to have the understanding of technologies behind multimedia applications
- 3. Students would be able to understand the process of retrieve the multimedia data
- 4. Students will be having the knowledge of image colors and its correction

SUGGESTED READINGS

- 1. Multimedia: Making It Work (9th edition). McGraw Hill Education, Vaughan, T. (2017)
- 2. Multimedia System Design (1st edition). Pearson Education India. Andleigh, K.., & Thakkar, K. (2015)
- 3. The Ultimate Multimedia Handbook. TMH.Keyes, J. (2000)
- 4. Multimedia Computing, Communications Applications. Pearson. Effective communication skills by John Neilson. Steinmetz, R., &Naharstedt, K. (2012)
- 5. Tay Vaughan, "Multimedia making it work", Tata McGraw-Hill, 2008.
- 6. Rajneesh Aggarwal & B. B Tiwari, "Multimedia Systems", Excel Publication, New Delhi, 2007.

7.https://www.youtube.com/watch?v=GhcMFOHyZfo&list=PLmTmzlfvwSwypTWCV8rVeTK-ie76Y57N

INTRODUCTION TO DRAWING (B.Sc. VCMT 103-23)

L T P I.A.: 25Marks

4 0 0 Theory: 75Marks

Time Allowed: 3 Hours Total Credits: 4

Max. Marks: 100

COURSE OBJECTIVES

- 1. To introduce students to the basics of drawing and develop their fundamental drawing skills.
- 2. To familiarize students with various drawing tools, techniques, and mediums.
- 3. To encourage creativity and artistic expression through drawing.
- 4. To enable students to communicate ideas effectively through visual representation.

UNIT: I INTRODUCTION TO DRAWING

- 1.1 Importance of drawing in various professional fields
- 1.2 Different drawing mediums and tools
- 1.3 Introduction to basic drawing techniques
- 1.4 Line, shape, Dot, space and form
- 1.5 Drawing simple objects using different techniques

UNIT: II FUNDAMENTALS OF DRAWING

- 2.1 Principles and elements of design in drawing
- 2.2 Understanding composition and layout in drawings
- 2.3 Drawing exercises focusing on proportion and perspective
- 2.4 Introduction to shading techniques: hatching, cross-hatching, and blending
- 2.5 Creating a still life drawing using proportion and shading techniques

UNIT: III EXPLORING DIFFERENT DRAWING STYLES

- 3.1 Different drawing styles: realistic, abstract, and expressive
- 3.2 Characteristics and applications of each style

- 3.3 Creating drawings in different styles
- 3.4 Critique and analysis of student work,
- 3.5 Focusing on style and expression

UNIT: IV DRAWING AS COMMUNICATION

- 4.1 Role of drawing in visual communication
- 4.2 Introduction to technical drawing and its applications
- 4.3 Introduction to sketching.
- 4.4 Importance of sketching in design and ideation
- 4.5 Creating technical drawings and sketches to communicate ideas

COURSE OUTCOMES

By the end of this course, students will be able to:

- 1. Demonstrate an understanding of the principles and elements of design in drawing
- 2. Use various drawing tools and mediums to create different types of drawings
- 3. Apply different techniques and styles in their drawings to achieve desired effects
- 4. Use drawing as a means of communication to convey ideas and concepts

PRACTICAL/ASSIGNEMENTS

- 1. Hands-on activities completed during each class
- 2. Artistic portfolio showcasing student progress and development throughout the course
- 3. Class participation and engagement in discussions and critiques
- 4. Periodic quizzes and assignments to assess understanding of concepts and techniques

SUGGESTED READING

- 1. "Drawing on the Right Side of the Brain" by Betty Edwards
- 2. "Keys to Drawing" by Bert Dodson
- 3. "How to Draw What You See" by Rudy De Reyna
- 4. "The Natural Way to Draw" by KimonNicolaides
- 5. "Figure Drawing for All It's Worth" by Andrew Loomis
- 6. "Drawing Lessons from the Great Masters" by Robert Beverly Hale

- 7. "Perspective Made Easy" by Ernest R. Norling
- 8. "The Complete Guide to Anatomy for Artists & Illustrators" by Gottfried Bammes
- 9. "Drawing the Head and Hands" by Andrew Loomis
- 10. "Color and Light: A Guide for the Realist Painter" by James Gurney
- 11. https://artincontext.org/what-is-drawing/
- 12. https://artsandculture.google.com/story/zQWB8rqqdj9t4g
- 13. https://www.britannica.com/art/drawing-art
- 14. https://www.youtube.com/@GCFLearnFree



WRITING FOR MEDIA (B.Sc. VCMT 104-23)

L T P I.A. : 15 Marks

2 0 0 Theory: 35 Marks

Time Allowed: 3 Hours Total Credit: 2

Max. Marks: 50

COURSE OBJECTIVES

1. Students will familiarizing with writing skills for various media

2. To equip the students with recent trends in media writing.

UNIT I: MEDIA AND WRITING

- 1.1 Overview of media platforms and their unique characteristics
- 1.2 The role of media writing in storytelling and journalism
- 1.3 Principles of effective communication in different mediums
- 1.4 Structure and format of news articles, features, and opinion pieces
- 1.5 Ethical considerations in media writing

UNIT-II: WRITING DIFFERENT MEDIA PLATFORMS

- 2.1 Introduction to Writing for Print Media, Principles & Techniques of Writing for Print
- 2.2 Writing for Radio, Language and Grammar, Formats of Radio Writing
- 2.3 Basic Principles and Techniques of TV Writing, Elements of TV Scripting Writin, General and Special audience programmes
- 2.4 Writing Techniques for New Media, Writing for Social Media Platforms Facebook, Twitter, Instagram etc.
- 2.5 Blog/Vlog writing, Live Writing, Reviews Blog- Book, Film

ASSIGNMENTS

- 1. Prepare one script on 5 minutes Radio programme.
- 2. Prepare one script on 5 minutes TV programme.
- 3. Prepare chart/poster on story boarding for television or radio script.
- 4. Prepare a brief report on famous TV Script Writers of India and their Writing Style.
- 5. Any other assignment given by the concerned faculty.

