

# 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



### Regulations and Syllabus

## M.SC. Multimedia

### Regulations and Syllabus

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

CHOICE BASED CREDIT SYSTEM

## REGULATIONS AND SYLLABUS

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

Name of the Subject Discipline : **MULTIMEDIA**  
Programme of Level : **Postgraduate programme - M.Sc., Multimedia**

### 1. Choice-Based Credit System

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

### 2. Programme:

“Programme” means a course of study leading to the award of a degree in a discipline. **M.Sc. Multimedia** is an undergraduate programme and duration is **Two years**, the duration that is spread over **Four semesters**.

### 3. Courses

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

### 4. Credits

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

### 5. Semesters

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

### 6. Departmental/institutional committee

The Departmental/Institutional Committee consists of the faculty of the Department/institution. The committee shall be responsible for admission to all the programmes offered by the

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

**7. Programme Educational Objectives (PEO) :**

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

<b>PEO1</b>	Graduates of the Multimedia program will have the knowledge and skills necessary to enter the multimedia industry or related fields as competent professionals. They will be prepared to adapt to evolving technologies and contribute effectively to multimedia projects.
<b>PEO2</b>	Graduates will be equipped with the ability to approach complex multimedia challenges creatively and critically. They will be capable of designing innovative solutions and leveraging multimedia tools and techniques to address real-world problems.
<b>PEO3</b>	Graduates of Multimedia will be proficient in communicating ideas and messages through various multimedia formats. They will have the skills to engage and inform diverse audiences using compelling multimedia content.
<b>PEO4</b>	Graduates will understand and uphold ethical principles in multimedia production and distribution. They will recognize their role in shaping digital culture and demonstrate a commitment to social responsibility, including considerations of privacy, diversity, and inclusivity.
<b>PEO5</b>	Graduates will have a foundation for lifelong learning, enabling them to stay current with emerging multimedia technologies and industry trends. They will be capable of adapting to the evolving demands of the multimedia field and pursuing advanced studies or professional development opportunities.

## 8. Programme Outcomes (3PO)

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

<b>PO1</b>	<b>Multimedia Proficiency:</b> Demonstrate a high level of proficiency in using multimedia tools, software, and technologies for creative expression and problem-solving.
<b>PO2</b>	<b>Effective Storytelling:</b> Ability to create compelling narratives and effectively convey messages through multimedia content, including video, audio, and interactive media.
<b>PO3</b>	<b>Visual Communication:</b> Strong visual communication skills, including graphic design, layout, and typography, to convey information and ideas effectively.
<b>PO4</b>	<b>Interactive Media Development:</b> Ability to design and develop interactive multimedia experiences, such as websites, mobile apps, and interactive installations.
<b>PO5</b>	<b>Media Production:</b> Proficient in multimedia production techniques, including video shooting and editing, audio recording and editing, and 3D modeling and animation.
<b>PO6</b>	<b>User Experience (UX) Design:</b> Graduates will understand the principles of UX design and be able to create user-friendly and engaging interactive multimedia interfaces.
<b>PO7</b>	<b>Media Ethics and Responsibility:</b> Graduates will be aware of ethical considerations in multimedia production and distribution, including copyright, privacy, and social responsibility.
<b>PO8</b>	<b>Cross-Media Integration:</b> Capable of integrating multimedia elements into various forms of media, such as print, online publications, and social media platforms.
<b>PO9</b>	<b>Project Management:</b> Demonstrate project management skills and be able to plan, execute, and deliver multimedia projects on time and within budget.
<b>PO10</b>	<b>Portfolio Development:</b> Establish a comprehensive multimedia portfolio showcasing their work, demonstrating their skills and readiness for careers in the multimedia industry or further academic pursuits.

## 9. Programme Specific Outcomes (PSO)

Programme Specific Outcomes (PSO's) are what the graduates should be able to do upon graduation. At the end of the M.Sc..Multimedia program, the Graduates

<b>PSO1</b>	Should be able to create multimedia content, including graphics,animations, videos, audio, and interactive media, to effectively communicate ideas and information across various platforms and media.
<b>PSO2</b>	Should have an ability to design and develop interactive multimedia applications, websites, and user interfaces that provide engaging and user-friendly experiences for diverse audiences.
<b>PSO3</b>	Should have the ability to produce and edit multimedia elements, including video, audio, and graphics, using industry-standard software and hardware, to meet professional production standards.
<b>PSO4</b>	Should have the capacity to apply principles of visual design, layout, typography, and aesthetics to create visually appealing and effective multimedia content and user interfaces.
<b>PSO5</b>	Should be able to understand the ethical and legal considerations related to multimedia production, distribution, and intellectual property rights. They will make informed decisions and uphold ethical standards in their multimedia work.

## 10. Eligibility for admission

A pass in the 3 years any Under undergraduate degree recognized by the UGC, or an examination accepted as equivalent thereto by the Syndicate for admission to this program.

## 11. Minimum Duration of Programme.

The programme is for three years. Each year shall consist of two semesters viz. Odd and Even semesters. Odd semesters shall be from June / July to October / November and even semesters shall be from November / December to April / May. Each semester there shall be 90 working days consisting of 6 teaching hours per working day (5 days/week).

## 12. Medium of instruction

The medium of instruction is English

### **13. Teaching Methods**

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

### **14. Components**

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

#### **Core courses (CC)**

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

#### **Generic Elective (Allied)**

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

#### **Discipline-Specific Electives (DSE)**

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

#### **Non-Major Electives (NME) - Exposure beyond the discipline Self-Learning Courses from MOOCs platforms**

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

### **Dissertation (Maximum Marks: 200)**

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

#### **No. of copies of the dissertation/internship report**

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

### **15. Attendance**

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

### **16. Examination**

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

#### ***Internal Assessment:***

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

#### **Theory - 25 marks**

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

**Practical - 25 marks**

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

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

Sr. No.	Content	Marks
1	Presentation	15
2	Progress report	10
	<b>Total</b>	<b>25</b>

**Dissertation – 50 Marks (Guide/HOD)**

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

***External Examination***

- ❖ There shall be examinations at the end of each semester, for odd semesters in October / November; for even semesters in April / May.
- ❖ A candidate who does not pass the examination in any course(s) may be permitted to appear in such failed course(s) in the subsequent examinations to be held in October / November or April / May. However, candidates who have arrears in practical shall be permitted to take their arrear Practical examination only along with regular practical examination in the respective semester.
- ❖ A candidate should get registered for the first-semester examination. If registration is not possible owing to a shortage of attendance beyond the condonation limit / regulation prescribed OR belated joining OR on medical grounds, the candidates are permitted to move to the next semester. Such candidates shall re-do the missed semester after completion of the programme.
- ❖ For the Dissertation Work, the maximum marks will be 100 marks for thesis evaluation and the Viva-Voce 50 marks.
- ❖ For the internship, the maximum mark will be 50 marks for project report evaluation and for the Viva-Voce it is 25 marks
- ❖ Viva-Voce: Each candidate shall be required to appear for the Viva-Voce Examination (in defense of the Dissertation Work/internship)

## **17. Passing minimum**

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

**MODEL SYLLABUS UNDER CBCS PATTERN w.e.f.2023-24)**

**M.Sc Multimedia**

**I Semester**

Sem.	Part	Courses	Course Code	Title of the Paper	T/P	Cr.	Hrs./Week	Max. Marks		
								Int.	Ext.	Total
I	III	CC1	83811	Introduction to Communication	T	5	5	25	75	100
		CC2	83812	Visual Presentation	T	5	5	25	75	100
		CC3	83813	Graphic Designing	T	4	4	25	75	100
		CC4	83814	Scripting & Storyboarding	T	4	4	25	75	100
		CC5	83815	Graphic Designing-Practical	P	4	8	25	75	100
		DSE – 1	83816A 83816B 83816C	1.Image Editing Techniques – Practical or 2.Matte Painting – Practical or 2.Digital Marketing - Practical	P	3	3	25	75	100
	IV	SLC - 1	Library			1				
			<b>Total</b>		<b>25</b>	<b>30</b>	<b>150</b>	<b>450</b>	<b>600</b>	

**II Semester**

II	III	CC6	83821	2D Digital Animation Techniques	T	4	4	25	75	100
		CC7	83822	Advanced 3D Design and Visualization Methods	T	4	4	25	75	100
		CC8	83823	Explainer Video Production	T	4	4	25	75	100
		CC9	83824	Video & Audio Editing	T	4	4	25	75	100
		CC10	83825	2D Digital Animation Techniques-Practical	P	4	8	25	75	100
		DSE – 2	83826A 83826B 83826C	1.Visual Effects 2.Interactive Motion Design for User Experience 3.Branding and Identity Design Strategy	P	3	3	25	75	100
	IV	NME – 1	83827A 83827B 83827C	1.AR Fundamentals and Applications 2.Fundamentals of VR Technology 3.Game Engine Integration for 2D Animation	P	2	3	25	75	100
		SLC – 1	83828	Self Learning courses (SLC) - MOOCs**						
				<b>Total</b>		<b>25</b>	<b>30</b>	<b>175</b>	<b>525</b>	<b>700</b>

III Semester										
III	III	CC11	83831	Modeling & Texturing	T	4	4	25	75	100
		CC12	83832	Advanced Rigging & Animation	T	4	4	25	75	100
		CC13	83833	Advanced Lighting & Rendering	T	4	4	25	75	100
		CC14	83834	Digital Cinematography	T	4	4	25	75	100
		CC15	83835	Modeling & Texturing- Practical	P	4	8	25	75	100
		DSE – 3	83836A 83836B 83836C	1.Advanced Visual Effects 2.Dynamic Simulation 3.3D Printing and Additive Manufacturing in Design	P	3	3	25	75	100
	IV	NME – 2	83837A 83837B 83837C	1.Interactive Game UI and UX Design 2.Interactive Cinematic Techniques for Game Environments 3. Game Art Fundamentals and Aesthetics	P	2	3	25	75	100
		SLC – 2	83838	Self Learning courses (SLC) - MOOCs**						
	<b>Total</b>						<b>25</b>	<b>30</b>	<b>175</b>	<b>525</b>
IV Semester										
IV		CC16	83841A/ 83841B	Dissertation/ Internship	D/ I	15	30	50	150	200
<b>Total</b>						<b>15</b>	<b>30</b>	<b>50</b>	<b>150</b>	<b>200</b>
<b>Grand Total</b>						<b>90</b>	<b>120</b>	<b>550</b>	<b>1650</b>	<b>2200</b>

<b>I – Semester</b>					
Core	Course code: 83811	<b>Introduction to Communication</b>	T	Credits: 5	Hours: 5
Objectives	<ol style="list-style-type: none"> <li>1. To demonstrate a comprehensive understanding of the foundational concepts, principles, and models that underlie the field of communication theory.</li> <li>2. To demonstrate a comprehensive understanding of the role, impact, and dynamics of mass media in contemporary society.</li> <li>3. To demonstrate a comprehensive understanding of the medium, its history, technology, and its role in modern communication and entertainment</li> <li>4. To understand psychology and sociology to craft media narratives that foster a deeper understanding of audience behaviors, attitudes, and experiences</li> <li>5. To Demonstrate comprehensive understanding of the intricate relationship between mass media, culture, and development in contemporary society.</li> </ol>				
Unit I	Introduction to communication theory – need for communication – understanding verbal and non verbal communication – types of communication – group communication – mass communication – interactive communication -- Western models of communication –Indian communication theory – barriers to communication				
Unit II	The Mass media – Theories of Press/Media – Journalism – Journalism for Development –History of Journalism – News and news values – Cinema – the Pioneers – the talkies – The Golden Age – Regional language cinema - Documentary and Short films – Impact of Cinema on Society – Film censorship.				
Unit III	Radio – Development of Radio as a Mass medium – Indian broadcasting – All India Radio at Independence – Radio Formats and Genres – FM Radio – Projected growth of Radio Industry – Digital Audio Broadcasting – Ethics of Broadcasting – Television – Development of Television as a Mass medium - Early experiments in Television –The Story of Indian Television- Music Industry – Book Publishing– Folk & Traditional media – Advertising & Public Relations.				
Unit IV	Psychology and Sociology of Media Audiences – The Audience as „Market“- The Public and Public opinion – Mass media and Politics – Audience Measurement – Audience Surveys –Mass Communication and Society : uses , effects, representations – Theories of Media Effects and Media Uses – The Mass Media and the Indian Family – Children and the Media –Representation of Women in the Mass media.				
Unit V	Mass media, culture and development – Information Technology, Telecommunications and the Internet – history of Information Technology in India – The Information Revolution –The Internet in India – Family and Social Networks – E-Commerce, E-Banking and E-Governance. The Gaming industry – Mass media, Intellectual Property Rights.				

**Reference and Text Books**

Dennis McQuail, (sixth Edition) " Mass Communication Theory", London, Sage South Asia, 2010

Hanson Ralph, "Mass Communication: Living in a Media World" , Mcgraw-Hill (Tx) (January 2004)

Joseph R. Dominick "Dynamics of Mass Communication-Media in the Digital Age", McGraw Hill, 2008, Tenth Edition

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

Lule Jack, " Understanding Media and Culture: An Introduction to Mass Communication", Self-Publishing ( 2016).

**Online Resources**

Course Outcomes		Knowledge level
CO-1	Able to recall and relate the understanding of foundational concepts and principles in communication theory.	K1
CO-2	Able to develop a comprehensive understanding of the role, impact, and ethical considerations associated with mass media in contemporary society.	K3&K6
CO-3	Able to distinguish and classify medium and uses in mass media communication	K4
CO-4	Able to determine proficiency in Understanding the Psychology and Sociology of Media Audiences	K5
CO-5	Able to elaborate in depth understanding of the Interplay Between Mass Media, Culture, and Development	K2&K6

### Course Outcome VS Programme Outcomes

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

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

I-Semester					
Course Code	Title of the Course	Visual Presentation	T	Credits:5	Hours:5
83812					
Unit -I					
<b>Objectives</b>	<p>To develop in-depth knowledge in understanding the importance and usage of elements &amp; principles of design</p> <p>To explore the principles and concepts governing the perception, interaction, and manipulation of colors in various visual contexts</p> <p>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</p> <p>To understand Grid Systems and its benefits of using in design, including how they establish structure, alignment, and consistency in layouts</p> <p>To understand storytelling in presentation and corporate presentation</p>				
<b>Unit I</b>	Design fundamental – Basics of Design – Characteristics of a good design - visualization - visualizing a word as drawing – Elements of design - Principles of design – creativity – fundamental of creativity – importance of creativity – developing creativity – exercises - analyzing principles and elements in famous designs.				
<b>Unit - II</b>	Color theory – basics of color 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.				
<b>Unit - III</b>	<p>Typography- typeface anatomy – measurements - typeface classifications – type families – spacing and alignment – selecting appropriate fonts – newspaper typeface analysis</p> <p>Graphics – importance of graphics – major classifications – image manipulation – exercises.</p>				
<b>Unit IV</b>	Grids and layouts – role of grids – structure – grid system and templates – layouts – layout guidelines – important parts of a page layout - types of layouts - analyzing various print design layouts - trends in digital design layouts - minimal/flat - geometric - card layout - Modular/grid - typography - design process - brochure designing - exercises.				
<b>Unit V</b>	<b>Planning the presentation</b> – storytelling – slide layout – Getting Audio & Visuals working together – Text vs. Graphics – Bullet Points – Problem solving with simple pictures – Charts – Animation -Fonts - social awareness presentation - corporate presentation.				
Outcomes					
CO1	Able to understand the role of principles and elements of design in solving design problems				K1
CO2	Able to utilize color theory to create visually compelling and communicatively effective designs across diverse mediums				K3&K6
CO3	Able to seamlessly interpret typography and graphical elements to create visually impactful designs that effectively convey messages and evoke desired emotions.				K4
CO4	Able to seamlessly interpret Grid System and Layout for designing				K5
CO 5	Able to express and elaborate content into a corporate presentation				K2&K6

