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

Bachelor of Science in Media Technology

Regulations and Syllabus

[For those who join the Course in July 2023 and after]

CHOICE BASED CREDIT SYSTEM

Regulations and Syllabus

GENERAL INSTRUCTIONS AND REGULATIONS

B.Sc. Media Technology conducted by Alagappa University, Karaikudi, Tamil Nadu through its Collaborative Institution.

Applicable to all the candidates admitted from the academic year **2023** onwards.

1. **Eligibility:**

   A pass in the Higher Secondary Examination (HSC) conducted by the Government of Tamil Nadu, or an examination accepted as equivalent thereto by the Syndicate for admission to this programme.

2. **For the Degree:**

   The candidates shall have subsequently undergone the prescribed program of study in an institute for not less than three academic years, passed the examinations prescribed and fulfill such conditions as have been prescribed thereof.

3. **Admission:**

   Admission is based on the marks in the qualifying examination.

4. **Duration of the course:**

   The course shall extend over a period of **Three years** under Semester pattern.

5. **Standard of Passing and Award of Division:**
   a. Students shall have a minimum of 40% of total marks of the University examinations in each subject. The overall passing minimum is 40% both in aggregate of Continuous Internal Assessment and external in each subject.
   b. The minimum marks for passing in each theory / Lab course shall be 40% of the marks prescribed for the paper / lab.
   c. A candidate who secures 40% or more marks but less than 50% of the aggregate marks prescribed for three years taken together, shall be awarded **THIRD CLASS.**
   d. A candidate who secures 50% or more marks but less than 60% of the aggregate marks prescribed for three years taken together, shall be awarded **SECOND CLASS.**
   e. A candidate who secures 60% or more of the aggregate marks prescribed for three years taken together, shall be awarded **FIRST CLASS.**
   f. Only Part-III subjects will be considered for the University academic ranking purpose.
   g. The Practical / Project shall be assessed by the two examiners, by an internal examiner and an external examiner.

6. **Continuous internal Assessment:**
   a. Continuous Internal Assessment for each paper shall be by means of Written Tests, Assignments, Class tests and Seminars
   b. **25 marks** allotted for the Continuous Internal assessment is distributed for Written Test, Assignment, Class test and Seminars.
   c. Internal Assessment - Break-Up of Marks, suggested pattern (Faculty may change the pattern, according to the subject and need)
      a. Two Internal Tests (choose one best out of two) – 50%
      b. Model Test (One model test) – Nil – Should be conducted prior to the University examination. It is a mandate.
      c. Assignments – 25%
      d. Seminar / Case Study – 25%
   d. Conduct of the continuous internal assessment shall be the responsibility of the concerned faculty.
   e. The continuous internal assessment marks should be submitted to the University at the end of every semester, before the commencement of Semester Exams.

f. The valued answer papers/assignments should be given to the students after the valuation is over and they should be asked to check up and satisfy themselves about the marks they have scored.
g. All mark lists and other records connected with the continuous internal assessments should be in the safe custody of the institution for at least one year after the assessment.

7. Attendance:

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

8. Examination:

Candidate must complete course duration to appear for the university examination. Examination will be conducted with concurrence of Controller of Examinations as per the Alagappa University regulations. **University may send the representatives as the observer during examinations.** University Examination will be held at the end of the each semester for duration of 3 hours for each subject. Certificate will be issued as per the AU regulations. **Hall ticket will be issued to the students at the end of every semester after submitting "No Dues" certificate to the exam cell, under the aegis of Controller of Examinations of the AU.**

Question Paper pattern:

Maximum: 75 Marks Duration: 3Hours

Part A - Short answer questions with no choice	: 10 x 02=20
Part B –Brief answer with either or type	: 05 x 05=25
Part C- Essay – type questions of either / or type	: 03 x 10=30

9. Miscellaneous

a. Every student should possess the prescribed text book for all the subjects, through-out the semester for their theory/lab classes.
b. Every student would be issued an Identity card by the institute/university to identify his/her admission to the course.
c. Every student shall access the library and internet (wi-fi) facilities provided for the self-development and career-development.
d. Every student who successfully completes the course within the stipulated time period would be awarded the degree by the University.

10. Fee structure

Course fee shall be as prescribed by the University and 50% of the course fee should be disbursed to University. Special fees and other fees shall be as prescribed by the Institution and the fees structure must be intimated to the University. Course fees should be only by Demand draft / NEFT and AU has right to revise the fees accordingly.

Semester Pattern

Pattern	Course Fee payment deadline
Semester	Fee must be paid before 10th September of the academic year

11. Other Regulations:

Besides the above, the common regulation of the University shall also be applicable to this programme.

SYLLABUS UNDER CBCS PATTERN w.e.f.2023-24)										
B.Sc. Media Technology										
Sem.	**Part**	**Course Code**	**Courses**	**Title of the Paper**	**T/P**	**Cr.**	**Hrs./ Week**	**Max. Marks**		
								Int.	**Ext.**	**Total**
I	I	83511T/ 11H/11F	T/OL	Tamil /Other Languages-I	T	3	4	25	75	100
	II	83512	E	General English-I	T	3	4	25	75	100
	III	83513	Core 1	Introduction to Visual Communication	T	4	5	25	75	100
		83514	Core 2	Graphic Design -Practical	P	4	6	25	75	100
		83515	Allied	Design Fundamentals	T	3	3	25	75	100
		83516	Allied	Image Editing Techniques-Practical	P	2	4	25	75	100
	IV	83517	SEC -I	Value Education	T	2	2	25	75	100
				Library			2			
				Total		**21**	**30**	**200**	**600**	**700**
II	I	83521T	T/OL	Tamil/Other Languages-II	T	3	4	25	75	100
	II	83522	E	General English-II	T	3	4	25	75	100
	III	83523	Core 3	Web Designing	T	4	5	25	75	100
		83524	Core 4	Web Designing-Practical	P	4	6	25	75	100
		83525	Allied 3	Digital Photography	T	3	3	25	75	100
		83526	Allied 4	Foundation Art-Practical	P	2	4	25	75	100
	IV	83527	SEC -II	Environmental Studies	T	2	2	25	75	100
		83528A 83528B		Internship/ Mini Project	I/ PR	2	--	25	75	100
				Library			2			
				Total		**23**	**30**	**175**	**525**	**700**
III	I	83531T	T/OL	Tamil/Other Languages-III	T	3	4	25	75	100
	II	83532	E	General English-III	T	3	4	25	75	100
	III	83533	Core 5	Interactive Animation Techniques	T	3	3	25	75	100
		83534	Core 6	2D Graphics & Animation	T	3	3	25	75	100
		83535	Core 7	2D Graphics & Animation - Practical	P	3	5	25	75	100
		83536	Allied 5	Pre Production & Shooting Techniques	T	3	3	25	75	100
		83537	Allied 6	Interactive Animation Techniques-Practical	P	2	4	25	75	100
	IV	83538	SEC -III	Entrepreneurship	T	2	2	25	75	100
		83539A 83539B 83539C	NME- I	1.Adipadai Tamil	P	2	2	25	75	100
				2.Advance Tamil	T					
				3.IT Skills for Employment	T					
				4. MOOC'S	T					
				Total		**24**	**30**	**225**	**675**	**900**

IV	I	83541T	T/OL	Tamil /Other Languages -IV	T	3	4	25	75	100
	II	83542	E	General English-IV	T	3	4	25	75	100
	III	83543	Core 8	Non Linear Editing	T	4	4	25	75	100
		83544	Core 9	3D Design	T	4	4	25	75	100
		83545	Core 10	3D Design-Practical	P	3	5	25	75	100
		83546	Allied 7	Advanced Art	T	3	3	25	75	100
		83547	Allied 8	Advanced Art-Practical	P	2	4	25	75	100
	IV	83548A 83548B 83548C	NME- II	1.Adipadai Tamil	P	2	2	25	75	100
				2.Advance Tamil	T					
				3. Small Business Management	T					
				4. MOOC'S	T					
		83549		Internship	I	2	--	25	75	100
				Total		**26**	**30**	**225**	**675**	**800**
V	III	83551	Core 11	Motion Graphics	T	4	4	25	75	100
		83552	Core 12	Dynamics Simulation	T	4	4	25	75	100
		83553A 83553B 83553C	DSE 1	1.Concept Art 2.Matte Painting 3.Visual Storytelling for Film and Games	T	4	4	25	75	100
		83554A 83554B 83554C	DSE 2	1.Advanced Modeling And Texturing 2.VR and AR Modeling 3.Digital Sculpting and Texturing Techniques	T	4	4	25	75	100
		83555A 83555B 83555C	DSE 3	1.Rigging and Animation-Practical 2.Lighting and Rendering-Practical 3.Compositing Techniques-Practical	P	4	4	25	75	100
		83556	Core 13	Motion Graphics-Practical	P	4	8	25	75	100
				Career Development/ Employability Skills			2			
				Total		**24**	**30**	**150**	**450**	**600**
VI	III	83561	Core 14	Visualization for Multimedia	T	4	4	25	75	100
		83562	Core 15	Portfolio & Presentation	T	4	4	25	75	100
		83563	Core 16	Visualization for Multimedia-Practical	P	4	6	25	75	100
		83564A 83564B 83564C	DSE 4	1.Trends in Multimedia 2.Interactive Media Design and User Experience 3.Digital Marketing and Social Media	T	4	4	25	75	100
		83565A/ 83565B	Core 17	Project/ Dissertation	PR/ D	**6**	**12**	**25**	**75**	**100**
				Total		**22**	**30**	**125**	**375**	**500**
	Grand Total					**140**	**180**	**1100**	**3300**	**4200**

I – Semester					
Core	**Course code: 83513**	**Introduction to Visual Communication**	**T**	**Credits: 4**	**Hours: 5**
Objectives	1. To gain a clear insight into different communication types, methods, and hurdles, enhancing skills for effective interactions in various situations. 2. Understand communication models such as Lasswell's, Two-step flow, Schramm's Circular, White's Gatekeeper, and Dance's Helical models, and differentiate technical, semantic, and pragmatic levels of communication. 3. Introduce semiotics, sign analysis, visual communication, sensory perception, and design processes. 4. Explore culture, global media, cross-cultural challenges, and semiotics in communication. 5. Explore Mass Media, its functions, types (Traditional, Print, Electronic, Digital, PR), and media theories (Hypodermic Needle, Uses & Gratification).				
Unit I	**Introduction to Communication:** Defining and Understanding Communication - Communication as a Process, Symbols and Meaning, Importance of Visual Communication - Communication as an expression - Skill and process -Types of communication - Verbal, Non verbal, Intrapersonal, Interpersonal, Group and Team, Mass, Intercultural Communication - Barriers to Communication.				
Unit II	**Understanding Visual Communication:** SMCR Model Theoretical concepts and constructs in Communication models – Lasswell‟s Model - Two-step flow theory – Schramm‟s Circular Model -Whites Gatekeeper theory – Dance‟s Helical model - Levels of Communication: Technical, Semantic, and Pragmatic. Distinguish and explain the key concepts within various communication models and categorize communication levels according to their technical, semantic, and pragmatic dimensions.				
Unit III	**Introduction to semiotics** – analysis - aspects of signs and symbols denotations and connotations - paradigmatic and syntagmatic aspects of signs. The semiotic landscape: Language and Visual communication - Narrative representation. Principles of Visual - Sensory Perceptions - Color psychology and theory (some aspects) – Definition - Optical/Visual Illusions etc., Design process –Research - A source of concept - The process of developing ideas, verbal, visual, combination & thematic - Visual thinking - Associative techniques, materials, tools (precision instruments etc.) - Design execution and presentation				
Unit IV	**Communication and Public opinion**: nature, meaning and process - Culture and Communication: Relationship Between Culture and Communication - Global Media – multicultural content -impact on Developing countries, Cross-cultural communication: problems and challenges. Communication as a process: Introduction to semiotics – analysis - aspects of signs and symbols denotations and connotations - paradigmatic and syntagmatic aspects of signs. Message – Meaning – Connotation - Denotation Culture/Codes etc.,				
Unit V	**Mass Media communication** - What is Mass Media – Functions of mass communication - To-Persuade, Inform, Educate, and Entertain; Other functions; Impact & Influence Of Mass Media Types of Mass Media: Traditional media, Print Media, Electronic media, Digital media, Public Relations, Publicity and Propaganda –Theories Of mass media: Hypodermic needle model, uses and a gratification model.				

Reference and Text Books

Bo Bergstrom, “Essentials of Visual Communication”, Laurence King Publishing, 2008.

J V Vilanilam, “Mass Communication In India: A Sociological Perspective”, SAGE Publications, 2005.

Keval.J.Kumar, “Mass Communication in India”, Jaico Publishing House, 1999.

Wood, Julia T, "Communication mosaics: An introduction to the field of Communication", Wards worth,2001. Paul Martin Lester "Visual Communication: Images With Messages", Cengage Learning, 2013.	
Online Resources https://www.britannica.com/topic/mass-communication https://www.ualberta.ca/art-design/areas-of-study/visual-communication-design.html https://www.youtube.com/watch?v=ubR8rEgSZSU https://www.youtube.com/watch?v=2p0NRBaQ4Ic	

Course Outcomes		Knowledge level
CO-1	Acquire fluency in the fundamental terminologies and principles related to communication.	K1
CO-2	Compare communication models; Lasswell, Two-step flow, Schramm's Circular, White's Gatekeeper, Dance's Helical; differentiate levels.	K3&K6
CO-3	Apply semiotics, analyze signs, enhance visual communication, and design proficiency	K4
CO-4	Master culture-media nexus, address cross-cultural hurdles, apply semiotics effectively	K5
CO-5	Achieve a comprehensive understanding of Mass Media roles, types, and theories, discerning their societal impact and implications.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	L(1)	M(2)	M(2)	S(3)
CO2	M(2)	L(1)	L(1)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	**2.2**	**2**	**2**	**2.2**	**2.6**

S–Strong (3), M-Medium (2), L-Low (1)

I-Semester					
Course Code: 83514	**Title of the Course**	**Graphic Design - Practical**	**P**	**Credits: 4**	**Hours: 6**
Objective	1. To use color theory to create mood and convey messages effectively. 2. To build a strong graphic design portfolio. 3. To understand the importance of choosing and arranging fonts effectively. Objectives should include creating visually appealing layouts, ensuring readability, and experimenting with various typographic styles. 4. To think creatively and innovatively in their design work. Set objectives that challenge them to explore new ideas, experiment with different design styles, and push the boundaries of traditional design concepts. **5.** To develop a strong foundation in graphic design. This includes understanding design principles such as balance, contrast, alignment, and proximity, as well as gaining proficiency in using design software and tools.				

Students are required to create storyboard, and design for the following:

Create a social media post design for a product or a company.
Create a brand and marketing collateral design for a company or product.
Design a brochure or a product catalogue
Create a leaflet for a furniture brand that would be distributed to prospective customers in an exhibition
Create a newsletter that promotes various products for Diwali.
Design a Vector Portrait Illustration
Design a Packaging Design for a Product
Create a Restaurant Menu Design
Design a Banner Ads for Online Promotion
Design a Book Cover Illustration

Outcome	1. Students will gain expertise in adapting their designs for various media platforms, including print, web, and social media. 2. Students will develop the ability to creatively solve design challenges. They will learn how to analyze design problems, generate multiple design concepts, and select the most appropriate solution based on design principles and project requirements. 3. students will have a portfolio of diverse design projects that showcase their skills and creativity 4. students will be proficient in using industry-standard graphic design software such as Adobe Photoshop, Illustrator, and InDesign, enabling them to create high-quality visual designs. **5.** students will be able to demonstrate effective visual communication skills. They will understand how to use typography, color theory, layout, and imagery to convey messages clearly and persuasively in their designs.

Reference and Text Books:

Adobe, " Adobe Illustrator CC Classroom in a Book " , Pearson Education India 1 edition 2014
Alina Wheeler, " Designing Brand Identity: An Essential Guide for the Whole Branding Team ", Wiley; 5 edition (October 16, 2017)
Faulkner Andrew, Chavez Conrad, " Adobe Photoshop CC Classroom in a Book, Pearson Education" First edition 2017

James Craig , Irene Korol Scala, " Designing with Type, 5th Edition: The Essential Guide to Typography ", Watson-Guptill; 5th ed. edition (May 1, 2006) Kordes Anton Kelly, Cruise John, "Adobe InDesign CC Classroom in a Book", Pearson Education; First edition 2017
Online Resources https://www.youtube.com/watch?v=rfIq1Szc2j4 https://www.youtube.com/watch?v=yad3GOnVw5c https://www.youtube.com/watch?v=9EGI-FSr0Ig https://www.youtube.com/watch?v=vAG-CElu7ck https://www.youtube.com/watch?v=lNOqlS5X1GU https://www.youtube.com/watch?v=NZmny1RT2R8

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	L(1)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	S(3)	S(3)
CO3	M(2)	S(3)	M(2)	S(3)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	L(1)	S(3)
W.AV	**2.6**	**2.6**	**2.4**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

<table>
<tr><th colspan="6">I – Semester</th></tr>
<tr><td>Allied</td><td>Course code: 83515</td><td>Design Fundamentals</td><td>T</td><td>Credits: 3</td><td>Hours: 3</td></tr>
<tr><td>Objectives</td><td colspan="5">1. To develop in-depth knowledge in understanding the importance and usage of elements & principles of design
2. To explore the principles and concepts governing the perception, interaction, and manipulation of colours in various visual contexts
3. To understand Typography and graphic principles for effective Visual Communication and explain the core concepts of typography, including typefaces, fonts, glyphs, type families, and their roles in visual communication
4. To understand Grid Systems and its benefits of using in design, including how they establish structure, alignment, and consistency in layouts
5. To understand perspective and its types for creative visualization</td></tr>
<tr><td>Unit I</td><td colspan="5">Design fundamental – Basics of Design – Characteristics of a good design - visualisation - visualising a word as drawing – Elements of design - Principles of design – creativity – fundamental of creativity – importance of creativity – developing creativity – exercises - analysing principles and elements in famous designs.</td></tr>
<tr><td>Unit II</td><td colspan="5">Colour theory – basics of colour theory – attributes of colour –colour wheel – colour harmony – colour schemes – colour blending – additive model – subtractive model – colour contrast – colour psychology – colour strategy – colours in printing - usage of adobe kuler - preparing swatches - exercises</td></tr>
<tr><td>Unit III</td><td colspan="5">Typography- typeface anatomy – measurements - typeface classifications – type families – spacing and alignment – selecting appropriate fonts – newspaper typeface analysis Graphics – importance of graphics – major classifications – image manipulation – exercises</td></tr>
<tr><td>Unit IV</td><td colspan="5">Grids and layouts – role of grids – structure – grid system and templates – layouts – layout guidelines – important parts of a page layout - types of layouts - analysing various print design layouts - trends in digital design layouts - minimal/flat - geometric - card layout - Modular/grid - typography - design process - brochure designing - exercises</td></tr>
<tr><td>Unit V</td><td colspan="5">Perspective views – Concept of perspective – types of perspective views – perspective terminology – linear perspective construction methods - single point perspective – two point perspective - three point perspective – aerial perspective - exercises</td></tr>
<tr><td colspan="6">Reference and Text Books
Lois Fichner-Rathus, “Foundations of Art and Design”, Wadsworth Publishing; First edition , 2007.
Robert A Curedale, “Design Thinking Process & Methods 4th Edition”, Design Community College Inc. (December 1, 2017).
Scott Williams, “New Perspectives in Typography”, Laurence King Publishing (13 October 2015).
Tina Sutton, Bride M. Whelan, “The complete colour harmony”, Leads Press, 2008
Tony Seddon, “20th Century Design: A Decade-by-Decade Exploration of Graphic Style Hardcover –8 Dec 2014”, HOW Books (8 December 2014)</td></tr>
<tr><td colspan="6">Online Resources
https://www.youtube.com/watch?v=YeI6Wqn4I78
https://www.youtube.com/watch?v=9EPTM91TBDU
https://www.youtube.com/watch?v=Sgm1oNt7cNw</td></tr>
</table>