COURSE OUTCOMES

- 1. Students will learn various writing techniques for different media.
- 2. Students will create content for various social media platforms.

SUGGESTED READINGS

- 1. Dilwali, Ashok. (2002). All about photography. New Delhi: National Book Trust.
- 2. Kobre, Kenneth. (2000). Photojournalism. The professional approach (4th Ed). London: Focal Press
- 3. Horton, Brian. (2000). Guide to photojournalism. New York: McGraw-Hill
- 4. Chapnick, Howard. (1994). Truth needs no ally: Inside photojournalism. New York: University of Missouri Press 6. British Press Photographers Association. (2007). 5000 Days: Press photography in a changing world. London: David & Charles
- 5. David, J. (2007). Radio Broadcasting Journalism in India. New Delhi: Cyber Tech Publications.
- 6. Gandhi, Prakash, Ved. (2009). Handbook of Television and Radio Broadcast. New Delhi: Kanishka Publishers, Distributers.

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START-UPS & ENTREPRENEURSHIP (B.Sc. VCMT 105-23)

L T P
3 0 0 Theory: 50 Marks
Time Allowed: 3 Hours

Total Credits: 3
Max. Marks: 75

COURSE OBJECTIVES

- 1. To understand the concept of entrepreneurship and identify the dimensions and resources required to establish a start-up
- 2. To identify the entrepreneurial strategies and various business models, and develop the entrepreneurial competencies
- 3. To analyze the schematic of the new venture's environment and understand the elements of business plan. To identify the various sources of finance for a new venture and role of central and state government in promoting entrepreneurship

UNIT-I: FOUNDATIONS OF START-UP

- 1.1 Concept of Entrepreneur Features
- 1.2 Types & Functions of Entrepreneur
- 1.3 Attributes of Strategic Resources Approaches, Women Entrepreneur
- 1.4 Entrepreneur Process & Role of Entrepreneurship in Economic Development
- 1.5 Sources for Idea Generation

UNIT-II: ENTREPRENEURIAL STRATEGIES AND COMPETENCIES

- 2.1 Crafting and Evaluating Strategy
- 2.2 Different types of New Venture expansion strategies
- 2.3 Entrepreneurship competencies qualities of a successful entrepreneur Entrepreneurial traits
- 2.4 Developing competencies Tools of assessment, Organizational structures
- 2.5 Role of public Sector & financial institution in the growth of entrepreneur

UNIT-III: START-UP ENVIRONMENT

- 3.1 Sources of new ventures capital, importance & benefits
- 3.2 Processes of Business Environment Analysis
- 3.3 Elements of Business plan, Formalities and procedures in registration of a business
- 3.4 Regulatory norms and legal aspects
- 3.5 Introduction to various incentives, subsidies and grants

ASSIGNMENTS

- 1. Design Thinking & Customer Validation
- 2. Generating Market Traction
- 3. Positioning and Packaging
- 4. Start-up Models fade-in fade-out effect
- 5. Design a business plan as start-up

COURSE OUTCOMES

- 1. Students will have the knowledge of entrepreneur and entrepreneurship
- 2. Students will be able to have the understanding about different business models and strategies
- 3. Students would be able to develop a start-up business plan and examine the elements & students would be able to understand the process of new venture launch or expansion

SUGGESTED READINGS

- 1. Vasant Desai, Small-Scale Enterprises and Entrepreneurship Ecosystem, 6th Edition, Himalaya Publishing House, 2016.
- 2. Robert Hisrich, Michael Peters, and Dean Shepherd, Entrepreneurship, 11th Edition, McGraw Hill Education, 2019.
- 3. Poornima M. Charantimath, Entrepreneurship Development and Small Business Enterprises, 3rd Edition, Pearson Education, 2018.
- 4. Andrew Zacharakis, WiliiamBygrave, and Andrew Corbett, Entrepreneurship, 4th Edition, Wiley, 2016.
- 5. Marc J. Dollinger, Entrepreneurship: Strategies and Resources, 4th Edition, Marsh Publications, USA, 2008.
- 6. Rajeev Roy, Entrepreneurship, 2nd Edition, Oxford University Press, 2011.
- 7. C.V. Bakshi, Entrepreneurship Development, 2nd Edition, Excel Publications, 2010.

ENGLISH - I PAPER CODE: AEC-105-N1

Total credits: 2 External marks: 75 Internal marks: 25

Course Outcomes:

After the successful completion of this course, students will be able to:

- 1. Learn about the foundation of English language.
- 2. Familiarize with essentials of grammar of English language.
- 3. Inculcate creative & aesthetic sensitivity and critical faculty through comprehension, appreciation, and analysis of the prescribed literary texts.
- 4. Understand proper pronunciation and accent of English language.

Unit I

Basic Grammar: Noun, Pronoun, Adjective, Verb, Adverb, Prepositions. Vocabulary Building:Suffix, Prefix, Synonyms, Antonyms,

Unit II

Essentials of Grammar-I: Articles, Subject - Verb agreement, Parts of Speech, Tenses

Unit III

Essentials of Grammar – II: Vowels, Consonants, Diphthongs, Clusters and Syllable, Direct and Indirect Speech.

