Study & Evaluation Scheme

of

Bachelor of Science in Animation and VFX

[Applicable for Batch 2022-25]

[As per CBCS guidelines given by UGC]

Approved in BOS	Approved in BOF	Approved in Academic Council

Quantum University, Roorkee
22 KM Milestone, Dehradun-Roorkee Highway, Roorkee (Uttarakhand)
Website: www.quantumuniversity.edu.in

Study & Evaluation Scheme
Study Summary

Name of the Faculty	Faculty of Media Studies & Design
Name of the School	Quantum School of Media Studies & Design
Name of the Department	Department of Media Studies & Design
Program Name	Bachelor of Science in Animation & Vfx
Duration	3 Years
Medium	English

Structure of Question Paper (ESE Theory Paper)

The question paper will consist of 5 questions, one from each unit. Student has to Attempt all questions. All questions carry 20 marks each. Parts a) and b) of question Q1 to Q5 will be compulsory and each part carries 2 marks. Parts c), d) and e) of Q1 to Q5 Carry 8 marks each and the student may attempt any 2 parts.

Important Note:

1. *The purpose of examination should be to assess the Course Outcomes (CO) that will ultimately lead to attainment of Programme Outcomes (PO). A question paper must assess the following aspects of learning as planned for a specific course i.e Remember, Understand, Apply, Analyze, Evaluate & Create (reference to Bloom's Taxonomy). The standard of question paper will be based on mapped BL level complexity of the unit of the syllabus, which is the basis of CO attainment model adopted in the university.*

2.Case Study / Caselet is essential in every question paper (wherever it is being taught as a part of pedagogy) for evaluating higher-order learning. Not all the courses might have case teaching method used as pedagogy.

3. There shall be continuous evaluation of the student and there will be a provision of real time reporting on QUMS. All the assignments will be evaluated through module available on ERP for time and access management of the class.

Evaluation Scheme

Type of Papers	Internal Evaluation (%)	End Semester Evaluation(%)	Total(%)
Theory	40	60	100
Practical/ Dissertations/Project Report/ Viva-Voce	40	60	100
Internal Evaluation Components(Theory Papers)			
Mid Semester Examination	60Marks		
Assignment–I	30Marks		
Assignment-II	30Marks		
Attendance	30Marks		

Internal Evaluation Components(Practical Papers)	
Quiz One	30Marks
Quiz Two	30Marks
Quiz Three	30Marks
Lab Records/Mini Project	30Marks
Attendance	30Marks
End Semester Evaluation (Practical Papers)	
ESE Quiz	40Marks
ESE Practical Examination(write-up)	20Marks
Viva-Voce	20Marks
Practical performance	20Marks

Structure of Question Paper (Theory Paper)

The question paper will consist of 5 questions, one from each unit. Student has to Attempt all questions. All questions carry 10 marks each. Parts a) and b) of question Q1 to Q5 will be compulsory and each part carries 2 marks. Parts c), d) and e) of Q1 to Q5 Carry 8 marks each and the student may attempt any 2 parts.

Important Note:

1. *The purpose of examination should be to assess the Course Outcomes (CO) that will ultimately lead to attainment of Programme Outcomes (PO). A question paper must assess the following aspects of learning as planned for a specific course i.e Remember, Understand, Apply, Analyze, Evaluate & Create (reference to Bloom's Taxonomy). The standard of question paper will be based on mapped BL level complexity of the unit of the syllabus, which is the basis of CO attainment model adopted in the university.*

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Program Structure – Bachelor of Science in Animation & Vfx

Introduction

Bachelor of Science Animation & VFX syllabus is broad and multidisciplinary consists of various subjects, it focuses on creative art and animating the characters for transmission of messages in meaningful and effective way. It is designed for production of various character in virtual format

Bachelor of Science Animation & VFX syllabus are designed in such a way that students grasp all the knowledge related to animation and Visual effects and enhancing employability and entrepreneurial ability of the graduates the Quantum University increase the practical content in the courses wherever necessary. The total number of credit hours in 6 semesters including Student programme will range from 150 to 160 for all the programmes.

The students would be required to record their observations in field and media-industries on daily basis and will prepare their project report based on these observations.

Experiential Learning Programme (ELP)/ Hands on Training (HOT)

This program will be undertaken by the students preferably during the sixth semester for a total duration of 24 weeks with a weightage of 0+20 credit hours. The students will register for any of two modules, listed below, of 0+10 credit hours each.

- Animator
- Video editor
- Making of digital Short Film/Documentary
- Science of Video Editing
- Digital Media
- Content Development
- Voice over production
- Still Photography
- Graphics Designing
- Visual effects

Curriculum (22-25) Version 2021.01

Quantum School of Mass Media & Design
Bachelor of Science in Animation & Vfx **-PC: 05-3-03**

BREAKUP OF COURSES

Sr. No	CATEGORY	CREDITS
1	Foundation Core (FC)	2
2	Program Core (PC)	72
3	Discipline Specific Elective	10
4	Open Electives (OE)	9
5	Project (PT)	10
6	Skill Enhancement Courses (SEC)	16
7	Languages	8
8	General Proficiency (GP)	5
9	Disaster Management*	2*
TOTAL NO. OF CREDITS		132

SEMESTER-WISE BREAKUP OF CREDITS

Sr.No	CATEGORY	SEM 1	SEM 2	SEM 3	SEM 4	SEM 5	SEM 6	TOTAL
1	Foundation Core (FC)	-	2	-	-	-	-	2
2	Program Core (PC)	15	13	15	14	7	8	72
3	Discipline Specific Elective (DSE)	-	-	-	-	10	-	10
4	Open Electives (OE)	-		3	3	3	-	9
5	Project (PT)	2	2	2	2	2	-	10
6	Skill Enhancement Courses (SEC)	-	0	2	2	2	10	16
7	Languages	4	4	-	-	-	-	8
8	General Proficiency (GP)	1	1	1	1	1		5
9	Disaster Management*							2*
	TOTAL	**22**	**22**	**23**	**22**	**25**	**18**	**132**