**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)

**Online Resources**

[https://youtube.com/playlist?list=PLx03\\_0RRvUEE8w\\_ipVLwBjr9gIIU9G8M&feature=shared](https://youtube.com/playlist?list=PLx03_0RRvUEE8w_ipVLwBjr9gIIU9G8M&feature=shared)  
<https://www.youtube.com/@MoreThanPowerpoint>  
<https://youtu.be/9EPTM91TBDU?feature=shared>

**Course Outcome VS Programme Outcomes**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	L(1)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	S(2)	S(3)
CO3	M(2)	M(3)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

I-Semester					
Core	Course code: 83813	Graphic Designing	T	Credits:4	Hours:4
<b>Unit -I</b>					
<b>Objective1</b>	<ol style="list-style-type: none"> <li>1. To produce high-quality, resolution-independent graphics and designs that can be printed at any size without loss of quality.</li> <li>2. To create visually compelling and persuasive content that effectively communicates a message, grabs the audience's attention, and drives desired actions or responses.</li> <li>3. To learn the objective of digital illustration is to master the use of digital tools and techniques to create visually stunning and conceptually rich artwork.</li> <li>4. To acquire the knowledge and skills required to create aesthetically pleasing and well-structured book layouts that effectively convey the content and engage readers.</li> <li>5. To master the techniques required to ensure consistent formatting, page numbering, and content flow across chapters and sections for a well-structured and cohesive book.</li> </ol>				
<b>Unit I</b>	Understanding the workspace of Vector application – Changing the view of the artwork – Logo designing – Using the shape tools – Aligning objects – Using the pathfinder feature- Using the Attributes panel – Applying a gradient fill.				
<b>Unit - II</b>	Digital Illustration – using the pencil tool – About Symbols – Creating symbols – Using the Mesh tool – Advertisement designing – Using the Transform Again command – using Clipping mask –Poster designing – Creating an Opacity mask – Rasterization.				
<b>Unit III</b>	Converting Type to Outlines – Using Appearance attributes – changing the units – using the Live.Trace – using the live paint tool – menu card designing – Packaging.				
<b>Unit -IV</b>	Getting to know the pagination application work area – Restoring default Preferences: – Creating newsletter – creating and applying paragraph styles – Book Designing – Master pages – Changing page margin and column settings – about spread – specifying automatic page numbering.				
<b>Unit-V</b>	Displaying and hiding master page items – placing images – flowing text automatically – editing styles – wrapping text around objects - understanding pdf – adding hyperlinks – exporting to pdf – creating a book file – setting the order and pagination – synchronizing book documents.				
<b>Outcomes</b>					
CO1	Able to create high-resolution graphics and designs that result in crisp and professional printed materials.			K1	
CO2	Able to evoke a strong emotional response and motivate the target audience to take the desired action, whether it's making a purchase, subscribing, or engaging with the advertised content			K3 & K6	
CO3	Able to create professional-quality, visually engaging artwork using digital tools, showcasing creativity and technical skills.			K4	
CO4	Able to produce professionally designed books with visually engaging layouts that enhance the reading experience and convey the intended message effectively.			K5	
CO5	Able to produce a professionally formatted and organized book that offers a cohesive and user-friendly reading experience.			K2&K6	

**Reference and Text Books:**

- Kelby, S., & White, T. (2011). *InDesign CS/CS2 Killer Tips: InDe CS/CS2 Kill Tips*. New Riders.
- Wood, B. (2012). *Adobe illustrator CS6 classroom in a book*. Adobe Press.
- Cruise, J., & Anton, K. K. (2009). *Adobe InDesign CS4 how-tos: 100 essential techniques*. Pearson Education.
- Capsule (Firm) (Ed.). (2008). *Design Matters: Packaging 01: An Essential Primer for Today's Competitive Market*. Rockport Publishers.
- Nguyen, T. T. (2020). Designing visual identity for the Talent Heist event of The Shortcut Oy.

**Online Resources**

- <https://www.youtube.com/watch?v=7no7qrTSRvI>
- <https://www.youtube.com/watch?v=vyQvU1qn7Fg>
- <https://www.youtube.com/watch?v=Urac4u6GngM>
- <https://www.youtube.com/watch?v=ZwiTqrVfDFU>

**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	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)	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)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	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)	M(2)	S(3)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M–Medium (2), L–Low (1)

I-Semester					
Core	Course Code: 83814	Scripting & Storyboarding	T	Credits:4	Hours:4
<b>Unit -I</b>					
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To demonstrate a comprehensive understanding of concept creation and pre production process</li> <li>2. To demonstrate an understanding towards anatomy of screenplay and script writing</li> <li>3. To understand the basic camera shots and movements in visual storytelling</li> <li>4. To understand the visual development process as sketches</li> <li>5. To Demonstrate comprehensive understanding of creating a storyboard design</li> </ol>				
Unit -I	Concept creating (knot)– product based story writing – documentary based story writing – commercial based story writing - storytelling(narration) – budget planning – production - scheduling - Script Writing – one line script writing (screenplay / dialogue) – storyboard drawing.				
Unit - II	Identifying suitable story concept/idea – Anatomy of a Screenplay - Beginning/Middle/EndElaborating and breaking up the selected concept into scenes - Elaborating individual scenes –Slug line - Action – Dialogue - Creating a detailed script / screenplay				
Unit - III	Shots - Extreme long shot – Long shot – Mid long shot – Close up – Extreme close up – Over the Shoulder shot – POV shot – Moves - Zoom in/Zoom out – Truck in/Truck out - Tilt up / Tilt down – Pan left/ Pan right – Transitions – The cut – Fade in / Fade out – Dissolve – Blur pan/ Zip pan.				
Unit IV	Sketching the Characters’ Personalities/ Costumes/ Poses – Sketching the features of Backgrounds / Exteriors or interiors of buildings in different perspectives – Developing sketches of Props /Accessories/ Weapons/ Vehicles - Improvising these sketches with respect to the theme				
Unit-V	Staging techniques – Composing the Characters /BG/ Props for individual shots – Drawing the Shot panels -Drawing the Shot Panels - Checking the overall flow for continuity – Adding Shot descriptions –Adding Dialogues – Indicating Camera movement arrows / camera transitions / Special fx etc.				
<b>Outcomes</b>					
CO1	Able to recall and relate the understanding of storytelling and concept creation				K1
CO2	Able to create a detailed script writing for a story				K3&K6
CO3	Able to interpret and generate different camera shots for storyboarding				K4
CO4	Able to determine sketching skills needed to visualize a story				K5
CO5	Able to elaborate in depth understanding to create a storyboard for various story and script				K2&K6
<b>Reference and Text Books:</b>					
David Harland Rousseau and Benjamin Reid Phillips, “ Storyboarding Essentials: SCAD Creative Essentials (How to Translate Your Story to the Screen for Film, TV, and Other Media)” , Watson-Guptill (25 June 2013)					
Ed Gaskell, “ Make Your Own Hollywood Movie - A Step-by-Step Guide to Scripting Storyboarding “, Ilex Press (4 October 2004)					
Francesca Banting, “ Your Life As A Movie: Scripting and Producing Your Dreams Into Reality”, Createspace Independent Pub; 1 edition (5 March 2015)					

Hart, John, “ The Art of the Storyboard: A FilmmakersIntroduction” , Second Edition , Focal Press; 2 edition (October 8, 2007)  
 Sergio Paez, Anson Jew, “ Professional Storyboarding: Rules of Thumb” , Routledge 1 edition (6 February 2013)

### 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)	S(3)	M(2)	S(3)	M(2)	M(2)	M(2)	S(3)	M(2)
CO3	S(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)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	M(2)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

**I-Semester**

Core	<b>Course code:</b> 83815	<b>Graphic Designing - Practical</b>	<b>P</b>	<b>Credits:4</b>	<b>Hours:8</b>
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<b>Objective</b>	<ol style="list-style-type: none"><li>1. 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.</li><li>2. 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.</li><li>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.</li><li>4. To use color theory to create mood and convey messages effectively.</li><li>5. To build a strong graphic design portfolio.</li></ol>
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<ol style="list-style-type: none"><li>1. Create unique and memorable logos for brands and businesses.</li><li>2. Design custom fonts, lettering, and manipulate text effectively.</li><li>3. Design posters for events, promotions, or art.</li><li>4. Create marketing materials for print and digital distribution.</li><li>5. Design professional and eye-catching business cards.</li><li>6. Apply 3D effects and perspective to objects</li><li>7. Create professional book, magazine, and newspaper layouts</li><li>8. Create a Milkshake brand Menu Design</li><li>9. Design a Billboard for the Brand</li><li>10. Design a Unlocking Creativity: A Guide to Entering the Creative World Book Cover Illustration</li></ol>
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**Reference and Text Books:**

Wood, B. (2020). Adobe Illustrator Classroom in a Book (2021 Release). Adobe Press.  
Airey, D. (2009). Logo design love: A guide to creating iconic brand identities. New Riders.  
Meisner, G. B. (2018). The golden ratio: The divine beauty of mathematics. Race Point Publishing.  
Anton, K. K., & DeJarld, T. (2021). Adobe InDesign Classroom in a Book (2022 release). Pearson.  
Kelby, S., & White, T. (2011). InDesign CS/CS2 Killer Tips: InDe CS/CS2 Kill Tips. New Riders.

**Online Resources**

- <https://www.youtube.com/watch?v=rflq1Szc2j4>
- <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=INOqlS5X1GU>
- <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)	M(2)	S(3)	M(2)	L(1)	L(2)	M(2)	S(3)	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	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)	S(3)	M(2)	M(2)	M(2)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.4</b>	<b>2.8</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2.4</b>	<b>2.2</b>

**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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

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

**I-Semester**

<b>Course Code:</b> 83816A	<b>Title of the Course</b>	<b>Elective I</b> <b>1. Image Editing Techniques - Practical</b>	<b>P</b>	<b>Credits: 3</b>	<b>Hours:3</b>
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**Objective**

1. To understand fundamental image enhancement techniques, such as adjusting brightness, contrast, saturation, and sharpness, to improve the overall quality of an image
2. 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
3. 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
4. To understand concepts like white balance, color grading, and the use of adjustment layers
5. To understand compositing multiple images, creating realistic shadows and reflections, and applying special effects

1. Create Stunning Photo Collages using Image Editing Application
2. Design Eye-Catching poster for an upcoming movie
3. Design a Social Media Graphics poster for Animal Welfare
4. Convert a Photo Retouch and Restore to a color image
5. Convert a raw photos use Camera Raw filter
6. Create a movie poster for Horror and Title on your own for the same
7. Create an E Greeting design for any traditional festival of India
8. Create a movie poster using Superhero character
9. Design a product ad for any one (Laptop, Mobile or TV) Photo manipulation (1:1 size)
10. Create a Gif animation for any

**Outcome**

1. Able to show proficiency in fundamental image manipulation techniques, such as cropping, resizing, and rotating, using industry-standard software
2. Able to show ability to adjust and correct colors in digital images.
3. 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.
4. 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.
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/watch?v=niPjODB7pDI&t=67s>

<https://www.youtube.com/watch?v=kpmjxGX9ooo>

<https://www.youtube.com/watch?v=aWod3cHun4Y>

**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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

I-Semester					
Course Code: 83816B	Title of the Course	Elective I 2.Matte Painting - Practical	P	Credits: 3	Hours:3
<b>Objective</b>	<ol style="list-style-type: none"> <li>To develop proficiency in digital painting techniques, including brushwork, blending, and texture application. They will learn to use digital painting software to create realistic landscapes and backgrounds</li> <li>To learn how to seamlessly integrate photos, 3D renders, and hand-painted elements to produce backgrounds that appear authentic and convincing.</li> <li>To gain a deep understanding of perspective principles and composition techniques in matte painting</li> <li>To manipulate images, create matte paintings, and work efficiently within a production pipeline</li> <li>To understand how to interpret artistic direction and integrate their matte paintings seamlessly into the larger project</li> </ol>				
	<ol style="list-style-type: none"> <li><b>Introduction to Matte Painting:</b> Create a simple matte painting of a natural landscape, such as a mountain scene, by combining multiple images. Focus on seamless integration and basic blending techniques.</li> <li><b>Cityscape Transformation:</b> Take a photograph of a familiar cityscape and transform it into a futuristic or post-apocalyptic city using matte painting techniques. Pay attention to lighting and mood.</li> <li><b>Historical Reconstruction:</b> Choose a historical era and recreate a landscape or cityscape from that time using matte painting. Incorporate accurate architectural and environmental details.</li> <li><b>Character Integration:</b> Combine a live-action photo of a person with a matte-painted background. Ensure the character seamlessly fits into the new environment, paying attention to lighting and shadows.</li> <li><b>Environmental Effects:</b> Create a matte painting that features a dramatic environmental effect, such as a tornado, flood, or wildfire. Emphasize the impact of the effect on the surroundings.</li> <li><b>Fantasy World Building:</b> Design a fantasy world by matte painting an otherworldly landscape. Focus on creating a believable and immersive environment with unique elements.</li> <li><b>Miniature Matte Painting:</b> Experiment with creating a matte painting that mimics the appearance of a miniature model or diorama. Pay attention to scale and detail to achieve a convincing effect.</li> <li><b>Day-to-Night Transition:</b> Take a daytime photograph and transform it into a nighttime scene using matte painting techniques. Adjust lighting, add stars, and create a nocturnal atmosphere.</li> <li><b>Storyboard Integration:</b> Choose a scene from a movie or TV show and recreate it as a matte painting. Pay attention to perspective and framing to match the original shot.</li> </ol>				

**10. Portfolio Piece:** Develop a matte painting that showcases your skills and creativity. This can be a personal project or a themed assignment, but it should demonstrate your proficiency in matte painting techniques.

**Outcome**

1. Able to show proficiency in digital painting techniques using industry-standard software and tools. They will gain the ability to create realistic and imaginative landscapes, architectural structures, and environments, paying attention to details like lighting, textures, and perspective
2. Able to conceptualize and visualize complex scenes and environments. They will be able to interpret and translate artistic concepts and ideas into digital matte paintings, demonstrating creativity and storytelling skills.
3. Able to integrate matte paintings into live-action footage or other visual elements. They will understand the principles of perspective, scale, and lighting to ensure that the matte paintings blend realistically with the rest of the scene.
4. Able to explore advanced digital tools and techniques for matte painting, including the use of 3D modeling software, camera projection mapping, and photobashing.
5. Able to interpret creative briefs, incorporate feedback, and adapt their matte painting work to fit the overall vision of a project.

**Reference and Text Books:**

- Mattingly, D. B. (2011). The digital matte painting handbook. John Wiley & Sons.
- Tonge, G. (2011). Digital Painting Tricks & Techniques: 100 Ways to Improve Your CG Art. Penguin.
- Vaz, M. C., & Barron, C. (2002). The invisible art: The legends of movie matte painting.
- Cabrera, C. (2014). Digital painting techniques: Practical techniques of digital art masters.
- Robertson, B. (2003). Painting the town. Computer Graphics World, [http://www. cgw. com/Publications/CGW](http://www.cgw.com/Publications/CGW), 26.