Unit IV

Spoken English Communication: Speech Drills, Pronunciation, Accent Stress and Intonation

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SUGGESTED READINGS:

- 1. Madhulika Jha, Echoes, Orient Long Man
- 2. Ramon & Prakash, Business Communication, Oxford.
- 3. Sydney Greenbaum Oxford English Grammar, Oxford.
- 4. M. Ashraf Rizvi, Effective Technical Communication, Tata McGraw Hill

Note: Only the latest editions of the above books are recommended.

DRAWING STUDIO (B.Sc. VCMT 107-23)

I.A/Practical: 25 Marks

Lab: Marks -50

Max. Marks: 75
Total Credit: 3

Time Allowed: 3 Hrs.

COURSE OBJECTIVES

1. To develop a strong foundation in drawing techniques and skills and also to foster creativity and artistic expression through drawing.

2. To enhance students' ability to observe and represent objects accurately and also cultivate critical thinking skills in analyzing and interpreting visual messages.

UNIT: I INTRODUCTION TO DRAWING STUDIO, TECHNIQUES, COMPOSITION AND DESIGN PRINCIPLES

- 1.1 Different drawing tools and materials
- 1.2 Basic drawing techniques: line drawing, contour drawing, and gesture drawing
- 1.3 Principles of composition and design in drawing
- 1.4 Understanding concepts such as balance, proportion, rhythm, and focal point
- 1.5 Analysis and critique of examples of well-composed drawings, Application of composition principles in student drawing, Develop hand-eye coordination and observation skills

UNIT: II DEVELOPING AND EXPLORING DRAWING, SKILLS, STYLES AND APPROACHES

- 2.1 Intensive practice sessions focusing on perspective drawing, shading, cross-hatching, and texture rendering
- 2.2 Techniques to various subjects (still life, landscapes, figures, etc.)
- 2.3 Different drawing styles (realism, abstract, impressionism, etc.)
- 2.4 Study and analysis of works by renowned artists to understand their unique approaches
- 2.5 Challenging assignments to encourage experimentation with different styles

COURSE OUTCOMES

By the end of this course, students will be able to:

- 1. Demonstrate proficiency in a variety of drawing techniques, such as line drawing, shading, cross-hatching, and texture rendering.
- Apply principles of composition and design to create visually appealing and balanced drawings and employ creative and innovative approaches to drawing exercises and assignments.

PRACTICAL/ASSIGNEMENTS

- 1. Regular class participation and engagement in studio sessions
- 2. Completion and quality of assigned drawing exercises, projects, and portfolio and active participation and contribution to group discussions and critiques

SUGGESTED READING

- 1. "Figure Drawing for All It's Worth" by Andrew Loomis
- 2. "Drawing Lessons from the Great Masters" by Robert Beverly Hale
- 3. "Perspective Made Easy" by Ernest R. Norling
- 4. "The Complete Guide to Anatomy for Artists & Illustrators" by Gottfried Bammes
- 5. "Drawing the Head and Hands" by Andrew Loomis
- 6. https://artincontext.org/what-is-drawing/
- 7. https://artsandculture.google.com/story/zQWB8rqqdi9t4g
- 8. https://www.britannica.com/art/drawing-art

CULTURAL HERITAGE & NATION BUILDING (VAC-109-N1)

I.A: 15 Marks Lab: Marks -35

0 0 Max. Marks: 50

Time Allowed: 3 Hrs.

Total Credit: 2

COURSE OBJECTIVES

1. To develop an understanding of the importance of cultural heritage in promoting national identity and unity.

2. To explore the historical, social, and cultural significance of different aspects of cultural heritage.

UNIT: I DIFFERENT PERSPECTIVES TO CULTURAL HERITAGE AND NATION BUILDING

- 1.1 Definition and components of cultural heritage
- 1.2 Significance of cultural heritage in nation-building
- 1.3 Evolution of cultural heritage
- 1.4 Historical events and movements influencing cultural heritage
- 1.5 Career opportunities in Cultural Heritage

UNIT: II CULTURAL HERITAGE IN THE CONTEMPORARY CONTEXT

- 2.1 Cultural heritage and social cohesion
- 2.2 Tourism and cultural heritage
- 2.3 Challenges in preserving cultural heritage
- 2.4 Govt. initiatives in preserving cultural heritage
- 2.5 Role of mass media in promoting cultural preservation

COURSE OUTCOMES

1. Students will be able to define cultural heritage and discuss its importance in promoting national identity.

2. Students will be able to analyze the historical factors that have shaped cultural heritage and also able to discuss the challenges and opportunities of utilizing cultural heritage for nation-building.

PRACTICAL/ASSIGNEMENTS

- 1. Short quiz to assess understanding of key concepts.
- 2. Group presentation on the impact of a historical event on cultural heritage.
- 3. Group project on proposing a preservation plan for a specific cultural heritage site.
- 4. Class debate on the repatriation of cultural artifacts.
- 5. Organised Visits/Exhibitions for students.