BSc-Animation & VFX: 132 credits

SEMESTER 1

Course Code	Category	Course Title	L	T	P	C	Version	Course Prerequisite
EG3104	LANG	English I	4	0	0	4	1	Nil
AN3105	PC	Foundation Art	4	0	0	4	1	Nil
AN3106		2D Digital Animation	4	0	4	6	1	Nil
AN3107		Digital Art	3	0	4	5	1	Nil
AN3142	PT	Project - I	0	0	4	2	1	Nil
GT3101	GP	General Proficiency	0	0	0	1	1.0	Nil
		TOTAL	**15**	**0**	**12**	**22**		

Contact Hrs: 27hrs

SEMESTER 2

Course Code	Category	COURSE TITLE	L	T	P	C	Version	Course Prerequisite
EG3208	LANG	English II	4	0	0	4	1	Nil
AN3205	PC	Storytelling	3	0	0	3	1	Nil
AN3206		3D Assets	2	0	8	6	1	Nil
AN3207		Preproduction	2	0	4	4	1	Nil
CE3102	FC	Disaster Management	2*	0	0	2*	1	Nil
CY3205	FC	Environmental Studies	2	0	0	2	1	Nil
AN3209	PT	Project –II	0	0	4	2	1	Nil
GP3201	GP	General Proficiency	0	0	0	1	1.0	Nil
		TOTAL	**13**	**0**	**16**	**22**	1	

Contact Hrs: 29 hrs

SEMESTER 3

Course Code	Category	COURSE TITLE	L	T	P	C	Version	Course Prerequisite
AN3302	PC	History of VFX	3	0	0	3	1	Nil
AN3303	PC	Compositing Techniques	2	0	8	6	1	Nil
AN3304	PC	3D Dynamics	2	0	8	6	1	Nil
	OE	Open Elective I (Graphic Design)	3	0	0	3	1	Nil
AN3305	SEC	Lighting & Rendering	0	0	4	2	1	Nil
AN3306	PT	Project -III	0	0	4	2	1	Nil
AN3301	GP	General Proficiency	0	0	0	1	1.0	Nil
		TOTAL	**10**	**0**	**24**	**23**	1	

Contact Hrs: 34hrs

SEMESTER 4

Course Code	Category	COURSE TITLE	L	T	P	C	Version	Course Prerequisite
AN3402	PC	Character & Layout Design Concepts	3	0	0	3	1	Nil
AN3403	PC	Rotoscopy& Paint	2	0	6	5	1	Nil
AN3404	PC	Advanced Compositing Techniques	2	0	8	6	1	Nil
	OE	Open Elective II (UX & UI design)	3	0	0	3	1	Nil
AN3405	SEC	Matchmoving	0	0	4	2	1	Nil
AN3406	PT	Project -IV	0	0	4	2	1	Nil
AN3401	GP	General Proficiency	0	0	0	1	1.0	Nil
		TOTAL	**10**	**0**	**22**	**22**	1	

Contact Hrs: 32hrs

SEMESTER 5

Course Code	Category	COURSE TITLE	L	T	P	C	Version	Course Prerequisite
AN3502	PC	Film Appreciation and Analysis	3	0	0	3	1	Nil
AN3503	PC	Motion Graphics	2	0	4	4	1	Nil
AN3504	DSE	Advanced 3D Animation /Advanced Modeling & Texturing	2	0	6	5	1	Nil
AN3505	DSE	Advanced Rigging /Advanced CG Simulation and Effects	2	0	6	5	1	Nil
	OE	Open Elective II (Creative Computing)	3	0	0	3	1	Nil
AN3506	SEC	Augmented Reality	0	0	4	2	1	Nil
AN3507	PT	Project -V	0	0	4	2	1	Nil
AN3501	GP	General Proficiency	0	0	0	1	1.0	Nil
		TOTAL	**12**	**0**	**24**	**25**	1	

Contact Hrs: 36hrs

SEMESTER 6

Course Code	Category	COURSE TITLE	L	T	P	C	Version	Course Prerequisite
AN3601	PC	Studio Design & Project Management	4	0	0	4	1	Nil
AN3602	PC	Matte Painting	4	0	0	4	1	Nil
	SEC	PROJECT/INTERNSHIP	0	0	20	10	1	Nil
		TOTAL	**8**	**0**	**20**	**18**	1	

Contact Hrs: 28 hrs

B. Choice Based Credit System (CBCS)

Choice Based Credit System (CBCS) is a versatile and flexible option for each student to achieve his target number of credits as specified by the UGC and adopted by our university.

The following is the course module designed for the B. Com program with specialization Honors and Banking and Insurance.

Core competency: Students will acquire core competency in Commerce and Finance and its allied areas.

Program/Discipline Specific Elective Course (DSEC):

Skilled communicator: The course curriculum incorporates basics and advanced training in order to make a graduate student capable of expressing the subject through technical writing as well as through oral presentation.

Critical thinker and problem solver: The course curriculum also include components that can be helpful to graduate students to develop critical thinking ability by way of solving problems/numerical using basic & advance knowledge and concepts of Commerce and Finance

Sense of inquiry: It is expected that the course curriculum will develop an inquisitive characteristic among the students through appropriate questions, planning and reporting experimental investigation.