Course Outcomes		Knowledge level
CO-1	Able to understand and recall the role of principles and elements of design in solving design problems	K1
CO-2	Able to utilise colour theory to create visually compelling and communicatively effective designs across diverse mediums	K3&K6
CO-3	Able to seamlessly interpret typography and graphical elements to create visually impactful designs that effectively convey messages and evoke desired emotions.	K4
CO-4	Able to seamlessly interpret Grid System and Layout for designing	K5
CO-5	Able to compose and construct various perspective visualisations as artworks and designs	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

I-Semester					
Allied	**Course Code: 83516**	**Image Editing Techniques - Practical**	**P**	**Credits: 2**	**Hours: 4**

Objective	1. To understand compositing multiple images, creating realistic shadows and reflections, and applying special effects 2. To understand fundamental image enhancement techniques, such as adjusting brightness, contrast, saturation, and sharpness, to improve the overall quality of an image 3. To understand concepts like white balance, color grading, and the use of adjustment layers 4. To understand using various selection tools and masking techniques to isolate and manipulate specific areas within an image, allowing for precise editing and creative effects **5.** To develop the skills to retouch and restore old or damaged photographs. They should be able to remove blemishes, wrinkles, and imperfections while preserving the natural look of the subject

Students are required to create storyboard, and design for the following:

1. Create a Movie Title using Image Editing Application
2. Design a poster for an upcoming 3D movie
3. Design a poster for a workshop organised by the institution or a social awareness message like saving water, electricity etc.
4. Convert a Black & White image to a colour image
5. Restore and retouch the given damaged photographs
6. Create a social awareness poster Design
7. Create an E Greeting design for any traditional festival of India
8. Create a Social Media Advertisement for a corporate company
9. Design a Micro world of a any famous landmark of INDIA
10. Create a Collage work for a theme

Outcome	1. Students will understand and apply non-destructive editing principles, including the use of adjustment layers, layer masks, and smart objects. They will be able to make changes to images without permanently altering the original content, facilitating efficient and flexible editing workflows. 2. Able to show ability to adjust and correct colors in digital images. 3. Able to show proficiency in fundamental image manipulation techniques, such as cropping, resizing, and rotating, using industry-standard software 4. Students will master advanced selection and masking techniques, enabling them to isolate and edit specific areas within an image accurately. They will be able to create precise selections using tools like the pen tool, magic wand, and refine edge functions. **5.** Students will develop the skills to create complex image compositions by combining multiple images seamlessly. They will learn to blend elements together, adjust lighting and shadows, and apply advanced retouching techniques to produce compelling and visually cohesive composite images

Reference and Text Books:

Chavez, C., & Faulkner, A. (2021). *Adobe Photoshop Classroom in a Book (2021 Release)*. Adobe

Press.
Dewis, G. (2015). *The Photoshop Workbook: Professional Retouching and Compositing Tips, Tricks, and Techniques*. Pearson Education.
Swerzenski, J. D. (2021). Fact, fiction or Photoshop: Building awareness of visual manipulation through image editing software. *Journal of Visual Literacy*, *40*(2), 104-124.
Whitt, P., Harder, J., & Shaffer, J. (2020). *Photo Editing Basics with Adobe Photoshop Elements: Improving, Enhancing, and Retouching Images*. Apress.

Online Resources

https://www.youtube.com/@BennyProductions
https://www.youtube.com/watch?v=BgiYdgzWa0Q&t=168s
https://www.youtube.com/watch?v=xj4vTVpV6vc

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	M(2)	M(2)	S(3)
CO2	M(2)	M(2)	S(3)	L(1)	L(1)
CO3	S(3)	S(3)	M(2)	S(3)	M(2)
CO4	S(3)	M(2)	S(3)	M(2)	M(2)
CO5	L(1)	S(3)	M(2)	S(3)	M(2)
W.AV	**2.4**	**2.6**	**2.4**	**2.2**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester-Core					
Core	**Course Code: 83523**	**Web Designing**	**T**	**Credits: 4**	**Hours: 5**
Objectives	1. To achieve fluency in translating print design skills to the web, ensuring adeptness in creating responsive and visually compelling digital content. 2. To Develop proficiency in utilizing clipping masks for web design to enhance graphic integration within shapes and elements, elevating the visual sophistication of web content. 3. To acquire a working knowledge of HTML to create and structure static web pages effectively. 4. To understand and apply the universal selector (*), gaining expertise in targeting and styling all HTML elements consistently across web projects. 5. To construct effective navigation bars using HTML and CSS, acquiring the skills to enhance user experience and site navigation.				
Unit 1	**Print to Web transition** – Introduction to work area of Image editing application – Creating a new document – Designing a mockup landing page – Grid system – Creating the Digital wireframe – Creating the layout and aligning shapes – placing the logo – adding the other elements – about layer styles – designing the body content				
Unit II	**Clipping Masks** – about the selection tools – creating the banner – using the Hue/Saturation command – Adding text – about smart filters – using the magic wand tool – using the Lasso tools – applying a Gradient fill – Layer techniques – Layer blending modes – Warping Type layers – Slicing – Optimising images using the Slice tool – using different optimization techniques				
Unit III	**Introduction to HTML** – Introduction to interface of web authoring application – creating the web page – defining CSS – Styling table – Class selector – understanding the box model – DIV – Identification with ID attribute – inserting body container – creating the side section - Float				
Unit IV	**Universal selecto**r – Floating multiple elements – clearing floated elements – Creating the site – defining the site – site management – construct the page outline – formatting main container – adding page section – position the icon elements on the page – setting position values – adding span tag				
Unit V	**Building a navigation bar** – creating style for navigation menu – design a navigation submenu HTML form elements – vendor prefix – inline style – CSS sprites – CSS reset- using web fonts –adding Google fonts to the website – adding an email subscribe – applying rounded corner buttons – adding drop shadow				

Reference and Text Books:

- Blerton Abazi, ”2017 Html and CSS: Build Your First Web Page”, Createspace Independent Pub (9 December 2016).
- David Sawyer Mcfarland (Author), Chris Grover, “Dreamweaver CC: The Missing Manual”, O′Reilly;
  2 edition (12 December 2014)
- James J. Maivald, “Adobe Dreamweaver CC Classroom in a Book”,Adobe; Pap/Psc edition 2014.
- Noble Desktop, “Photoshop CC 2017 for Web & UI Step by Step Training”, Noble Desktop 2017.
- Rob Larsen, “Beginning HTML and CSS”, Wiley (2013).

Online Resources https://www.youtube.com/watch?v=KwoSm0E8MOE https://www.youtube.com/watch?v=GJN7TemsZtY https://www.youtube.com/watch?v=OJLfjgVlwDo https://www.youtube.com/watch?v=Z07d9Vu7GKM		
CO1	Able to apply print design knowledge to produce engaging and responsive web designs.	K1
CO2	Able to Demonstrate proficiency in using clipping masks to seamlessly blend images and text, enabling sophisticated graphic compositions with precise control over visibility and transparency.	K3&K6
CO3	Able to develop the ability to create and structure web content using HTML, encompassing foundational tags, elements, and document organization.	K4
CO4	Able to efficiently apply consistent styling across all elements within web designs.	K5
CO5	Able to Develop the ability to create responsive and visually appealing navigation bars, improving website usability and user engagement.	K2&K6

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	S(3)	S(3)	L(1)	S(3)	M(2)	L(1)	M(2)	S(3)
CO2	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	L(1)	M(2)	S(3)	L(1)	M(2)	L(1)
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**	**2.8**	**2.8**	**2.4**	**1.8**	**2.2**	**2.4**	**1.8**	**2.4**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester - Core					
Core	**Course Code: 83524**	**Web Designing - Practical**	**P**	**Credits: 4**	**Hours: 6**
Objective	**1. To the web. Transitioning from print to web design involves adapting your content and design principles to suit online platforms.** **2. To create precise and visually appealing graphic effects in digital design."** **3. To create and structure static web pages effectively.** **4. To employ the universal selector (*) in CSS to target and style all HTML elements efficiently.** **5. To create visually appealing and functional navigation menu styles using CSS."**				

Students are required to write code snippets, which covers the following objectives

1. Design a website for a brand site. Create the webpage design using a design application, use HTML and CSS for creating the web page. Provide appropriate links and navigations. Add animations wherever required.
2. Design a responsive page layout design for a brand.
3. Design a web banner advertisement for a brand.
4. Design a web newsletter.
5. Designing a own portfolio web layout page design
6. Design an Emailer for a brand.
7. Design an E-commerce Websites landing page.
8. Create a cover page for Health and Wellness Websites.
9. Create User flow for Health and Wellness Websites
10. Create ICONOGRAPHY for a specific interface design

Outcome	**1. Students will demonstrate the ability to effectively translate print materials into web-compatible formats, optimizing content for digital platforms and enhancing user engagement.** **2. Students will demonstrate mastery in applying clipping masks to create intricate and precise graphic effects in digital design."** **3. learner will be adept at utilizing the universal selector (*) in CSS to efficiently style HTML elements, ensuring comprehensive control over web design.** **4. Students will create responsive and visually appealing navigation bars, improving website usability and user engagement.** **5. Apply consistent styling across all elements within web designs.**

Reference and Text Books:

- Blerton Abazi, ”2017 Html and CSS: Build Your First Web Page”, Createspace Independent Pub (9 December 2016).
- David Sawyer Mcfarland (Author), Chris Grover, “Dreamweaver CC: The Missing Manual”, O′Reilly;
  2 edition (12 December 2014)
- James J. Maivald, “Adobe Dreamweaver CC Classroom in a Book”,Adobe; Pap/Psc edition 2014.
- Noble Desktop, “Photoshop CC 2017 for Web & UI Step by Step Training”, Noble Desktop 2017.
- Rob Larsen, “Beginning HTML and CSS”, Wiley (2013).

Online Resources

https://www.youtube.com/@SuperSimpleDev
https://www.youtube.com/watch?v=YszONjKpgg4
https://www.youtube.com/watch?v=raMaAm061eM
https://www.youtube.com/watch?v=eFzAtvFOr4M

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	S(3)	S(3)	L(1)	S(3)	M(2)	L(1)	M(2)	S(3)
CO2	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)	S(3)	M(2)	S(3)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	L(1)	M(2)	S(3)	L(1)	M(2)	L(1)
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**	**2.8**	**2.8**	**2.4**	**1.8**	**2.2**	**2.4**	**1.8**	**2.4**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester - Allied					
Allied	**Course Code: 83525**	**Digital Photography**	**T**	**Credits: 3**	**Hours: 3**
Objective1	1. To Gain insight into the evolution of photography, exploring its historical milestones, technological advancements, and cultural impact. 2. To Develop a proficient grasp of the Rule of Thirds in composition, enabling the creation of visually balanced and engaging images across various artistic mediums. 3. To understand exposure triangle's interplay of aperture, shutter speed, and ISO, enabling precise control over light and creative expression in photography. 4. To demonstrate a comprehensive understanding of polarising filters, their principles of operation, and their practical applications in photography 5. To understand and gain skills necessary to proficiently navigate and utilize image editing software interfaces.				
Unit 1	**History of Photography** – History of cameras – Camera Handling technique – Basic camera settings – Different Types of Image Format – Understanding good photo and bad photo – Understanding Megapixel (MB) and image pixel.				
Unit II	**Understanding the Rule of Thirds** - Backgrounds - Foregrounds - Composition – Positive and negative space – Framing - Symmetry –Angle of view - Perspective - Understanding the lights Temperature - Assignment 1: Portraits				
Unit III	**What is exposure triangle** - Understanding Aperture types –Understanding Shutter Speed types —Understanding the ISO types – Speed Light – Softbox light – Umbrella light – Cool light – Types of camera lenses – wide angle, telephoto - zoom lenses – macro lenses - Fish eye lenses - tripod stand - lens hood – Assignment 2: product photography.				
Unit IV	**Polarising Filters** - Soft Focus Filters - The Star Filter - The Fog Filter – Environmental Portraits - Short Lighting - Broad Lighting – Bounce – Diffuser - Key Light - fill light – back light - Snoot – Reflector - Working with cameras – Assignment 3: Fashion photography - Assignment 4: landscape photography - - Assignment 5: Still Life				
Unit V	**Image editing software interface navigation** – Layers – Tools – Adjustment – Color balance – Hue/Saturation – Photo Filter – Brightness Contrast – Black and White – Exposure – curves – levels – Filters – Bridge – Temperature adjustment – Tint – Fill light – Recovery – Vibrancies – Clarity – Blacks - Interpretative Assignment: CD or Album Design.				

Reference and Text Books:

- Alan.A.Armer, “Writing the Screenplay: TV and Film, 2/E”, Waveland Pr Inc, 2002.
- Blain Brown, “Cinematography: Theory and Practice: Image Making for Cinematographers and Directors: Volume 3”, Focal Press; Second edition (27 July 2011).
- David Stump, “Digital Cinematography: Fundamentals, Tools, Techniques”, and Workflows, Routledge; 1 edition (21 March 2014).
- Jonathan Canlas, Kristen Kalp, “Film is Not Dead: A Digital Photographer's Guide to Shooting Film (Voices That Matter)”, New Riders, 2012.
- Steve Cartwright, “Pre-Production Planning for Video, Film, and Multimedia”, Focal Press, 1996.

Online Resources

https://youtu.be/V7z7BAZdt2M?feature=shared
https://youtu.be/WXdAX0No2hM?feature=shared
https://youtu.be/wwVEbEpGTkY?feature=shared

CO1	Able to Acquire a deep understanding of photography's historical journey, tracing its development, pioneers, and transformative role in visual storytelling.	K1
CO2	Able to Demonstrate the ability to apply the Rule of Thirds, producing visually harmonious compositions through strategic placement of subjects in images.	K3&K6
CO3	Able to classify and distinguish exposure triangle to create a expression in photography	K4
CO4	Able to determine skills necessary to effectively utilise polarising filters in various contexts.	K5
CO5	Able to navigate the user interface and make image editing in the commonly used image editing software applications.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	S(3)	M(2)	M(2)	M(2)
CO2	L(1)	M(2)	M(2)	M(2)	S(3)
CO3	L(1)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	L(1)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	S(3)	S(3)	M(2)
W.AV	**1.8**	**2.4**	**2.4**	**2.2**	**2.2**

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester - Allied					
Allied	**Course Code: 83526**	**Foundation Art - Practical**	**P**	**Credits: 2**	**Hours: 4**
Objectives	**To develop the ability to transform flat 2D images into visually striking 3D representations using various line-based techniques and shading methods.**				

Students are required to create the following:

1. Create a cartoon character out of an object and illustrate the character in different views
2. Create a facial expression sheet for the cartoon character out of an object.
3. Create a storyboard with a minimum of 15 shots for the animation story of your own.
4. Create the front and side view of a 2 leg cartoon character
5. Create the front and side view of a 4 leg cartoon character
6. Design a cartoon character that undergoes a physical or emotional transformation over time.
7. Incorporate your cartoon character into a specific environment or setting. Illustrate the character's interaction with the environment and how it adapts to its surroundings.
8. Design and illustrate a set of accessories or props for your cartoon character, such as clothing, tools, or gadgets.
9. Choose a well-known cartoon character (e.g., Mickey Mouse) and create a timeline illustrating how the character has evolved in terms of design and personality over the years.
10. Animate your cartoon character in a short sequence, such as a walk or a dance. Provide a video or GIF of the animation, demonstrating your understanding of character movement and timing.

Outcome	**1. Create 3D-like effects in drawings using lines, shading, hatching, and stippling.** **2. Understand and apply 2-point and 3-point perspective for realistic environmental drawings.** **3. Draw their own face accurately while experimenting with different drawing styles.** **4. Mix primary colors to create secondary and tertiary colors effectively.** **5. Create a color wheel that demonstrates an understanding of color relationships.** **6. Use 1-point perspective to construct 2D scenes with depth and visual appeal.**

Reference and Text Books:

- Gottfried Bammes, “The Artist's Guide to Human Anatomy” , Dover Publications, 2004
- Michael McKinley and Valerie O'Loughlin, “Human Anatomy”, McGraw Hill Higher Education; 2nd edition, 2007.
- Blair, P. (1995). Cartoon Animation: The Collector's Series (p. 224). Walter Foster Publishing.
- Loomis, A. (2021). Figure drawing for all it's worth. Clube de Autores.