SUGGESTED READING/WEB LINKS

- 1. UNESCO World Heritage Sites: A Complete Guide by UNESCO
- 2. Cultural Heritage and Nation Building: Modern India and its Ancient Past by RomilaThapar
- 3. Cultural Heritage Management: A Global Perspective by Anna Leask and Conal McCarthy
- 4. Intangible Cultural Heritage: A Global Perspective by Laurajane Smith and NatsukoAkagawa
- 5. Cultural Heritage and Tourism: An Introduction by Dallen J. Timothy
- 6. https://asi.nic.in/national-cultural-heritage-sites-list/
- 7. https://www.nmcg.nic.in/writereaddata/fileupload/47_River%20Basin%20Guide%20for%20Medium%20and%20Minor%20Rivers.pdf
- 8. https://www.cgisaopaulo.gov.in/svcc.php

Semester-II

FUNDAMENTALS OF VISUAL COMMUNICATION (B.Sc. VCMT 201-23)

L T P

Time Allowed: 3 Hours

I.A.: 25 Marks Theory: 75 Marks Max. Marks: 100 Total Credits: 4

COURSE OBJECTIVES

- 1. Introducing the concept of Visual Communication.
- 2. To inculcate knowledge of Visual communication culture.
- 3. To acquaint students with knowledge of Design.
- 4. To orient students toward visual composition.

UNIT-I: INTRODUCTION TO VISUAL COMMUNICATION

- 1.1 Communication: Definition, types of Communication nature of communication
- 1.2 Understanding Visual Communication and its importance
- 1.3 Visual Communication as expression and skill
- 1.4 Visual Communication Encoding and Decoding
- 1.5 Scope of Visual Communication

UNIT-II: DEVELOPING VISUALS & COMPOSITION

- 2.1 Ideating Design, Journey of an idea to visual
- 2.2 Contemporary practices in visual development
- 2.3 Principles of Visual and Other Sensory Perceptions
- 2.4 Color psychology
- 2.5 Color wheel.

UNIT-III: UNDERSTANDING VISUAL CULTURE

- 3.1 Visual Universe, Visual Thinking
- 3.2 Visual Culture and Visual Grammar
- 3.3 Art and Aesthetics of visual communication
- 3.4 Narrative representation through Visuals

3.5 Case studies of the visual culture of India

UNIT-IV: VISUAL AND MARKET

- 4.1 Optical / Visual Illusions
- 4.2 Visual market and research
- 4.3 Process of developing ideas-verbal, visual, combination & thematic, visual thinking
- 4.4 Associative techniques, materials, tools
- 4.5 Design execution and presentation.

ASSIGNMENTS

- 1. Discuss basic visual communication processes as well as self-perception of visual communication
- 2. Write an essay/article on contemporary visual Communication practices (500-800) words.
- 3. Students will test the relevance of any one selected theory on basis of survey and interaction, and present the result through ppt.
- 4. Assignment on audience understanding
- 5. Other assignment given by the concerned faculty

COURSE OUTCOMES

- 1. Students would be able to introduce themselves to concept of Visual Communication.
- 2. Students would be able to inculcate knowledge of Visual communication culture.
- 3. Students would be able to develop their knowledge of visual composition.
- 4. Students would be able to apply of knowledge of the market and visual communication.

SUGGESTED READINGS:

- 1. Barnes, S. B. (2011). An introduction to visual communication: From cave art to second life. Peter Lang, International Academic Publishers.
- 2. Hollis, R. (2001). *Graphic design: A concise history*.
- 3. Samara, T. (2020). Design elements: Understanding the rules and knowing when to break them A visual communication manual (3rd ed.). Rockport Publishers.
- 4. Cheng, K. (2020). *Designing type* (2nd ed.). Yale University Press.
- 5. Davis, M., & Hunt, J. (2017). Visual communication design: An introduction to design concepts in everyday experience. Bloomsbury Publishing

DIGITAL PHOTOGRAPHY TECHNIQUES (B.Sc. VCMT 202-23)

L T P
I.A: 25 Marks
4 0 0 Theory: 75 Marks
Time Allowed: 3 Hours

Total Credits: 4

Max. Marks: 100

COUSRE OBJECTIVES

- 1. To teach students the fundamental principles of photography, including composition, exposure, and lighting.
- 2. To provide students with hands-on experience using different types of cameras and lenses, as well as editing software.
- 3. To help students develop their own personal style and vision in photography.
- 4. To introduce students to different genres of photography, such as portrait, landscape, Wild Life & Nature.

Unit -I INTRODUCTION TO PHOTOGRAPHY

- 1.1 Meaning of Photography, History & Evolution of Photography.
- 1.2 Film photography & Digital Photography, VGA vs. Megapixel
- 1.3 Different Types of Cameras- SLR, DSLR, Mirror Less, Pinhole Camera, Full Frame & Crop Sensor, Action Camera etc.
- 1.4 Camera Accessories Tripod, Additional Lens, Gimble, Flash Light & Camera Bag, Memory unit etc.
- 1.5 Image Formats RAW, JPEG, PNG, TIFF, GIF, PSD etc.

Unit-II CAMERA FUNCTIONS AND SETTINGS

- 1.1 Understand the Exposure Triangle- aperture, shutter speed, and ISO , Zoom, Optical Zoom vs. Digital Zoom
- 1.2 Depth of field and focus, Composition and framing
- 1.3 Focal Length, F stop & T stop, Image sensor
- 1.4 Angle of View, Program Mode & Auto Mode, Histogram

1.5 Function of White Balance & Rule of Third, Gamma

Unit-III CAMERA LENSES AND TYPES OF SHOTS, ANGLE & MOVEMENTS

- 3.1 Different types of Lenses- Standard, Wide/Ultra Angle, Macro, Telephoto, Fisheye Lens, Zoom lens vs. Prime Lens etc.
- 3.2 Camera Lens on the Basis of Mount-EF Lenses, EFS Lenses, DX & FX Mount Lenses, A Mount lens & A Mount DT etc.
- 3.3 Different types of Shots.
- 3.4 Different Camera Angeles.
- 3.5 Different Camera Movements.