Skilled project manager: The course curriculum has been designed in such a manner as to enabling a graduate student to become a skilled project manager by acquiring knowledge about mathematical project management, writing, planning, study of ethical standards and rules and regulations pertaining to business and trade related projects operation.

Ethical awareness/reasoning: A graduate student requires understanding and developing ethical awareness/reasoning which the course curriculums adequately provide.

Lifelong learner: The course curriculum is designed to inculcate a habit of learning continuously through use of advanced ICT technique and other available techniques/books/journals for personal academic growth as well as for increasing employability opportunity.

Value Added Course (VAC): A value added audit course is a non-credit course which is basically meant to enhance general ability of students in areas like soft skills, quantitative aptitude and reasoning ability - required for the overall development of a student and at the same time crucial for industry/corporate demands and requirements. The student possessing these skills will definitely develop acumen to perform well during the recruitment process of any premier organization and will have the desired confidence to face the interview. Moreover, these skills are also essential in day-to-day life of the corporate world. The aim is to nurture every student for making effective communication, developing aptitude and a general reasoning ability for a better performance, as desired in corporate world. There shall be four courses of Aptitude in Semester I, II, III & IV semesters and two courses of Soft Skills in III & IV Semesters and will carry no credit, however, it will be compulsory for every student to pass these courses with minimum 50% marks to be eligible for the certificate. These marks will not be included in the calculation of CGPI. Students have to specifically be registered in the specific course of the respective semesters.

Skill Enhancement Course: This course may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.

Generic/Open Elective Course (OE): Open Elective is an interdisciplinary additional subject that is compulsory in a program. The score of Open Elective is counted in the overall aggregate marks under Choice Based Credit System (CBCS). Each Open Elective paper will be of 3 Credits in II, III and IV semesters. Each student has to take Open/Generic Electives from department other than the parent department. Core / Discipline Specific Electives will not be offered as Open Electives.

Non-Credit CGPA: This is a compulsory noncredit CGPA course that does not have any choice and will be of 3 credits. Each student of B. Com Program has to compulsorily pass the Environmental Studies and Disaster Management.

C. Program Outcomes of B.Sc. Animation & VFX program:

PO-01	Create Computer Graphics assets creation, Visual Effects, 3D and Graphic Design.
PO-02	Create a complex project to finish with smoothly in a result-oriented manner both individually and as a team.
PO-03	Demonstrate, communicate ideas, emotion and intent effectively in visual, oral and written forms.
PO-04	Apply thoughtful contributors to society.
PO-05	Analyze learning cycle, and become effective and efficient industry leaders with the quality of entrepreneurship.
PO-06	Evaluate the work collaboratively and effectively in diverse situations.
PO-07	Highly trained to demonstrate their knowledge, skill, dedication and work ethics required to be a successful member of a production team
PO-08	Demonstrate the industrial requirements.
PO-09	Demonstrate their acquired knowledge for the growth of social and ethical values in outdoor activities, such as service learning, internships and field work.
PO-10	Define the content for mentor the staff placed under them to produce desired results.

D. Program Specific Outcomes:

PSO-1	To create competence in the fields of Computer Graphics assets creation, Visual Effects,3D animation and Graphic designing.
PSO-2	uire multiple skills that will enhance their employability in different f Animation, 3D and Entertainment industry
PSO-3	the ongoing changing trends and keep them updated with the latest technology.
PSO-4	Understand the ongoing changing trends and keep them updated with the latest technology.

PSO-5	Inculcate adequate knowledge, skill, dedication and work ethics required for accomplishment of the assigned task. .

E. Program Educational Objectives (PEO's)

PEO-1	**B.Sc. Animation, VFX & 3D:** After completing graduation students will be equipped with creative and technical skills in various domains of Animation, 3D, VFX and multimedia. This will enable them to be employed globally.
PEO-2	**Animation**: This specialization offered to the students will enhance their knowledge in the field 3D Animation. Students will become an expert in specific domain of 3d Animation and will work in Films, Games and other animation related fields.
PEO-3	**Graphic Design**: This specialization offered to the students will enhance their knowledge in the field of 2D Animation & Graphic Design. Students will achieve expertise in the specific domain of Graphics Design, 2D animation and will be able to work in Films, Graphic design Companies and other animation related fields.

F. Pedagogy & Unique practices adopted:

"Pedagogy is the method and practice of teaching, especially for teaching an academic subject or theoretical concept". In addition to conventional time-tested lecture method, the institute will emphasize on experiential learning:

Role Play & Simulation: Role- play and simulation are forms of experiential learning. Learners take on different roles, assuming a profile of a character or personality, and interact and participate in diverse and complex learning settings. Role-play and simulation function as learning tools for teams and groups or individuals as they "play" online or face-to-face. They alter the power ratios in teaching and learning relationships between students and educators, as students learn through their explorations and the viewpoints of the character or personality they are articulating in the environment. This student-centered space can enable learner-oriented assessment, where the design of the task is created for active student learning. Therefore, role-play& simulation exercises such as virtual share trading, marketing simulation etc. are being promoted for the practical-based experiential learning of our students.

Video Based Learning (VBL)&Learning through Movies (LTM): These days technology has taken a front seat and classrooms are well equipped with equipment and gadgets. Video-based learning has become an indispensable part of learning. Similarly, students can learn various concepts through movies. In fact, many teachers give examples from movies during their discourses. Making students learn few important theoretical concepts through VBL & LTM is a good idea and method. The learning becomes really interesting and easy

as videos add life to concepts and make the learning engaging and effective. Therefore, our institute is promoting VBL& LTM, wherever possible.

Field/Live Projects: The students, who take up experiential projects in companies, where senior executives with a stake in teaching guide them, drive the learning. All students are encouraged to do some live project other their regular classes.