Online Resources

https://www.artistsnetwork.com/art-techniques/beginner-artist/drawing-anatomy-for-beginners/
https://www.youtube.com/@ProkoTV/videos
https://www.youtube.com/@AaronBlaiseArt/videos

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	S(3)	M(2)	M(2)
CO2	M(2)	S(3)	S(3)	M(2)	S(3)
CO3	M(2)	M(2)	S(3)	S(3)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	M(2)
W.AV	**2.4**	**2.6**	**2.6**	**2.4**	**2.2**

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester-Core					
Core	**Course Code: 83533**	**Interactive Animation Techniques**	**T**	**Credits: 3**	**Hours: 3**
Objectives	1. To confidently navigate the software's work area, understanding how to access and manage various elements of the user interface effectively. 2. To understand stroke and fill manipulation, shape creation, object selection, contour adjustment, grouping, and proficient use of tools such as the pen, brush, and pencil for creating dynamic visual compositions 3. To demonstrate an understanding towards creating animations using keyframes, in between frames, layers, classic tweening, shape tweening, and frame-by-frame techniques. 4. To design captivating banner advertisements using graphic symbols, align panels, animated captions, and the blur filter to maximize user engagement 5. To understand masking techniques, creating interactive buttons, and writing Action Script 3.0 code to develop an interactive recipe book with event handlers, adhering to naming rules and utilizing scene navigation through frame labels and the 'gotoAndPlay' action.				
Unit I	Getting to know the work area - choosing a new workspace – the stage – changing the stage properties - timeline- using the properties inspector – working with panels – using the tools panel – previewing a movie – publishing a movie				
Unit II	Working with graphics – understanding strokes and fills – creating shapes – making selections – changing shape contours – grouping objects – using the sub selection tool – using the pen tool – free transform tool – applying a gradient fill – using the brush tool – pencil tool				
Unit III	Creating animation – about animation – keyframes – inbetween frames – about layers in animation – selecting multiple frames – using classic tween –using shape tweening – Creating a frame by frame animation.				
Unit IV	Symbols – symbol advantages – Graphic symbols – creating banner advertisements – banner ad design tips – using the align panel – adding and animating the caption – using the blur filter.				
Unit-V	Masking – creating buttons – understanding Action Script 3.0 – scripting terminology – actions panel – creating event handlers for buttons – naming rules – fscommand- creating an interactive recipe book – about scenes – goto And Play action – frame labels				

Reference and Text Books:

1. Chun Russell, “Adobe Animate CC Classroom in a Book (2018 release)”, Pearson Education; First edition 2017.
2. Gack Davidson, “Adobe Animate CC 2017: The Complete Beginner's Guide”, Publisher: Createspace Independent Pub; 1 edition January 2017.
3. Myra Ferguson, “How to Cheat in Adobe Animate CC 1st Edition”, CRC Press; 1 edition (November 15, 2017).
4. Stephen Brooks, “Tradigital Animate CC: 12 Principles of Animation in Adobe Animate 1st Edition”, Stephen Brooks, CRC Press; 1 edition (October 21, 2016).
5. TOM GREEN, “Beginning Adobe Animate CC: Learn to Efficiently Create and Deploy Animated and Interactive Content”, Apress; 1st ed. edition (March 9, 2017).

Online Resources:

https://www.youtube.com/watch?v=JtlVx-dNHcw
https://www.youtube.com/watch?v=Xv0kUo3vi_I&list=PLd4LgJMeZtWUVdPQfEdVjTBa-r0LafkWp
https://www.youtube.com/watch?v=f1LOjz9GRRw

CO1	Confidently navigate and utilize Adobe Animate's workspace, stage, timeline, properties inspector, panels, and tools panel to create, preview, and publish interactive animations.	K1

CO2	To show proficiency in creating and manipulating shapes, applying gradients, and using various selection and drawing tools to create visually appealing digital artwork.	K3&K6
CO3	Able to show proficiency in creating animations, utilizing keyframes, in between frames, layers, classic tweening, shape tweening, and frame-by-frame techniques for dynamic and engaging visual storytelling.	K4
CO4	Able to show proficiency in creating captivating banner advertisements by leveraging graphic symbols, aligning elements effectively, adding animated captions, and applying the blur filter to enhance visual impact.	K5
CO5	Achieve a comprehensive understanding of creating interactive multimedia content by mastering masking techniques, button creation, ActionScript 3.0 scripting, event handling, and utilizing frame-based navigation for dynamic user experiences	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	L(1)	S(3)	M(2)	M(2)
CO2	M(2)	L(1)	S(3)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	M(2)
W.AV	**2.2**	**2**	**2.6**	**2.2**	**2.2**

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester- Core					
Core	**Course Code 83534**	**2D Graphics & Animation**	**T**	**Credits: 3**	**Hours: 3**
Objectives	1. To demonstrate an understanding towards the principles of animation, including stretch and squash, timing, anticipation, and more, enabling them to create compelling and engaging animated content 2. Master the principles of 2D computer animation, including timeline utilization, symbol creation, tweening, easing in and out, hinging symbols, and script writing essentials encompassing script importance, conflict, screenplay anatomy, scenes, slug lines, action, and dialogue 3. To master the art of visual storytelling through effective storyboarding and camera shot selection, including understanding camera moves and transitions to enhance narrative impact. 4. To demonstrate comprehensive understanding towards the art of animation, from frame-by-frame sequences, character rigging, and motion guides to creating captivating scenes, special effects, and mask animations 5. Apply audio integration in animation, from creating and importing sound to perfecting lip sync and character vocalization for a compelling animation demo reel.				
Unit I	**Introduction to Animation** – types of animation – the traditional process – principles of animation : stretch and squash – timing and motion – anticipation – staging – follow through and overlapping action – straight ahead action and pose to pose action – slow in and out – arcs – exaggeration – secondary action – appeal – solid drawing				
Unit II	**2D Computer animation concepts: the timeline** – symbols – tweening– easing in and out – hinging symbols – script writing: importance of script – conflict – anatomy of screenplay – scenes – slug line – action – dialogue.				
Unit III	**Storyboard - creating a storyboard** – basic camera shots – the extreme long shot – the long shot – the mid long shot – the close up shot – the extreme close up – other useful camera shot – cutaway shot – cut in shot – over the shoulder – point of view shot – noddy shot – camera moves – zoom in/zoom out – truck in/truck out – camera transitions – the cut – fade in/fade out – dissolve – blur, pan or zip pan				
Unit IV	**Animation process** – frame by frame animations - onion skin - sack animation(frame by frame) - cartoonish vehicles loop animations using tween - ball animation using classic motion guide - ease in and ease out - preparing the character for animation – dissecting the body parts into separate symbols –creating symbols – setting pivot points – rigging – distribute to layers – creating the walk cycle - attitude walk cycle - run cycle - jump animation - four leg walk cycle - background panning and zooming - using scenes - special effects animation - mask animation.				
Unit-V	**Audio** – creating and importing audio – sound recording tips – importing audio elements and managing audio files – editing audio – using outside software –preparing the timeline for Audio – lip sync hing – basic cartoon phonetics and vocalization – the vowels – consonant sounds – making words – Anime dialogue - single character acting and lip sync animation - two character acting and lip sync animation - Animation demo reel.				

Reference and Text Books:

1. Bill Davis, “Creating 2D animation in a small studio” , GGC Publishing , 2006.
2. Hedley Griffin, “The Animator's Guide to 2D Computer Animation”, Focal Press, 2000.
3. Sandro Corsaro and Clifford J. Parrott, “Hollywood 2D Digital Animation: The New Flash Production Revolution” ,Course Technology PTR; 1 edition , 2004.
4. Steve Roberts, “Character Animation: 2D Skills for Better 3D”,Focal Press; Second edition, 2007.
5. Tony White, “Animation from Pencils to Pixels: Classical Techniques for the Digital Animator” , Focal Press; 1 edition, 2006.

Online Resources: https://youtube.com/playlist?list=PLNaAcA0yN3KY2SK8TcDEMWjxydzxWkEUB&feature=shared https://www.youtube.com/@NobleFrugal/videos https://youtube.com/playlist?list=PL1A1FEDA47ADC18D4&feature=shared https://youtube.com/playlist?list=PL40CCm7kKzr4aL4tPfERT9bI9mTtRjMtW&feature=shared		
CO1	Demonstrate a deep understanding of animation principles such as stretch and squash, timing, anticipation, and more, enabling them to create animated content that is engaging and visually captivating	K1
CO2	Able to show proficiency in principles of 2D computer animation, including timeline utilization, symbol creation, tweening, easing in and out, symbol hinging, and script writing essentials.	K3&K6
CO3	Show proficiency in visual storytelling through effective storyboarding and camera shot selection. They will understand various camera moves and transitions, enhancing their ability to craft narratives with a significant impact on the audience.	K4
CO4	To show comprehensive understanding of animation, ranging from frame-by-frame sequences and character rigging to motion guides, scene creation, special effects, and mask animations. They will be well-rounded animators capable of tackling diverse animation challenges	K5
CO5	Audio integration in animation effectively, from creating and importing sound to perfecting lip sync and character vocalization.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	S(3)	M(2)	M(2)	S(3)
CO2	M(2)	M(2)	L(1)	S(3)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	S(3)	S(3)
W.AV	**2.2**	**2.6**	**2**	**2.4**	**2.6**

III-Semester -Core					
Core	**Course Code 83535**	**2D Graphics & Animation -Practical**	**P**	**Credits: 3**	**Hours:5**
Objective	1. To understand and apply fundamental animation principles, such as timing, spacing, and anticipation, to create smooth and believable 2D animations 2. To understand storyboards, including shot composition and scene transitions, as well as plan the production process for a 2D animation project, demonstrating effective pre-production skills. 3. To demonstrate their ability to navigate the software's interface, create keyframes, use the timeline, and manipulate vector graphics. 4. To understand 2D characters, including walk cycles, facial expressions, and character interactions, showing a solid grasp of character design and animation techniques 5. To understand project development and collaboration for animation production.				

1. **Basic Animation Principles -** Create a short animation (15-30 seconds) that demonstrates your understanding of fundamental animation principles.
2. **Character Design and Rigging -** Design an original 2D character and rig it for animation using adobe animate. Animate the character performing a simple action.
3. **Lip Sync Animation -** Animate a character delivering a short dialogue (provided or self-written) with accurate lip syncing and facial expressions. Focus on conveying emotions and synchronizing the speech with the character's movements.
4. **Storyboarding and Animatics** - Create a storyboard for a 30-second animation sequence. Then, turn it into an animatic (a rough, timed version of the animation) to plan camera angles, pacing, and scene transitions.
5. **Walk Cycle Animation** - Animate a character in a convincing walk cycle. Pay attention to weight, balance, and fluidity in the character's movements. Experiment with different types of walks (e.g., confident, sneaky, tired).
6. **Character Interaction** - Animate two characters interacting with each other in a short scene. Focus on character acting, body language, and conveying a clear narrative through animation.
7. **Effects Animation** - Create an effects animation sequence, such as fire, water, or smoke. Explore different techniques and tools for achieving realistic and visually appealing effects
8. **Parallax Animation** - Design and animate a 2D parallax scene, where foreground and background elements move at different speeds to create a sense of depth and immersion.
9. **Traditional Animation Techniques** - Choose a classic Disney-style character (e.g., Mickey Mouse, Donald Duck) and animate a short sequence using traditional frame-by-frame animation techniques. This assignment emphasizes the importance of timing and spacing.
10. **Portfolio Piece -** Develop a 2D animation project of your choice. This could be a short film, music video, or a complex character-driven animation sequence. Emphasize storytelling, creativity, and technical proficiency.

Outcome	1. Able to show proficiency in fundamental animation principles such as timing, spacing, and squash-and-stretch. They will be able to apply these principles to create animations that convey a sense of realism, weight, and fluid motion 2. Able to create effective storyboards and animatics that serve as a blueprint for their animations. They will learn how to plan and organize their animation projects, including character and scene design, to ensure a clear and cohesive narrative. 3. Able to master the art of character animation, including techniques for creating convincing character movements, expressions, and personalities. They will learn to animate characters with a focus on lip syncing, body mechanics, and emotional conveyance. 4. Able to develop project management skills specific to animation production. They will understand how to plan and execute an animation project within a given timeframe, collaborate effectively

Reference and Text Books:

1. Bill Davis, "Creating 2D animation in a small studio" , GGC Publishing , 2006
2. Hedley Griffin, " The Animator's Guide to 2D Computer Animation ", Focal Press, 2000
3. Sandro Corsaro and Clifford J. Parrott, " Hollywood 2D Digital Animation: The New Flash Production Revolution" ,Course Technology PTR; 1 edition , 2004
4. Steve Roberts, " Character Animation: 2D Skills for Better 3D" ,Focal Press; Second edition, 2007
5. Tony White, " Animation from Pencils to Pixels: Classical Techniques for the Digital Animator" , Focal Press; 1 edition, 2006

Online Resources

https://youtube.com/playlist?list=PLNaAcA0yN3KY2SK8TcDEMWjxydzxWkEUB&feature=shared
https://www.youtube.com/@NobleFrugal/videos
https://youtube.com/playlist?list=PL1A1FEDA47ADC18D4&feature=shared
https://youtube.com/playlist?list=PL40CCm7kKzr4aL4tPfERT9bI9mTtRjMtW&feature=shared

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	M(2)	M(2)	S(3)	M(2)	M(2)
CO4	S(3)	S(3)	M(2)	S(3)	M(2)
CO5	M(2)	M(2)	M(2)	M(2)	S(3)
W.AV	**2.4**	**2**	**2.6**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester -Allied					
Allied	**Course Code 83536**	**Pre Production & Shooting Techniques**	**T**	**Credits: 3**	**Hours:3**
Objective	1. Craft a compelling script with well-defined characters and a logical plot structure. 2. Plan and allocate resources efficiently to ensure a cost-effective and timely production. 3. Develop a visually cohesive aesthetic, designing sets and props to match the project's overall look. 4. Stick to the shooting schedule, coordinating with the cast and crew to minimize downtime. 5. Facilitate clear communication among the cast and crew, ensuring everyone understands their roles.				
Unit I	Writing Story – Idea / Concept - Synopsis – Background – Writing one line script – Scene and shots splitup – Story board – defining the characters – Types of character – Planning Budget - Scheduling – Costume.				
Unit II	Camera angle – Camera Movement – Low Angle – High Angle – Close up – Ex-close up - Mid-long shot – Ex Mid long shot – Long shot – Ex-Long shot – Camera panning (left to right) (right to left) – Camera tilt up – Camera tilt down.				
Unit III	Camera blocking – Shot Composition – (Rules – 180 degree) – (30 degree rule) - Aesthetics – Continuities – The rule of thirds – Clap board - Editing report – Preview monitoring – Understanding lighting – 3 point lighting.				
Unit IV	Camera lenses – Camera Aperture – Camera Shutter Speed - Wide angle lenses – Tele lenses– Filters – DSLR digital cameras – Film camera – Different types of storage format – Depth of field – Deep focus.				
Unit-V	Rough Editing – Final Editing – Dubbing – Music posting / Re recording – Mixing (mixing the all audio tracks – Adding visual effects – Adding the audio sound effects (special effects) – Exporting different medium format - Previewing the final output.				

Reference and Text Books:

1. Alan.A.Armer, “Writing the Screenplay: TV and Film”, 2/E, Waveland Pr Inc, 2002
2. Gustavo Mercado, “The Filmmaker's Eye: Learning (and Breaking) the Rules of Cinematic Composition”, Focal Press, 2010.
3. Jonathan Canlas, Kristen Kalp, “Film is Not Dead: A Digital Photographer’s Guide to Shooting Film (Voices That Matter)”, New Riders, 2012.
4. Steve Cartwright, “Pre-Production Planning for Video, Film, and Multimedia”, Focal Press, 1996.
5. Sonja Schenk, Ben Long, “The Digital Filmmaking Handbook, 6th edition, Foreing Films; 6th Revised with New Preface, Updated Technology”, New Topics Including Filming with Drones & VR ed. edition (June 30, 2017).

Online Resources:

1. https://www.youtube.com/watch?v=U6I1tMgjW-I&t=757s
2. https://www.youtube.com/watch?v=XrauJb_Bsq0&t=163s
3. https://www.youtube.com/watch?v=GOQ7rZ4PNOo

CO1	Deep understanding of animation principles such as stretch and squash, timing, anticipation, and more, enabling them to create animated content that is engaging and visually captivating	K1
CO2	Principles of 2D computer animation, including timeline utilization, symbol creation, tweening, easing in and out, symbol hinging, and script writing essentials.	K3&K6
CO3	Show proficiency in visual storytelling through effective storyboarding and camera shot selection. They will understand various camera moves and transitions, enhancing their ability to craft narratives with a significant impact on the audience.	K4
CO4	Understanding of animation, ranging from frame-by-frame sequences and character rigging to motion guides, scene creation, special effects, and mask animations. They will be well-rounded animators capable of tackling diverse animation challenges	K5
CO5	Audio integration in animation effectively, from creating and importing sound to perfecting lip sync and character vocalization.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	M(2)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	S(3)	S(3)	M(2)	M(2)	M(2)
CO4	M(2)	M(2)	L(1)	S(3)	M(2)
CO5	S(3)	M(2)	M(2)	M(2)	S(3)
W.AV	**2.6**	**2.4**	**2**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester -Allied					
Allied	**Course Code 83537**	**Interactive Animation Techniques-Practical**	**P**	**Credits: 2**	**Hours:4**
Objective	1. Develop proficiency in using animation software tools to create interactive and engaging animations. 2. Explore and implement various animation techniques, such as keyframing and rigging, to achieve desired interactive effects. 3. Understand the principles of user interaction design and integrate them into animated projects. 4. Create interactive animations that cater to different platforms and devices for optimal user experience. 5. Evaluate and refine interactive animation projects through user testing and feedback for improved functionality and engagement.				

1. **Keyframing Animation -** Utilize keyframes to create smooth transitions and movements within an interactive animation.
2. **Rigging and Character Animation -** Learn how to rig characters and animate them, allowing for interactive movements and responses.
3. **Interactive Buttons and Triggers** - Implement buttons and triggers to initiate specific animated actions or sequences based on user interactions.
4. **Physics-Based Animation** - Employ physics simulations to create realistic interactions between animated elements, such as gravity, collisions, and dynamics.
5. **Path Animation -** Utilize path tools to animate objects along designated paths or trajectories in response to user input.
6. **Interactive Storytelling** - Develop animated narratives that allow user interaction to progress the story or influence its outcomes.
7. **Gesture and Motion Control** - Implement gesture recognition or motion control to trigger or influence animated actions.
8. **Parallax Animation** - Create depth and perspective within an animation by incorporating parallax effects, reacting to user movements or scrolling.
9. **Interactive Infographics** - Design animated infographics where user interactions reveal or navigate through information using animated elements.
10. **Responsive Animation:** Create animations that dynamically adapt to different screen sizes or devices, ensuring a consistent and engaging experience across platforms.

Outcome	1. A solid understanding of the principles of interactive animation, including key concepts such as frame-based animation, interactivity, and user engagement. 2. Apply user-centered design approaches to produce interactive animations that respond seamlessly to user input and enhance engagement. 3. Create a portfolio of diverse interactive animation projects, encompassing character-driven narratives, interactive interfaces, and adaptable animations for various platforms. 4. Learn techniques to optimize interactive animations for digital delivery, ensuring cross-platform compatibility, responsiveness, and user-friendly experiences. 5. A solid understanding of the principles of interactive animation, including key concepts such as frame-based animation, interactivity, and user engagement.