Unit-IV LIGHTS & FLASH UNIT

- 4.1 Lighting & types of Light in photography
- 4.2 Three Point Lightning System, Ring Light & Spot Light
- 4.3 Light meter in photography, Spot Metering, Center weighted metering mode.
- 4.4 Flash accessories including diffusers, reflectors, and gels, Soft Boxes, Umbrella lights.
- 4.5 Creative lighting techniques, including high-speed flash and light painting.

COURSE OUTCOMES

- 1. Students will demonstrate an understanding of the technical aspects of photography, including camera operation, lighting, exposure, and post-processing.
- 2. Students will be learn the importance of light in Photography.
- 3. Students will demonstrate an ability to use photography as a means of creative expression, conveying emotion, mood, and message through their images.
- 4. They will apply various shooting techniques for different subjects and contexts, including portraiture, landscape, macro and street photography.
- 5. Students will create a portfolio of their work, demonstrating their technical competence, creative expression, and professional skills.

PRACTICAL/ASSIGNEMENTS

- 1. Handling Camera
- 2. Experiment with aperture and shutter speed to achieve different effects in photographs. Take photos of the same subject using different apertures and shutter speeds, and compare the results.

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- 3. Set up a still life or portrait scene in a studio and experiment with different types of lighting, modifiers, and techniques to create different moods and effects.
- 4. Choose a subject and explore different composition techniques, including the rule of thirds, leading lines, symmetry, and depth of field.
- 5. Analyze the resulting images and discuss how the different compositions affect the overall impact of the photograph.

SUGGESTED READINGS

- 1. "Understanding Exposure" by Bryan Peterson This book covers the technical aspects of photography, including aperture, shutter speed, and ISO, and provides practical tips for achieving correct exposure.
- 2. "The Photographer's Eye" by Michael Freeman This book focuses on the compositional aspects of photography, including framing, balance, and visual flow, and provides guidance for creating impactful images.
- 3. "On Photography" by Susan Sontag This classic work explores the role of photography in society and culture, and raises important questions about the ethics and politics of image-making.
- 4. "The Americans" by Robert Frank This influential photography book is a seminal work of documentary photography, and offers a powerful critique of American society in the 1950s.
- 5. "The Decisive Moment" by Henri Cartier-Bresson This book is a collection of images by one of the most celebrated photographers of the 20th century, and provides insight into his approach to photography and his philosophy on capturing the decisive moment.
- 6. GFX Mentor, Kunal Malhotra, Gmax Studio on Youtube

DESIGN FUNDAMENTALS (B.Sc. VCMT 203-23)

I.A: 25 Marks Theory: Marks -75 Max. Marks: 100

Total Credit: 4

L T P 4 0 0 Time Allowed: 3 Hrs.

COURSE OBJECTIVES

- 1. To familiarize students with design and its various disciplines
- 2. To introduce students to the design process
- 3. To teach students the fundamentals of design principles
- 4. Prepare students for more advanced design coursework and professional careers in this field

Unit-I DESIGN PRACTICES

- 1.1 Definition of design & Overview of design
- 1.2 Ideation and concept development, Design process and methodology.
- 1.3 Various design disciplines (graphic design, web design, product design & user experience design.)
- 1.4 Making of Prototyping
- 1.5 Testing Prototyping

UNIT-II DESIGN ELEMENTS AND COMPOSITION

- 2.1 Elements of Design
- 2.2 Principle of Design
- 2.3 Composition and layout, Gestalt principles
- 2.4 Grid, Proximity, White Space & Repetition symmetry & asymmetry
- 2.5 Composition techniques used in print, web, and branding design

UNIT -III COLORS & DESIGN

- 3.1 Color Theory, Color properties hue, saturation, value
- 3.2 Color harmony analogous, complementary and triadic
- 3.3 Color mixing
- 3.4 Color Schemes
- 3.5 Cultural associations & symbolism in design,

UNIT-IV PROFESSIONAL ETHICS

- 4.1 Ethical considerations in design practice
- 4.2 Intellectual property and copyright law, fair use and plagiarism, Protecting design with trademarks, patents, and copyrights
- 4.3 The impact of digital technologies on intellectual property
- 4.4 Understanding professional codes of conduct and standards
- 4.5 Environmental regulations and laws governing design

COURSE OUTCOME

- 1. Students will have a solid understanding of the principles of design & the processes used to create effective designs.
- 2. Students will have an understanding of the history of design and the major design movements.
- 3. Students will be able to think creatively and critically when approaching design challenges.
- 4. Students will be able to communicate their design ideas effectively through visual presentations.

ASSIGNEMENTS

- 1. Create an infographic: Choose a topic or theme and create an infographic that presents information in a clear and visually appealing way. Consider factors such as data visualization, typography, and color scheme.
- 2. Design a print layout: Choose a publication, such as a magazine or brochure, and design a layout that effectively communicates information and engages the reader. Consider factors such as typography, hierarchy, and visual elements.
- 3. Design a product: Choose a product and design it from concept to completion, including sketches, digital renderings, and prototypes.
- 4. Create a branding identity: Choose a product or service and create a branding identity for it, including a logo, color scheme, and other visual elements that convey the brand's values and personality.

5. Design a website: Choose a topic or theme and design a website that effectively communicates information and engages the user. Consider factors such as user experience, layout, typography, and color scheme.

SUGGESTED READING

- 1. "Thinking with Type" by Ellen Lupton
- 2. The Elements of Graphic Design" by Alex W. White
- 3. "Don't Make Me Think" by Steve Krug
- 4. "Grid Systems in Graphic Design" by Josef Müller-Brockmann
- 5. https://www.youtube.com/@GCFLearnFree
- 6. https://www.youtube.com/@envatotuts



AUDIO - VIDEO EDITING (B.Sc. VCMT 204-23)

L T P 0 0 2

Time Allowed: 3 Hrs.