Industrial Visits: Industrial visit are essential to give students hand-on exposure and experience of how things and processes work in industries. Our institute organizes such visits to enhance students' exposure to practical learning and work out for a report of such a visit relating to their specific topic, course or even domain.

MOOCs: Students may earn credits by passing MOOCs as decided by the college. Graduate level programs may award Honors degree provided students earn pre-requisite credits through MOOCs. University allows students to undertake additional subjects/course(s) (In-house offered by the university through collaborative efforts or courses in the open domain by various internationally recognized universities) and to earn additional credits on successful completion of the same. Each course will be approved in advance by the University following the standard procedure of approval and will be granted credits as per the approval. Keeping this in mind, University proposed and allowed a maximum of two credits to be allocated for each MOOC courses. In the pilot phase it is proposed that a student undertaking and successfully completing a MOOC course through only NPTEL could be given 2 credits for each MOOC course.

For smooth functioning and monitoring of the scheme the following shall be the guidelines for MOOC courses, Add-on courses carried out by the College from time to time.

a) It will necessary for every student to take at least one MOOC Course throughout the programme.

b) There shall be a MOOC co-ordination committee in the College with a faculty at the level of Professor heading the committee and all Heads of the Department being members of the Committee.

c) The Committee will list out courses to be offered during the semester, which could be requested by the department or the students and after deliberating on all courses finalize a list of courses to be offered with 2 credits defined for each course and the mode of credit consideration of the student. The complete process shall be obtained by the College before end of June and end of December for Odd and Even semester respectively of the year in which the course is being offered. In case of MOOC course, the approval will be valid only for the semester on offer.

d) Students will register for the course and the details of the students enrolling under the coursealong with the approval of the Vice Chancellor will be forwarded to the Examination department within fifteen days of start of the semester by the Coordinator MOOC through the Principal of the College.

e) After completion of MOOC course, Student will submit the photo copy of Completion certificate of MOOC Course to the Examination cell as proof.

f) Marks will be considered which is mentioned on Completion certificate of MOOC Course.

g) College will consider the credits only in case a student fails to secure minimum required credits then the additional subject(s) shall be counted for calculating the minimum credits required for the award of degree.

Special Guest Lectures (SGL) &Extra Mural Lectures (EML): Some topics/concepts need extra attention and efforts as they either may be high in difficulty level or requires experts from specific industry/domain to make things/concepts clear for a better understanding from the perspective of the industry. Hence, to cater to the present needs of industry we organize such lectures, as part of lecture-series and invite prominent personalities from academia and industry from time to time to deliver their vital inputs and insights.

Student Development Programs (SDP): Harnessing and developing the right talent for the right industry an overall development of a student is required. Apart from the curriculum teaching various student development programs (training programs) relating to soft skills, interview skills, SAP, Advanced excel training etc. that may be required as per the need of the student and industry trends, are conducted across the whole program. Participation in such programs is solicited through volunteering and consensus.

Industry Focused programmes: Establishing collaborations with various industry partners to delive the programme on sharing basis. The specific courses are to be delivered by industry experts to provide practice-based insight to the students.

Special assistance program for slow learners & fast learners: write the note how would you identify slow learners, develop the mechanism to correcting knowledge gap. Terms of advance topics what learning challenging it will be provided to the fast learners.

Induction program: Every year 3 weeks induction program is organized for 1st year students and senior students to make them familiarize with the entire academic environment of university including Curriculum, Classrooms, Labs, Faculty/ Staff members, Academic calendar and various activities.

Mentoring scheme: There is Mentor-Mentee system. One mentor lecture is provided per week in a class. Students can discuss their problems with mentor who is necessarily a teaching faculty. In this way, student's problems or issues can be identified and resolved.

Competitive exam preparation: Students are provided with one class in every week for GATE/ Competitive exams preparation.

Extra-curricular Activities: organizing & participation in extracurricular activities will be mandatory to help students develop confidence & face audience boldly. It brings out their leadership qualities along with planning & organizing skills. Students undertake various cultural, sports and other competitive activities within and outside then campus. This helps them build their wholesome personality.

Career & Personal Counseling: - Identifies the problem of student as early as possible and gives time to discuss their problems individually as well as with the parents. Counseling enables the students to focus on behavior and feelings with a goal to facilitate positive change.Its major role lies in giving: Advice, Help, Support, Tips, Assistance, and Guidance.

Participation in Flip Classes, Project based Learning (A2 Assignment), Workshops, Seminars & writing & Presenting Papers: Departments plan to organize the Flip Classes, Project based Learning (A2 Assignment), workshops, Seminars & Guest lecturers time to time on their respective topics as per academic calendar. Students must have to attend these programs. This participation would be count in the marks of general Discipline & General Proficiency which is the part of course scheme as non-credit course.

Formation of Student Clubs, Membership & Organizing & Participating events: Every department has the departmental clubs with the specific club's name. The entire student's activity would be performed by the club. One faculty would be the coordinator of the student clubs & students would be the members with different responsibility.

Capability Enhancement & Development Schemes: The Institute has these schemes to enhance the capability and holistic development of the students. Following measures/ initiatives are taken up from time to time for the same: Career Counseling, Soft skill development, Remedial Coaching, Bridge Course, Language Lab, Yoga and Meditation, Personal Counseling

*Library Visit & Utilization of QLRC:*Studentsmay visit the library from morning10 AM to evening 8 PM. Library created its resources Database and provided Online Public Access Catalogue (OPAC) through which users can be accessed from any of the computer connected in the LAN can know the status of the book. Now we are in process to move from OPAC to KOHA.