Reference and Text Books:

1. Head, V. (2016). Designing interface animation (Vol. 240). New York: Rosenfeld Media.
2. Glassner, A. (2017). Interactive storytelling: Techniques for 21st century fiction. CRC Press.
3. Peters, K. (2007). Actionscript 3.0 Animation: Making Things Move. Friends of ED/Apress.
4. Johnston, O., & Thomas, F. (1981). The illusion of life: Disney animation (p. 576). New York: Disney Editions.
5. Richard, W. (2002). The Animator's Survival Kit.

Online Resources

https://www.youtube.com/watch?v=SrzVahzwVV4
https://www.youtube.com/watch?v=Q2HhqMqoijE
https://www.youtube.com/watch?v=GozVrY64JM4

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	L(1)	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)	S(3)	S(3)
CO3	M(2)	S(3)	L(1)	M(2)	S(3)	M(2)	S(3)	M(2)	L(1)	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	**2.4**	**2.6**	**1.8**	**2.2**	**2.4**	**2**	**2.2**	**2.2**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	M(2)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	S(3)
CO5	M(2)	S(3)	M(2)	M(2)	M(2)
W.AV	**2.4**	**2.6**	**2.6**	**2.2**	**2.2**

S–Strong (3), M-Medium (2), L-Low (1)

IV-Semester -Core					
Core	**Course Code 83543**	**Non Linear Editing**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Acquire proficiency in using non-linear editing software (e.g., Adobe Premiere Pro, Final Cut Pro, Avid Media Composer). 2. Learn to organize and manage the editing timeline efficiently, including importing, arranging, and trimming clips. 3. Master fundamental editing techniques such as cutting, trimming, and rearranging clips for seamless storytelling. 4. Understand and apply various transitions and effects to enhance visual storytelling and maintain audience engagement. 5. Develop skills in editing and mixing audio elements, including dialogue, music, and sound effects, to achieve balanced and impactful soundtracks.				
Unit I	Introduction to editing - Online editing – time code – in and out point – elements – commands and interface – non linear editing – non destructive editing – interlaced / progressive scan video – editing time base – monitor window controls – functions of the source view, program view, timeline – relationship between the timeline and the program view in the monitor window – editing clips into a sequence – selecting one or more clips				
Unit - II	Splitting a clip – understanding title – title safe and action safe zone – previewing titles on an external monitor – editing interface: three point editing – overlay and insert edits – trimming using slip and slide edits – using the trim window – opening the trim window – finding edit you want to trim.				
Unit - III	transitions – displaying transitions – aligning transitions by dragging – replacing transitions – clip handles and transitions - Using workspaces – applying and controlling standard effects – removing multiple effects applied to a clip – animating effects – effects control window – reordering effects				
Unit IV	Showing or hiding key frame area – showing or hiding the timeline beyond a clip's in and out point – playing audio in selected clip – applying video effects – changing filter effects and settings – change effects over time using key frames – removing all key frames of an effect				
Unit-V	Customizing the rendering format – Understanding the render menus – generate a sequence automatically – working with the audio mixer window – creating a storyboard – audio editing– File Export Settings – exporting different video format – Video codec's and compression				

Reference and Text Books:

1. Jones, S. B. (2013). Video color correction for non-linear editors: a step-by-step guide. Routledge.
2. Yao, X., Newson, A., Gousseau, Y., & Hellier, P. (2021, September). Learning non-linear disentangled editing for stylegan. In 2021 IEEE International Conference on Image Processing (ICIP) (pp. 2418-2422). IEEE.
3. Talabbaev, R. E. (2020). Problems And Errors Of Video Editing Beginners. The American Journal of Interdisciplinary Innovations and Research, 2(10), 80-83.
4. Talabbaev, R. E. (2020). Problems And Errors Of Video Editing Beginners. The American Journal of Interdisciplinary Innovations and Research, 2(10), 80-83.
5. Park, S. D. (2019). Education of media by production of image contents-Focusing on Non-Linear Editing. Journal of the Korea Institute of Information and Communication Engineering, 23(9), 1096-1103.

Online Resources

What's the Difference Between Linear and Non-Linear Video Editing?

Non-linear editing in HitFilm Express

What Is Linear & Non-Linear Narrative? | Let's Talk Theory

CO1	Attain proficiency in using non-linear editing software (e.g., Adobe Premiere Pro).	K1
CO2	Develop the ability to efficiently organize and manage the editing timeline, including importing, arranging, and trimming clips.	K3&K6
CO3	Master fundamental editing techniques such as cutting, trimming, and rearranging clips for cohesive storytelling. Understand and apply various transitions and effects to enhance visual storytelling and maintain audience engagement.	K4
CO4	Acquire skills in editing and mixing audio elements, achieving balanced and impactful soundtracks. Gain proficiency in color correction and grading techniques to enhance visual consistency and storytelling aesthetics.	K5
CO5	Learn to integrate motion graphics, titles, and overlays effectively to enhance the overall visual appeal of the edited content. Explore advanced editing techniques such as keyframing, masking, and multicam editing for more complex and polished productions.	K2&K6

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	L(1)	M(2)	M(2)	M(2)	L(1)	M(2)	M(2)	L(1)
CO2	M(2)	M(2)	L(1)	M(2)	S(3)	S(3)	L(1)	M(2)	S(3)	S(3)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	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	**2.4**	**2.6**	**1.8**	**2.2**	**2.2**	**2**	**1.6**	**2.2**	**2.4**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	L(1)	S(3)	M(2)	M(2)
CO2	M(2)	L(1)	S(3)	M(2)	L(1)
CO3	M(2)	S(3)	S(3)	M(2)	S(3)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	M(2)
W.AV	**2.2**	**2**	**2.6**	**2.2**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

IV-Semester -Core					
Core	**Course Code 83544**	**3D Design**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Develop proficiency in creating intricate 3D models, covering fundamental modeling techniques and progressing to advanced structures. 2. Learn the principles of lighting, texturing, and rendering to create realistic and visually compelling 3D environments. 3. Acquire skills in 3D animation and character rigging, enabling the creation of dynamic and lifelike animations. 4. Explore the process of preparing 3D models for printing, understanding various 3D printing technologies, and translating digital designs into physical prototypes. 5. Understand the fundamentals of designing for virtual reality, encompassing spatial design, user interaction, and the creation of immersive 3D environments.				
Unit I	Introduction to user interface – working in 3D – views –the workspace – creating manipulating and moving objects – perspective and orthographic windows – creating curves – editing curves – attaching and detaching curves – inserting knots – reverse curve direction - – adding points to a curve – using curve editing tool.				
Unit II	Editing nurbs - rebuilding surfaces – surface fillets – stitching surfaces – creating polygons – append polygon tools – combine – polygon Booleans – mirror geometry – polygon smooth tool – subdivision surfaces – polygon reduction – the cut face tool – extruding polygon faces and edges.				
Unit III	Using Nurbs curves to create a model – creating Basic table top Props – the polygon robot modeling – Modeling an Exterior shot – hypershade - understanding Materials and textures – texturing the Robot – texturing table top Props - texturing a sample of exterior element.				
Unit IV	Rigging – joints and tools –- ik - Fk – spline ik – Types of Constrains - Skinning – Primitive Rig - traditional animation fundamentals – the wave principle – overlap – using the time slider – setting playback range – setting playback speed – setting key frames – auto key – key frame options – channel control – editing key frames – editing timing of key frames – editing in- between – changing a key pose – moving and scaling keys – cutting, copying and deleting keys – using breakdowns – animation types – using graph editor – Basic character. animation.				
Unit V	Adding lights – light theory – artistic theories – types of light – common attributes – ambient lights – spot lights – point lights – directional lights – area lights – volume lights – working with shadows – depth map shadows – baking shadows – ray traced shadows creating cameras – focal length – cameras – types of cameras – resolution gate – safe display region – safe action – safe title – use background –converting 3d scenes to 2d images the render view – navigating in the render view – keeping images in render view – renderingregions – snapshots – setting render global – image name and format – Batch Rendering.				

Reference and Text Books:

1. Tang, Y. M., & Ho, H. L. (2020). 3D modeling and computer graphics in virtual reality. In mixed reality and three-dimensional computer graphics. IntechOpen.
2. Maloy, R., & Edwards, S. (2020). Makerspaces and 3D Printing: A Learning-by-Doing Professional Development Model for Preservice and Inservice Teachers. In Next Generation Digital Tools and Applications for Teaching and Learning Enhancement (pp. 201-220). IGI Global.
3. Maloy, R., & Edwards, S. (2020). Makerspaces and 3D Printing: A Learning-by-Doing Professional Development Model for Preservice and Inservice Teachers. In Next Generation Digital Tools and Applications for Teaching and Learning Enhancement (pp. 201-220). IGI Global.
4. Arevalo, K., Tovar, M., & Li, J. (2021). Creating Games with Unreal Engine, Substance Painter, & Maya: Models, Textures, Animation, & Blueprint. CRC Press.
5. Villanueva, N. (2022). Beginning 3D Game Assets Development Pipeline.

Online Resources

Autodesk Maya | Model a Seaside Fishing House | Exterior modeling | M#7
Autodesk Maya 2020 - How to Make a Simple Stylized Boat _ Feat_Pietro Chiovaro
Autodesk Maya 2020, Zbrush 2020, Substance Painter - Stylized Axe
Quick Rigging and Skinning a character for beginners

CO1	Create compelling 3D animations and visual effects for films, TV shows, and digital media.	K1
CO2	Design and model characters, environments, and assets for use in video game development.	K3&K6
CO3	Develop realistic 3D renderings of architectural designs and interiors for visualization purposes.	K4
CO4	Design detailed 3D models of products and prototypes for manufacturing and product development.	K5
CO5	Build immersive 3D environments and experiences for virtual reality applications and simulations.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	M(2)	M(2)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	M(2)	M(2)
W.AV	**2.4**	**2.6**	**2.4**	**2.2**	**2.2**

S–Strong (3), M-Medium (2), L-Low (1)

IV-Semester -Core					
Core	**Course Code 83545**	**3D Design-Practical**	**P**	**Credits: 3**	**Hours:5**
Objective	1. Develop proficiency in using industry-standard 3D design software to create models, textures, and animations for various applications. 2. Comprehend and apply diverse 3D modeling techniques such as polygonal, NURBS, and sculpting to create complex 3D objects. 3. Learn to apply textures, materials, and lighting effectively to enhance the realism and visual appeal of 3D models and scenes. 4. Acquire skills in rigging and animation to bring 3D models to life, creating dynamic and engaging visual narratives. 5. Execute practical projects involving the creation of 3D assets and scenes, demonstrating the ability to conceptualize, design, and execute 3D designs for specific purposes or industries.				

1. **Modeling a Realistic Object:** Choose a real-life object (such as a household item, tool, or piece of furniture) and create a detailed 3D model using software like Blender, Maya, or 3ds Max**.**
2. **Character Design and Animation:** Develop a 3D character model from concept to completion, focusing on details, textures, rigging, and animation to bring the character to life.
3. **Architectural Visualization:** Design and render a detailed 3D model of a building, house, or architectural structure, emphasizing lighting, textures, and realistic rendering**.**
4. **Product Visualization:** Create a visually appealing and realistic 3D representation of a product, considering textures, materials, lighting, and presentation for marketing or promotional purposes**.**
5. **Environment Creation:** Construct a 3D environment or scene, such as a landscape, interior space, or futuristic setting, focusing on composition, lighting, and atmosphere.
6. **Motion Graphics Integration:** Blend 3D elements into live-action footage or create motion graphics sequences using 3D models, incorporating elements seamlessly into video projects.
7. **Character Rigging and Animation:** Dive deeper into character animation by rigging a character for movement and creating a short animation showcasing its actions, emotions, or interactions.
8. **3D Printing Preparation:** Design a 3D printable model, ensuring it meets the requirements for successful printing, considering structural integrity, supports, and printability.
9. **Special Effects and Simulation:** Experiment with simulations such as fluid dynamics, particle effects, or cloth simulations to create realistic effects in a chosen scenario**.**
10. **Interactive 3D Experience:** Develop an interactive 3D experience or virtual reality (VR) environment, considering user interaction and immersion for an engaging user experience.

Outcome	1. Achieve proficiency in using industry-standard 3D design software to create models, textures, and animations effectively. 2. Develop expertise in various 3D modeling techniques such as polygonal, NURBS, and sculpting, enabling the creation of complex and detailed 3D models. 3. Apply texture mapping, material application, and rendering methods to enhance visual realism and quality in 3D designs. 4. Acquire skills in rigging and animation to bring 3D models to life, enabling dynamic movements and storytelling capabilities. 5. Apply theoretical knowledge to practical projects, showcasing the ability to conceptualize and execute diverse 3D design projects tailored for specific purposes or industries.

Reference and Text Books:

1. Dorsey, J., Rushmeier, H., & Sillion, F. (2010). Digital modeling of material appearance. Elsevier.
2. Vaughan, W. (2011). Digital modeling. New Riders.
3. Murdock, K. (2023). Autodesk Maya 2024 Basics Guide. SDC Publications.
4. Leach, J. A., & Lockhart, S. (2023). AutoCAD 2024 Instructor: A Student Guide for In-Depth Coverage of AutoCAD's Commands and Features. Sdc Publications.

Online Resources

https://www.youtube.com/watch?v=I4Z1VLmgYdw
https://www.youtube.com/watch?v=BmvGSO9MIMs

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	S(3)	L(1)	M(2)	M(2)
CO2	M(2)	M(2)	L(1)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	S(3)	M(2)	S(3)
W.AV	**2.2**	**2.6**	**2**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

IV-Semester -Allied					
Allied	**Course Code 83546**	**Advanced Art**	**T**	**Credits: 3**	**Hours:3**
Objective	1. Enhance skills in depicting complex anatomical structures and lifelike figures with precision. 2. Explore and master advanced techniques to convey emotions, atmosphere, and narrative depth in artworks. 3. Integrate various mediums and materials innovatively to create unique and textured art pieces. 4. Develop a diverse and sophisticated portfolio showcasing proficiency in multiple styles, themes, and artistic approaches. 5. Push creative boundaries by exploring avant-garde and experimental concepts, fostering personal artistic evolution and innovation.				
Unit I	Human anatomy - Line of action – Constructing stick figures - developing with geometric blocks – steps in full body finish – action poses – fore shortening – drawing figures in different perspectives – male body proportions - female body proportions – visualizing body forms in flow lines – Animal anatomy basics – Birds anatomy basics				
Unit II	Muscle study – Male body muscles - Female body muscles –Body muscles in profile views – Drawing arms and legs in different views – Drawing the Torso- Studying the muscles in various views - Head study – Drawing heads in various angles – Female heads - Hands and feet in various possible views - Details of facial features –Costume / Drapery study - Facial Expressions and emotions.				
Unit III	Character design – Essentials of character designing – Aesthetic appeal, Functional, Distinct, Personality, Originality, Purpose, Target audience, Exaggerated characteristics, 3D Visualization etc. - Character types – Heavy villainous character, Pretty/Cute character, Mad/weird character. Ridiculous/ Humorous character – Alien Characters - Props and set design – Developing props diagrammatically.				
Unit IV	Developing BG - Over-lays and Under-lays – Creating panning BG – Drawing a location in different angles and different lightings- Art for Animation – Lip movements – Vowels and consonants - Character sheet/ Model sheet- Drawing a character in various action poses - Turnaround - developing a character in front, side and back views proportionately.				
Unit V	Walk cycle drawings – Drawing 8 stages of a walk - Run cycle – Fly cycle – Four leg walks - Drawing animation sequences – Straight ahead vs. Pose-to-pose methods of animation drawings - Extremes, Break ups and In-between drawings - Concept art – Visual representation of an idea, design or mood				

Reference and Text Books:

1. Jelali, M., & Huang, B. (Eds.). (2009). Detection and diagnosis of stiction in control loops: state of the art and advanced methods.
2. Bafekrpour, E. (2017). Advanced composite materials: properties and applications. De Gruyter Open.
3. Panofsky, E. (2023). The life and art of Albrecht Dürer. Princeton University Press.
4. Debnath, P., Torres, D. F., & Cho, Y. J. (Eds.). (2023). Advanced Mathematical Analysis and Its Applications. CRC Press.
5. Bleicher, S. (2023). Contemporary color: Theory and use. Routledge.

Online Resources

Architecture Art Sketch Photoshop Action Tutorial - Advanced
Drawing faces tutorial
Understanding Shadow Colors (Ambient Light Part 2)

CO1	Develop a standout portfolio showcasing advanced skills, diverse styles, and thematic coherence.	K1
CO2	Attain recognition through participation in art exhibitions, fostering visibility and credibility within artistic communities.	K3&K6
CO3	Cultivate a unique and recognizable artistic voice, characterized by innovation, personal expression, and thematic depth.	K4
CO4	Establish professional connections through representation, galleries, and participation in the broader art industry.	K5
CO5	Contribute to the artistic community by sharing knowledge through workshops, mentoring, or educational initiatives.	K2&K6

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	L(1)	M(2)	M(2)	M(2)	M(2)	L(1)	M(2)	L(1)
CO2	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)	M(2)	L(1)	S(3)	S(3)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	M(2)	L(1)	M(2)	M(2)	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	**2.4**	**2.6**	**2**	**2.2**	**2.2**	**2**	**2.2**	**1.6**	**2.4**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	**2.4**	**2.6**	**2.6**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

IV-Semester -Allied					
Allied	**Course Code 83547**	**Advanced Art-Practical**	**P**	**Credits: 2**	**Hours:4**
Objective	1. Explore and master various art mediums such as oil, acrylic, mixed media, sculpture, or digital art to broaden artistic expression. 2. Develop advanced techniques in drawing, painting, and sculpting, focusing on precision, detail, and nuanced execution. 3. Cultivate the ability to conceptualize and execute complex artistic ideas, emphasizing creativity, originality, and personal artistic vision. 4. Create a comprehensive portfolio showcasing diverse and advanced artworks demonstrating proficiency, creativity, and growth throughout the course. 5. Engage in critical analysis and self-reflection, honing the capacity to evaluate one's own work and that of others, fostering artistic growth and improvement.				