**Online Resources**

- <https://youtu.be/-ghSIQkdxww?feature=shared>
- <https://youtu.be/CQAdD1PjtqQ?feature=shared>
- <https://conceptartempire.com/matte-painting/>
- <https://www.studiobinder.com/blog/what-is-matte-painting-in-movies/>

### 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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

I-Semester					
Course Code: 83816C	Title of the Course	Elective I 3.Digital Marketing - Practical	P	Credits:3	Hours: 3
<b>Objective</b>	<ol style="list-style-type: none"> <li>To Understand Digital Marketing Fundamentals and Gain a solid grasp of the core principles, terminology, and channels within digital marketing</li> <li>To understand SEO, SEM, email marketing, social media, and content marketing.</li> <li>To Develop the ability to create engaging and persuasive digital content, including text, images, videos, and interactive media, optimized for different digital platforms and audiences.</li> <li>To develop and implement international promotion strategies to expand market reach, build brand awareness, and drive global sales</li> <li>To understand the art of creating, executing, and optimizing effective email marketing campaigns to engage and convert target audiences</li> </ol>				
<ol style="list-style-type: none"> <li><b>Digital Marketing Landscape Analysis</b> - Research and analyze the current state of digital marketing trends and technologies. Present a report on emerging trends, including social media, SEO, content marketing, and paid advertising.</li> <li><b>Website Audit</b> - Choose a website and conduct a comprehensive SEO audit. Identify and recommend improvements for on-page and off-page SEO.</li> <li><b>Social Media Campaign</b> - Plan and execute a social media marketing campaign for a fictional or real business. Create content, schedule posts, and measure engagement and reach.</li> <li><b>Content Marketing Strategy</b> - Develop a content marketing strategy for a chosen brand. Create a content calendar and produce blog posts, videos, or other content assets.</li> <li><b>Email Marketing Campaign</b> - Design and execute an email marketing campaign. Analyze open rates, click-through rates, and conversion rates</li> <li><b>Influencer Marketing Strategy</b> - Create an influencer marketing strategy for a product or service. Identify potential influencers, negotiate partnerships, and measure campaign results</li> <li><b>Digital Marketing Campaign Presentation</b> - Develop a comprehensive digital marketing campaign for a real or fictional business. Present your campaign strategy, including objectives, target audience, channels, and budget, to the class.</li> </ol>					
<b>Outcome</b>	<ol style="list-style-type: none"> <li>Able to show foundational knowledge and skills to navigate the dynamic digital marketing landscape</li> <li>Able to show proficiency in planning, executing, and optimizing Search Engine Marketing (SEM) and Pay-Per-Click (PPC) advertising campaigns to drive targeted traffic and achieve specific marketing objectives</li> <li>Able to optimize social media platforms to enhance brand visibility, engagement, and reach within their target audiences.</li> <li>Able to show proficiency in designing, implementing, and optimizing effective email marketing campaigns to engage and convert target audiences</li> <li>Able to formulate and implement international promotion strategies that effectively target and engage diverse global markets</li> </ol>				

**Reference and Text Books:**

Annmarie Hanlon, "Digital Marketing: Strategic Planning & Integration", SAGE, 2019.  
 Ian Dodson, "The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns", Wiley 2016.  
 Philip Kotler, Hermawan Kartajaya, Iwan Setiawan, "Marketing 4.0, John Wiley & Sons", 2016.  
 Rajendra Nargundkar, "Digital Marketing: Cases from India, Notion Press", Inc, 2018.  
 RyanDamian, "Understanding Digital Marketing: Marketing Strategies for Engaging the Digital Generation", Kogan Page, 2016.

**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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

**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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

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

II-Semester -Core					
Core	CC 83821	2D Digital Animation Techniques	T	Credits: 4	Hours: 4
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To demonstrate an understanding towards human anatomy and proportions for effective character designing</li> <li>2. To demonstrate an understanding towards the animation principles</li> <li>3. To demonstrate an understanding towards computer animation basics</li> <li>4. To Develop proficiency in the animation process, from concept and storyboard creation to final rendering, to create engaging and visually appealing animations</li> <li>5. To Develop the ability to synchronize audio elements with animation to enhance storytelling and emotional impact</li> </ol>				
<b>Unit I</b>	Human anatomy - Line of action – Constructing stick figures - developing with geometric blocks – steps in full body finish – action poses – male body proportions - female body proportions – visualizing body forms in flow lines – Animal anatomy basics – Birds anatomy basics - 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.				
<b>Unit II</b>	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.				
<b>Unit III</b>	Computer animation concepts: the timeline – symbols – tweening– easing in and out – hinging symbols - preparing the character for animation – dissecting the body parts into separate symbols –creating symbols – setting pivot points – rigging – distributed to layers.				
<b>Unit IV</b>	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 – 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.				
<b>Unit V</b>	Audio – creating and importing audio into the application – 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.				
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. Bill Davis, “Creating 2D animation in a small studio” , GGC Publishing , 2006</li> <li>2. Hedley Griffin, “ The Animator's Guide to 2D Computer Animation ”, Focal Press, 2000</li> <li>3. Sandro Corsaro and Clifford J. Parrott, “ Hollywood 2D Digital Animation: The New Flash Production Revolution” ,Course Technology PTR; 1 edition , 2004</li> <li>4. Steve Roberts, “ Character Animation: 2D Skills for Better 3D” ,Focal Press; Second edition, 2007</li> <li>5. Tony White, “ Animation from Pencils to Pixels: Classical Techniques for the Digital Animator” , Focal Press; 1 edition, 2006</li> </ol>					

**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	Able to recall human proportions and define character design essentials	K1
CO2	Able to show skills to choose and apply principles of animation	K3&K6
CO3	Able to operate and demonstrate proficiency in Animation Tools and Software	K4
CO4	Able to create captivating animations using industry-standard software and techniques	K6
CO5	Able to demonstrate proficiency in using audio to enhance storytelling and create immersive experiences in animation	K2&K6

**Course Outcome VS Programme Outcomes**

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

**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)	S(3)	M(2)	M(2)
CO2	S(3)	M(2)	S(3)	M(2)	S(3)
CO3	S(3)	M(2)	S(3)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	S(3)	S(3)
<b>W.AV</b>	<b>2.8</b>	<b>2.2</b>	<b>2.6</b>	<b>2.4</b>	<b>2.4</b>

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

<b>II-Semester -Core</b>					
<b>Core</b>	<b>CC 83822</b>	<b>Advanced 3D Design and Visualization Methods</b>	<b>T</b>	<b>Credits:4</b>	<b>Hours: 4</b>
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To demonstrate a fundamental understanding of 3D user interface principles and their application in virtual environments</li> <li>2. To understand and proficiently edit NURBS curves and polygons in 3D modeling software</li> <li>3. To understand 3D modeling using polygon modeling techniques for realistic digital visualizations</li> <li>4. To demonstrate understanding towards rigging and animation</li> <li>5. To demonstrate understanding about lighting and rendering</li> </ol>				
<b>Unit I</b>	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 a curve editing tool.				
<b>Unit II</b>	Editing nurbs - rebuilding surfaces – surface filets – 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.				
<b>Unit III</b>	Using Nurbs curves to create a model – creating Basic tabletop Props – the polygon robot modeling – Modeling an Exterior shot – hypershade - understanding Materials and textures – texturing the Robot – texturing tabletop Props - texturing a sample of exterior elements.				
<b>Unit IV</b>	Rigging – joints and tools -- ik - Fk – spline ik – Types of Constraints - Skinning – Primitive Rig - traditional animation fundamentals – the wave principle – overlap – using the time slider – setting playback range – setting playback speed – setting keyframes – 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.				
<b>Unit V</b>	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 – rendering regions – snapshots – setting render global – image name and format – Batch Rendering.				
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. 3dExtrude Tutorials, “Autodesk Maya - An Introduction to 3D Modeling “, Independently published (June 24, 2018)</li> <li>2. Dariush Derakhshani, “ Introducing Autodesk Maya 2016 “ Autodesk Official Press by   Jul 27, 2015</li> <li>3. Kelly L. Murdock, “ Autodesk Maya 2018 Basics Guide “, SDC Publications; Pap/Psc edition (November 6, 2017)</li> <li>4. Michael McKinley, “ Maya Studio Projects: Game Environments and Props “, Sybex; 1 edition (March 1, 2010)</li> <li>5. Prof Sham Tickoo, “ Autodesk Maya 2018: A Comprehensive Guide “, Purdue Univ   Aug 11, 2017</li> </ol>					

CO1	Able to design and navigate 3D user interfaces proficiently	K1
CO2	Able to show proficiency in editing NURBS curves and polygons for precise 3D modeling.	K3&K6
CO3	Able to generate realistic 3D models using polygons	K4
CO4	Able to determine proficiency in rigging and animation concepts using 3D application	K5
CO5	Able to show proficiency in using lights and rendering	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)	M(2)	M(2)	M(2)	S(3)	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	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)	S(3)
<b>W.AV</b>	<b>2.6</b>	<b>2.4</b>	<b>2.4</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	L(1)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	M(2)	M(2)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	L(1)
<b>W.AV</b>	<b>2.2</b>	<b>2.6</b>	<b>2.4</b>	<b>2</b>	<b>1.6</b>

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester -Core					
Core	CC 83823	Explainer Video Production	T	Credits:4	Hours:4
<b>Objectives</b>	1. To demonstrate an understanding towards motion graphics application interface 2. To demonstrate an understanding towards comprehensive video and motion graphics production 3. To understand the concepts of rotoscope, keying and tracking 4. To understand motion graphics using industry-standard software and techniques 5. To understand animation composer and rendering				
<b>Unit I</b>	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 keyframes – Color.				
<b>Unit II</b>	Drawing, Painting and paths – Text - Transparency and compositing - Effects and animation presets - Markers - Expression and automation - Rendering and exporting – understanding of compositing – attribute scale, rotate, transform or move the layer - Assignment – typography animation.				
<b>Unit III</b>	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. Assignment – keying, Assignment – 2d tracking, Assignment – Match moving.				
<b>Unit IV</b>	What is motion graphics? Creating a 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 - Assignment - corporate presentation.				
<b>Unit V</b>	Creating background 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 - Assignment - corporate presentation.				
<b>Reference and Text Books:</b>					
1. Adobe Creative Team, “ Adobe After Effects CS6 Classroom in a Book “, Adobe Press, 2012 2. Chris Meyer & Trish Meyer, “ Creating Motion Graphics with After Effects: Essential & Advanced Techniques, 5th Edition, Version CS5 “ , Focal Press, 2010 3. Chris Meyer, Trish Meyer, “ After Effects Apprentice: Real-World Skills for the Aspiring Motion Graphics Artist “ , Routledge; 4 edition (February 19, 2016) 4. David Dodds , “ Hands-On Motion Graphics with Adobe After Effects CC: Develop your skills as a Visual Effects and Motion Graphics Artist “, Packt Publishing (April 9, 2019) 5. Mark Christiansen, “ Adobe After Effects CS6 Visual Effects and Compositing Studio Techniques” , Adobe Press, 2012					
<b>Online Resources</b>					
<a href="https://youtube.com/playlist?list=PLYfCBK8IplO77FDDLnS06qEMoVLD7Qyib&amp;feature=shared">https://youtube.com/playlist?list=PLYfCBK8IplO77FDDLnS06qEMoVLD7Qyib&amp;feature=shared</a> <a href="https://youtu.be/IAUAVwYWFdI?feature=shared">https://youtu.be/IAUAVwYWFdI?feature=shared</a>					

CO1	Able to show proficiency in navigating and using the interface effectively	K1
CO2	Able to create text based animations and compositions	K3&K6

CO3	Able to show proficiency in comparing rotoscoping, keying and tracking techniques	K4
CO4	Able to show skills in creating motion graphics video for corporate presentations	K5
CO5	Able to show proficiency in using animation composer and rendering queue	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)	S(3)	S(3)	S(3)
CO2	M(2)	M(2)	M(2)	M(2)	S(3)	L(1)	M(2)	M(2)	S(3)	S(3)
CO3	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)
CO4	M(2)	S(3)	M(2)	M(2)	M(2)	M(2)	M(2)	S(3)	M(2)	M(2)
CO5	M(2)	L(1)	M(2)	M(2)	M(2)	M(2)	M(2)	L(1)	S(3)	S(3)
<b>W.AV</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2</b>	<b>2.2</b>	<b>1.8</b>	<b>2</b>	<b>2.2</b>	<b>2.6</b>	<b>2.6</b>

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)	L(1)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	M(2)	M(2)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	L(1)
<b>W.AV</b>	<b>2.2</b>	<b>2.6</b>	<b>2.4</b>	<b>2</b>	<b>1.6</b>

S–Strong (3), M-Medium (2), L-Low (1)

<b>II-Semester -Core</b>					
<b>Core</b>	<b>CC 83824</b>	<b>Video &amp; Audio Editing</b>	<b>T</b>	<b>Credits: 4</b>	<b>Hours:4</b>
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To understand the fundamental principles and techniques of video editing</li> <li>2. To demonstrate an understanding towards indepth editing techniques</li> <li>3. To understand the usage of effects and transitions in editing</li> <li>4. To demonstrate an understanding towards rendering techniques and file formats</li> <li>5. To understand audio editing and techniques</li> </ol>				
<b>Unit I</b>	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 – editing clips into a sequence.				
<b>Unit II</b>	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 - transitions – displaying transitions – aligning transitions by dragging – replacing transitions – clip handles and transitions - Using workspaces – applying and controlling standard effects– effects control window – reordering effects				
<b>Unit III</b>	Showing or hiding keyframe 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				
<b>Unit IV</b>	Customizing the rendering format – Understanding the render menus - working with the audio mixer window – creating a storyboard – audio editing– File Export Settings – exporting different video format – Video codec’s and compression				
<b>Unit V</b>	Understanding audio software interface – What is sound acoustic setup – Different types of audio mikes - Adding multiple sound tracks – understanding Channels – Separate Stereo and Mono channels – Sample Rate - Effects, Delay/Echo, reverb, amplitude – Changing Pitch – Mixing voice and music – Noise reduction – Audio file format – Export audio				
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. Adobe, “ Adobe Premiere Pro CC Classroom in a Book “, 1e Paperback, Publisher: Pearson Education India; 1 edition (2014)</li> <li>2. Alexis Van Hurkman , “ Color Correction Handbook: Professional Techniques for Video and Cinema (Digital Video &amp; Audio Editing Courses) 2nd Edition “, Peachpit Press; 2 edition (November 29, 2013)</li> <li>3. Gack Davidson, “ Adobe Premiere Pro CC 2017: The Complete Beginner's Guide “, Createspace Independent Pub; 1 edition (28 January 2017)</li> <li>4. Jim Owens , “ Television Production “,Focal Press, 18 Dec 2015</li> <li>5. Joseph V. Mascelli, “ The Five C's of Cinematography: Motion Picture Filming Techniques “, First Silman-James Press Ed edition, 1998</li> </ol>					

CO1	Able to show knowledge and understanding in video editing fundamentals	K1
CO2	Able to formulate and apply comprehensive editing techniques	K3&K6
CO3	Able to compare and interpret effects in video editing	K4
CO4	Able to choose and interpret file formats and export settings	K5
CO5	Able to show proficiency in compiling audios and create effective video and audio outputs	K2&K6

### Course Outcome VS Programme Outcomes

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

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)	L(1)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	M(2)	M(2)	M(2)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	L(1)
<b>W.AV</b>	<b>2.2</b>	<b>2.6</b>	<b>2.4</b>	<b>2</b>	<b>1.6</b>