EG3104	Title: English-I	L T P C 4 0 0 4
Version No.		
Course Prerequisites	Nil	
Objectives	To familiarize the students with the English language's basics and its grammar	
Expected Outcome	**CO1:** Develop one's ability to use English Language in day-to-day and real-life situations **CO2:** Interpret isolated vocabulary words and phrases in familiar contexts **CO3:** Express ideas through written, oral and visual communication **CO4:** Compose meaningful sentences and paragraphs as a prominent life-long skill. **CO5:** Demonstrate excellent reading and comprehension skills	
Unit No.	Unit Title	No. of hours (per Unit)
Unit I	**Everyday conversations**	8Hrs
• Introducing self/others • Weather • Classroom • Asking about facilities around • Asking for help, suggestions, ideas, directions and advice • Describing a person/thing		
Unit II	**Meeting people, expressing, and talking about**	10Hrs
• Greetings, Starting the Conversation, Small Talks, Closing the Conversation • Happiness/Displeasure, Preference, Doubts, Views. • Interests, Different Cultures, Clothes, Cars, Institutes, Situations, Schedules, Prices Points to cover: Vocabulary, grammar, Construction of sentences, listening.		
Unit III	**Comprehension**	9Hrs
• Comprehension passage 1 • Comprehension passage 2 • Comprehension passage 3 • Comprehension passage 4 • Comprehension passage 5 Points to cover: Vocabulary, grammar, Construction of sentences.		
Unit IV	**Short Paragraph Writing**	9Hrs

<table>
<tr><td colspan="3">

Punctuality
Nutrition
Exercise
Global Warming
Disciple Inflation
Demonetization

Points to cover: Vocabulary, grammar, Construction of sentences
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<tr><td>Unit V</td><td>Review Writing</td><td>12Hrs</td></tr>
<tr><td colspan="3">

Topic 1 – Book [can be a story review for average students]
Topic 2 - Movie review [different kinds of movies can be suggested too for practice]
Topic 3 – Another Movie review
Topic 4 – Hotel / Café / Recreations Centre Review
Topic 5 – Electronic Gadget Review (Laptop/smartphone / speakers/ PSP/ etc.)
What is a review? How to write a review? Different types of reviews.
Writing for social media: Facebook, Inked-in
Points to remember while writing on social media. How to write a profile summary.
What is a blog? How to write a blog?

Points to cover: Vocabulary, grammar, Construction of sentences.
</td></tr>
<tr><td>Text Books</td><td colspan="2">1. Speak Now Level I & II, Oxford Press
2. Business Benchmark, Level – Upper Intermediate by Cambridge University Press.
3. Practical English Usage by Michel Swan, Oxford University Press</td></tr>
<tr><td>Reference Books</td><td colspan="2">1. Cambridge Grammar for English: A comprehensive Guide for spoken & written English (South Asian edition), Cambridge University Press.
2. How English Works by Michael Swan & Catherine Walter, Oxford University.</td></tr>
<tr><td>Mode of Evaluation</td><td colspan="2">Internal and External Assessment</td></tr>
<tr><td>Recommendation by Board of Studies on</td><td colspan="2">20-10-2022</td></tr>
<tr><td>Date of approval by the Academic Council</td><td colspan="2">20-10-2022</td></tr>
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Course Outcome For EG3104

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Students will able to Understand the process of film making and script writing.	2	Emp
CO2	Students will be able to Create the imaginary characters and layout for programs	2	S
CO3	Students will able to Relate with the visual and technical requirements of production	6	S
CO4	Students will able to Understand the process of audio recording and voice over techniques	6	Ent
CO5	Students will able to describe the multiple characters and their description	2	None

CO-PO Mapping for EG3104

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)											Program Specific Outcomes		Program Educational Outcomes	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3105	**Title: Foundation Art**	**L T P C** 4 0 0 4
Version No.		
Course Prerequisites		
Objectives	• To interpret drawing skills with precision • Formulate the ways of creating perspective drawing with shading techniques • Demonstrate the knowledge of figure drawing and nature study	
Expected Outcome	• Define the role of different medium and materials. • Analyze importance of Perspective. • Utilizing perspective drawing from real life • Apply Light and shade in Art. • Apply accurate anatomy characteristics in figure drawing.	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Introduction to Drawing Materials:**	8Hrs
• Introduction of Unit • Papers-Different pencils. • Colour pencils-Crayons and poster colours. • Introduction to drawing the objects, figures from the surroundings. • To learn, observe, analysing, and drawing mechanical objects, utensils and objects from every day life		
Unit II	**Perspective drawing:**	10Hrs
• Introduction of Unit. • To learn the importance of Perspective. • Rules of perspectives • To learn one point – two point perspectives • 3 point, Multi Pints, and Foreshortening perspectives • Learn to draw from different eye levels and different angles		
Unit III	**Drawing from Nature:**	10Hrs
• Introduction of Unit. • Location drawing and learning to represent trees, plants, bushes, shrubs, insects, birds, and animals with attention to structure and morphology, proportion, volume, and behavior. • Dramatizing what has been recorded.		
Unit IV	**Lighting &Shading:**	10Hrs