1. **Mixed Media Exploration:** Encourage students to experiment with combining various mediums such as paint, collage, found objects, and digital elements to create dynamic artworks**.**
2. **Advanced Techniques Development -** Refine advanced technical skills in drawing, shading, perspective, composition, and color theory for intricate and detailed artworks.
3. **Conceptual Artistic Development -** Cultivate the ability to develop and express complex and original ideas, exploring deeper conceptual themes in artworks**.**
4. **Narrative Painting Series:** Task students with creating a series of paintings that tell a story or convey a message, exploring sequential art techniques and storytelling through visual narrative**.**
5. **Advanced Color Theory and Emotional Impact:** Deep dive into color psychology, teaching students how to use color to evoke specific emotions and atmospheres within their artworks**.**
6. **Advanced Figure Drawing and Anatomy Studies:** Dive deeper into the human form through detailed anatomical studies and life drawing sessions to enhance understanding and mastery of figure drawing.
7. **Critique and Art Analysis -** Engage in constructive critique sessions, refining skills in analyzing art and providing valuable feedback to peers for mutual growth.
8. **Art Historical Knowledge -** Gain a deeper understanding of art history, studying different movements, artists, and their impact on contemporary art practices.
9. **Professional Presentation Skills -** Learn professional presentation techniques, including framing, exhibition setup, and digital portfolio creation for public display**.**
10. **Self-Evaluation and Reflection -** Cultivate self-reflection skills to assess personal growth, strengths, weaknesses, and areas for improvement in artistic practice.

Outcome	1. Demonstrate mastery in advanced artistic techniques such as intricate brushwork, complex compositions, detailed sculpting, or sophisticated digital rendering. 2. Exhibit the ability to conceive and execute artworks with profound conceptual depth and emotional resonance, showcasing advanced creative thinking. 3. Showcase proficiency in multiple artistic mediums, displaying expertise in traditional, digital, mixed-media, or interdisciplinary approaches. 4. Develop a distinct and identifiable artistic style, reflecting personal vision and individuality while exploring diverse themes and subject matters. 5. Compile a sophisticated portfolio highlighting a collection of refined, innovative, and critically reflective artworks demonstrating advanced artistic growth.

Reference and Text Books:

1. Graham, M. A. (2009). Advanced placement in studio art and secondary art education policy: Countering the null curriculum. Arts Education Policy Review, 110(3), 18-24.
2. Graham-Dixon, A. (2008). Art: the definitive visual guide. London: Dorling Kindersley, 2008.
3. Indraratna, B., Rujikiatkamjorn, C., & Salim, W. (2023). Advanced rail geotechnology–ballasted track. CRC press.
4. Dunphy, L. M., Winland-Brown, J., Porter, B., & Thomas, D. (2015). Primary care: Art and science of advanced practice nursing. FA Davis.
5. Sullivan, G. (Ed.). (2010). Art practice as research: Inquiry in visual arts. Sage.

Online Resources

Drawing For Concept Art: TUTORIAL GUIDE From Beginner to Advanced
LEARN TO DRAW FROM 0 to 100! | Roadmap| DrawlikeaSir
Watercolor painting tutorial - Cloudy Landscape

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	M(2)	S(3)	L(1)
CO2	S(3)	M(2)	M(2)	M(2)	L(1)
CO3	M(2)	S(3)	M(2)	S(3)	S(3)
CO4	M(2)	M(2)	S(3)	M(2)	M(2)
CO5	S(3)	S(3)	M(2)	M(2)	S(3)
W.AV	**2.6**	**2.6**	**2.2**	**2.4**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Core					
Core	**Course Code 83551**	**Motion Graphics**	**T**	**Credits: 4**	**Hours: 4**
Objective	1. Achieve proficiency in utilizing industry-standard motion graphics software for creating compelling visual animations and effects. 2. Demonstrate an understanding and application of key animation principles like timing, motion, and composition to develop engaging motion graphics. 3. Acquire the ability to use motion graphics as a means of effective storytelling and communication, utilizing typography, imagery, and animation. 4. Develop skills in integrating visual effects and enhancements to elevate the visual impact and quality of motion graphic projects. 5. Execute practical projects demonstrating learned techniques, emphasizing the creation of professional-level motion graphics for various contexts and platforms.				
Unit I	Introduction to Motion graphics - Compositing techniques- Interface navigation - Layer based compositing - Workspace and workflow - Creating Project window - Importing footages - Layers and properties - View and previews - Animation and key frames – Color.				
Unit II	Drawing, Painting and paths – Text - Transparency and compositing - Effects and animation presets - Markers - Expression and automation - Rendering and exporting – understanding of composting – attribute scale, rotate, transform or move the layer.				
Unit III	Understanding the rotoscopy – Masking – different types of spline control – Masking tools – Understanding the keying – Keylight - 2d tracking and track marker – Stabilizing footage - 3d Tracking and match moving.				
Unit IV	What is motion graphic? Creating project window - creating a text layer – importing audio file – understanding the different type of video format – understanding the render – Navigating the 3d text from 3d software – Understanding effects and preset.				
Unit V	Creating backgrounds and 4 color gradient – cc particle world options and setting – adjusting particle option producers, Physics, Shaded – Understanding the animation composer – navigating animation composer menu – Understanding expression - Rendering queue				
Reference and Text Books: 1. Shaw, A. (2015). Design for motion: fundamentals and techniques of motion design. Routledge. 2. Betancourt, M. (2020). The history of motion graphics. Wildside Press LLC. 3. Meyer, C., & Meyer, T. (2013). Creating motion graphics with After Effects: Essential and advanced techniques. Taylor & Francis. 4. Byrne, B. (2012). 3D motion graphics for 2D artists: conquering the 3rd dimension. Taylor & Francis. 5. Crook, I., & Beare, P. (2017). Motion graphics: Principles and practices from the ground up. Bloomsbury Publishing.					
Online Resources https://www.youtube.com/watch?v=iQXa8UG10DQ&list=PLv-qeciwXOWYChBqgPtWh_oDYiDnXPBUl https://www.youtube.com/watch?v=d8E4UEVdkXM					
CO1	Attain proficiency in using industry-standard software to create visually engaging and polished motion graphics.				K1
CO2	Apply fundamental animation principles to design and execute captivating motion graphics, emphasizing timing, motion, and visual storytelling.				K3&K6
CO3	Develop the ability to convey messages effectively through motion graphics, integrating typography, imagery, and animation for clear communication.				K4

CO4	Learn to incorporate and manipulate visual effects, enhancing the impact and aesthetic appeal of motion graphic projects.	K5
CO5	Create a comprehensive portfolio showcasing diverse motion graphic projects, highlighting skills, creativity, and versatility in motion design.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	S(3)	M(2)	S(3)
CO2	M(2)	M(2)	S(3)	S(3)	M(2)
CO3	M(2)	M(2)	S(3)	M(2)	S(3)
CO4	S(3)	M(2)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	M(2)
W.AV	**2.4**	**2**	**2.6**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Core					
Core	**Course Code 83552**	**Dynamics Simulation**	**T**	**Credits: 4**	**Hours: 4**
Objective	1. Achieve accurate and realistic physics simulations for objects and environments within virtual spaces. 2. Simulate realistic fluid behavior, including liquids and gasses, for applications like animations, games, and engineering analyses. 3. Implement dynamic cloth simulations to replicate realistic movement and interaction in virtual garments or fabrics. 4. Utilize rigid body dynamics to simulate the motion and interaction of solid, inflexible objects within a virtual environment. 5. Create dynamic particle systems for effects such as smoke, fire, explosions, and other complex visual phenomena.				
Unit I	Particle and options – Create Emitter – Emit from the object – Use selected Emitter – Pre point emission rates – Make collide – Particle Collision Event Editor - Goal – Instance (Replacement) – Sprite Wizard – Emitter types – Omni – Surface – Volume – Curve – Directional – Creating two different types of example using particle and emitters.				
Unit II	Introduction to the types of field - Air field – Drag field – Gravity field – Newton field – Radial field – turbulence field – Uniform field – Vortex field – Volume axis – turbulence field attributes – Magnitude - Frequency – Noise level - Attenuation – Different types of axis controls – Creating two different type of example using fields.				
Unit III	Introduction to Soft body / Rigid body simulation in 3d Application – Create active rigid body – Create passive rigid body – Create nail constrain – Create Pin constrain – Create Hinge constrain – Create Spring constrain – Set Active Key – Set Passive Key – Break Rigid Body Connections – Paint soft body Weights tool – Create two different types of example using active / passive rigid body.				
Unit IV	Introduction to Particle type - Multipoint – Multi streak – Numeric – Points – Sprits – Introduction to fluid effects – Fluid 2d container – Fluid 3d container – Make collide – Get fluid example – Ramp position – Ramp Velocity – Lifespan PP – World Velocity – Ramp Acceleration – Creating two different type of example using fields.				
Unit V	Software Rendering – Blobby surface – Cloud – Tube – Conserve – Hardware Rendering - Flip book clap – Clear Flip book options – Hardware render attribute – setting up the camera – Scale buffer – Render alpha sequence frame from software render and hardware render.				

Reference and Text Books:

1. Palamar, T. (2009). *Maya Studio Projects: Dynamics*. John Wiley & Sons.
2. Arnold, M., & Schiehlen, W. (Eds.). (2009). *Simulation techniques for applied dynamics* (Vol. 507). Springer Science & Business Media.
3. Klee, H., & Allen, R. (2018). *Simulation of dynamic systems with MATLAB® and Simulink®*. Crc Press.
4. Roberts, N., Andersen, D. F., Deal, R. M., Garet, M. S., & Shaffer, W. A. (1983). *Introduction to computer simulation: the system dynamics approach*. Addison-Wesley Publishing Company.

Online Resources

Maya 2018: MASH Dynamics

How to make a dynamic Ocean and a floating boat in Maya | Autodesk

Maya Bullet Physics Simulation Tutorial: Wrecking Ball Animation - Active and Passive Rigid Body

CO1	Develop simulations that create immersive and realistic interactive virtual environments through dynamic simulations.	K1
CO2	Master the visualization of fluid dynamics, enhancing the realism of liquid and gas interactions in simulations.	K3&K6
CO3	SAchieve lifelike representation of cloth and fabrics in motion, considering factors like gravity and external forces.	K4
CO4	Showcase precision in simulating the movement and collisions of solid objects, ensuring realistic interactions within dynamic scenarios.	K5
CO5	Create captivating visual effects using dynamic particle systems, adding realism to phenomena like fire, smoke, or complex visual simulations.	K2&K6

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	L(1)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	S(3)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	L(1)	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**	**2.6**	**2.4**	**2.2**	**2.2**	**2**	**2.2**	**2.2**	**1.8**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	S(3)	S(3)	M(2)	M(2)
CO2	S(3)	S(3)	S(3)	S(3)	S(3)
CO3	M(2)	M(2)	S(3)	S(3)	M(2)
CO4	M(2)	S(3)	M(2)	M(2)	M(2)
CO5	S(3)	M(2)	M(2)	L(1)	S(3)
W.AV	**2.4**	**2.6**	**2.6**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester					
Elective 1	**Course Code: 83553A**	**Elective I - 1.Concept Art**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Understand the fundamentals of visual storytelling through concept art creation 2. Develop proficiency in digital art tools and techniques for conceptualizing characters, environments, and objects. 3. Apply color theory, composition, and design principles to craft compelling concept art pieces. 4. Analyze and interpret creative briefs to effectively translate ideas into visual representations. 5. Demonstrate the ability to iterate and refine concept art based on constructive feedback and artistic vision.				
Unit I	Understanding Concept Art-Definition and Purpose-Role in Various Industries (Gaming, Film, Animation)-Evolution and Historical Overview-Essential Skills for Concept Artists-Drawing and Sketching Techniques-Digital Tools and Software-Color Theory Fundamentals-Concept Art Process-Ideation and Brainstorming-Thumbnails and Iterative Sketching-Refinement and Finalization				
Unit II	Character Design Fundamentals-Anatomy and Proportions-Expressions and Gestures-Personality and Backstory Development-Creating Memorable Characters-Silhouette Recognition-Costume Design-Iconic Features-Character Turnarounds and Pose Sheets-Understanding 3D Form-Presentation for Animation or Modeling-Dynamic Pose Exploration				
Unit III	World-Building-Defining the Conceptual World-Mood and Atmosphere-Consistency in Design Elements-Architectural Concepts-Environmental Structures-Incorporating Cultural Influences-Establishing Scale and Perspective-Storyboarding for Environments-Sequential Storytelling-Scene Transitions-Visual Narration Techniques				
Unit IV	Prop Design Basics-Defining Purpose and Function-Incorporating Style and Theme-Props in Narrative Context-Weapon and Technology Design-Imaginative Weaponry-Futuristic echnologies-Consistency with World-Building-Object Turnarounds and Detailing-3D Representation--Texture and Material Definition-Highlighting Key Features				
Unit V	Concept Art in Various Industries-Gaming Industry Applications-Film and Animation Industry Applications-Concept Art for Advertising-Working with Art Directors and Teams- Collaboration and Communication-Receiving and Implementing Feedback-Meeting Deadlines and Milestones-Building a Concept Art Portfolio-Portfolio Presentation-Tailoring Portfolios for Job Applications-Online Presence and Networking				

Reference and Text Books:

1. Lilly, E. (2017). The Big Bad World of Concept Art for Video Games: How to Start Your Career as a Concept Artist. Design Studio Press.
2. Zahed, R. (2018). Spider-Man, Into the Spider-Verse: The Art of the Movie. Titan Books.
3. Kurtti, J. (2015). The art of Tangled. Chronicle Books.

Online Resources

How To Sketch Landscapes: Tutorial

Drawing For Concept Art: TUTORIAL GUIDE From Beginner to Advanced

CO1	Ability to ideate and translate abstract concepts into visually compelling and coherent art pieces.	K1
CO2	Proficiency in using various tools, software, and techniques essential for creating concept art, both traditional and digital.	K3&K6
CO3	Capability to work across diverse styles, genres, and project requirements, showcasing adaptability and versatility in artistic expression.	K4
CO4	Skill in critically evaluating and iterating on concept art through feedback, resulting in refined and improved final pieces.	K5
CO5	Creation of a comprehensive portfolio demonstrating a range of concept art pieces showcasing individual growth, style, and skill set.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	S(3)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	L(1)
W.AV	**2.4**	**2.6**	**2.6**	**2.2**	**2.2**

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Elective I					
Elective 1	**Course Code: 83553B**	**Elective I - 2.Matte Painting**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Achieve the illusion of authentic, believable landscapes or settings through the integration of painted elements. 2. Contribute to the mood and tone of a scene by adding visual elements that complement the storytelling and cinematic experience. 3. Expand the scope of a film or project by painting extensions to physical sets, providing a broader and more immersive visual experience. 4. Save time and resources by digitally painting intricate details instead of constructing elaborate physical sets or traveling to various locations. 5. Ensure a seamless blend between live-action footage and painted elements to maintain a cohesive and natural-looking visual narrative.				
Unit I	Introduction to Matte Painting-Overview of Matte Painting: Definition, history, and evolution in the film and entertainment industry.-Role of Matte Painting in Visual Effects VFX)-Understanding its significance in creating realistic and fantastical environments.-Introduction to Industry Tools: Familiarization with software such as Adobe Photoshop and other relevant tools for matte painting.				
Unit II	Digital Painting Basics: Understanding brush techniques, color theory, and composition in the context of matte painting-Photo Manipulation: Techniques for integrating and blending photographic elements seamlessly into a digital painting-Matte Painting Workflow: Establishing an effective workflow for planning, sketching, and refining matte paintings.				
Unit III	Conceptualizing Environments: Techniques for brainstorming and sketching environment concepts-Storytelling through Environments: Creating matte paintings that enhance storytelling and contribute to the overall narrative-Design Principles: Applying design principles such as perspective, scale, and lighting to create visually compelling environments.				
Unit IV	3D Integration: Introduction to integrating 3D elements into matte paintings for enhanced realism-Digital Matte Creation: Creating entirely digital environments from scratch using various digital painting techniques-Atmospheric Effects: Understanding and implementing atmospheric elements such as fog, haze, and depth of field.				
Unit V	Industry Standards and Trends: Keeping up with the latest tools, techniques, and trends in matte painting-Case Studies: Analyzing and deconstructing successful matte paintings from the industry-Portfolio Development: Building a strong matte painting portfolio showcasing a range of skills and styles-Professional Practices: Understanding client briefs, working within a production pipeline, and collaborating with other VFX professionals.				

Reference and Text Books:

1. Mattingly, D. B. (2011). The digital matte painting handbook. John Wiley & Sons.
2. Kurop, N. (2003). State of the Art: Matte Painters-a Secret World of Illusion. Metro Magazine: Media & Education Magazine, (136), 154-157.
3. Caira, A. (2021). Evaluation of the effects of four consolidants on matte paint and their ageing.
4. ELECTIVE, I., & PAINTING, M. Matte paintings-use image editing software to composite multiple images-layer masking–the clone stamp tool.
5. 3DTotal. com (Firm). (2009). Digital Painting Techniques (Vol. 1). Taylor & Francis.

Online Resources

How to Make #Matte_Painting Manipulation In Photoshop cc [PART - 01]
How to Make Matte Painting #Manipulation In Photoshop cc [PART - 02]
BEGINNER'S GUIDE to Matte Painting in Photoshop!
Giant Buffalo-Photoshop Manipulation Speed Art Tutorial

CO1	Graduates showcase mastery in digital brushwork, blending, and scene creation for diverse visual narratives.	K1
CO2	Students produce compelling matte paintings, seamlessly integrating with live-action footage for enhanced storytelling in film and media.	K3&K6
CO3	Successful participants demonstrate the ability to craft imaginative and realistic landscapes, from futuristic cityscapes to ancient realms.	K4
CO4	Graduates exhibit expertise in matte painting techniques, transporting audiences seamlessly through historical eras with precision and artistry.	K5
CO5	Completion of the module equips individuals with the skills to contribute to film, gaming, and visual effects productions, showcasing professional-grade matte painting portfolios.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	S(3)	M(2)	L(1)
CO2	M(2)	M(2)	S(3)	M(2)	M(2)
CO3	S(3)	S(3)	S(3)	M(2)	M(2)
CO4	M(2)	M(2)	M(2)	S(3)	S(3)
CO5	M(2)	S(3)	M(2)	M(2)	M(2)
W.AV	**2.4**	**2.6**	**2.6**	**2.2**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Elective I					
Elective 1	**Course Code: 83553C**	**Elective I - 3.Visual Storytelling for Film and Games**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Develop an understanding of narrative structures and visual techniques specific to film and gaming mediums. 2. Apply cinematographic principles and framing techniques to create compelling visual narratives for film and game environments. 3. Analyze the impact of lighting, color grading, and visual elements on storytelling and emotional engagement in film and gaming contexts. 4. Demonstrate proficiency in storyboarding and previsualization techniques essential for planning and conveying visual narratives effectively. 5. Collaborate within a team setting, integrating visual storytelling strategies to contribute to cohesive storytelling in film and game development projects.				
Unit I	Understanding Narrative Structure: Introduction to the three-act structure and its application in film and game storytelling-Visual Language: Exploring the basics of visual storytelling, including shot composition, camera angles, and framing-Storyboarding Essentials: Techniques for creating effective storyboards to visualize and plan narrative sequences.				
Unit II	Character Archetypes: Exploring common character archetypes and their roles in storytelling-Visual Character Design: Techniques for creating visually compelling and memorable characters-Character Arcs: Understanding the importance of character development and growth in the narrative.				
Unit III	World Creation: Developing the visual language of the narrative world, considering setting, culture, and history-Environmental Storytelling: Using environments to convey narrative elements and enhance the overall storytelling experience-Game Level Design: Applying visual storytelling principles to the design of game levels and environments.				
Unit IV	Cinematic Techniques: Advanced exploration of camera techniques, including tracking shots, dolly shots, and aerial shots-Dynamic Camera Movement: Using camera movement to evoke emotion and guide the audience's attention-Game Cinematics: Applying cinematic principles to game cutscenes and interactive storytelling				
Unit V	Collaboration in Production: Understanding the collaborative nature of film and game production and the roles of various team members-Audio-Visual Integration: Exploring the synergy between visual storytelling and sound design in creating immersive experiences-Final Project: Applying all learned concepts to create a visual storytelling project, either a short film sequence or a game narrative.				