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester -Core					
Core	CC 83825 Lab II	2D Digital Animation Techniques - Practical	P	Credits: 4	Hours:8
Objective	<ol style="list-style-type: none"> <li>To understand and apply fundamental animation principles, such as timing, spacing, and anticipation, to create smooth and believable 2D animations</li> <li>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.</li> <li>To demonstrate their ability to navigate the software's interface, create keyframes, use the timeline, and manipulate vector graphics.</li> <li>To understand 2D characters, including walk cycles, facial expressions, and character interactions, showing a solid grasp of character design and animation techniques</li> <li>To understand project development and collaboration for animation production.</li> </ol>				
<ol style="list-style-type: none"> <li><b>Basic Animation Principles</b> - Create a short animation (15-30 seconds) that demonstrates your understanding of fundamental animation principles.</li> <li><b>Character Design and Rigging</b> - Design an original 2D character and rig it for animation using adobe animate. Animate the character performing a simple action.</li> <li><b>Lip Sync Animation</b> - 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.</li> <li><b>Storyboarding and Animatics</b> - 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.</li> <li><b>Walk Cycle Animation</b> - 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).</li> <li><b>Character Interaction</b> - Animate two characters interacting with each other in a short scene. Focus on character acting, body language, and conveying a clear narrative through animation.</li> <li><b>Effects Animation</b> - Create an effects animation sequence, such as fire, water, or smoke. Explore different techniques and tools for achieving realistic and visually appealing effects</li> <li><b>Parallax Animation</b> - Design and animate a 2D parallax scene, where foreground and background elements move at different speeds to create a sense of depth and immersion.</li> <li><b>Traditional Animation Techniques</b> - 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.</li> <li><b>Portfolio Piece</b> - 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.</li> </ol>					

<p><b>Outcome</b></p>	<ol style="list-style-type: none"> <li>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</li> <li>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.</li> <li>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.</li> <li>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</li> </ol>
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**Reference and Text Books:**

6. Bill Davis, “Creating 2D animation in a small studio” , GGC Publishing , 2006
7. Hedley Griffin, “ The Animator's Guide to 2D Computer Animation ”, Focal Press, 2000
8. Sandro Corsaro and Clifford J. Parrott, “ Hollywood 2D Digital Animation: The New Flash Production Revolution” ,Course Technology PTR; 1 edition , 2004
9. Steve Roberts, “ Character Animation: 2D Skills for Better 3D” ,Focal Press; Second edition, 2007
10. 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)	M(2)	S(3)	M(2)	M(2)	M(2)	S(3)	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	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)	S(3)
<b>W.AV</b>	<b>2.6</b>	<b>2.4</b>	<b>2.4</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

**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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

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

II-Semester - Elective II					
Elective II	DSE – 83826A	Elective II 1. Visual Effects	P	Credits:3	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To demonstrate an understanding towards visual effects application interface and navigation through workspace and tools</li> <li>2. To understand keylight and masking techniques using the visual effects application</li> <li>3. To understand the tracking process and using different tracking techniques</li> <li>4. To understand the principles and techniques of rotoscoping in visual effects and animation production.</li> <li>5. To Understand the principles and techniques of layer compositing for creating visually appealing visual effects sequence</li> </ol>				
<ol style="list-style-type: none"> <li> <b>1. Introduction to VFX Software</b>            Familiarize yourself with basic visual effects software.            Create a simple composition with text and image elements, applying basic effects like transitions and color grading.         </li> <li> <b>2. Keying and Green Screen Compositing</b>            Learn the fundamentals of keying.            Shoot a video with a green screen and practice compositing different backgrounds.         </li> <li> <b>3. Particle Systems</b>            Explore particle systems in VFX software.            Create a scene with dynamic elements like rain, snow, or fire using particle effects.         </li> <li> <b>4. Motion Tracking</b>            Introduce motion tracking techniques.            Track a moving object in a video and integrate a visual effect into the tracked motion.         </li> <li> <b>5. Rotoscoping</b>            Understand the concept of rotoscoping.            Rotoscope a complex scene, isolating an object or character from the background.         </li> <li> <b>6. 2D Animation Integration</b>            Combine 2D animation with live-action footage.            Animate a character or object and integrate it seamlessly into a live-action scene.         </li> <li> <b>7. Color Correction and Grading</b>            Learn color correction and grading techniques.            Enhance the visual appeal of a video by adjusting color balance, saturation, and contrast.         </li> <li> <b>8. Simulating Natural Phenomena</b>            Simulate a natural phenomenon such as fire, smoke, or water using VFX tools.            Discuss the principles behind the simulation and its application in film.         </li> <li> <b>9. Forced Perspective</b>            Experiment with forced perspective techniques.            Create a scene where the perception of depth is altered using visual effects.         </li> <li> <b>10. Final Project: Scene Enhancement</b>            Choose a short video clip with a specific theme (e.g., sci-fi, fantasy, or drama).            Enhance the scene using a variety of visual effects learned throughout the module.            Present the final project with a focus on creativity and technical proficiency.         </li> </ol>					

**Reference and Text Books:**

1. Alexis Van Hurkman, “ Color Correction Handbook: Professional Techniques for Video and Cinema “ , Peachpit Press; 2 edition (November 29, 2013)
2. Erica Hornung, “ The Art and Technique of Matchmoving: Solutions for the VFX Artist 1st Edition “, Focal Press; 1 edition (August 31, 2010)
3. Lee Lanier, “ Professional Digital Compositing: Essential Tools and Techniques “ , Sybex; Original edition (8 December 2009)
4. Ron Brinkmann , “ The Art and Science of Digital Compositing, Second Edition: Techniques for Visual Effects, Animation and Motion Graphics (The Morgan Kaufmann Series in Computer Graphics) “, Morgan Kaufmann; 2 edition (24 May 2008)
5. Ron Ganbar, “ Professional Compositing and Visual Effects “ , Peachpit Press; 1 edition (April 23, 2011)

CO1	Able to show proficiency in navigating and using the tool in visual effects application interface effectively	K1
CO2	Able to identify and formulate keylight and masking techniques	K3&K6
CO3	Able to interpret and classify 2d and 3d tracking process	K4
CO4	Able determine comprehensive understanding of rotoscoping techniques and their applications in visual effects and animation	K5
CO5	Able to translate the understanding and show proficiency in layer compositing techniques for creating complex visual compositions	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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

### Mapping Course Outcome VS Programme Specific Outcomes

<b>CO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>
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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

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

II-Semester - Elective II					
Elective II	DSE - 83826B	Elective II 2.Interactive Motion Design for User Experience	P	Credits:3	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>To Understand the fundamental principles of interactive motion design, including animation techniques and user engagement strategies</li> <li>To understand the fundamentals of motion and transitions</li> <li>To understand the interactive narration using motion</li> <li>To Develop an understanding of motion principles and design strategies that promote accessibility and inclusivity in digital and physical environments</li> <li>To understand motion design techniques to create captivating and dynamic visual experiences</li> </ol>				
<ol style="list-style-type: none"> <li><b>Interactive Prototyping:</b> Design and prototype interactive user interfaces using motion to enhance user experience.</li> <li><b>Microinteractions Exploration:</b> Analyze and implement subtle animated elements (microinteractions) that engage and guide users within interfaces.</li> <li><b>Scroll-based Animations:</b> Develop web-based interfaces with scroll-triggered animations to create dynamic and immersive user journeys.</li> <li><b>Gesture-Based Interactions:</b> Explore motion design for gesture-based interactions, considering usability and intuitive design principles.</li> <li><b>Interactive Infographics:</b> Transform static data into dynamic and engaging infographics, utilizing motion to communicate information effectively.</li> <li><b>User-Centric Transitions:</b> Implement seamless transitions between screens or elements, prioritizing user-centric design and smooth interactions.</li> <li><b>Interactive Storytelling:</b> Create interactive narratives by integrating motion design to guide users through a compelling and user-driven story.</li> <li><b>Responsive Animation:</b> Design responsive interfaces with adaptive animations that cater to various screen sizes and orientations.</li> <li><b>Interactive Iconography:</b> Redefine traditional iconography by incorporating interactive motion elements to convey functionality and enhance user understanding.</li> <li><b>Usability Testing with Motion:</b> Conduct usability testing sessions focusing on the impact of motion design on user engagement and overall user experience.</li> </ol>					
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>Steane, J. (2014). The Principles and Processes of Interactive Design. United Kingdom: Bloomsbury Academic.</li> <li>The Theory and Practice of Motion Design: Critical Perspectives and Professional Practice. (2018). United Kingdom: Taylor &amp; Francis.</li> <li>Head, V. (2016). Designing Interface Animation: Improving the User Experience Through Animation. United States: Rosenfeld Media.</li> <li>Saffer, D. (2013). Microinteractions: Designing with Details. China: O'Reilly Media.</li> <li>Labrecque, J., Shukla, A. (2021). Mastering Adobe Animate 2021: Explore Professional Techniques and Best Practices to Design Vivid Animations and Interactive Content. United Kingdom: Packt Publishing.</li> </ol>					

CO1	Able to show skills to create a simple user interface animations	K1
CO2	Able to formulate continuity and create effective transitions	K3&K6
CO3	Able to interpret microinteractions to develop an interactive narrative	K4
CO4	Able to determine a comprehensive understanding of motion principles tailored to enhance accessibility and inclusivity in design and built environments	K5
CO5	Able to demonstrate proficiency in employing advanced motion design techniques to create visually compelling and dynamic animations	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

II-Semester - Elective II					
Elective -II	DSE - 83826C	Elective II <b>3.Branding and Identity Design Strategy</b>	P	Credits:3	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>To develop the skills and knowledge necessary to create cohesive and memorable visual identities that effectively represent and communicate the essence of a brand or organization.</li> <li>To Understand branding strategy and research while crafting USP</li> <li>To understand the usage of visual elements in creating brand identity</li> <li>To understand branding touchpoints and their significance in shaping a brand's identity and perception.</li> <li>To Understand branding implementation plan for a hypothetical or real-world business, demonstrating an understanding of budgeting, resource allocation, and timeline management</li> </ol>				
<ol style="list-style-type: none"> <li><b>Brand Audit and Analysis:</b> Conduct a comprehensive audit of a company's brand, analyzing visual elements, messaging, and market positioning.</li> <li><b>Competitor Branding Comparison:</b> Compare and contrast the branding strategies of two competing companies in the same industry, identifying strengths and weaknesses.</li> <li><b>Logo Design Challenge:</b> Design a logo for a fictitious brand, emphasizing simplicity, scalability, and relevance to the target audience.</li> <li><b>Typography Exploration:</b> Explore diverse typography choices for a brand, presenting a mood board of font options and justifications for each.</li> <li><b>Color Psychology in Branding:</b> Analyze the psychological impact of color in branding and propose a color scheme for a new or rebranded identity.</li> <li><b>Brand Persona Development:</b> Develop a detailed brand persona, including demographics, values, and personality traits, to guide future design decisions.</li> <li><b>Brand Style Guide Creation:</b> Construct a comprehensive brand style guide encompassing logo usage, color palettes, typography, and imagery guidelines.</li> <li><b>Multichannel Branding Campaign:</b> Devise a multichannel branding campaign for a real or hypothetical product, integrating print, digital, and social media elements.</li> <li><b>Interactive Branding Experience:</b> Design an interactive and immersive branding experience, considering user engagement and consistency across various touchpoints.</li> <li><b>Brand Launch Strategy:</b> Develop a strategic plan for the launch of a new brand, outlining key milestones, promotional activities, and audience engagement tactics.</li> </ol>					
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>Wheeler, A. (2017). Designing brand identity: an essential guide for the whole branding team. John Wiley &amp; Sons.</li> <li>Knapp, P. M. (2001). Designing Corporate Identity: graphic design as a business strategy. Rockport Publishers.</li> <li>Budelmann, K., Kim, Y., Wozniak, C. (2010). Brand Identity Essentials: 100 Principles for Designing Logos and Building Brands. United States: Rockport Publishers.</li> <li>Airey, D. (2014). Logo Design Love: A Guide to Creating Iconic Brand Identities. United Kingdom: Pearson Education.</li> <li>Brand Positioning: Strategies for Competitive Advantage, 2/e. (1998). India: Tata McGraw-Hill Book Company.</li> </ol>					

CO1	Able to create recognizable and consistent visual representations that make a brand or company memorable and easily recognizable.	K1
CO2	Able to identify and develop brand USP based on the research	K3&K6
CO3	Able to generate a brand identity applying the principles effectively	K4
CO4	Able to Determine the concept of branding touchpoints and their significance in building a cohesive brand identity	K5
CO5	Able to Effectively communicate the results of branding evaluations and recommendations to stakeholders, both verbally and through written reports.	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

## II-Semester - NME- I

NME	NME – 83827A	1.AR Fundamentals and Applications	P	Credits:2	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To understand the fundamental concepts and principles of Augmented Reality (AR) technology and its applications</li> <li>2. To provide an understanding of AR technologies and hardware, including types of AR devices, development tools, sensors, cameras, tracking, and hardware requirements essential for AR development.</li> <li>3. To familiarize learners with AR development, including languages, frameworks, creating AR applications in Unity and similar environments, integrating 3D elements, testing/debugging, and emphasizing best practices in AR development.</li> <li>4. To explore the diverse applications of AR across industries, including gaming, education, healthcare, architecture, and design, while also examining real-world case studies of successful AR implementations.</li> <li>5. To explore future trends and challenges in AR, including emerging technologies, ethical and privacy considerations, adoption challenges and opportunities, and making predictions about the future of AR, culminating in group projects and presentations on potential AR applications.</li> </ol>				
<ol style="list-style-type: none"> <li>1. <b>AR Overview:</b> Provide an overview of AR technologies, applications, and their impact on multimedia.</li> <li>2. <b>AR Hardware Exploration:</b> Explore various AR hardware devices, such as AR glasses and smartphones, and analyze their capabilities.</li> <li>3. <b>AR Content Creation:</b> Develop basic AR content using AR authoring tools, integrating 3D models or animations into real-world environments.</li> <li>4. <b>Marker-based AR Project:</b> Create a marker-based AR project, where digital content is triggered by physical markers in the environment.</li> <li>5. <b>Location-based AR Experience:</b> Design a location-based AR experience, leveraging geolocation data to enhance user interactions in specific areas.</li> <li>6. <b>Interactive AR Gaming Prototype:</b> Develop a prototype for an interactive AR game, emphasizing user engagement and immersive gameplay.</li> <li>7. <b>AR in Marketing Campaign:</b> Devise an AR-powered marketing campaign, integrating AR elements to enhance brand promotion and customer engagement.</li> <li>8. <b>AR in Education Module:</b> Develop an educational AR module, exploring how AR can enhance learning experiences in a specific subject or skill.</li> <li>9. <b>Social AR Experience:</b> Create a social AR experience that allows users to interact with each other in augmented spaces, fostering collaboration and communication.</li> <li>10. <b>AR for Accessibility:</b> Explore the application of AR to improve accessibility, developing a solution that aids individuals with specific needs or disabilities.</li> </ol>					
<b>Reference and Text Books:</b> <ol style="list-style-type: none"> <li>1. "Augmented Reality: Principles and Practice" by Dieter Schmalstieg and Tobias Hollerer</li> <li>2. "Augmented Human: How Technology Is Shaping the New Reality" by Helen Papagiannis</li> <li>3. "Unity AR &amp; VR by Tutorials" by Unity Technologies</li> <li>4. <a href="https://augmented.org/">https://augmented.org/</a></li> </ol>					

CO1	Able to explore its history , key concepts, terminology, compare it with Virtual Reality (VR) and Mixed Reality (MR), and delve into current trends and applications across various industries.	K1
CO2	Able to have a comprehensive grasp of AR technologies and hardware, covering various AR device types, development tools, sensor/camera technology, tracking methods, and hardware prerequisites for effective AR development.	K3&K6
CO3	Able to have the skills to confidently engage in AR development, utilizing various programming languages and frameworks, creating interactive AR applications, incorporating 3D elements, effectively testing and debugging, and applying best practices for successful AR development projects.	K4
CO4	Able to gain a comprehensive understanding of how AR is employed across various industries, including gaming, education, healthcare, architecture, and design, through the analysis of successful case studies.	K5
CO5	Able to have a forward-looking perspective on AR, understanding emerging technologies, ethical and privacy concerns, adoption dynamics, and will be capable of presenting innovative AR application concepts through group 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)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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