• Value Scale shows, A Light Source and Shadows, Form shadow, A light side and dark side on round surfaces, Highlight, Light middle tones, Dark middle tone, reflected light, cast shadows, Value Schemes and Mood, Value as Pattern • Perspective • Lighting and shading in Outdoor and Indoor study.		
Unit V	**Figure Drawing**	10Hrs
• Introduction to Figure Drawing, • Learning Stick Figures • Practice with Lines and Stick Figures • Mannequin Drawings • Drawing Figures in Blocks • Drawings from different eye-levels • Basic Anatomical Study • Live model study • Creative Forms of Aliens with Balanced Anatomy; • Drawings of Human Figures from Different Backgrounds. • Drawing Props and Costumes		
Text Books	1. Lewis-Pencil-Drawing-Techniques by David Lewis Publisher: Watson-Guptill Publications (1984) 2. PerspectiveDrawingHandbookbyJosephD'Amelio17May2004	
Reference Books	1. Light and shade with chapters on charcoal pencil and brush drawing 1897 2. The complete book of drawing techniques by peter stanyer 2010	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome ForAN3105

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Students will able to Understand the process of film making and script writing.	2	Emp
CO2	Students will be able to Create the imaginary characters and layout for programs	2	S
CO3	Students will able to Relate with the visual and technical requirements of production	6	S

CO4	Students will able to Understand the process of audio recording and voice over techniques	6	Ent
CO5	Students will able to describe the multiple characters and their description	2	None

CO-PO Mapping for AN3105

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)											Program Specific Outcomes		Program Educational Outcomes	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PEO1	PEO2	PEO3
CO1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3106	Title: 2D Digital Animation	L T P C 4 0 4 6
Version No.		
Course Prerequisites		
Objectives	• Interpret 2D Animation skills • Formulate the ways of creating various tween animation • Demonstrate the knowledge of staging and exporting the various animation techniques • Interpret 2D Animation skills • Formulate the ways of creating various tween animation • Demonstrate the knowledge of staging and exporting the various animation techniques	
Expected Outcome	• List the techniques in creating 2D animation • Analyze timing and sequencing of Animation. • Apply the techniques of animation staging for creating a scene. • Compare the application for exporting animation file. • Design 2D animation with background in a scene.	
Unit No.	Unit Title	No. of hours (per Unit)
Unit I	**Tools and Interface:**	8Hrs
• Introduction to Tools and Interface • Drawing for Animation • Shape Manipulation • Working with Strokes and Fills • Library and properties • Grouping Shapes • Frames per Second • Stage Size • Background colour • Key frame Animation		
Unit II	**Tween Animation:**	10Hrs
• Introduction of Unit • Motion and Shape Tween • Guide Paths • Path Animation • Masking • Animating Masks • Gradients and Effects		
Unit III	**Staging and Timing:**	10Hrs

• Introduction of Unit • Animation Staging and timing • Static Background Scenes • Animated Background Scenes • Scene Management • Duplicating and Editing Scenes		
Unit IV	**Export Movie:**	10Hrs
• Introduction of Unit, • File Management • Library Management, • Workspace customization • Compressions • Sprite sheet		
Unit V	**Application:** **10hrs**	
• Key frame Animation Exercise: Principles of Animation. • Key frame Animation Exercise: Key frame Animation, Character Animation • Key frame Animation Exercise: Stick Figure Cycles Animation Creating Scenes for Animation		

Lab Experiments:

1. Create 5 animation drawings
2. Creating a Car/ Rocket / Tank model
3. Creating a Motion tween of Car travelling from left to right.
4. Create a solar system with Guide paths.
5. Create a Ball bouncing animation of Rubber, table tennis and basketball.
6. Create a simple BG in Animate CC
7. Animate the BG scenes with zoom in and zoom out with other camera movements.
8. Design a character in Adobe animate cc.
9. Create a whip animation
10. Create a Squirrel jump animation
11. Create a Walk cycle animation
12. Create a Run cycle animation

Text Books	1. Adobe Animate CC: Classroom in a Book - The Official Training Workbook from Adobe – 2017by Russell Chun 2. SimpledrawingforplanninganimationbyWayneGilbert2014
Reference Books	1. CartoonAnimationbyPrestonBlair1994 2. Muybridge-The Human Figure in Motion by Eadweard Muybridge, Publisher Dover Publications Feb 2007
Mode of Evaluation	Internal and External
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3106

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Student will be able to understand the language of cinema	2	S
CO2	Students will able to understand the concept of reporting and the beats in reporting; Political, Crime, Sports etc.	2	S
CO3	Students will able to understand the work functions of news room and its operations.	2	S
CO4	Understand the process of editing in print media; newspapers , magazines etc.	2	Ent
CO5	Understand & Investigate the facts from various sources and able to prepare questions for a specific interview; rewrite news stories from newspapers on national and international issues.	5	Emp

CO-PO Mapping for AN3106

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	1	2	3	2	1	2	2	3	2	3	1	2	2
CO 2	2		2	0		1	3		3		2	3	3	1	2
CO 3	2	2	0	0	2	1	0	3	2	2	0	0	3	3	1
CO 4	2	1	3		2	3	2	2	1	2	2	2	3	0	2
CO 5	3	1		3	1	2	2	3	2	1	3	3	0	3	3
Avg	2.4	1.75	1.5	1.25	2	1.8	1.6	2.5	2	2	1.8	2.2	2	1.8	2

AN3107	**Title: DIGITAL ART**	L T P C 3 0 4 5

Version No.		
Course Prerequisites		
Objectives	• Interpret colour theory skills in digital format • Demonstrate the ways of creating raster and vector graphics in digital software • Apply the knowledge of digital painting with image restoration and manipulation	
Expected Outcome	• Demonstrate colour theory in digital media • Categorise file formats in digital art • Categorise the role of raster graphics in digital media • Apply vector art in creating graphics and illustration • Plan image manipulation and magazine design cover in digital art	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Theories of Perception:**	4Hrs
• Introduction of Unit • Electromagnetic Spectrum • Using Color Theory: Analog and Digital Colors • Symbolism • Additive and Subtractive Colors • Mixing Colors • Colors for Painting		
Unit II	**Digital Tools, Hardware for Digital Painting**	8Hrs
• Introduction of Unit, • Image Format and Color • Representations • Image and File Formats • File Compressions • Properties of Bitmap Image • Resolutions for Print and Display • Digital color Representation		
Unit III	**Introduction to Raster Graphics Tools**:	8Hrs
• Introduction of Unit • Layers • Adjustment Tools • Painting • Creating raster artworks • Image Manipulation • Color Manipulation • Layer Blending • Masking • Export Parameters		
Unit IV	**Introduction to Vector Graphics Tools:**	8Hrs