Reference and Text Books:

1. Sandler, M. (2018). *Visual storytelling: how to speak to your audience without saying a word*. Michael Wiese Productions.
2. Block, B. (2008). The visual story: Creating the visual structure of film. *TV and Digital Media*.
3. Brine, K. G. (2020). *The Art of Cinematic Storytelling: A Visual Guide to Planning Shots, Cuts, and Transitions*. Oxford University Press.
4. Lancaster, K. (2019). *Basic Cinematography: A Creative Guide to Visual Storytelling*. Routledge.
5. Robotham, T. (2021). *Cinematic storytelling: A comprehensive guide for directors and cinematographers*. CRC Press.

Online Resources

The Video Games That Changed Storytelling
Visual Storytelling in Filmmaking
Storytelling in Video Games - Diamondbolt
Sketchbook Drawing: Pen Ink Visual Storytelling Film Studies #drawingexercises

CO1	Students can demonstrate a comprehensive understanding of various visual storytelling techniques applicable to both film and game development contexts.	K1
CO2	Ability to apply cinematographic principles such as camera angles, framing, and movement to create engaging visual narratives in film and game environments.	K3&K6
CO3	Capability to design and develop characters and environments that effectively contribute to narrative storytelling, eliciting emotional engagement from the audience or player.	K4
CO4	Proficiency in creating storyboards and using previsualization techniques to plan and communicate visual narratives effectively for film and game projects.	K5
CO5	Capacity to critically analyze and evaluate successful visual storytelling examples in films and games, extracting techniques and strategies for their application in personal or collaborative projects.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	L(1)	M(2)	S(3)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)
CO3	M(2)	S(3)	L(1)	M(2)	M(2)
CO4	S(3)	M(2)	S(3)	S(3)	L(1)
CO5	M(2)	S(3)	M(2)	M(2)	M(2)
W.AV	**2.4**	**2.6**	**1.8**	**2.2**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Elective II					
Elective II	**Course Code: 83554A**	**Elective II - 1. Advanced Modeling And Texturing**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Develop advanced skills in polygonal modeling, focusing on precision and complexity to create intricate and realistic 3D objects. 2. Explore sophisticated texture mapping methods and techniques to enhance the visual realism of 3D models, emphasizing attention to detail and artistic expression. 3. Acquire proficiency in UV mapping strategies to ensure efficient and seamless texture application, maximizing the visual impact of 3D models. 4. Dive into advanced rendering techniques and lighting strategies to achieve photorealistic results, emphasizing the importance of realistic illumination for 3D scenes. 5. Explore the power of procedural texturing algorithms to add dynamic and realistic surface details to 3D models, enhancing texture variety and complexity.				
Unit I	Creating Organic character – Add reference image – Reference proportion – Creating basic shape – Using extrude – Creating a new layer – using split polygon tool – Combine option – using Merge Edges option – using the subdivide proxy option – using the cut faces tool – convert subdivision surfaces to polygon – Smooth option –Extract option – using the merge edge tool – final model corrections.				
Unit II	UV texture editor window – Planar mapping – Auto mapping – Spherical Mapping – Cylindrical Mapping - Cut UV Edges – Move and Sew UV Edges – Unfold UVs – Relax UVs – Split UVs – Align UVs – Check UV overlay's – Flip UV's – Rotate selected UVs – Smooth UVs – Aligning UV's – Layout UV's – UV snapshot – Exporting UV for texturing.				
Unit III	3D Application hypershade material – Different types of utilities - Blinn – Lambert – Anisotropic - Phong – Ponge E – Ramp shader – Surface shader – Use Background – 2d Texturing map – 3d Texturing map – Common Material Attribute - Color– Transparency map – Diffuse – Specular shading – Bump mapping				
Unit IV	Rendering current frame – Rendering IPR render –Rendering quality – Frame padding – Image resolutions setting – Keeping images in Render view – Frame region rendering – Different types of channel – Snapshot – Choosing Rendering camera – Render save image –Rendering Test Outputs				
Unit V	Basic Sculpting Concepts – Interface Overview – Understanding 3D Space – Importing Objects – Sculpting a Wooden Log – Creating a Layer and Subdividing – UV Mapping – Sculpt Layers – Sculpting Details – The Paint Tools – Paint Layers – Creating Stencil – Importing Stencil Image – Manipulating Stencil Image – Stencil Projections – Painting Texture – Map Creations – Generate Normal Map – Displacement Map – Exporting Maps – Generate final Output using 3D application				

Reference and Text Books:

1. Ebert, D. S. (2003). Texturing & modeling: a procedural approach. Morgan Kaufmann.
2. Van Houtte, P., Li, S., Seefeldt, M., & Delannay, L. (2005). Deformation texture prediction: from the Taylor model to the advanced Lamel model. International journal of plasticity, 21(3), 589-624.
3. Ingrassia, M. (2008). Maya for games: modeling and texturing techniques with Maya and Mudbox. CRC Press.
4. Pascu, N. E., & Dobrescu, T. (2012). Modeling, texturing and lighting in cad applications. Advanced Materials Research, 423, 116-127.
5. Bennett, T. D., & Li, L. (2001). Modeling laser texturing of silicate glass. Journal of applied physics, 89(2), 942-950.

Online Resources

Full 3D Modeling Workflow | Autodesk Maya + Substance 3D Painter
Exporting Textures From Substance 3D Painter to Maya Arnold
Car Modeling in Maya (JEEP) | Texturing in Substance Painter |
How I made Metal Slug Jeep 3d modeling timelapse with Maya and Substance

CO1	Graduates showcase proficiency in advanced polygonal modeling techniques, demonstrating the ability to create intricate and realistic 3D objects with precision.	K1
CO2	Successful participants exhibit expertise in advanced texture mapping methods, emphasizing artistic expression and achieving a higher level of realism in textured 3D models.	K3&K6
CO3	Graduates demonstrate mastery in advanced UV mapping strategies, ensuring optimal texture placement for seamless and efficient results in their 3D models.	K4
CO4	Individuals showcase the ability to apply advanced rendering techniques, including realistic lighting setups and material properties, resulting in photorealistic visualizations of 3D scenes.	K5
CO5	Successful completion of the module equips participants with the skills to implement procedural texturing algorithms, allowing them to dynamically generate realistic surface details and enhance the versatility of textures in 3D models.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	**2.4**	**2.6**	**2.6**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

Course Code: 83554B	V-Semester -Elective II				
Elective II	**DSE 2**	**Elective II - 2. VR and AR Modeling**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Understand the fundamentals of Virtual Reality (VR) and Augmented Reality (AR) technologies, their applications, and differences in modeling for immersive experiences. 2. Develop proficiency in using specialized software tools for creating 3D models optimized for VR and AR environments, considering performance and user interaction. 3. Apply principles of spatial design, scale, and interactivity to create realistic and immersive 3D models tailored for VR and AR platforms. 4. Explore techniques for incorporating interactive elements and user interface design within 3D models to enhance user engagement and navigation in VR and AR experiences. 5. Demonstrate the ability to optimize 3D models for real-time rendering, considering performance requirements essential for seamless VR and AR experiences.				
Unit I	Understanding the differences between virtual reality and augmented reality and their applications-Evolution and Trends: Exploring the history and current trends in VR and AR technologies-Industry Tools: Introduction to software and platforms commonly used for VR and AR modeling, such as Unity or Unreal Engine.				
Unit II	Basics of 3D Modeling: Introduction to polygonal modeling, texture mapping, and basic geometry for virtual environments-Optimization Techniques: Understanding the importance of efficient models for real-time rendering in VR and AR-UV Mapping and Texturing: Techniques for creating and applying textures to 3D models for immersive experiences.				
Unit III	User Interaction Principles: Exploring how users interact with virtual and augmented environments-Hand Tracking and Gestures: Understanding the role of hand tracking and gestures in creating intuitive interactions-UI/UX Design for Immersive Experiences: Designing user interfaces that enhance the overall user experience in VR and AR environments.				
Unit IV	Rigging Basics: Introduction to rigging techniques for character and object animation-Animation Principles: Applying animation principles to create lifelike movements in virtual and augmented environments-Implementing Interactivity: Integrating interactive elements into animated VR and AR scenes.				
Unit V	Advanced Modeling Techniques: Exploring advanced 3D modeling techniques such as sculpting, procedural generation, and photogrammetry.Spatial Audio Integration: Understanding the importance of spatial audio and integrating it into VR and AR projects.Final Project: Applying all learned concepts to develop a VR or AR project, showcasing modeling, interaction design, animation, and advanced techniques.				

Reference and Text Books:

1. Jerald, J. (2015). The VR book: Human-centered design for virtual reality. Morgan & Claypool.
2. Parisi, T. (2015). Learning virtual reality: Developing immersive experiences and applications for desktop, web, and mobile. " O'Reilly Media, Inc.".
3. Schmalstieg, D., & Hollerer, T. (2016). Augmented reality: principles and practice. Addison-Wesley Professional.
4. Aukstakalnis, S. (2016). Practical augmented reality: A guide to the technologies, applications, and human factors for AR and VR. Addison-Wesley Professional.
5. Whyte, J. (2007). Virtual reality and the built environment. Routledge.

Online Resources

Using Blender In VR Is Awesome | My Virtual Reality 3D Modelling Workflow.

Create Stunning AR/VR Experiences with 3ds Max and EnvisionVR

CO1	Demonstrating a high level of proficiency in using specialized software and tools for creating optimized 3D models for VR and AR environments.	K1
CO2	Applying spatial design principles effectively to create immersive and realistic environments tailored for VR and AR experiences.	K3&K6
CO3	Ability to optimize 3D models for real-time rendering, ensuring smooth performance and interaction within VR and AR applications.	K4
CO4	Developing 3D models with interactive elements and intuitive user interfaces that enhance user engagement and navigation within VR and AR environments.	K5
CO5	Demonstrating adaptability in handling challenges specific to VR/AR modeling and employing critical thinking to solve complex design and performance-related issues in these immersive mediums.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	L(1)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	S(3)	M(2)	S(3)	M(2)	M(2)
CO4	M(2)	S(3)	M(2)	S(3)	M(2)
CO5	M(2)	M(2)	M(2)	M(2)	S(3)
W.AV	**2.4**	**2**	**2.6**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Elective II					
Elective II	**Course Code: 83554C**	**Elective II - 3. Digital Sculpting and Texturing Techniques**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Develop proficiency in utilizing digital sculpting software and tools to create detailed and expressive 3D sculptures. 2. Gain a deep understanding of anatomy and form to enhance digital sculpting skills, ensuring accuracy and realism in character and object modeling. 3. Explore and master advanced texture painting methods, integrating them seamlessly with digital sculpting workflows to add intricate details and surface textures. 4. Learn advanced rendering techniques to achieve realistic surface appearances, emphasizing the interaction of light and texture in digital sculptures. 5. Acquire skills in optimizing UV mapping for digital sculptures, ensuring efficient texture placement and allowing for detailed and realistic texturing.				
Unit I	Understanding the role of digital sculpting in 3D modeling and animation-Introduction to Sculpting Software- Familiarization with industry-standard sculpting software such as ZBrush or Mudbox-Basic Sculpting Tools and Techniques: Exploring essential sculpting tools, brush techniques, and navigation within the software.				
Unit II	Anatomy Studies- Conducting studies of human and creature anatomy to develop a foundation for character design-Concept Art Integration: Translating 2D concept art into 3D sculptures, emphasizing creativity and artistic interpretation-Detailing and Refinement: Techniques for adding intricate details and refining sculptures to achieve a high level of realism.				
Unit III	UV Mapping Fundamentals: Understanding the basics of UV mapping to prepare models for texturing-Texture Painting Techniques: Exploring various methods for hand-painting textures directly onto 3D models-Procedural Texturing: Introduction to procedural texturing methods for efficient and realistic texture creation.				
Unit IV	PBR Workflow: Understanding the principles of PBR materials and their role in achieving realistic rendering-Material Creation: Creating and applying PBR materials to digital sculptures to enhance realism and visual fidelity-Shader Integration: Implementing shaders to achieve specific material effects and enhance the overall visual quality.				
Unit V	Advanced Sculpting Techniques: Exploring advanced sculpting features, such as dynamic topology and multi-resolution sculpting-Substance Painter Workflow: Integrating digital sculptures with Substance Painter for enhanced texturing and material refinement-Portfolio Development: Building a strong portfolio showcasing a range of digital sculptures and textured models.				

Reference and Text Books:

1. De la Flor, M., & Mongeon, B. (2012). Digital sculpting with Mudbox: essential tools and techniques for artists. CRC Press.
2. Raitt, B., & Minter, G. (2000). Digital sculpture techniques. Interactivity Magazine, 4(5).
3. Frank, F., Unver, E., & Benincasa-Sharman, C. (2017). Digital sculpting for historical representation: Neville tomb case study. Digital Creativity, 28(2), 123-140.
4. Perry, R. N., & Frisken, S. F. (2001, August). Kizamu: A system for sculpting digital characters. In Proceedings of the 28th annual conference on Computer graphics and interactive techniques (pp. 47-56).
5. Greuel, C., Bolas, M. T., Bolas, N., & McDowall, I. E. (1996, April). Sculpting 3D worlds with music: advanced texturing techniques. In Stereoscopic Displays and Virtual Reality Systems III (Vol. 2653, pp. 306-315). SPIE.

Online Resources

Tutorial: Beginners Head Sculpt | EASY In Blender
How to Sculpt the Torso in Blender - Simple Method by a Pro Sculptor
ZBrush to Photoshop Timelapse - 'Dragon' Concept
Step-by-Step ZBrush Tutorial | Turning 2D Concepts into 3D Characters

CO1	Graduates showcase proficiency in using digital sculpting tools, demonstrating the ability to create detailed and expressive 3D sculptures.	K1
CO2	Successful participants exhibit a deep understanding of anatomy and form, showcasing accurate and realistic modeling skills in both characters and objects.	K3&K6
CO3	Graduates demonstrate mastery in advanced texture painting techniques, integrating them seamlessly with digital sculpting workflows to add intricate details and surface textures.	K4
CO4	Individuals showcase the ability to apply advanced rendering techniques, creating realistic surface appearances and emphasizing the interaction of light and texture in digital sculptures.	K5
CO5	Successful completion of the module equips participants with the skills to optimize UV mapping for digital sculptures, ensuring efficient texture placement and allowing for detailed and realistic texturing.	K2&K6

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	L(1)
CO2	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)	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)	M(2)	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	**2.4**	**2.6**	**2.4**	**2.2**	**2.2**	**2**	**2.2**	**2.2**	**2.4**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Elective III					
Elective III	**Course Code: 83555A**	**Elective III - 1. Rigging and Animation - Practical**	**P**	**Credits: 4**	**Hours:4**
Objective	1. Implement advanced rigging techniques to create versatile skeletal structures capable of supporting complex character movements in 3D animation. 2. Apply principles of weight painting and skinning to ensure realistic deformation and movement of 3D models during animation. 3. Demonstrate proficiency in keyframe animation, utilizing timing, spacing, and easing to create lifelike movement in characters and objects. 4. Employ constraints and controllers effectively to streamline animation workflows and add precision to the movement of rigs and models. 5. Develop skills in character posing, facial expressions, and gesture animation to convey emotions and storytelling in 3D character animation.				

1. **Advanced Rigging Techniques:** Mastering complex rigging structures, including IK/FK systems and spline-based deformations, for versatile character movement and control.
2. **Weight Painting and Skinning Mastery:** Understanding and applying weight painting and skinning methods to achieve realistic deformation and movement of characters during animation.
3. **Keyframe Animation Fundamentals:** Grasping the principles of keyframe animation, focusing on timing, spacing, and easing to bring life and realism to character movement and object animation.
4. **Constraint Implementation and Controllers:** Utilizing constraints and controllers to manage rig behavior, automate repetitive tasks, and enhance precision in character animation workflows.
5. **Facial Rigging and Expression Animation:** Exploring techniques for facial rigging and mastering expressive animation to convey emotions and storytelling through character facial movements.
6. **Character Posing and Gesture Animation:** Developing skills in posing characters and creating dynamic gestures essential for conveying personality and narrative in animations.
7. **Rigging Optimization and Performance:** Optimizing rigs for efficient performance, focusing on rig complexity, resource management, and real-time playback.
8. **Physics-based Animation Integration:** Integrating physics simulations for dynamic effects like cloth, hair, and secondary motions within character animations.
9. **Lip Sync and Dialogue Animation:** Understanding the nuances of lip syncing and syncing character movements to dialogue audio for synchronized storytelling.
10. **Project-based Rigging and Animation:** Applying learned techniques through practical projects, creating fully rigged and animated characters or scenes showcasing acquired skills in rigging and animation.

Outcome	1. Students demonstrate an advanced understanding and application of rigging principles, creating complex and functional rig structures for various character types. 2. Students exhibit proficiency in keyframe animation techniques, effectively conveying lifelike movements, emotions, and storytelling through character animation. 3. Ability to apply weight painting, skinning, and deformation methods proficiently, resulting in realistic and smooth character movement during animation. 4. Students can use constraints and controllers efficiently, enhancing precision and control over character rigs and animation workflows. 5. Capability to create dynamic and expressive character performances, including gestures, facial expressions, and nuanced movements, conveying emotions and narrative effectively.