### Mapping Course Outcome VS Programme Specific Outcomes

<b>CO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>
CO1	S(3)	S(3)	S(3)	M(2)	M(2)
CO2	M(2)	M(2)	S(3)	M(2)	L(1)
CO3	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	M(2) )	M(2)	M(2)	M(2)	M(2)
CO5	M(2) )	S(3)	M(2)	M(2)	L(1)
<b>W.AV</b>	<b>2.2</b>	<b>2.6</b>	<b>2.4</b>	<b>2</b>	<b>1.6</b>

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

II-Semester - NME- I					
NME	NME – 83827B	2.Fundamentals of VR Technology	P	Credits:2	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>To explore the definition, history, key concepts, types, applications, and ethical implications of Virtual Reality (VR).</li> <li>To introduce and explain the key components and technologies of VR hardware, including headsets, controllers, sensors, display technology, audio systems, and ergonomic design considerations.</li> <li>To provide an overview of VR software, including development platforms, tools, 3D content creation, programming languages, UI design principles, UX considerations, and content creation techniques for immersive storytelling.</li> <li>To familiarize readers with the principles of user interaction and navigation in VR, covering topics such as hand tracking, gesture recognition, navigation methods, input devices, intuitive interface design, and providing case studies of effective VR interaction design.</li> <li>To explore the diverse applications of VR, including gaming, education, healthcare, and architecture, while also addressing ethical considerations and highlighting future trends and emerging technologies in the field.</li> </ol>				
<ol style="list-style-type: none"> <li><b>Introduction to VR Technology:</b> Explore foundational principles of Virtual Reality (VR) technology, covering hardware, software, and key concepts.</li> <li><b>VR Headset Comparison:</b> Evaluate and compare different VR headsets, considering factors like display quality, tracking accuracy, and user experience.</li> <li><b>Basic VR Content Creation:</b> Create a simple VR experience using introductory content creation tools, focusing on immersive storytelling.</li> <li><b>360-Degree Video Production:</b> Produce a 360-degree video, addressing challenges unique to VR content creation, such as spatial audio and seamless stitching.</li> <li><b>VR Interaction Design:</b> Dive into VR interaction design principles, developing a user-friendly interface for navigation and interaction within virtual environments.</li> <li><b>VR Application Development Basics:</b> Gain hands-on experience with basic VR application development, utilizing platforms like Unity or Unreal Engine.</li> <li><b>Simulated Environments in VR:</b> Construct a simulated environment within VR, emphasizing realistic spatial relationships and user engagement.</li> <li><b>VR and Storytelling:</b> Explore the intersection of VR and storytelling, creating a narrative-driven VR experience that captivates and immerses users.</li> <li><b>VR for Training and Simulation:</b> Design a VR training module for a specific industry, emphasizing the practical applications of VR in simulating real-world scenarios.</li> <li><b>VR User Experience (UX) Testing:</b> Conduct UX testing for a VR application, gathering feedback on user comfort, navigation, and overall satisfaction with the virtual experience.</li> </ol>					
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>"Virtual Reality" by Steven M. LaValle</li> <li>"The VR Book: Human-Centered Design for Virtual Reality" by Jason Jerald</li> <li>"Learning Virtual Reality: Developing Immersive Experiences and Applications for Desktop, Web, and Mobile" by Tony Parisi</li> <li>"Virtual Reality Blueprints" by Jonathan Linowes</li> </ol>					
CO1	Able to provide a comprehensive understanding of Virtual Reality, its practical applications, and the ethical challenges it presents.				K1

CO2	Able to equip readers with a comprehensive understanding of VR hardware components and their respective technologies, enabling informed decisions and considerations for VR experiences.	K3&K6
CO3	Able to enable readers to understand the tools, techniques, and principles involved in VR software development and storytelling, facilitating the creation of compelling and user-friendly VR experiences.	K4
CO4	Able to empower readers with a deep understanding of VR interaction and navigation principles, enabling them to design and implement immersive and user-friendly virtual reality experiences.	K5
CO5	Able to provide readers with insights into the current and potential future applications of VR across various fields, along with an understanding of ethical concerns and anticipated trends in virtual reality technology.	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)	M(2)	M(2)	M(2)	S(3)	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	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)	S(3)
<b>W.AV</b>	<b>2.6</b>	<b>2.4</b>	<b>2.4</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M–Medium (2), L–Low (1)

## II-Semester - NME- I

NME	NME – 83827C	<b>3.Game Engine Integration for 2D Animation</b>	P	Credits:2	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To introduce the importance of 2D animations in game development, provide an overview of popular game engines and their compatibility with 2D animations, and familiarize learners with key animation</li> <li>2. To teach the core principles of 2D animation, including timing, sprite sheet creation, various animation techniques, and provide hands-on experience in creating and optimizing 2D animations.</li> <li>3. To teach participants how to integrate 2D animations with Unity, covering Unity's 2D animation system, asset management, animation controllers, and techniques for smooth character animation playback.</li> <li>4. To instruct participants on integrating 2D animations with Unreal Engine, covering Unreal Engine's 2D animation tools, asset management, animation sequences, and the creation of animation blueprints for character control and interaction.</li> <li>5. To educate participants about platform-specific considerations, performance optimizations, testing, and deployment strategies for cross-platform game engine integration, ensuring smooth gameplay across various platforms.</li> </ol>				
<ol style="list-style-type: none"> <li>1. <b>Introduction to Game Engines:</b> Explore the basics of game engines and their role in integrating 2D animation into interactive multimedia projects.</li> <li>2. <b>Sprite Animation in Unity:</b> Implement sprite animation in Unity, focusing on character movement and basic interactions within a 2D game environment.</li> <li>3. <b>Parallax Scrolling Techniques:</b> Create a parallax scrolling effect in a game engine, enhancing visual depth and dynamism in 2D animations.</li> <li>4. <b>Physics and Collisions in Games:</b> Integrate physics and collision detection in a 2D game environment using a game engine like Unity or Unreal Engine.</li> <li>5. <b>Interactive Narrative Design:</b> Design and implement an interactive narrative using 2D animations within a game engine, emphasizing player choices and branching storylines.</li> <li>6. <b>Character Rigging and Animation:</b> Rig and animate 2D characters for game engines, considering skeletal animation and character controllers.</li> <li>7. <b>UI/UX Design for Games:</b> Develop user interfaces and experiences tailored for 2D games, ensuring seamless integration with game engine functionalities.</li> <li>8. <b>Sound Integration in Games:</b> Integrate sound effects and background music into a 2D game using game engine audio systems for a more immersive experience.</li> <li>9. <b>Mobile Game Development:</b> Adapt 2D animations for mobile platforms, optimizing performance and user experience within a chosen game engine.</li> <li>10. <b>Multi Platform Deployment:</b> Explore techniques for deploying 2D animated games across multiple platforms, addressing compatibility and performance considerations in the chosen game engine.</li> </ol>					
<b>Reference and Text Books:</b> <ol style="list-style-type: none"> <li>1. "The Animator's Survival Kit" by Richard Williams</li> <li>2. "Character Animation Crash Course!" by Eric Goldberg</li> <li>3. "The Art of Game Design: A Book of Lenses" by Jesse Schell</li> <li>4. <a href="https://learn.unity.com/tutorials">https://learn.unity.com/tutorials</a></li> <li>5. <a href="https://ru.esotericsoftware.com/">https://ru.esotericsoftware.com/</a></li> </ol>					

CO1	Able to work with popular game engines and essential animation concepts in a practical development environment.	K1
CO2	Able to enable participants to grasp essential 2D animation principles, techniques, and practical skills for creating and optimizing animations effectively.	K3&K6
CO3	Able to equip participants with the knowledge and skills necessary to seamlessly integrate 2D animations into Unity, enabling them to create fluid character animations using Unity's animation system.	K4
CO4	Able to enable participants to effectively integrate 2D animations into Unreal Engine, empowering them to create and control character animations using Unreal Engine's animation tools and blueprints.	K5
CO5	Able to equip participants with the knowledge and skills needed to efficiently integrate and optimize 2D animations in game engines for cross-platform deployment, ensuring a seamless gaming experience across different devices.	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester - Core					
Core	CC 83831	Modeling & Texturing	T	Credits:4	Hours:4
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Demonstrate proficiency in utilizing industry-standard 3D modeling software to create detailed and accurate 3D models for various purposes.</li> <li>2. Develop advanced skills in texture mapping, unwrapping, and applying materials to enhance the realism and visual appeal of 3D models.</li> <li>3. Gain a deep understanding of UV mapping techniques and efficiently unwrap complex 3D models to optimize texture application and avoid distortion.</li> <li>4. Acquire expertise in procedural texturing methods and the use of shaders to achieve realistic surface properties, including reflections, specularity, and bump mapping.</li> <li>5. Apply best practices in digital sculpting and detailing to create intricate and high-resolution 3D models suitable for animation, gaming, or visual effects production.</li> </ol>				
<b>Unit I</b>	Introduction to user interface – working in 3D – views –the workspace – creating manipulating and moving objects – perspective and orthographic windows – creating curves – editing curves – reverse curve direction – using curve editing tool -- Editing nurbs - rebuilding surfaces – creating polygons – polygon Booleans – mirror geometry – polygon smooth tool – extruding polygon faces and edges- Creating an office chair – – Applying materials and textures to chair - Character modeling basics with props and weapon - Character props and topology				
<b>Unit II</b>	Character unwrapping - Introduction to Sculpting – Sculpting tools – Sculpting brushes – Alpha textures for Sculpting – Character sculpting – Symmetric and Asymmetric Sculpting – Creating detail sculpting and texture maps – Introduction to Retopologize				
<b>Unit III</b>	Hyper shade - understanding Materials and textures – Unwrapping the chair Parts -- Introduction to Texturing - Unwrapping polygon before texturing – Photograph manipulation – Baking Normal map - Color map - Displacement map - Assigning maps in 3D application software – finalizing Texture maps				
<b>Unit IV</b>	Lights – types of light – common attributes – spotlights – point lights – directional lights – area lights – volume lights – working with shadows – depth map shadows – baking shadows – ray traced shadows Understanding material and lighting – Direct Lighting - Indirect lighting - Final Gather – Global illumination – Caustics – HDRI – SSS Shader – Final output using direct and indirect lighting				
<b>Unit V</b>	Advanced Rendering technique – Render layers - Basics of Rendering – Rendering engines - mental ray and Vray Rendering – Render passes and types – Diffuse Pass - Specular pass - Zdepth pass - Shadow pass - Occlusion pass – Character Lighting – Key pass, Fill pass, Rim pass and bounce pass				
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. 3dExtrude Tutorials, “ Autodesk Maya 2010: The Modeling Handbook “, Independently published (June 24, 2018)</li> <li>2. Chris Legaspi, “ Anatomy for 3D Artists: The Essential Guide for CG Professionals “ 3DTotal Publishing (December 15, 2015)</li> <li>3. Prof. Sham Tickoo Purdue Univ, “ Autodesk Maya 2017: A Comprehensive Guide” , 9th Edition, CADCIM Technologies; 9 edition (October 20, 2016)</li> <li>4. Todd Palamar, “ Maya Feature Creature Creations (Graphics Series) 1st Edition “, CharlesRiver Media; 1 edition (April 25, 2008)</li> </ol>					

5. Todd Palamar, “ Mastering Autodesk Maya 2016 “ Autodesk Official Press 1st Edition. Sybex; 1 edition (August 10, 2015)

**Online Resources:**

[Modeling and Texturing in Blender - TUTORIAL](#)

[1. Hut | Modeling a Hut in Maya | Tutorial 1| Making 3D Scene Step by Step](#)

CO1	Develop proficiency in 3D modeling techniques to create realistic and visually compelling virtual environments.	K1
CO2	Master the art of UV mapping and texturing, enhancing the ability to apply intricate details to 3D models for increased realism.	K3&K6
CO3	Acquire skills in using industry-standard software tools for modeling and texturing, empowering effective communication within the digital art and design community.	K4
CO4	Understand the principles of light and shadow in relation to texture mapping, enabling the creation of visually stunning and dynamic 3D assets.	K5
CO5	Gain expertise in optimizing models and textures for various platforms, ensuring efficient performance in real-time applications and game development.	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)	L(1)	M(2)	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)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	S(3)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.6</b>	<b>1.6</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	L(1)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)
CO3	S(3)	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)	M(2)
<b>W.AV</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>1.8</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester - Core					
Core	CC 83832	Advanced Rigging & Animation	T	Credits:4	Hours:4
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Demonstrate proficiency in creating complex skeletal rigs for characters with diverse anatomies in a 3D animation environment.</li> <li>2. Apply advanced rigging techniques to achieve realistic deformations and seamless articulation of characters in response to various movement scenarios.</li> <li>3. Master the implementation of facial rigging, including advanced controls for expressions, lip sync, and nuanced facial animations.</li> <li>4. Utilize advanced animation principles and tools to create dynamic and visually compelling character animations, incorporating principles such as weight, anticipation, and overlapping action.</li> <li>5. Develop expertise in integrating advanced rigging and animation workflows, optimizing efficiency and collaboration within a production pipeline for high-quality animated content.</li> </ol>				
<b>Unit I</b>	Basic study Elements of Rigging tools – constraints and types – Deformers and types – connecting multiple attributes – Analysis of prop rig – work flow with constrained objects – Prop rig for complex utilization – usage of set driven key – Adding custom attributes				
<b>Unit II</b>	Character Study (characteristics) – Character Anatomy study (skeleton system) – Preparing the scene – renaming structure – constructing Leg joints and foot controls – Adding knee controls – constructing spine joints – Adding spline ik system – upper body controls –finishing spine controls – constructing shoulder -- Adding finger joints – Adding elbow and ik control system – constructing Fk control system – Building Ik and Fk control system –Constructing finger controls – constructing neck and head bones – head controls – constructing facial joints – creating facial controls – creating eye controls – Skinning and adjusting paint weights and influences – Mirroring weights and finalizing the character weights				
<b>Unit III</b>	Introduction to Animation tools and Editors – Principle of Animations – Animating – ball with a tail motion – Assignment_1 (Tail ball with the concept) – ball with leg walk movement – How animation layer works – Animation layers basics -- understanding animation layers – creating variations – Assignment_1 (Creating variation styles) –Finalizing animation layers				
<b>Unit IV</b>	Intro character controls – character walk cycle –Assignment_2 (walking with different styles) – character action with Props – Assignment_3 (action added with different props) – Face controls checking for animation – Studying the facial REFERENCES: – Starting and Ending Extreme Passes -- Blocking the talking poses – Break down passes – Refining the eye and eyebrow movements – Tweaking and finalizing animation				
<b>Unit V</b>	Intro to Mo-cap data – source data preparation – source data and custom rig -- retargeting – checking regarded animation – solving issues from source data and custom rig – correcting orientation issues – fine tuning retargeted animation – Camera Blocking for the action/animation				
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. Andy Beane, “ 3D Animation Essentials “, Sybex , Mar 17, 2016</li> <li>2. Antonio Bosi, “ Autodesk Maya 138 Tutorials and Tips by 138 useful Maya tutorials (tips &amp; tricks)” , Autodesk Maya Press, Feb 24, 2017</li> </ol>					