• Introduction of Unit • Creating Vector Arts • Paths and Shapes • Vector brushes and colors • Layers • Transparency • Grouping • Blending Modes • Logo designing • Managing Artwork • Single and Multipage Illustrations		
Unit V	**Application**	8Hrs
• Digital Painting • Portrait painting • Images Restoration • Images manipulation and collages • Vector Art – Graphics and Illustrations • Print and Web graphics		
Text Books	1. Principles of Form and Design byWuciusWongJohnWiley& Sons, NewYork2, September 15,1993. 2. TheAnimationBible:A Practical Guide to the Art of Animating from Flipbooks to Flash–MaureFurniss 2008	
Reference Books	1.AdobePhotoshopCCClassroomina Bookwith AccessCodeby AndrewFaulkner 2017	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Lab Experiments:

1. Creating a PPT of colour theory by mixing colours
2. Digital Painting
3. Layers Exercise – create a simple BG
4. Adjustment Tools – photo retouching
5. Design a character with basic shapes
6. Creating raster artworks – paint an object
7. Image Manipulation – create an animal morph concept

8. Create an concept character with manipulation 9. Create a car or robot or face (vector painting) 10. Images Restoration – retouch old photo 11. Create a Magazine cover 12. Create a Digital paint BG/ Portrait	
Text Books	1. Principles of Form and Design by WuciusWongJohnWiley& Sons, NewYork2, September 15,1993. 2. The Animation Bible: A Practical Guide to the Art of Animating from Flipbooks to Flash–Maure Furniss 2008
Reference Books	1.AdobePhotoshopCCClassroomina Book with Access Code by Andrew Faulkner 2017
Mode of Evaluation	Internal and External
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3107

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)

CO1	Student will be able to understand the language of cinema	2	S
CO2	Students will able to understand the concept of reporting and the beats in reporting; Political, Crime, Sports etc.	2	S
CO3	Students will able to understand the work functions of news room and its operations.	2	S
CO4	Understand the process of editing in print media; newspapers , magazines etc.	2	Ent
CO5	Understand & Investigate the facts from various sources and able to prepare questions for a specific interview; rewrite news stories from newspapers on national and international issues.	5	Emp

CO-PO Mapping for AN3107

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	1	2	3	2	1	2	2	3	2	3	1	2	2
CO 2	2		2	0		1	3		3		2	3	3	1	2
CO 3	2	2	0	0	2	1	0	3	2	2	0	0	3	3	1
CO 4	2	1	3		2	3	2	2	1	2	2	2	3	0	2
CO 5	3	1		3	1	2	2	3	2	1	3	3	0	3	3
Avg	2.4	1.75	1.5	1.25	2	1.8	1.6	2.5	2	2	1.8	2.2	2	1.8	2

AN3142	**Title: Project - I**	**L T P C** 0 0 4 2
Version No.		
Course Prerequisites	Nil	

Objectives	To interpret the 2D project pipeline. To identify story and visualization To elucidate the identification and execution of 2D Project To apply the communication skills To describe presentation skills	
Expected Outcome	To understand the 2D project pipeline. To demonstrate story and visualization To analyze the identification and execution of the 2D Project To apply communication skills in the project To create 2D Animation project	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Introduction to Project**	8 Hrs
Pipeline of Animation, project management,		
Unit II	**Ideation of Project**	10 Hrs
Idea, story and script for 2D animation		
Unit III	**Visuals in Project**	9 Hrs
Gesture drawing, storyboard,visualization, identification and execution of 2d animation, Digital art for the project.		
Unit IV	**Communications for Project**	9 Hrs
Communications within the team for finishing the project on the deadline. Proper naming conventions for the project.		
Unit V	**Presentation**	12 Hrs
Creating handouts for the project, presenting the 2D animation.		
Text Books	Ideas for the Animated Short: Finding and Building Stories The Digital Art Technique Manual for Illustrators & Artists: The Essential Guide to Creating Digital Illustration and Artworks Using Photoshop, Illustrator, and Other Software by Joel Lardner, Paul Roberts	
Reference Books	The Animator's Survival Kit: A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome for AN3142

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the history of printing in India	2	Emp
CO2	Understand the elements and principles of design.	2	S
CO3	Understand & design the layout and composition for graphics	2	S
CO4	Analyze the Techniques of News Editing	3	Ent
CO5	Understand the basic of Photoshop	5	None

CO-PO Mapping for AN3142

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	2	1	1	2	2	0	1	0	2	1	1	2	2	2	3
CO 2	2	3	1	3	2	2	3	2	0	2	3	0	3	3	0
CO 3	1	0	2	0	3	2	3	3	2	2	2	3	0	0	3
CO 4	2	3	2	3	3	3	2	2	3	3	0	2	2	3	2
CO 5	3	3	3	3	0	3	2	3	3	3	3	3	3	1	2
Avg	2	2	1.8	2.2	2	2	2.2	2	2	2.2	1.8	2	2	1.8	2