Reference and Text Books:

1. Raju, P. (2019). Character Rigging and Advanced Animation. Apress.
2. Jones, S. (2012). Digital Creature Rigging: The Art and Science of CG Creature Setup in 3ds Max. Taylor & Francis.
3. Allen, E., & Murdock, K. L. (2011). Body language: advanced 3D character rigging. John Wiley & Sons.
4. O'Hailey, T. (2018). Rig it right! Maya animation rigging concepts. Routledge.
5. Hardin, S., & Gorden, J. (2004). LightWave 3D 8 Cartoon Character Creation: Rigging and Animation (Vol. 2). Jones & Bartlett Publishers.

Online Resources

Freeform Animation Rigging: Evolving the Animation Pipeline
Simple Rigging In Blender
EASY and QUICK Character Rigging in Blender - Blender Basics Tutorial

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Elective III					
Elective III	**Course Code: 83555B**	**Elective III - 2.Lighting and Rendering-Practical**	**p**	**Credits: 4**	**Hours:4**
Objective	1. Develop practical skills in applying various lighting techniques to 3D scenes, including ambient lighting, directional lighting, and point lights. 2. Gain hands-on experience in applying realistic materials and shaders to 3D models, exploring different surface properties and interactions with light. 3. Understand and implement advanced rendering settings, including ray tracing, global illumination, and optimization techniques for efficient and high-quality renders. 4. Learn practical approaches to scene composition and cinematography, including camera placement, framing, and storytelling through lighting and rendering choices. 5. Explore post-processing techniques for enhancing rendered images, including color correction, depth of field, and other image adjustments to achieve desired visual effects.				

1. **Introduction to Lighting Principles:** Overview of fundamental lighting principles, including types of light sources, shadows, and their impact on the visual appearance of 3D scenes.
2. **Practical Application of Ambient Lighting:** Hands-on exercises focusing on the practical application of ambient lighting to create a base level of illumination within 3D scenes.
3. **Directional and Point Lights in Practice:** Practical demonstrations and exercises involving the application of directional and point lights to achieve specific lighting effects and moods.
4. **Realistic Material and Shader Application:** In-depth exploration of applying realistic materials and shaders to 3D models, emphasizing surface properties and interactions with light sources.
5. **Advanced Rendering Settings:** Practical sessions covering advanced rendering settings, including ray tracing, global illumination, and other settings for achieving high-quality renders.
6. **Optimization Techniques for Efficient Rendering:** Techniques and strategies for optimizing rendering processes to achieve efficiency without compromising the quality of the final render.
7. **Scene Composition and Cinematography:** Practical exercises on scene composition, camera placement, and cinematography principles to enhance storytelling and visual impact in 3D scenes.
8. **Atmospheric and Environmental Lighting:** Exploration of techniques for implementing atmospheric and environmental lighting to create immersive and visually compelling 3D environments.
9. **Post-Processing for Image Enhancement:** Hands-on sessions covering post-processing techniques such as color correction, depth of field, and other enhancements to refine rendered images.
10. **Practical Project:** Application of acquired skills in a practical project, allowing students to showcase their understanding of lighting and rendering principles in a comprehensive 3D scene.

Outcome	1. Graduates demonstrate proficiency in practical lighting techniques, showcasing the ability to effectively use different light 2. Successful participants exhibit mastery in applying realistic materials and shaders to 3D models, creating surfaces that interact authentically with lighting conditions. 3. Ensuring efficient and high-quality renders while understanding the impact of advanced rendering settings. 4. Individuals demonstrate mastery in scene composition and cinematography, employing practical skills to create visually compelling and well-balanced 3D scenes. 5. Successful completion of the module equips participants with the skills to enhance rendered images through post-processing techniques, achieving desired visual effects and refinements.

Reference and Text Books:

1. Larsson, N. (2012). Realistic Lighting in Autodesk Maya with Mental Ray Area Light.
2. McKinley, M. (2010). Maya Studio Projects: Game Environments and Props. John Wiley & Sons.
3. Livny, B. (2008). MENTAL RAY, FOR MAYA, 3DS MAX, AND XSI: A 3D ARTIST'S GUIDE TO RENDERING (With CD). John Wiley & Sons.
4. Li, J., Watkins, A., Arevalo, K., & Tovar, M. (2021). Creating Games with Unity, Substance Painter, & Maya: Models, Textures, Animation, & Code. CRC Press.

Online Resources

Arnold Lighting Tutorial in Maya 2022 | Maya Lighting Tutorial
Lighting Interior Day Light using Arnold Renderer in Autodesk Maya
V-Ray in Maya: Lighting and Rendering Your 3D Models

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Elective III					
Elective III	**Course Code: 83555C**	**Elective III - 3.Compositing Techniques-Practical**	**P**	**Credits: 4**	**Hours:4**

Objective	1. Apply advanced compositing methods to seamlessly integrate elements, such as CGI, live-action footage, and visual effects, for a cohesive final output. 2. Demonstrate proficiency in using industry-standard software tools to manipulate and enhance images, ensuring consistency and realism in the composite. 3. Master color grading and correction techniques to achieve visual coherence and establish mood or atmosphere within composited scenes. 4. Utilize masking, rotoscoping, and tracking techniques effectively to isolate elements and create intricate composite sequences. 5. Develop skills in refining and optimizing composites, ensuring final outputs meet professional standards and project requirements.

1. **Advanced Layer Compositing:** Mastering layering techniques to combine multiple elements seamlessly, such as CGI, live-action footage, and effects, for a unified scene.
2. **Green Screen and Matte Extraction:** Learning precise green screen keying and matte extraction methods to isolate and integrate subjects into various backgrounds effectively.
3. **Visual Effects Integration:** Understanding the integration of visual effects elements like explosions, fire, or particle simulations into live-action footage for realistic composites.
4. **Color Grading and Correction:** Applying color grading and correction techniques to unify visuals, enhance mood, and ensure consistency across composited elements.
5. **Rotoscoping and Masking Techniques:** Mastering rotoscoping and masking to isolate specific elements and create detailed, complex composites.
6. **Tracking and Matchmoving:** Utilizing tracking and matchmoving tools to integrate CGI elements seamlessly into live-action footage, maintaining realistic movement and perspective.
7. **Depth and Parallax in Compositing:** Exploring depth and parallax techniques to create a sense of depth and perspective in composite scenes for added realism.
8. **Refinement and Optimizing Composites:** Techniques for refining composites, removing artifacts, and optimizing outputs to meet industry standards and project requirements.
9. **Motion Graphics Integration:** Integrating motion graphics elements within composites, ensuring seamless interaction and integration with live-action footage.
10. **Project-based Compositing:** Applying learned techniques to practical projects, creating complex, high-quality composites showcasing mastery in compositing skills and workflows.

Outcome	1. Demonstrating proficiency in using industry-standard software and tools to create complex and seamless composites involving multiple elements. 2. Ability to effectively integrate various elements like CGI, visual effects, live-action footage, and motion graphics into cohesive and visually compelling composites. 3. Skillfully applying color grading and correction techniques to achieve visual consistency, enhance mood, and create a coherent look across composite scenes. 4. Proficiency in using masking and rotoscoping techniques to isolate elements accurately and create detailed composites. 5. Ability to refine and optimize composites to meet industry standards, ensuring high-quality final outputs that meet project specifications and client expectations.

Reference and Text Books:

1. Brinkmann, R. (2008). The art and science of digital compositing: Techniques for visual effects, animation and motion graphics. Morgan Kaufmann.
2. Wright, S. (2013). Digital compositing for film and video. Taylor & Francis.
3. Lanier, L. (2009). Professional digital compositing: essential tools and techniques. John Wiley & Sons.
4. Lanier, L. (2017). Advanced Visual Effects Compositing: Techniques for Working with Problematic Footage. Taylor & Francis.

Online Resources

Cinematic Compositing Techniques In Blender — Tutorial
7 Rules of Cinematic Framing and Composition
Top 5 Tips: Improve your VFX compositing
BACK TO THE FUTURE "Compositing Techniques" | Shanks FX | PBS Digital Studios

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	L(1)
CO2	S(3)	M(2)	M(2)	M(2)	S(3)	S(3)	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)	M(2)	M(2)
CO4	L(1)	L(1)	M(2)	M(2)	M(2)	L(1)	M(2)	S(3)	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**	**2.4**	**2.4**	**2.2**	**2.2**	**2**	**2.2**	**2.2**	**2.4**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	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	M(2)	M(2)	L(1)	S(3)	M(2)
CO5	S(3)	M(2)	M(2)	M(2)	S(3)
W.AV	**2.2**	**2.2**	**2**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

V-Semester -Core					
Core	**Course Code: 83556**	**Motion Graphics - Practical**	**P**	**Credits: 4**	**Hours:8**

Objective	1. Gain proficiency in industry-standard software for creating motion graphics. 2. Develop skills in conceptualizing and storyboarding for effective motion graphic design. 3. Learn various animation techniques and their application in creating compelling motion graphics. 4. Explore the integration of visual effects to enhance the impact of motion graphic designs. 5. Apply learned principles and techniques through hands-on projects to create polished motion graphic pieces.

1. **Title Sequence Creation:** Design an engaging title sequence for a hypothetical film or TV show, incorporating animated text, graphics, and effects.
2. **Logo Animation:** Develop a dynamic animation that brings a company or personal logo to life using motion graphics techniques.
3. **Infographic Animation:** Create an animated infographic that visualizes statistical data or complex information using motion graphics elements.
4. **Character Animation:** Animate a character or mascot using motion graphics, focusing on movement, expressions, and storytelling.
5. **Music Video Segment:** Design a short segment for a music video, synchronizing visuals with the rhythm and mood of the music.
6. **Explainer Video:** Develop an animated explainer video that effectively communicates a concept, product, or service using motion graphics**.**
7. **Broadcast Graphics Package:** Create a set of cohesive graphics for a TV show or news segment, including lower thirds, transitions, and on-screen elements.
8. **Interactive Motion Graphics:** Design interactive elements using motion graphics for web or mobile applications, considering user interaction and engagement.
9. **Social Media Ad:** Produce a short, attention-grabbing motion graphics ad suitable for platforms like Instagram, TikTok, or YouTube.
10. **Title Animations for Film Scenes:** Design and animate title cards or transitions for various scenes in a short film, demonstrating versatility in motion design styles.

Outcome	1. Develop a dynamic motion graphic that visually represents a brand's identity through animation, incorporating elements like logos, typography, and color schemes. 2. Produce an engaging and informative motion graphic video that explains a complex concept or process using captivating visuals, animation, and narration. 3. Design and animate compelling title sequences for a film or TV show, utilizing motion graphics to set the tone, style, and mood of the production. 4. Create an animated data visualization project that presents complex information or statistics in a clear, visually appealing manner, using motion to enhance understanding. 5. Develop interactive motion graphics optimized for web platforms, incorporating animation and interactivity to engage users in an online environment.

Reference and Text Books:

1. Crook, I., & Beare, P. (2017). Motion graphics: Principles and practices from the ground up. Bloomsbury Publishing.
2. Shaw, A. (2015). Design for motion: fundamentals and techniques of motion design. Routledge.
3. Betancourt, M. (2020). The history of motion graphics. Wildside Press LLC.
4. Gallagher, R., & Paldy, A. M. (2006). Exploring Motion Graphics (Design Exploration). Thomson Delmar Learning.
5. Krasner, J. (2004). Motion Graphic Design and Fine Art Animation: Principles and Practice. Focal Press.

Online Resources

Animating a Scene in After Effects - After Effects Tutorial - Easy Method
Motion Graphics Product Ads In After Effects | Social Media Poster Tutorial
After Effects Tutorial: Create Professional AD using Particles | Motion Graphics 2023
Motion Graphics Tutorial | Cool Hover Animation in After Effects

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	L(1)
CO2	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)	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)	M(2)	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	**2.4**	**2.6**	**2.4**	**2.2**	**2.2**	**2**	**2.2**	**2.2**	**2.4**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M(2)	S(3)	S(3)	M(2)	L(1)
CO2	S(3)	M(2)	S(3)	M(2)	M(2)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	M(2)	M(2)	M(2)	S(3)	S(3)
CO5	S(3)	S(3)	M(2)	M(2)	M(2)
W.AV	**2.4**	**2.6**	**2.6**	**2.2**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

VI-Semester -Core					
Core	**Course Code: 83561**	**Visualization for Multimedia**	**T**	**Credits: 4**	**Hours:4**
Objective	1. To grasp fundamental principles of visual communication and design, enabling students to create visually compelling multimedia content. 2. To develop skills in creating engaging narratives through multimedia elements. 3. To explore interactive multimedia design principles for user engagement. 4. To understand and apply data visualization techniques in multimedia content. 5. To introduce the concepts and techniques of using VR/AR for immersive multimedia experiences.				
Unit I	Introduction to Visualization in Multimedia-Overview of Visualization-Definition and significance-Evolution of visualization in multimedia-Role of Visualization in Multimedia-Enhancing user experience-Communicating complex information-Types of Visualization in Multimedia-Static vs. Dynamic visualization-Interactive visualization				
Unit II	Visual Perception and Cognition-Understanding how the human brain processes visual information-Gestalt principles in visualization design-Color Theory in Multimedia-Impact of color on emotions and perception-Creating visually appealing color schemes-Typography and Layout in Visualization-Choosing appropriate fonts for multimedia-Principles of layout design for effective communication				
Unit III	Introduction to industry-standard tools (e.g., Adobe Creative Suite)-Creating and editing visual elements for multimedia-Exploring tools for representing and analyzing data visually-Case studies on effective data visualization-Introduction to tools for creating interactive multimedia content-Hands-on exercises in building interactive visual elements				
Unit IV	Multimedia Storytelling-Incorporating visualization in storytelling-Narrative techniques for multimedia projects-Virtual and Augmented Reality (VR/AR)-Overview of VR/AR technologies-Applications and challenges in multimedia visualization-Case Studies and Real-world Applications-Analyzing successful multimedia projects-Learning from failures and successes in visualization				
Unit V	Ethical Issues in Visualization-Privacy concerns-Misrepresentation and bias in visual content-Cultural Sensitivity in Multimedia-Adapting visual content for diverse audiences Case studies on culturally aware multimedia visualization-Future Trends in Visualization for Multimedia-Emerging technologies and their impact-Predictions and considerations for the future of multimedia visualization				

Reference and Text Books:

1. Ware, C. (2019). Information visualization: perception for design. Morgan Kaufmann.
2. Few, S. (2009). Now You See It: Simple Visualization Techniques for Quantitative Analysis. Analytics Press.
3. Munzner, T. (2014). Visualization analysis and design. CRC press.
4. Plaisant, C. (2004). The Challenge of Information Visualization Evaluation. In Proceedings of the Working Conference on Advanced Visual Interfaces (pp. 109-116). ACM.

CO1	Students will be able to articulate the core concepts of visualization and explain their relevance to multimedia applications.	K1
CO2	Students will demonstrate proficiency in applying principles of visual perception, color theory, typography, and layout in the design of multimedia visualizations.	K3&K6
CO3	Students will develop the ability to integrate visualization techniques into multimedia storytelling, creating coherent and engaging narratives.	K4
CO4	Analyze and evaluate case studies of multimedia projects, identifying successful visualization strategies and areas for improvement.	K5
CO5	Students will demonstrate an understanding of ethical considerations in multimedia visualization, addressing issues such as privacy, misrepresentation, and cultural sensitivity.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	**2.4**	**2.6**	**2.6**	**2.2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

VI-Semester -Core					
Core	**Course Code: 83562**	**Portfolio & Presentation**	**T**	**Credits: 4**	**Hours:4**

Objective	1. Equip students for effective portfolio creation and presentation. 2. Equip students with the skills to create and present effective digital portfolios. 3. Prepare students for professional portfolio presentations in theater, TV, and film, emphasizing presentation techniques and format requirements. 4. Understand the skills to create, use, and analyze marketing mediums effectively. 5. effective portfolio maintenance, design, publishing, and enhancement strategies.
Unit I	Basics of Portfolio, Importance of portfolio, Elements in Portfolio - Types of Portfolio - The Effective Showcase - Development Techniques - Portfolio requirements - Portfolio Development Techniques Do's and Don'ts.
Unit II	Introduction to the Digital Portfolio - The Effective Digital Showcase - Production Techniques - Design document, Different stages of digital media of their specialization -- Digital Portfolio Do's and Don'ts.
Unit III	Presentation: Preparing professional Theater/TV/Film Portfolio Presentation Techniques Professional presentation skill - Presentation Format and requirements.
Unit IV	Marketing: Business Cards - Blog and Web pages - Importance of Business Cards, Blog and Web pages - Design and development of Business Cards, Blog and Web pages - Market analysis for using medium of marketing - Introduction to social networking and its Importance
Unit V	Portfolio Maintenance - Components of a Portfolio - Audience, Tone, Range Format, Portfolio Guidelines - Portfolio Design - Portfolio Budget and Deadline planning - Publishing your portfolio - Portfolio enhancement.

Reference and Text Books:

1. Harold Linton, “Portfolio Design”, W. W. Norton & Company, Fourth edition, 2012.
2. Rafael Jaen, “Developing and Maintaining a Design-Tech Portfolio A Guide for Theatre”, Film and TV, 2006.
3. Sara Eisenman , “Building Design Portfolios, Innovative Concepts for Presenting Your Work”. Design Field Guides, 2004
4. Wiedmer, T.L., “Digital portfolios: Capturing and demonstrating skills and levels of performance”, Phi Delta Kappan: SAGE Journals, 1998.

Online Resources

1. Presenting portfolio projects in a design interview
2. https://www.youtube.com/watch?v=TxBrcdiNqcM
3. Portfolio Round: Present your PORTFOLIO WORK like a Pro!

CO1	Define and demonstrate the importance of portfolios and Identify key portfolio elements and types.	K1
CO2	Develop the significance of digital portfolios	K3&K6
CO3	Demonstrate effective professional presentation skills.	K4
CO4	Students will develop marketing materials, understand their importance, and harness social networking for success.	K5
CO5	Develop, maintain, design, and publish portfolios with audience-focused content and adhere to guidelines.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

VI-Semester-Core					
Core	**Course Code: 83563**	**Visualization for Multimedia-Practical**	**P**	**Credits: 4**	**Hours:6**
Objective	1. Design and develop an interactive multimedia project incorporating various visualization elements, demonstrating proficiency in creating engaging user experiences. 2. Visualize data relevant to a given multimedia context using appropriate tools, showcasing the ability to translate complex information into visually compelling representations. 3. Applying visualization principles to enhance user experience and effectively communicate information to a target audience. 4. Analyze an existing multimedia project, identify visualization strengths and weaknesses, and propose redesigns with improved visual communication strategies. 5. learn to critically evaluate their own and peers' visualizations, incorporating feedback to iteratively improve the quality of multimedia projects.				