I.A: 15 Marks Theory: Marks -35 Max. Marks: 50 Total Credit: 2

COURSE OBJECTIVES

- 1. To introduce students to the fundamentals of audio and video editing.
- 2. To introduce students to advanced audio-video editing techniques.
- 3. To prepare students for careers in audio-video editing and related fields, such as filmmaking, video production, and multimedia design.
- 4. To provide students with opportunities to practice their audio-video editing skills through hands-on projects and assignments.

UNIT-I BASICS OF AUDIO & EDITING

- 1.1 Basics of sound and audio.
- 1.2 Pitch, Tone & Bass, Tempo, Audio Modulation, and Console.
- 1.3 Editing audio by editing software- Avid Pro tools, Adobe Audition, Audacity.
- 1.4 Removing background noise from audio, Applying audio effects and filters.
- 1.5 Linear & Non linear editing, Mixing and mastering audio- EQ, compression, reverb.

UNIT-II VIDEO EDITING

- 2.1 Basics of video and video formats, Video timeline & Scroll
- 2.2 Video editing software and their features- Adobe premiere pro, Final cut Pro.
- 2.3 Cutting and arranging video clips Adding transitions and effects to video.
- 2.4 Color grading and correction, Exporting video for various platforms and formats.
- 2.5 Introduction to non-linear editing, online editing, the role of editing in visual storytelling.

UNIT-III FUNDAMENTAL OF AUDIO- VIDEO EDITING

- 3.1 Introduction to Audio Formats
- 3.2 Introduction to Video Formats- MP4

- 3.3 The role of codecs and compression-lossless compression and lossy compression.
- 3.4 Understanding resolution, aspect ratio, frame rate, HD, FHD,4K & 8K
- 3.5 Audio- Video Transitions.

UNIT-IV EMERGING TRENDS IN AUDIO- VIDEO EDITING

- 4.1 360-degree video editing, Live streaming and real-time editing.
- 4.2 Multi-camera editing, Mobile editing, 3D editing and compositing
- 4.3 Immersive audio formats: Dolby Atmos and DTS:X.
- 4.4 Use of AI and VR in Audio & Video editing.
- 4.5 Motion graphics and animation software, Key frame animation techniques.

COURSE OUTCOMES

- 1. Understanding the basics of audio and video formats, codecs, and compression.
- 2. Understanding the fundamentals of audio and video editing software.
- 3. Developing proficiency in basic audio and video editing techniques such as cutting, trimming, and splitting clips.
- 4. Understanding emerging trends and technologies in audio and video editing, such as 360-degree video editing, virtual production, and artificial intelligence.

PRACTICAL/ASSIGNEMENTS

- 1. Create a short video montage using Adobe premiere Pro.
- 2. Create a podcast using Pro tools or Adobe Audition.
- 3. Create a music video using Final Cut Pro.
- 4. Edit a short film using Final Cut Pro.
- 5. Create a virtual tour for 360 video editing by AI.

SUGGESTED READING

- 1. "In the Blink of an Eye: A Perspective on Film Editing" by Walter Murch
- 2. "The Technique of Film and Video Editing: History, Theory, and Practice" by Ken Dancyger.
- 3. "Digital Non-Linear Desktop Editing" by Thomas Ohanian and Michael Phillips
- 4. "Color Correction Handbook: Professional Techniques for Video and Cinema" by Alexis Van Hurkman
- 5. "Pro Tools 101: An Introduction to Pro Tools 11" by Frank D. Cook.

Indian Constitution (B.Sc.VCMT-205-23)

L T P

3 0 0

Time Allowed: 3 Hrs.

I.A./Practical: 25 Marks Theory: 50 Marks Max. Marks: 75 Total Credits: 3

COURSE OBJECTIVES:

- 1. To understand the political framework for social welfare
- 2. To understand the foundation of democracy in India
- 3. To Understand Special Constitutional provision

UNIT I: FOUNDATION OF DEMOCRACY IN INDIA

- 1.1 Introduction of Constitution of India: History, Origin and Drafting committee
- 1.2 Meaning and importance of the Constitution
- 1.3 Preamble of Indian Constitution
- 1.4 State: Origin, Concept and its Organs.
- 1.5 Concepts of Welfare State

Unit II: SALIENT FEATURES OF INDIAN CONSTITUTION

- 1.1 Directive Principles of State Policy
- 1.2 Fundamental Rights, Fundamental Duties
- 1.3 Reasonable Restriction on Article 19(a)
- 1.4 The President, Union Executive and Indian Parliament
- 1.5 Salient Feature & Characteristics of Indian Constitution

UNIT III: SPECIAL FEATURES OF INDIAN CONSTITUTION

- 3.1 Amendment to Constitution, and Important Constitutional Amendments
- 3.2 Emergency Provisions: National and financial Emergency, Presidential Rule
- 3.3 Citizen oriented measures RTI and PIL Provisions and significance
- 3.4 Part 9 B: The Cooperative Societies
- 3.5 Constitutional Remedies for Citizens

Assignments:

- 1. Group Activity: Group Presentation on Welfare state
- 2. Group Activity: Poster/Chart on Constitution of India and its Features.
- 3. FDG on Constitutional Amendments

COURSE OUTCOME

- 1. Able to understand the political framework for social welfare
- 2. Able to understand the foundation of democracy in India
- 3. Able to Understand Special Constitutional provision

SUGGESTED READINGS:

- Mahajan, G. (Ed.). (1998). Democracy, Difference and Social Justice. New Delhi: Cambridge University Press
- Mohanty, Manoranjan (2004) Class, Caste, Gender Readings in Indian Government and Politics, New Delhi: Sage Publication
- "The Constitution of India" by B.R. Ambedkar, Published by Oxford University Press, 1951, ISBN: 9780195650292
- "Indian Constitutional Law" by M.P. Jain, Published by Lexis Nexis, Sixth Edition, 2016, ISBN: 9789351444867
- "Commentary on the Constitution of India" by D.D. Basu, Published by Eastern Book Company, Twentieth Edition, 2018, ISBN: 9788170195190
- "Constitutional Law and Philosophy" by Granville Austin, Published by Oxford University Press, Third Edition, 2015, ISBN: 9780195674551
- "The Oxford Companion to the Supreme Court of India" edited by A.G. Noorani, Published by Oxford University Press, Second Edition, 2015, ISBN: 9780199457122
- "The Indian Constitution: Cornerstone of a Nation" by Granville Austin, Published by Oxford University Press, Second Edition, 1966, ISBN: 9780195604753
- "The Making of the Indian Constitution: Select Documents" edited by B. Shiva Rao, Published by Indian Law Institute, Sixth Edition, 2016, ISBN: 9788182483469
- "Constitutional Interpretation in India" by S.K. Agnihotri, Published by Deep & Deep
 Publications, Second Edition, 2012, ISBN: 9788176293468

DIGITAL PHOTOGRAPHY TECHNIQUES- STUDIO (B.Sc. VCMT 206-23)

L T P 2 0 0 Time Allowed: 3 Hrs. I.A/Practical: 15 Marks Lab: Marks -35 Max. Marks: 50 Total Credit: 2

- 1. Camera Operation: Hands-on practice with camera controls and settings, including aperture, shutter speed, and ISO, focusing, and using different types of lenses. Students will practice shooting in different lighting conditions and learn how to adjust the camera settings accordingly to achieve proper exposure.
- 2. Lighting: Practice with different types of lighting equipment, such as strobes, continuous lighting, and modifiers, to create different lighting effects in studio and on-location shoots.
- 3. Composition techniques: Experiment with different composition techniques, including rule of thirds, leading lines, and framing.
- 4. Critique and Feedback: Participate in group critiques and receive feedback on photographs to improve technical and artistic skills.
- 5. Create a production Portfolio & Exhibition of different genre of Photography.

FARIDABAD HARYANA विद्या परम् भूषणम

ADOBE SUITE-BASIC LEVEL (B.Sc. VCMT 207-23)

L T P 0 0 3

Time Allowed: 3 Hrs.

I.A: 25 Marks Practical: Marks -50 Max. Marks: 75 Total Credits: 3

1. Adobe Photoshop:

- > Introduction to the Photoshop interface
- Basic image editing tools and techniques
- Layers and masks
- Selections and manipulation
- Color correction and adjustment
- 2. Adobe InDesign:
- Introduction to the InDesign interface
- Working with text and typography
- > Importing and manipulating images
- Layout and design principles
- Creating interactive PDFs
- 3. Adobe Premiere Pro
- Introduction to the Adobe premiere Pro
- Understand timelines
- Edit video using Adobe Premiere Pro.
- Working with transitions
- Create a Show-reel using Adobe premiere Pro

ENVIRONMENTAL SCIENCE-I SUBJECT CODE: VAC-EVS-I

L	T	P	Credits	SESSIONAL	: 25
2	0	0	2	FINAL EXAM	: 75
				TOTAL	: 100

NOTE: Question paper will have two parts. Part-1 will be compulsory and have 10 questions of equal marks covering the entire syllabus. Attempt any four questions out of six from Part-2.

COURSE OUTCOMES:

At the completion of this course, the learner will be able to:

- CO1: Understand human interaction with the environment and efforts taken for emergence of environmentalism at international level.
- CO2: Understand concept of natural resources, their distribution, conservation, management and sustainable utilization.
- CO3: Develop critical thinking towards local, regional and global environmental issue.
- CO4: Describe the concept of ecosystem, biodiversity and their conservation at national and international levels.

Unit I: Humans and the Environment

(4 hrs)

The man-environment interaction: Humans as hunter-gatherers; Mastery of fire; Origin of agriculture; Emergence of city-states; Great ancient civilizations and the environment, Indic Knowledge and Culture of sustainability; Middle Ages and Renaissance; Industrial revolution and its impact on the environment; Population growth and natural resource exploitation; Global environmental change. Environmental Ethics and emergence of environmentalism: Anthropocentric and eco-centric perspectives (Major thinkers); The Club of Rome- Limits to Growth; UN Conference on Human Environment 1972; World Commission on Environment and Development and the concept of sustainable development; Rio Summit and subsequent international efforts.

Unit II: Natural Resources and Sustainable Development

(6 hrs)

Overview of natural resources: Definition of resource; Classification of natural resources- biotic and abiotic, renewable and non-renewable.

Biotic resources: Major type of biotic resources- forests, grasslands, wetlands, wildlife and aquatic (fresh water and marine); Microbes as a resource; Status and challenges.

Water resources: Types of water resources- fresh water and marine resources; Availability and use of water resources; Environmental impact of over-exploitation, issues and challenges; Water scarcity and stress; Conflicts over water.

Soil and mineral resources: Important minerals; Mineral exploitation; Environmental problems due to extraction of minerals and use; Soil as a resource and its degradation.