3. David Rodriguez, “Animation Methods - Rigging Made Easy: Rig your first 3D Character in Maya Rig it Right! Maya Animation Rigging Concepts (Computers and People) “, CreateSpace Independent Publishing Platform, Jul 27, 2018
4. Jahirul Amin, “ Beginner's Guide to Character Creation in Maya “ , 3DTotal Publishing (30 April 2015)
5. Roger King , “ 3D Animation for the Raw Beginner Using Autodesk Maya “, Chapman and Hall/CRC; 1 edition (15 August 2014)

**Online Resources:**

[Simple Advanced Rigging in Blender - Tutorial](#)

CO1	To proficiently design and execute intricate skeletal rigs for diverse character anatomies in 3D animation, showcasing advanced rigging skills.	K1
CO2	Able to demonstrate mastery in applying advanced rigging techniques to achieve lifelike character deformations and articulate seamless movements in response to varied animation scenarios.	K3&K6
CO3	will showcase expertise in facial rigging by implementing advanced controls for expressions, lip sync, and nuanced facial animations in their animated projects	K4
CO4	Able to exhibit advanced animation skills, incorporating principles like weight, anticipation, and overlapping action to create dynamic and visually compelling character animations.	K5
CO5	Able to integrate advanced rigging and animation workflows effectively, enhancing their ability to contribute to high-quality animated content within a production pipeline.	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)	L(1)	M(2)	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)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	S(3)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.6</b>	<b>1.6</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

**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)	L(1)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)
CO3	S(3)	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)	M(2)
<b>W.AV</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>1.8</b>	<b>2.4</b>

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

III-Semester - Core					
Core	CC 83833	Advanced Lighting & Rendering	T	Credits:4	Hours:4
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Develop proficiency in advanced lighting techniques to create realistic and visually compelling scenes in 3D rendering.</li> <li>2. Master the use of industry-standard rendering software to achieve photorealistic results and enhance visual storytelling.</li> <li>3. Acquire advanced knowledge of global illumination, including radiosity and ray tracing, to achieve realistic light interactions in virtual environments.</li> <li>4. Explore the integration of specialized shaders and materials to enhance the visual quality and artistic expression in rendering projects.</li> <li>5. Gain expertise in optimizing rendering pipelines for efficiency and quality, considering factors such as render time and resource utilization.</li> </ol>				
<b>Unit I</b>	Lighting Introduction – Production Techniques – Software Requirements – Lighting Workflow – Adding Light Sources – Types of lights and their usage - Diffuse and Specular - Light properties – Testing Lights – Isolating a Light – Linking and Unlinking Lights – Lighting in Production – Integrating Task – Geometry – Shading				
<b>Unit II</b>	Three Point Lighting – Modeling with Light – Three Point Positions – Key Light – Fill Light – Key & Fill Ratios – Back Light – Shadows – Visual Function of Shadows – Revealing Different Angles – Lights Casting Shadow – Single Shadow Scenes – Fill Light Shadows – Avoiding Shadows – Shadow Brightness – Brightening shadow with Ambient & Fill Lights – Transparency Support				
<b>Unit III</b>	Faking Shadows – Shadows using 3D Models – Reducing shadows – Qualities of Lights – Softness – Hard or Soft Light – Rendering Soft Light – Intensity – Attenuation – No Attenuation – Color – Light Throw – Throw Pattern & Texture – Light Animation – Moving Lights – Animating Light Parameters – Color Mixing – Color & Depth – Warm & Cool Colours – Black & White – Color Balance – Color Temperature – Indoor & Outdoor light colors – RGB Colour				
<b>Unit IV</b>	Exposure – Common Exposure Problems – High & Low Contrast – Gama Correction – How Real life Camera works – Aperture – F-Stops – Depth of Field – Shutter Speed – Motion Blur – Video Fields – Shading Models – Anisotropic Highlights – Specular Color – Raytracing – Raytraced Reflections – Raytrace Depth				
<b>Unit V</b>	Global Illumination – Photon Mapping – Caustics – Rendering Layers – Rendering Passes – Beauty Pass – Highlight Pass – Reflection Pass – Adding Reflections in compositing – Shadow Pass – Lighting Pass – Effects Pass – Pass Management Features				
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. Advanced Maya Texturing and Lighting Paperback – by Lee Lanier (Author), - Sybex; 3rd Edition edition (29 May 2015)</li> <li>2. Mastering mental ray: Rendering Techniques for 3D and CAD Professionals 1st Edition by Jennifer O'Connor (Author), - Sybex; 1 edition (April 19, 2010)</li> <li>3. Light for Visual Artists: Understanding &amp; Using Light in Art &amp; Design Paperback – April 27, 2011 by Richard Yot (Author), - Laurence King Publishing; Reprint edition (April 27, 2011)</li> </ol>					
CO1	Demonstrate the ability to apply advanced lighting techniques to create atmospherically rich and visually immersive 3D scenes.				K1
CO2	Produce photorealistic renders using industry-standard software, showcasing mastery of rendering tools and features.				K3&K6

CO3	Implement global illumination methods, including radiosity and ray tracing, to accurately simulate complex light interactions in virtual environments.	K4
CO4	Utilize specialized shaders and materials effectively to achieve desired visual effects and enhance the overall aesthetic appeal of rendered scenes.	K5
CO5	Optimize rendering workflows for efficiency, demonstrating the capacity to manage render times and system resources while maintaining high-quality output.	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)	L(1)	M(2)	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)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	S(3)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.6</b>	<b>1.6</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	L(1)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)
CO3	S(3)	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)	M(2)
<b>W.AV</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>1.8</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester - Core					
Core	CC 83834	Digital Cinematography	T	Credits:4	Hours:4
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Develop proficiency in operating digital cinema cameras, mastering their settings, and understanding their functionalities to capture high-quality images.</li> <li>2. Acquire a comprehensive understanding of lighting techniques, color theory, and composition principles to create visually compelling and aesthetically pleasing cinematography.</li> <li>3. Explore post-production workflows, including digital editing and color grading, to enhance and refine cinematographic sequences effectively.</li> <li>4. Demonstrate proficiency in utilizing advanced cinematography tools and accessories, such as stabilizers and drones, for dynamic and innovative shot compositions.</li> <li>5. Cultivate critical analytical skills to assess and critique digital cinematography, applying industry standards and creative insights to elevate the overall quality of film and video productions.</li> </ol>				
<b>Unit I</b>	Introduction to Digital Cinematography – Rule of third – Composition – Framing – One point perspective – Two point perspective – Leading lines - Curved line – Vertical Line – Horizontal line – Zig Zag line – Balance - Head room – Different types of FPS – Size and Aspect Ratio - Colors and pattern – Different types of Camera Names (DSLR, Gopro, RED, Alexa, Sony, Cannon) – Storyboard – Mood board.				
<b>Unit II</b>	What is a Lens? – Lens Speed - Field of View – Sharpness – Distortion - Camera Aperture - Camera Shutter Speed - Guidelines for choosing a Lens - The Main Functions of a Photographic Lens - Consumer Cameras - Choosing a Lens - The Normal Lens - Field of View - Lens Types - Perspective and Depth - The Illusion of Depth.				
<b>Unit III</b>	Camera Distance - Examining a Shot - Shot Types - Extreme Long Shot - Long Shot - Medium Long Shot - Medium Shot - Medium Close Up and Close Up - Extreme Close Up - Shot Size and Lenses - Over the Shoulder Shot - Two Shot - Camera Height - Eye Level Height - High Angle - Low Angle - Objective and Subjective Camera Work – Audience Viewpoint - First-Person Viewpoint - Third-Person Restricted Viewpoint - Point-of-View Shot - Camera blocking - Shot Composition - (Rules - 180 degree) - (30 degree rule) – The rule of thirds - Editing report - Camera Movement - The Panning Shot - The Tilt Shot - The Tracking Shot – The Circular Move - The Push-In Shot - The Pull-Out Shot - The Crane Shot - The Handheld Shot- The Stead cam Shot - The Aerial Shot - Moving the Camera Successfully - Static Shots.				
<b>Unit IV</b>	Three-Point Lighting - The Key Light - The Fill Light - The Back Light - Effective Use of ThreePoint Lighting - Practical Lighting Applications - Lighting Analysis - Lighting the Face - Visual Intensity - Contrast and Affinity - Contrast in Color - How Does Light Help Tell a Story? - different types of lights – Par Light 575, 1.2kv, 4kv, 12kv - Pocket par – Kino Flo 2bank, 4bank, 8bank, 10bank – LED soft box – DVR Box – Honey comp – Baby Light – Multi 10 – 2kv Light – Dimmer – LED Fresnel Light - Complementary colours				
<b>Unit V</b>	What is camera accessory? – Fluid head tripod – Monopod – track and trolley – crane – Jimmy Jib – Matte box - Rain deflector – Different types of ND Filters – IR filters – Baby stand – Different types of skimmer – Satin cloth – Umbrella Cloth – Reflector Cloth - Green Cloth – Black Cloth – Diffuser – Reflectors – Flags – Gobos – Butterfly Stencils – Cutter – Sand Bag – Low Base - Gel Peppers – Boom Rod – Vaseline – Dull Spray - Laser Pointer Plus UV Light .				

**Reference and Text Books:**

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

CO1	Able to Demonstrate proficiency in operating digital cameras, understanding their features, and making informed decisions to capture high-quality cinematic footage.	K1
CO2	Able to Apply principles of composition, framing, and camera movement to effectively convey visual storytelling in digital cinematography.	K3&K6
CO3	To Master the use of lighting techniques and equipment to achieve desired moods, atmospheres, and visual aesthetics in cinematic scenes.	K4
CO4	To Develop skills in post-production processes, including color grading and editing, to enhance and refine digital cinematography projects.	K5
CO5	Able to Gain a comprehensive understanding of industry-standard workflows and practices in digital cinematography, preparing for real-world applications in film and video production.	K2&K6

**Course Outcome VS Programme Outcomes**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S(3)	S(3)	S(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)	S(3)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.8</b>	<b>2.4</b>	<b>1.8</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2.2</b>

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

### Mapping Course Outcome VS Programme Specific Outcomes

<b>CO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>
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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

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

III-Semester - LAB					
LAB	CC – 83835 LAB III	Modeling & Texturing - Practical	P	Credits:4	Hours:8
Objectives	<ol style="list-style-type: none"> <li>1. Demonstrate proficiency in utilizing industry-standard 3D modeling software to create detailed and accurate 3D models for various purposes.</li> <li>2. Develop advanced skills in texture mapping, unwrapping, and applying materials to enhance the realism and visual appeal of 3D models.</li> <li>3. Gain a deep understanding of UV mapping techniques and efficiently unwrap complex 3D models to optimize texture application and avoid distortion.</li> <li>4. Acquire expertise in procedural texturing methods and the use of shaders to achieve realistic surface properties, including reflections, specularities, and bump mapping.</li> <li>5. Apply best practices in digital sculpting and detailing to create intricate and high-resolution 3D models suitable for animation, gaming, or visual effects production.</li> </ol>				
	<ol style="list-style-type: none"> <li>1. Create a low-poly outdoor environment, including terrain, trees, and simple structures, focusing on efficient modeling techniques for optimization.</li> <li>2. Texture a character model by applying realistic materials, emphasizing the use of UV mapping and texture painting to enhance details.</li> <li>3. Design and model a modern interior space, incorporating architectural elements such as furniture, lighting, and textures to achieve a visually appealing result.</li> <li>4. Model and texture a detailed vehicle, emphasizing surface details, materials, and realistic textures to achieve a high level of realism.</li> <li>5. Create a set of game-ready props, focusing on efficient polygonal modeling and creating optimized textures suitable for real-time rendering.</li> <li>6. Develop a unique creature character through organic modeling, focusing on anatomical details and applying textures to bring the creature to life.</li> <li>7. Model a futuristic sci-fi weapon using hard surface modeling techniques, paying attention to clean geometry and realistic material application.</li> <li>8. Texture maps a product model with an emphasis on product realism, showcasing skills in creating materials like metal, plastic, and glass for accurate representation.</li> <li>9. Utilize digital sculpting tools to create a highly detailed model, then generate displacement maps for realistic surface details in the final textured render.</li> <li>10. Develop textures for 3D models intended for AR applications, considering factors such as lighting conditions and real-world integration to achieve a seamless AR experience.</li> </ol>				
<b>Reference and Text Books:</b> <ol style="list-style-type: none"> <li>1. 3dExtrude Tutorials, “ Autodesk Maya 2010: The Modeling Handbook “, Independently published (June 24, 2018)</li> <li>2. Chris Legaspi, “ Anatomy for 3D Artists: The Essential Guide for CG Professionals “ 3DTotal Publishing (December 15, 2015)</li> <li>3. Prof. Sham Tickoo Purdue Univ, “ Autodesk Maya 2017: A Comprehensive Guide” , 9th Edition, CADCIM Technologies; 9 edition (October 20, 2016)</li> <li>4. Todd Palamar, “ Maya Feature Creature Creations (Graphics Series) 1st Edition “, Charles River Media; 1 edition (April 25, 2008)</li> <li>5. Todd Palamar, “ Mastering Autodesk Maya 2016 “ Autodesk Official Press 1st Edition. Sybex; 1 edition (August 10, 2015)</li> </ol>					

<b>Online Resources</b>		
<a href="https://www.youtube.com/@Autodesk_Maya/videos">https://www.youtube.com/@Autodesk_Maya/videos</a> <a href="https://www.youtube.com/@MHTutorials3D/videos">https://www.youtube.com/@MHTutorials3D/videos</a> <a href="https://www.youtube.com/@Arrimus3D/videos">https://www.youtube.com/@Arrimus3D/videos</a> <a href="https://simplymaya.com/">https://simplymaya.com/</a>		
CO1	Develop proficiency in 3D modeling techniques to create realistic and visually compelling virtual environments.	K1
CO2	Master the art of UV mapping and texturing, enhancing the ability to apply intricate details to 3D models for increased realism.	K3&K6
CO3	Acquire skills in using industry-standard software tools for modeling and texturing, empowering effective communication within the digital art and design community.	K4
CO4	Understand the principles of light and shadow in relation to texture mapping, enabling the creation of visually stunning and dynamic 3D assets.	K5
CO5	Gain expertise in optimizing models and textures for various platforms, ensuring efficient performance in real-time applications and game development.	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)	L(1)	M(2)	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)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	S(3)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.6</b>	<b>1.6</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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

### Mapping Course Outcome VS Programme Specific Outcomes

<b>CO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>
CO1	S(3)	S(3)	M(2)	L(1)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)
CO3	S(3)	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)	M(2)
<b>W.AV</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>1.8</b>	<b>2.4</b>