Major Project Pre Visualization

1. **Understand Project Requirements:**Review the guidelines and requirements provided by your academic institution for the pre-visualization document.
2. **Title and Abstract:** Provide a clear and concise title for your major project-Include a brief abstract summarizing the key objectives, scope, and significance of your project.
3. **Introduction:** Introduce the context of your project, explaining why you chose the specific specialization-Clearly state the problem or opportunity your project aims to address.
4. **Project Objectives:** Define specific, measurable, achievable, relevant, and time-bound (SMART) objectives for your major project.
5. **Methodology & Proposed Visualization Techniques:** Outline the research and development methods you plan to employ-Describe any tools, technologies, or techniques you intend to use for visualization in your major project- Detail the visualization techniques you plan to implement, explaining how they align with your project objectives.
6. **Technical Requirements:** Specify any hardware or software requirements for your project-Include details about the platforms or technologies you'll use.
7. **Timeline & Budget (if applicable):** Develop a realistic timeline outlining key milestones and deadlines for different project phases-If your project requires funding, provide an estimate of the budget required for resources, tools, or other expenses.
8. **References:**Include a comprehensive list of references cited throughout your pre-visualization document.
9. **Appendix (if needed):**Attach any supplementary materials, such as sketches, diagrams, or early visual concepts-Submission:Follow the specific submission guidelines provided by your academic institution-Submit the pre-visualization document to your project advisor or relevant department as per the specified deadline.
10. **Prepare for Presentation (if required):**Be ready to present and defend your pre-visualization document during any scheduled presentations or reviews.

Outcome	1. The ability to select and create visualizations that accurately convey data, ensuring clarity and understanding. 2. Showcase the skill to incorporate multimedia components seamlessly, enhancing the overall impact and user engagement of their visualizations. 3. Develop visualizations with interactive features, allowing users to navigate, click, or manipulate elements to deepen their understanding. 4. Produce visualizations that not only effectively communicate information but also adhere to design principles, creating a professional and branded look. 5. Demonstrate an understanding of accessibility guidelines, incorporating features like alternative text, readable fonts, and color contrasts to enhance the user experience for all.

Reference and Text Books:

1. Robbins, J. N. (2013). Creating More Effective Graphs. Wiley.
2. Steele, J., & Iliinsky, N. (2010). Beautiful Visualization: Looking at Data through the Eyes of Experts. O'Reilly Media.
3. Ware, C. (2019). Information visualization: perception for design. Morgan Kaufmann.

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	S(3)
CO3	M(2)	S(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
W.AV	**2.4**	**2.6**	**2.4**	**2**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

Course Code: 83564A		VI-Semester- Elective- IV			
Elective IV	**DSE 4**	**1.Trends in Multimedia**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Develop proficiency in utilizing the latest trend software tool for creating cutting-edge multimedia content. 2. Apply advanced features to explore and implement emerging trends in 3D modeling and animation within the multimedia context. 3. Analyze and interpret the integration of augmented reality (AR), virtual reality (VR), and mixed reality (MR) applications, understanding their impact on multimedia experiences. 4. Demonstrate hands-on skills in interactive multimedia design to create user interfaces and experiences. 5. Utilize the latest trend for creating multimedia content tailored for social media and digital marketing, understanding the platform-specific requirements and trends.				
Unit I	Blender Scene – Manipulating editor window – 3d window space navigation – Selecting, Moving, Rotating and Scaling object – File navigation – Blender units and scale - Pivot, layer, outliner, duplication - Camera view and orthographic view – Camera look to view – Vertices, edges and Faces – Subdivide – Knife cut – Extrude – Spin – Screw – Assignment 1(creating the interior design).				
Unit II	Materials – Material Shader - UV Textures – Multiple material – Transparency material – Image texture – Procedural texture – Bump Texture – Material Ramp – Render to Image file – Render slots - Point Lamp – Sun Lamp and sun lamp sky – Hemi Lamp – Area Lamp – Spot Lamp – Ambient Occlusion – Lamp constraints and Parenting – Assignment 2 (Creating the Primitive man modeling with texture).				
Unit III	Basic keyframe animation – Graph Editor – Cyclic Animation – Path Animation – Camera Path animation – Introduction to armature – Lattices - Alpha and color animation – Shape animation – Constraints - Rendering image and animation in different format – Introduction to dynamic – Assignment 3 (Walk cycle, Run cycle and action).				
Unit IV	Rigging basic – Understanding the Armature modifier –Add Armature – Mirror Modifier – Create the armature for the body – Extruding the spine – Extruding the arms symmetrically – Naming the bones – Understanding IK and FK solver – Add an IK solver - Creating a null bone for IK solver – apply the armature modifier to the mesh – Painting Vertex Groups – Weight paint mode				
Unit V	Animating a Wave with the action editor – Move to a Different Frame – Finishing the wave – Creating a walk cycle – Contact poses – Flipping poses - Passing poses – High point – Tweaking the walk cycle – Rendering the scene – Understanding the different video format - Export alpha sequence frame.				

Reference and Text Books:

1. Thilakanathan, D. (2016). Blender 3D For Beginners: The Complete Guide: The Complete Beginner's Guide to Getting Started with Navigating, Modeling, Animating, Texturing, Lighting, Compositing and Rendering Within Blender.. United Kingdom: CreateSpace Independent Publishing Platform.
2. Fisher, G. (2012). Blender 3D Basics: The Complete Novice's Guide to 3D Modeling and Animation. United Kingdom: Packt Publishing.
3. van Gumster, J. (2020). Blender For Dummies. United Kingdom: Wiley.
4. Simonds, B. (2013). Blender Master Class: A Hands-on Guide to Modeling, Sculpting, Materials, and Rendering. United States: No Starch Press.
5. Hess, R. (2012). Blender Production: Creating Short Animations from Start to Finish. United Kingdom: CRC Press.

Online Resources
https://www.blenderguru.com/tutorials/blender-beginner-tutorial-series
https://www.youtube.com/@cg_cookie/videos

CO1	Demonstrate proficiency in Blender's editor manipulation, 3D space navigation, and object manipulation, applying these skills to efficiently create and navigate interior design scenes	K1
CO2	Master the intricacies of material creation in Blender, including shaders, UV textures, transparency, and various lighting techniques, and apply this knowledge to model a primitive man with realistic textures	K3&K6
CO3	Acquire foundational skills in keyframe animation, utilizing the Graph Editor and exploring cyclic animations, path animations, and camera path animations, culminating in the creation of a dynamic walk cycle and action sequence	K4
CO4	Develop expertise in rigging using Blender's Armature modifier, mirror modifier, IK and FK solvers, and weight painting, resulting in the successful rigging of a character model for animation	K5
CO5	Demonstrate advanced animation techniques in Blender, including creating a realistic wave, a walk cycle, and refining poses using the action editor, ultimately rendering scenes and exporting sequences in various video formats	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Course Code: 83564B		VI-Semester			
Elective IV	**DSE 4**	**2.Interactive Media Design and User Experience**	**T**	**Credits: 4**	**Hours:4**
Objective	1. Develop a comprehensive understanding of interactive media principles and the evolution of the field, emphasizing their role in contemporary media technology. 2. Acquire expertise in user-centered design methodologies, including conducting user research, creating personas, and developing user journeys for effective interactive media solutions. 3. Master wireframing and prototyping techniques, applying them to create interactive media designs and gaining proficiency in the use of prototyping tools. 4. Analyze, integrate, and implement various multimedia elements into interactive designs, demonstrating the ability to create user interfaces responsive to diverse devices. 5. Attain practical programming skills using HTML, CSS, and JavaScript for interactive media, while exploring relevant web development frameworks and libraries to build functional prototypes and applications.				
Unit I	**Foundations of Interactive Media Design** - Introduction to interactive media principles and concepts - Understanding user experience (UX) design principles and their importance - Exploring the history and evolution of interactive media - Overview of key tools and software for interactive media design.				
Unit II	**User-Centered Design and Prototyping** - In-depth exploration of user-centered design methodologies - Conducting user research, personas, and user journeys - Wireframing and prototyping techniques for interactive media - Introduction to prototyping tools and their application.				
Unit III	**Interactive Media Elements and Multimedia Integration** - Analysis of interactive media elements: text, images, audio, and video - Techniques for integrating multimedia components into interactive designs - Hands-on projects incorporating multimedia elements into user interfaces - Introduction to responsive design for various devices.				
Unit IV	**Interactive Media Programming and Development** - Introduction to basic programming concepts for interactive media - Hands-on coding using HTML, CSS, and JavaScript for interactive design - Overview of web development frameworks and libraries - Building interactive prototypes and simple applications.				
Unit V	**Usability Testing and User Feedback** - Importance of usability testing in interactive media design. Planning and conducting usability tests - Analyzing and interpreting user feedback for design improvement - Iterative design processes and incorporating user feedback.				

Reference and Text Books:

1. Norman, D. (2013). The Design of Everyday Things: Revised and Expanded Edition. United States: Basic Books.
2. Tondreau, B. (2019). Layout Essentials Revised and Updated: 100 Design Principles for Using Grids. United Kingdom: Rockport Publishers.
3. Cooper, A., Reimann, R., Cronin, D. (2012). About Face 3: The Essentials of Interaction Design. Germany: Wiley.
4. Rubin, J., Chisnell, D. (2011). Handbook of Usability Testing: How to Plan, Design, and Conduct Effective Tests. Germany: Wiley.
5. McFarland, D. S. (2011). JavaScript & JQuery: The Missing Manual. United States: O'Reilly Media.

Online Resources
https://www.youtube.com/watch?v=hu-q2zYwEYs&ab_channel=NetNinja
https://www.youtube.com/watch?v=Yt2troF-Eyc&ab_channel=ForrestKnight
https://www.youtube.com/watch?v=p0bGHP-PXD4&ab_channel=TraversyMedia
https://www.nngroup.com/articles/usability-testing-101/
https://balsamiq.com/wireframes/desktop/docs/intro/

CO1	Demonstrate a comprehensive understanding of foundational principles and concepts in interactive media design, including the historical evolution and the significance of user experience (UX) design.	K1
CO2	Apply user-centered design methodologies proficiently, conducting thorough user research, creating personas, and developing user journeys to inform the design process.	K3&K6
CO3	Master wireframing and prototyping techniques, utilizing appropriate tools to create interactive media designs that incorporate multimedia elements such as text, images, audio, and video.	K4
CO4	Acquire practical programming skills in HTML, CSS, and JavaScript, enabling the creation of interactive prototypes and simple applications while understanding the role of web development frameworks and libraries.	K5
CO5	Demonstrate expertise in usability testing, including the ability to plan and conduct tests, analyze user feedback, and iteratively improve interactive media designs based on usability insights.	K2&K6

Course Outcome VS Programme Outcomes

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	M(2)	S(3)	S(3)	L(1)	M(2)	M(2)	M(2)	L(1)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)
CO3	M(2)	S(3)	S(3)	S(3)	S(3)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	L(1)	M(2)	S(3)	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	**2.4**	**2.6**	**2.4**	**2.4**	**2.4**	**2**	**2.2**	**2.2**	**2.4**	**2**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Course Code: 83564C		VI-Semester			
Elective IV	**DSE 4**	**3.Digital Marketing and Social Media**	**T**	**Credits: 4**	**Hours:4**
Objective	1. To understand the scope of digital marketing India and the different types of channels used in digital marketing and its tools. 2. To know the definition of Search engine marketing and campaigns by using SEM on different platforms. 3. Understanding the importance of Social presence of a company in the various platforms. 4. To understand the importance of Email marketing and the strategies used in creating campaigns. 5. To acknowledge the strategies used in international marketing and promotional ideas used by the advertisers and its ethics.				
Unit I	Introduction, Types, History of marketing and its importance, Case studies of Branding-Digital Marketing, history, importance, Case studies of digital marketing - Career opportunities of digital marketing india and worldwide-Definition and importance of content in digital marketing.				
Unit II	Role of content in the customer journey-Audience analysis and segmentation-Creating buyer personas-Importance of SEO in content marketing-Keyword research and optimization-On-page and off-page SEO considerations-Developing a content strategy-Content calendars and scheduling-Aligning content with marketing goals-Blog posts-Articles-Infographics-Videos-Podcasts-Social media posts-Tailoring content for different social media platforms-Copyright and plagiarism-Privacy considerations in content creation-Creating a writing portfolio-Freelancing and working with clients.				
Unit III	Definition and importance of SEO in digital marketing-Historical evolution of search engines-How search engines work-Tools and techniques for keyword research-Long-tail keywords and their importance-Title tags, meta descriptions, and header tags-URL structure optimization-Image optimization-Content optimization strategies-Importance of backlinks-Link-building strategies-Overview of popular SEO tools (e.g., SEMrush, Moz, Ahrefs)- Analyzing successful SEO campaigns- Implementing SEO strategies on real projects				
Unit IV	Definition and significance of SEM-Distinction between SEO and SEM-Historical context and evolution of SEM-Crafting compelling ad headlines and descriptions - A/B testing ad copy-Ad extensions and their impact-Manual vs. automated bidding-Setting bid amounts and bid adjustments-Budget allocation and management-Local search ads on Google Map - Location extensions-Geo-targeting strategies-Hands-on experience with campaign setup-Analyzing real-world SEM campaigns-Developing a comprehensive SEM strategy				
Unit V	Creation of posts using design software-Skippable ad-Basics of web design-Sitemap-Domain-Socialmedia - marketing-Instagram-Facebook-Linkedin-Quora-Linked-X-Youtube- Creation of campaigns in the mentioned platforms-Audience Engagement-REputation management of a brand on the social media platforms-Email marketing-Using visuals and multimedia in emails-Crafting compelling subject lines- Writing engaging email content--Importance of personalization in email marketingCall-to-action (CTA) strategies.				

Reference and Text Books:

1. Chaffey, D., & Ellis-Chadwick, F. (2019). Digital Marketing: Strategy, Implementation and Practice (8th ed.). Pearson.
2. Chaffey, D., & Smith, P. R. (2017). Digital Marketing Excellence: Planning, Optimizing and Integrating Online Marketing (5th ed.). Routledge.
3. Pulizzi, J. (2014). Epic Content Marketing: How to Tell a Different Story, Break through the Clutter, and Win More Customers by Marketing Less. McGraw-Hill Education.
4. Evans, D., McKee, J. (2010). Social Media Marketing: The Next Generation of Business Engagement. Germany: Wiley.
5. Ryan, D., Jones, C. (2012). Understanding Digital Marketing: Marketing Strategies for Engaging the Digital Generation. United Kingdom: Kogan Page.

Online Resources

https://grow.google/intl/uk/courses-and-tools/?category=career&topic=digital-marketing
https://www.youtube.com/@GoogleAnalytics/videos

CO1	Understanding the tools, channels and scope of digital marketing in India and worldwide.	K1
CO2	Gaining experience in doing a live campaign by Search engine marketing on various platforms.	K3&K6
CO3	Experiencing in creating campaigns in various digital platforms and the importance of social media presence in the current scenario.	K4
CO4	Experience in creating the campaigns in email marketing using any platform including content and design.	K5
CO5	Knowledge gaining in the aspect of international marketing, ethical issues and promotional strategies.	K2&K6

Course Outcome VS Programme Outcomes

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

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S(3)	S(3)	M(2)	M(2)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	S(3)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	M(2)	M(2)	S(3)	S(3)
W.AV	**2.4**	**2.4**	**2**	**2.4**	**2.4**

S–Strong (3), M-Medium (2), L-Low (1)

VI-Semester					
Core	**Course Code: 83565A/ 83565B**	**Project/ Dissertation**	**PR/ D**	**Credits: 6**	**Hours:12**
Objective	1. Develop the ability to formulate a well-defined research problem and articulate clear research questions or objectives. 2. Demonstrate proficiency in conducting a comprehensive literature review to situate the dissertation within the broader academic context. 3. Acquire advanced research and analytical skills to design and implement a robust methodology for data collection and analysis. 4. Cultivate effective academic writing skills, including the synthesis and communication of complex ideas and findings in a coherent manner. 5. Demonstrate a critical understanding of ethical considerations in research and apply ethical principles throughout the dissertation process.				

Dissertation for Major Project

1. **Introduction and Background:** Clearly define the scope and purpose of the dissertation. - Provide a brief overview of the background literature and the research gap being addressed
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:** Conduct a thorough review of relevant literature in the field of multimedia, highlighting key theories, frameworks, and previous research studies. - Identify gaps in the existing literature that the dissertation seeks to fill.
4. **Methodology:** Detail the research design, methods, and tools employed in the study. - Justify the chosen methodology and discuss its appropriateness for the research questions.
5. **Data Collection:** Describe the process of data collection, including the types of data gathered and the rationale for selecting - specific sources or participants
6. **Analysis and Findings:** Present and analyze the data collected, demonstrating how it addresses the research questions. - Discuss any unexpected findings and their implications for the overall study.
7. **Discussion:** Interpret the results in the context of the existing literature. - Discuss the significance of the findings and their contributions to the field of multimedia.
8. **Conclusion:** Summarize the key findings and their implications. - Provide recommendations for future research or practical applications based on the results.
9. **Limitations:** Acknowledge any limitations in the research design or data collection process. - Discuss how these limitations may have influenced the study's outcomes.
10. **References:** Compile a comprehensive list of all sources cited in the dissertation, adhering to the required citation style (e.g., APA, MLA).

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

Course Outcome VS Programme Outcomes

CO	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**

S–Strong (3), M-Medium (2), L-Low (1)

Mapping Course Outcome VS Programme Specific Outcomes

CO	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**

S–Strong (3), M-Medium (2), L-Low (1)

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.
- 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.

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

RANGE OF MARKS	GRADE POINTS	LETTER GRADE	SCRIPTION
- 100	**9.0 – 10.0**	**O**	**tstanding**
- 89	**8.0 – 8.9**	**D+**	**cellent**
- 79	**7.5 – 7.9**	**D**	**tinction**
- 74	**7.0 – 7.4**	**A+**	**y Good**
- 69	**6.0 – 6.9**	**A**	**od**
- 59	**5.0 – 5.9**	**B**	**erage**
- 49	**4.0 – 4.9**	**C**	**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 = Sum of the multiplication of grade points by the credits of the courses

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.

Final Result

CGPA	Grade	Classification of Final Result
9.5 – 10.0 9.0 and above but below 9.5	**O+** **O**	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
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 i and 'n' refers to the semester 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.