Energy resources: Sources of energy and their classification, renewable and non-renewable sources of energy; Conventional energy sources- coal, oil, natural gas, nuclear energy; non-conventional energy sources- solar, wind, tidal, hydro, wave, ocean thermal, geothermal, biomass, hydrogen and fuel cells; Implications of energy use on the environment.

Introduction to sustainable development: Sustainable Development Goals (SDGs)- targets and indicators, challenges and strategies for SDGs.

Unit III: Environmental Issues: Local, Regional and Global

(6 hrs)

Environmental issues and scales: Concepts of micro-, meso-, synoptic and planetary scales; Temporal and spatial extents of local, regional, and global phenomena.

Pollution: Impact of sectoral processes on Environment; Types of Pollution- air, noise, water, soil, thermal, radioactive; municipal solid waste, hazardous waste; transboundary air pollution; acid rain; smog.

Land use and Land cover change: land degradation, deforestation, desertification, urbanization. Biodiversity loss: past and current trends, impact.

Global change: Ozone layer depletion; Climate change. Disasters – Natural and Man-made (Anthropogenic)

Unit IV: Conservation of Biodiversity and Ecosystems

(8 hrs)

Biodiversity and its distribution: Biodiversity as a natural resource; Levels and types; Biodiversity in India and the world; Biodiversity hotspots.

Ecosystems and ecosystem services: Major ecosystem types in India and their basic characteristics-forests, wetlands, grasslands, agriculture, coastal and marine; Ecosystem services- classification and significance.

Threats to biodiversity and ecosystems: Land use and land cover change; Commercial exploitation of species; Invasive species; Fire, disasters and climate change.

Major conservation policies: in-situ and ex-situ conservation; Major protected areas; Biosphere reserves; Ecologically Sensitive Areas; Coastal Regulation Zone; the role of traditional knowledge for biodiversity conservation, community-based conservation; Gender and conservation.

Overview of the following conventions and protocols- Convention on Biological Diversity (CBD); Cartagena Protocol on Biosafety; Nagoya Protocol on Access and Benefit-sharing; Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES); Ramsar Convention on Wetlands of International Importance; Ramsar sites; United Nations Convention to Combat Desertification (UNCCD).

Unit V: Case studies/ Field Work

(6 hrs)

The students are expected to be engaged in some of the following or similar identified activities:

- a) Field visits to identify local/regional environmental issues, make observations including data collection and prepare a brief report.
- b) Discussion on one national and one international case study related to the environment and sustainable development.
- c) Participation in plantation drive and nature camps.
- d) Documentation of campus flora and fauna.

Suggested Readings:

- 1. Baskar, R & Baskar, S. (2010). Natural Disasters: Earth's Processes & Geological Hazards, Unicorn Books
- 2. Bawa, K.S., Oomen, M.A. and Primack, R. (2011) Conservation Biology: A Primer for South Asia. Universities Press.
- 3. Bhagwat, Shonil (Editor) (2018) Conservation and Development in India: Reimagining Wilderness, Earthscan Conservation and Development, Routledge.
- 4. Chiras, D. D and Reganold, J. P. (2010). Natural Resource Conservation: Management for a Sustainable Future.10th edition, Upper Saddle River, N. J. Benjamin/Cummins/Pearson.
- 5. De Anil, K. (2003). Environmental chemistry. New Age International.
- 6. Fisher, Michael H. (2018) An Environmental History of India- From Earliest Times to the Twenty-First Century, Cambridge University Press.
- 7. Gilbert M. Masters and W. P. (2008). An Introduction to Environmental Engineering and Science, Ela Publisher (Pearson)
- 8. Harper, Charles L. (2017) Environment and Society, Human Perspectives on Environmental Issues 6th Edition. Routledge.
- 9. Harris, Frances (2012) Global Environmental Issues, 2nd Edition. Wiley- Blackwell.
- 10. Headrick, Daniel R. (2020) Humans versus Nature- A Global Environmental History, Oxford University Press.

- 11. Hughes, J. Donald (2009) An Environmental History of the World- Humankind's Changing Role in the Community of Life, 2nd Edition. Routledge.
- 12. John W. Twidell and Anthony D. (2015). Renewable Energy Sources, 3rd Edition, Weir Publisher (ELBS)
- 13. Kaushik, A., & Kaushik, C. P. (2006). Perspectives in environmental studies. New Age International.
- 14. Krishnamurthy, K.V. (2003) Textbook of Biodiversity, Science Publishers, Plymouth, UK
- 15. Manahan, S.E. (2022). Environmental Chemistry (11th ed.). CRC Press. https://doi.org/10.1201/9781003096238
- 16. Perman, R., Ma, Y., McGilvray, J., and Common, M. (2003) Natural Resource and Environmental Economics. Pearson Education.
- 17. Rajagopalan, R. (2011). Environmental Studies: From Crisis to Cure. India: Oxford University Press.
- 18. Sharma, P. D., & Sharma, P. D. (2012). Ecology and environment. Rastogi Publications.
- 19. Simmons, I. G. (2008). Global Environmental History: 10,000 BC to AD 2000. Edinburgh University Press
- 20. Singh, J.S., Singh, S.P. & Egopta, S.R. 2006. Ecology, Environment and Resource Conservation. Anamaya Publications https://sdgs.un.org/goals
- 21. Sinha, N. (2020) Wild and Wilful. Harper Collins, India.
- 22. Varghese, Anita, Oommen, Meera Anna, Paul, Mridula Mary, Nath, Snehlata (Editors) (2022) Conservation through Sustainable Use: Lessons from India. Routledge.
- 23. William P. Cunningham and Mary A. (2015). Cunningham Environmental Science: A global concern, Publisher (Mc-Graw Hill, USA)