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

III-Semester - Elective III					
Elective III	DSE – 83836A	1.Advanced Visual Effects	P	Credits:3	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Develop proficiency in advanced compositing techniques, mastering the integration of live-action footage with computer-generated imagery (CGI) to create seamless visual effects.</li> <li>2. Acquire a comprehensive understanding of complex 3D rendering and lighting principles, enabling the creation of realistic and visually compelling virtual environments.</li> <li>3. Explore cutting-edge motion tracking methods and refine skills in matchmoving, empowering the accurate placement of virtual elements within live-action scenes.</li> <li>4. Master the art of dynamic simulations, including fluid dynamics and particle systems, to enhance visual effects with realistic and engaging elements such as fire, smoke, and water.</li> <li>5. Gain expertise in advanced color grading and post-production processes, elevating the final visual quality of projects and ensuring a polished and professional outcome.</li> </ol>				
<ol style="list-style-type: none"> <li>1. <b>Advanced Green Screen Compositing:</b> Master advanced techniques in green screen compositing, addressing challenges like spill suppression and realistic lighting.</li> <li>2. <b>Fluid Simulation in VFX:</b> Explore fluid dynamics simulations for visual effects, creating realistic animations of liquids, smoke, or fire.</li> <li>3. <b>VFX for Virtual Reality:</b> Implement visual effects specifically designed for virtual reality experiences, ensuring optimal immersion and user engagement.</li> <li>4. <b>Advanced Particle Systems:</b> Develop complex particle systems in VFX software, creating dynamic visual elements such as explosions, magic effects, or natural phenomena.</li> <li>5. <b>Advanced Motion Tracking:</b> Enhance motion tracking skills by working on complex scenes, integrating CGI elements seamlessly with live-action footage.</li> <li>6. <b>CGI Integration in Live Action:</b> Integrate computer-generated imagery (CGI) into live-action scenes, addressing lighting, shadows, and perspective for a realistic blend.</li> <li>7. <b>Advanced Rotoscoping Techniques:</b> Master advanced rotoscoping techniques, isolating intricate objects or characters from challenging backgrounds.</li> <li>8. <b>VFX for Augmented Reality:</b> Explore the application of visual effects in augmented reality, creating AR experiences with enhanced digital elements.</li> <li>9. <b>Digital Matte Painting:</b> Learn digital matte painting techniques, creating realistic backgrounds or environments for film or multimedia projects.</li> <li>10. <b>Advanced Color Grading and Effects:</b> Dive into advanced color grading and effects in post-production, adding cinematic style and visual polish to multimedia content.</li> </ol>					
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. Alexis Van Hurkman, “ Color Correction Handbook: Professional Techniques for Video and Cinema “ , Peachpit Press; 2 edition (November 29, 2013)</li> <li>2. Erica Hornung, “ The Art and Technique of Matchmoving: Solutions for the VFX Artist 1st Edition “, Focal Press; 1 edition (August 31, 2010)</li> <li>3. Lee Lanier, “ Professional Digital Compositing: Essential Tools and Techniques “, Sybex; Original edition (8 December 2009)</li> <li>4. Ron Brinkmann , “ The Art and Science of Digital Compositing, Second Edition: Techniques for Visual Effects, Animation and Motion Graphics (The Morgan Kaufmann Series in Computer Graphics) “, Morgan Kaufmann; 2 edition (24 May 2008)</li> <li>5. Ron Ganbar, “ Professional Compositing and Visual Effects “ , Peachpit Press; 1 edition (April 23, 2011)</li> </ol>					

**Online Resources:**[How Movie VFX Are Made: The 8 Steps of Visual Effects!](#)

CO1	Able to master advanced techniques in computer-generated imagery (CGI) to create realistic and seamless visual effects for film and video productions.	K1
CO2	To gain proficiency in utilizing industry-standard software tools for compositing, motion tracking, and 3D animation in the context of visual effects production.	K3&K6
CO3	To demonstrate a deep understanding of the principles of light and color theory, applying them effectively to enhance the believability of visual effects in diverse scenes.	K4
CO4	to showcase the ability to analyze and solve complex challenges in visual effects production, including issues related to integration, perspective, and the interaction of virtual elements with live-action footage.	K5
CO5	Show skills to collaborate seamlessly within a production team, efficiently communicating and implementing visual effects concepts to contribute to the overall success of a film or video project.	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)	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)	S(3)	M(2)	M(2)	S(3)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.8</b>	<b>2.4</b>	<b>2.2</b>	<b>2.6</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	S(3)	M(2)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.8</b>	<b>2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester - Elective III					
Elective III	DSE – 83836B	2.Dynamic Simulation	P	Credits:3	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Understanding Dynamics Simulation Principles: Comprehend physics-based modeling and simulation techniques for multimedia.</li> <li>2. Mastering Particle Dynamics: Develop proficiency in creating realistic particle systems for dynamic visual effects.</li> <li>3. Simulating Fluid Dynamics: Acquire skills to animate realistic fluid dynamics in multimedia contexts.</li> <li>4. Dynamic Simulation for Character Animation: Apply dynamics simulation to achieve realistic movement and interactions in character animation.</li> <li>5. Integration of Dynamics Simulation in Multimedia Productions: Seamlessly integrate dynamics simulations to enhance visual impact and storytelling in multimedia projects.</li> </ol>				
<ol style="list-style-type: none"> <li>1. <b>Basic Particle System Creation:</b> Develop a basic particle system to understand the principles of dynamic simulation.</li> <li>2. <b>Exploration of Fluid Dynamics:</b> Simulate and animate simple fluid dynamics scenarios, such as pouring liquids or flowing rivers.</li> <li>3. <b>Advanced Particle Dynamics Project:</b> Create a complex particle dynamics project, simulating dynamic effects like explosions or swarming behavior.</li> <li>4. <b>Rigid Body Dynamics Simulation:</b> Apply dynamics principles to simulate rigid body interactions, focusing on collisions and realistic movement.</li> <li>5. <b>Character Animation with Dynamics:</b> Integrate dynamics simulation into character animations, emphasizing natural movement and interactions.</li> <li>6. <b>Dynamic Cloth Simulation:</b> Explore dynamic cloth simulations for realistic fabric movement in multimedia scenes.</li> <li>7. <b>Interactive Physics-based Game Element:</b> Develop an interactive multimedia project incorporating physics-based game elements using dynamics simulation.</li> <li>8. <b>Advanced Fluid Simulation Project:</b> Work on an advanced fluid simulation project, such as simulating intricate water splashes or smoke effects.</li> <li>9. <b>Combining Dynamics with Augmented Reality:</b> Implement dynamics simulations in augmented reality, blending virtual and real-world interactions.</li> <li>10. <b>Multimedia Production with Dynamics:</b> Apply dynamics simulations to enhance a multimedia production, addressing challenges in real-world project scenarios.</li> </ol>					
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. Creating Visual Effects in Maya: Fire, Water, Debris, and Destruction Paperback – by Lee Lanier (Author), Focal Press; Pap/Psc edition (17 March 2014)</li> <li>2. The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures Hardcover – by Susan Zwerman (Editor), Jeffrey A. Okun (Editor), Focal Press; 2 edition (1 October 2014)</li> <li>3. Learning Autodesk® Maya® 2008: The Special Effects Handbook Paperback – by Autodesk Maya Press (Author), Sybex; Pap/DVD edition (26 October 2007)</li> </ol>					

CO1	Demonstrate proficiency in creating and analyzing dynamic simulations to model real-world mechanical systems.	K1
CO2	Apply principles of kinematics and kinetics to solve complex engineering problems using dynamic simulation techniques.	K3&K6
CO3	Develop skills in using industry-standard software tools for dynamic simulation, enhancing engineering design and analysis capabilities.	K4
CO4	Evaluate and interpret simulation results to make informed decisions and optimizations in the design and performance of mechanical systems.	K5
CO5	Gain a comprehensive understanding of dynamic simulation methodologies and their application in predicting and improving the behavior of dynamic systems.	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)	L(1)	M(2)	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)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	S(3)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.6</b>	<b>1.6</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	L(1)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)
CO3	S(3)	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)	M(2)
<b>W.AV</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>1.8</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester - Elective III					
Elective III	DSE – 83836C	3. 3D Printing and Additive Manufacturing in Design	P	Credits:3	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Develop a fundamental understanding of 3D printing and additive manufacturing processes, including their historical context and key principles.</li> <li>2. Apply design for additive manufacturing (DFAM) principles to create optimized and functional 3D-printed components.</li> <li>3. Explore and evaluate various 3D printing technologies, including their advantages, limitations, and appropriate applications.</li> <li>4. Demonstrate proficiency in selecting and working with diverse materials used in additive manufacturing processes.</li> <li>5. Analyze and discuss real-world applications of 3D printing in design across industries, considering the impact on traditional manufacturing methods and future trends.</li> </ol>				
<ol style="list-style-type: none"> <li>1. <b>Introduction to 3D Printing Technologies:</b> Explore various 3D printing technologies and applications, choosing the most suitable method for a specific design project.</li> <li>2. <b>Designing for 3D Printing:</b> Create a 3D model with CAD software, focusing on optimal 3D printing design, considering supports and print orientation.</li> <li>3. <b>Material Exploration and Prototyping:</b> Experiment with different 3D printing materials, producing prototypes to understand material properties and application suitability.</li> <li>4. <b>Advanced CAD Modeling:</b> Dive into CAD software, designing a complex object with intricate details for advanced 3D printing techniques.</li> <li>5. <b>Functional 3D Printing Project:</b> Identify a real-world problem, design a functional solution using 3D printing, emphasizing practical additive manufacturing applications.</li> <li>6. <b>Multimaterial 3D Printing:</b> Explore multimaterial 3D printing by designing an object incorporating multiple materials for specific aesthetic or functional goals.</li> <li>7. <b>3D Scanning and Reverse Engineering:</b> Learn 3D scanning, scan an object, and reverse engineer and modify the design for 3D printing.</li> <li>8. <b>Customized Product Design:</b> Design a customizable product using parametric principles, highlighting 3D printing's flexibility for user personalization.</li> <li>9. <b>Industry Collaboration Project:</b> Collaborate with a local industry or business to design and 3D print a prototype addressing a specific need or challenge.</li> <li>10. <b>Mass Production Optimization:</b> Explore design considerations for mass production using 3D printing, optimizing for efficient batch printing and cost-effectiveness.</li> </ol>					
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. Gibson, I., Rosen, D. W., &amp; Stucker, B. (2010). Additive manufacturing technologies: 3D printing, rapid prototyping, and direct digital manufacturing. Springer.</li> <li>2. Kalpakjian, S., &amp; Schmid, S. R. (2013). Manufacturing engineering and technology. Pearson.</li> <li>3. Rafiq, T., &amp; Cochrane, R. (2019). 3D printing: Technology, applications, and selection. William Andrew.</li> <li>4. Chua, C. K., &amp; Leong, K. F. (2014). 3D printing and additive manufacturing: Principles and applications. World Scientific.</li> <li>5. Hull, C. W. (1993). Apparatus for production of three-dimensional objects by stereolithography. U.S. Patent No. 4,575,330. Washington, DC: U.S. Patent and Trademark Office.</li> </ol>					

CO1	Demonstrate a comprehensive understanding of 3D printing technologies and additive manufacturing processes in the context of design applications.	K1
CO2	Apply design principles specific to additive manufacturing, optimizing geometric considerations and support structures for enhanced print quality.	K3&K6
CO3	Evaluate and select appropriate materials for 3D printing based on their properties and applications, considering factors such as polymers, metals, ceramics, and biomaterials.	K4
CO4	Utilize various 3D printing technologies, including Stereolithography, Fused Filament Fabrication, and Selective Laser Sintering, to create functional prototypes and components.	K5
CO5	Analyze real-world applications of 3D printing across industries, assessing its impact on traditional manufacturing, and anticipate future trends and advancements in additive manufacturing technologies.	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

**III-Semester - NME - 2**

NME	NME – 83837A	1. Interactive Game UI and UX Design	P	Credits:2	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Understand the foundational principles of game UI and UX design, including visual aesthetics, player experience, and historical context.</li> <li>2. Apply user research methodologies to analyze player behavior, conduct playtests, and create user personas for effective game design.</li> <li>3. Demonstrate proficiency in designing interactive and responsive game UI elements, such as buttons, menus, and heads-up displays (HUDs).</li> <li>4. Implement user-centered design (UCD) principles, incorporating iterative processes, design thinking, and usability testing in game development.</li> <li>5. Explore advanced topics in game UI/UX design, including adaptive design for different platforms, considerations for multiplayer interactions, and emerging technologies like AR and VR.</li> </ol>				
<ol style="list-style-type: none"> <li>1. <b>Game UI Fundamentals:</b> Explore the basics of game UI design, covering layout, navigation, and visual hierarchy for effective user engagement.</li> <li>2. <b>Wireframing and Prototyping:</b> Create wireframes and interactive prototypes for game interfaces, emphasizing user flow and functionality.</li> <li>3. <b>Iconography and Asset Design:</b> Design icons and visual assets for game UI, focusing on clarity, consistency, and relevance to the game theme.</li> <li>4. <b>Responsive UI Design:</b> Develop responsive game UIs, considering various screen sizes and resolutions for a consistent user experience across platforms.</li> <li>5. <b>Interactive Menu Systems:</b> Design and implement interactive menu systems, incorporating animations and transitions for enhanced user engagement.</li> <li>6. <b>User-Centered Design Workshop:</b> Conduct a workshop focusing on user-centered design principles, applying feedback to refine game UI prototypes.</li> <li>7. <b>Game HUD and Heads-Up Display Design:</b> Create intuitive Heads-Up Displays (HUDs) for games, emphasizing information clarity without compromising gameplay.</li> <li>8. <b>Accessibility in Game UI:</b> Explore and implement accessibility features in game UI design, ensuring inclusivity for diverse user needs.</li> <li>9. <b>User Testing and Iteration:</b> Conduct user testing sessions on game UI prototypes, gather feedback, and iterate on designs for improved user experience.</li> <li>10. <b>Game UI Portfolio Project:</b> Develop a comprehensive game UI portfolio project, showcasing a range of skills and design solutions for diverse gaming scenarios.</li> </ol>					
<p><b>Reference and Text Books:</b></p> <ol style="list-style-type: none"> <li>1. Schell, J. (2014). "The Art of Game Design: A Book of Lenses." CRC Press.</li> <li>2. Isbister, K., &amp; Schaffer, N. (2008). "Game Usability: Advancing the Player Experience." Morgan Kaufmann.</li> <li>3. Norman, D. A. (2013). "The Design of Everyday Things." Basic Books.</li> <li>4. Shneiderman, B., &amp; Plaisant, C. (2010). "Designing the User Interface: Strategies for Effective Human-Computer Interaction." Pearson.</li> <li>5. Rogers, Y., Sharp, H., &amp; Preece, J. (2015). "Interaction Design: Beyond Human-Computer Interaction." Wiley.</li> </ol>					
<p><b>Online Resources</b></p> <p><a href="https://www.youtube.com/watch?v=p7SlpT2GFGs&amp;ab_channel=CreativeAssembly">https://www.youtube.com/watch?v=p7SlpT2GFGs&amp;ab_channel=CreativeAssembly</a></p> <p><a href="https://www.youtube.com/playlist?list=PLtRmk1XMIZPo36V7PrEZWrk-9muvizXkl">https://www.youtube.com/playlist?list=PLtRmk1XMIZPo36V7PrEZWrk-9muvizXkl</a></p> <p><a href="https://www.nngroup.com/articles/usability-testing-101/#:~:text=The%20goals%20of%20usability%20testing,of%20the%20product%20or%20service">https://www.nngroup.com/articles/usability-testing-101/#:~:text=The%20goals%20of%20usability%20testing,of%20the%20product%20or%20service</a></p>					

CO1	Able to analyze and apply foundational principles of visual aesthetics, user experience, and historical context to design effective game user interfaces.	K1
CO2	Demonstrate proficiency in conducting user research, playtests, and creating user personas to inform the design of interactive game interfaces.	K3&K6
CO3	Showcase the ability to design responsive and intuitive game UI elements, integrating principles of information architecture, typography, and color theory.	K4
CO4	Able to apply user-centered design principles, employing iterative processes and usability testing to enhance the overall player experience in game development.	K5
CO5	Able to explore advanced topics such as adaptive design for various platforms, multiplayer considerations, and emerging technologies, students will demonstrate a comprehensive understanding of cutting-edge trends in game UI/UX design.	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

**III-Semester - NME - 2**

NME	NME – 83837B	2.Interactive Cinematic Techniques for Game Environments	P	Credits:2	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Understand the role of interactive cinematics in gaming, exploring their evolution, impact on player engagement, and relevance in contemporary game design.</li> <li>2. Develop proficiency in cinematic scriptwriting and storyboarding, adapting traditional film techniques to create compelling narratives within interactive game environments.</li> <li>3. Acquire skills in visual design and direction for game cinematics, encompassing framing, composition, lighting, character animation, and the integration of real-time rendering in game development.</li> <li>4. Master the principles of interactive cinematic sound design, including creating immersive audio environments, syncing sound with interactive elements, and employing dynamic audio techniques for enhanced player experiences.</li> <li>5. Implement and integrate interactive cinematics into game development, addressing technical challenges, designing seamless transitions between gameplay and cinematics, and refining cinematic sequences through playtesting and iteration.</li> </ol>				
<ol style="list-style-type: none"> <li>1. <b>Interactive Cinematic Storyboarding:</b> Develop interactive storyboards for game environments, incorporating cinematic techniques to guide player engagement and narrative progression.</li> <li>2. <b>Dynamic Camera Systems:</b> Implement dynamic camera systems within game environments, utilizing cinematic techniques for seamless transitions and immersive player experiences.</li> <li>3. <b>Scene Lighting and Composition:</b> Explore cinematic lighting and composition principles, applying them to game environments for enhanced visual storytelling.</li> <li>4. <b>Cinematic Sound Design Integration:</b> Integrate cinematic sound design techniques into game environments, emphasizing the role of audio in creating immersive narratives.</li> <li>5. <b>Real-time Cinematic Cutscenes:</b> Design and implement real-time cinematic cutscenes, utilizing game engine capabilities for interactive storytelling moments.</li> <li>6. <b>Player-Driven Cinematic Experiences:</b> Develop game scenarios that allow players to influence cinematic sequences, exploring interactive storytelling possibilities.</li> <li>7. <b>Character Animation for Cinematics:</b> Create cinematic character animations that convey emotion and narrative within the context of game environments.</li> <li>8. <b>Cinematic Environmental Effects:</b> Implement cinematic environmental effects, such as weather changes or dynamic lighting, to enhance storytelling in game environments.</li> <li>9. <b>Adaptive Cinematic Narratives:</b> Explore adaptive cinematic narratives, designing game environments that respond to player choices and actions.</li> <li>10. <b>Interactive Cinematic Portfolio Project:</b> Develop a comprehensive portfolio project showcasing various interactive cinematic techniques applied to diverse game environments.</li> </ol>					
<p><b>Reference and Text Books:</b></p> <ol style="list-style-type: none"> <li>1. Ward, M. (2015). Cinematic Storytelling: The 100 Most Powerful Film Conventions Every Filmmaker Must Know. Michael Wiese Productions.</li> <li>2. Lebowitz, J., Klug, C. (2011). Interactive Storytelling for Video Games: A Player-centered Approach to Creating Memorable Characters and Stories. Netherlands: Focal Press.</li> <li>3. Newman, R. (2009). Cinematic Game Secrets for Creative Directors and Producers: Inspired Techniques from Industry Legends. Germany: Focal Press/Elsevier.</li> <li>4. Schell, J. (2008). The art of game design. Netherlands: Taylor &amp; Francis.</li> <li>5. Salen, K., Salen Tekinbas, K., Zimmerman, E. (2003). Rules of Play. United Kingdom: Books24x7.com.</li> </ol>					

CO1	Develop expertise in leveraging interactive cinematic techniques to enhance player immersion and storytelling within game environments.	K1
CO2	Master the integration of dynamic camera angles and movements to create engaging and cinematic gaming experiences.	K3&K6
CO3	Acquire skills in scripting and implementing interactive cutscenes that seamlessly blend with the gameplay narrative.	K4
CO4	Explore innovative methods for incorporating player choices into cinematic sequences, fostering a personalized gaming experience.	K5
CO5	Gain proficiency in optimizing performance and maintaining a balance between interactivity and cinematic storytelling in game design.	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)	L(1)	M(2)	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)	M(2)	S(3)	M(2)	M(2)	M(2)
CO4	S(3)	M(2)	M(2)	M(2)	S(3)	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.6</b>	<b>1.6</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)	L(1)	M(2)
CO2	M(2)	M(2)	M(2)	M(2)	M(2)
CO3	S(3)	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)	M(2)
<b>W.AV</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>1.8</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

III-Semester - NME - 2					
NME	NME – 83837C	3. Game Art Fundamentals and Aesthetics	P	Credits:2	Hours:3
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Develop proficiency in digital art tools and techniques to create visually appealing game assets.</li> <li>2. Gain a deep understanding of fundamental design principles and apply them to enhance game art aesthetics.</li> <li>3. Explore the relationship between color theory and mood to create immersive and engaging game environments.</li> <li>4. Acquire 3D modeling skills to design and sculpt characters and objects for use in game development.</li> <li>5. Foster a critical eye for visual storytelling in games, mastering the art of conveying narrative through characters, environments, and props.</li> </ol>				
<ol style="list-style-type: none"> <li>1. <b>Game Art Style Exploration:</b> Explore various game art styles, analyzing aesthetics in genres like realism, stylization, and pixel art for a deeper understanding.</li> <li>2. <b>Character Design Basics:</b> Master the fundamentals of character design, focusing on anatomy, proportion, and creating compelling, visually engaging game characters.</li> <li>3. <b>Environment Art Composition:</b> Learn the principles of environmental composition, emphasizing storytelling and mood through the arrangement of game assets.</li> <li>4. <b>Texture Mapping Techniques:</b> Explore advanced texture mapping techniques, applying materials and textures to 3D models to enhance realism and visual appeal.</li> <li>5. <b>Concept Art Development:</b> Develop game concept art, translating ideas into visual representations to guide the overall aesthetic direction of a game project.</li> <li>6. <b>Color Theory in Game Art:</b> Study color theory principles and apply them to game art, understanding the psychological impact of colors on player experience.</li> <li>7. <b>Animating Game Assets:</b> Animate game assets, focusing on principles like timing, weight, and anticipation to bring characters and objects to life in a game environment.</li> <li>8. <b>UI/UX Design for Games:</b> Design user interfaces and experiences tailored for games, considering player interaction and visual communication within the gaming context.</li> <li>9. <b>Game Art Pipeline Workshop:</b> Explore the game art production pipeline, from concept to implementation, emphasizing collaboration and workflow efficiency.</li> <li>10. <b>Portfolio Development Project:</b> Develop a comprehensive game art portfolio project, showcasing a diverse range of skills and aesthetic choices across different game genres.</li> </ol>					
<b>Reference and Text Books:</b>					
<ol style="list-style-type: none"> <li>1. Gurney, J. (2010). Color and Light: A Guide for the Realist Painter. United Kingdom: Andrews McMeel Publishing.</li> <li>2. Jones, P. J. (2016). The Anatomy of Style. United Kingdom: Korero Press.</li> <li>3. How to Draw and Paint Anatomy, All New 2nd Edition: Creating Lifelike Humans and Realistic Animals. (2021). United States: Fox Chapel Publishing.</li> <li>4. Schell, J. (2008). The Art of Game Design: A Book of Lenses. Morgan Kaufmann.</li> <li>5. Papstein, K., Steiner, M., Aerni, M. (2014). ZBrush Characters and Creatures. United Kingdom: 3DTotal Publishing.</li> </ol>					
<b>Online Resources</b>					
<a href="#">Art Fundamentals: Values</a> <a href="#">Aesthetic Driven Development: Choosing Your Art Before Making a Game</a>					

CO1	Demonstrate proficiency in employing digital art tools and techniques for creating high-quality game assets.	K1
CO2	Apply fundamental design principles to enhance the aesthetic appeal and visual coherence of game art.	K3&K6
CO3	Analyze and implement color theory concepts to evoke specific moods and atmospheres within game environments.	K4
CO4	Master 3D modeling skills to craft detailed characters and objects suitable for integration into game development pipelines.	K5
CO5	Exhibit the ability to convey narrative elements through visual storytelling in game art, emphasizing character, environment, and prop design.	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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.4</b>	<b>2</b>

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)
<b>W.AV</b>	<b>2.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

IV -Semester - Practical					
CC	83841A/ 83841B	83841A Dissertation/ 83841B Internship	D/ I	Credits:15	Hours:30
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Develop the ability to formulate a well-defined research problem and articulate clear research questions or objectives.</li> <li>2. Demonstrate proficiency in conducting a comprehensive literature review to situate the dissertation within the broader academic context.</li> <li>3. Acquire advanced research and analytical skills to design and implement a robust methodology for data collection and analysis.</li> <li>4. Cultivate effective academic writing skills, including the synthesis and communication of complex ideas and findings in a coherent manner.</li> <li>5. Demonstrate a critical understanding of ethical considerations in research and apply ethical principles throughout the dissertation process.</li> </ol>				

### **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).

## Internship

1. **Cover Page:** Include your name, the title "Internship Documentation," the name of the company/organization, and the duration of the internship.
2. **Table of Contents:** Provide a clear and organized list of sections in your documentation for easy navigation.
3. **Introduction:** Briefly introduce the purpose of the internship documentation. - Mention the key goals and objectives of your internship.
4. **Profile of the Organization:** Provide an overview of the company/organization where you completed your internship. - Include details such as the industry, size, mission, and any relevant background information.
5. **Internship Objectives:** Outline the specific objectives or goals you aimed to achieve during the internship. - Align these objectives with your academic and career goals.
6. **Work Responsibilities:** Detail the tasks and responsibilities you undertook during the internship. - Highlight projects, roles, and any specific multimedia-related activities you were involved in.
7. **Skills Developed:** Identify and elaborate on the skills you acquired or enhanced during the internship. - Discuss technical, interpersonal, and problem-solving skills relevant to multimedia.
8. **Challenges Faced:** Describe any challenges or obstacles encountered during the internship. - Discuss how you addressed or overcome these challenges.
9. **Achievements and Contributions:** Showcase any notable achievements, projects completed, or contributions made to the organization. - Include visuals or multimedia elements to enhance your presentation.
10. **Learning Outcomes:** Summarize the key takeaways and learning outcomes from the internship experience. - Relate these outcomes to your academic and professional development.
11. **Reflection and Self-Evaluation:** Reflect on your personal and professional growth during the internship. - Evaluate how the experience has contributed to your skill set and future aspirations.
12. **Recommendations and Future Steps:** Include any recommendations you received from supervisors or colleagues. - Discuss your future steps or how the internship has influenced your career trajectory.
13. **Conclusion:** Provide a concise conclusion summarizing the overall impact and significance of the internship experience.
14. **Appendix:** Include any supplementary materials, such as multimedia samples, project documentation, or additional evidence of your work.
15. **References:** If applicable, cite any sources or references used in your documentation.

**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)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)
CO2	S(3)	S(3)	M(2)	M(2)	S(3)	S(3)	M(2)	M(2)	S(3)	S(3)
CO3	S(3)	M(2)	S(3)	M(2)	M(2)	M(2)	S(3)	M(2)	S(3)	S(3)
CO4	M(2)	L(1)	M(2)	M(2)	M(2)	L(1)	M(2)	S(3)	M(2)	M(2)
CO5	S(3)	M(2)	S(3)	S(3)	M(2)	M(2)	M(2)	M(2)	S(3)	S(3)
<b>W.AV</b>	<b>2.8</b>	<b>2</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>2</b>	<b>2.2</b>	<b>2.2</b>	<b>2.8</b>	<b>2.8</b>

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)	M(2)	S(3)	M(2)	S(3)
CO3	S(3)	S(3)	S(3)	M(2)	M(2)
CO4	M(2)	M(2)	M(2)	S(3)	M(2)
CO5	M(2)	S(3)	M(2)	M(2)	S(3)
<b>W.AV</b>	<b>2.6</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>

S–Strong (3), M-Medium (2), L-Low (1)

## PG Programme

### **19.1 Passing minimum**

- A candidate shall be declared to have passed each course if he/she secures not less than 40% marks in the End Semester Examinations and 40% marks in the Internal Assessment and not less than 50% in the aggregate, taking Continuous Assessment and End Semester Examinations marks together.
- 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 and 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 the Project/Dissertation/Internship if he/she gets not less than 40% in the End Semester Examinations and 40% marks in the Internal Assessment and not less than 50% in the aggregate in each of the Project/Dissertation/Internship Report and Viva-Voce.
- A candidate who gets less than 50% in the Project/Dissertation/Internship Report must resubmit the thesis. Such candidates need to take again the Viva-Voce on the resubmitted Project report.

### **19.2 Grading**

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 Paper/ Course)

<b>RANGE OF MARKS</b>	<b>GRADE POINTS</b>	<b>LETTER GRADE</b>	<b>DESCRIPTION</b>
90 - 100	<b>9.0 – 10.0</b>	<b>O</b>	<b>Outstanding</b>
80 - 89	<b>8.0 – 8.9</b>	<b>D+</b>	<b>Excellent</b>
75 - 79	<b>7.5 – 7.9</b>	<b>D</b>	<b>Distinction</b>
70 - 74	<b>7.0 – 7.4</b>	<b>A+</b>	<b>Very Good</b>
60 - 69	<b>6.0 – 6.9</b>	<b>A</b>	<b>Good</b>
50 - 59	<b>5.0 – 5.9</b>	<b>B</b>	<b>Average</b>
00 - 49	<b>0.0</b>	<b>U</b>	<b>Re-appear</b>
ABSENT	<b>0.0</b>	<b>AAA</b>	<b>ABSENT</b>

- 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 a 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 a 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 a 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 a 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 a GPA between 5.0 – 5.9 and marks from 50 - 59 shall be declared to have an Average (B).
- g) Candidates earning a GPA between 0.0 and marks from 00 - 49 shall be declared to have Re-appear (U).
- h) Absence from an examination shall not be taken as an attempt.

From the second semester onwards the total performance in a semester and continuous performance starting from the first semester are indicated respectively as Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA). These two are calculated by the following formulate

$$\text{GRADE POINT AVERAGE (GPA)} = \frac{\sum_i C_i G_i}{\sum_i C_i}$$

GPA =  $\frac{\text{Sum of the multiplication of Grade Points by the credits of the courses}}{\text{Sum of the credits of the courses in a Semester}}$

### 19.3 Classification of the final result

CGPA	Grade	Classification of Final Result
9.5 – 10.0 9.0 and above but below 9.5	<b>O+</b> <b>O</b>	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	<b>D++</b> <b>D+</b> <b>D</b>	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	<b>A++</b> <b>A+</b> <b>A</b>	First Class
5.5 and above but below 6.0 5.0 and above but below 5.5	<b>B+</b> <b>B</b>	Second Class
0.0 and above but below 5.0	<b>U</b>	Re-appear

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 a CGPA between 9.5 and 10.0 shall be given Letter Grade (O+), and those who earned a 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 a CGPA between 7.5 and 7.9 shall be given Letter Grade (D), those who earned a CGPA between 8.0 and 8.4 shall be given Letter Grade (D+), those who earned a 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 a CGPA between 6.0 and 6.4 shall be given Letter Grade (A), those who earned a CGPA between 6.5 and 6.9 shall be given Letter Grade (A+), those who earned a 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 a CGPA between 5.0 and 5.4 shall be given a Letter Grade (B), and those who earned a CGPA between 5.5 and 5.9 shall be given a Letter Grade (B+) and declared to have passed in Second Class.
- i) Candidates who earned a CGPA between 0.0 and 4.9 shall be given Letter Grade (U) and declared to have Re-appear.
- e) Absence from an examination shall not be taken as an attempt.

$$\text{CUMULATIVE GRADE POINT AVERAGE (CGPA)} = \frac{\sum_n \sum_i C_{ni} G_{ni}}{\sum_n \sum_i C_{ni}}$$

CGPA = Sum of the multiplication of Grade Points by the credits of the entire Programme  
Sum of the credits of the courses for the entire Programme

Sum of Grade Points X credits of 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 PG Programme are alone eligible for this classification.