SEMESTER-2

CY3205	Title: Environmental Studies	L T P C 2 0 0 2
Version No.	1.0	
Course Prerequisites	Nil	
Objectives	Creating awareness among engineering students about the importance of environment, the effect of technology on the environment and ecological balance is the prime aim of the course.	
Expected Outcome	Students will understand the transnational character of environmental problems and ways of addressing them, including interactions across local to global scales.	
Unit No.	Unit Title	No. of hours (per Unit)
Unit I	Introduction to Environmental studies & Ecosystems	5Hrs
Multidisciplinary nature of environmental studies, Scope and importance, Need for public awareness. Concept, Structure and function of an ecosystem, Energy flow in an ecosystem: food chains, food webs and ecological pyramids. Examples of various ecosystems such as: Forest, Grassland, Desert, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)		
Unit II	Natural Resources: Renewable & Non- renewable resources	5Hrs
Land as a resource, land degradation, landslides (natural & man-induced), soil erosion and desertification. Forests & forest resources: Use and over-exploitation, deforestation. Impacts of deforestation, mining, dam building on environment and forests. Resettlement and rehabilitation of project affected persons; problems and concerns with examples. Water resources: Use and over-exploitation of surface and ground water, floods, drought, conflicts over water (international & inter-state). Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer- pesticide problems with examples. Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs.		
Unit III	Biodiversity & Conservation	5Hrs
Levels of biological diversity: genetic, species and ecosystem diversity. Bio geographic zones of India. Ecosystem and biodiversity services. Biodiversity patterns and global biodiversity hot spots, India as a mega-biodiversity nation; Endangered and endemic species of India. Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions. Conservation of biodiversity: In-situ and Ex-situ conservation.		
Unit IV	Environmental Pollution	4Hrs
Environmental pollution and its types. Causes, effects and control measures of: a) Air pollution b) Water pollution – freshwater and marine c) Soil pollution d) Noise pollution e) Thermal pollution Nuclear hazards and human health risks, Solid waste management: Control measures of urban and industrial waste.		
Unit V	Environmental Policies & Practices	5Hrs
Concept of sustainability and sustainable development. Water conservation & watershed management. Climate change, global warming, acid rain, ozone layer depletion. Disaster management: floods, earthquake, cyclones and landslides. Wasteland reclamation. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation. Environment: rights and duties. Population growth.		

Text Books	1. Bharucha. E, Textbook of Environmental Studies for Undergraduate Courses.
Reference Books	1. Kaushik Anubha, Kaushik C P, Perspectives in Environmental Studies New Age Publication
Mode of Evaluation	Internal and External Examinations
Recommendation by Board ofStudies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for CY3205

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Students will be able to aware with current scenario of society.	2	Emp
CO2	Students will be understand the contemporary issue and able to related the things	2	S
CO3	Students will be able to develop the opinion and create the new thought about it	2	S
CO4	Students will be able to collect lot of information.	3	Ent
CO5	Students will be able to inculcate the new perception about current scenario.	5	None

CO-PO Mapping for CY3205

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	1	1	1	1	1	1	1	1	0	0	2	1	2	2	0
CO 2	1	0	0	0	1	0	2	0	0	0	1	0	2	3	3
CO 3	0	2	3	0	1	1	2	0	0	0	1	0	1	3	3
CO 4	2	0	1	0	0	1	0	0	0	0	0	0	3	3	3
CO 5	3	0	2	0	2	2	2	0	0	0	3	1	3	3	2
Avg	1.4	0.6	1.4	0.25	1	1	1.25	0.2	0	0	1.4	0.4	2.2	2.8	2.2

AN3209	Title: English II	L T P C 4 0 0 4
Version No.		

Course Prerequisites		
Objectives	To familiarise the students with functional English and comprehension techniques	
Expected Outcome	• Explain the concept of grammar to address competitive exams. • Demonstrate the use of advanced English language by using various words, i.e., idioms and phrases in a variety of sentences in a functional context. • Comprehend the proper usage of English grammar. • Adapt the strategies of comprehension by using the learnt techniques and methodologies. • Apply professional writing methodologies.	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**English Grammar & Vocabulary**	9Hrs
• Correction of Common Errors (with a recap of English Grammar with its usage in a practical context.) • Synthesis: Simple, complex and compound sentences • Commonly used Idioms & phrases (Progressive learning whole semester)		
Unit II	**Speaking Skills**	9 Hrs
• Art of public speaking • Common conversation • Extempore • PowerPoint Presentation (ppt)Skills**:** Nuances of presenting PPTs		
Unit III	**Comprehension Skills**	9 Hrs
• Strategies of Reading comprehension: Four S's • How to solve a Comprehension (Short unseen passage: 150-200 words)		
Unit IV	**Professional Writing**	9 Hrs
• a) Preparing Notice, Agenda & Minutes of the Meeting		
Unit V	**Value-based text reading**	12 Hrs
• a) The Barber's Trade Union – Mulk Raj Anand		
Text Books	1. Singh R.P., An Anthology of Short stories, O.U.P. New Delhi.	

Reference Books	1. Allen, W. *"Living English Structure*‖ Pearson Education, New Delhi. Joseph, Dr C.J. &Myall E.G. —*A Comprehensive Grammar of Current English*‖ Inter-University Press, Delhi
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3209

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Students will able to Understand the process of film making and script writing.	2	Emp
CO2	Students will be able to Create the imaginary characters and layout for programs	2	S
CO3	Students will able to Relate with the visual and technical requirements of production	6	S
CO4	Students will able to Understand the process of audio recording and voice over techniques	6	Ent
CO5	Students will able to describe the multiple characters and their description	2	None

CO-PO Mapping for AN3209

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)											Program Specific Outcomes		Program Educational Outcomes	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3205	**Title: Storytelling**	**L T P C** 4 0 0 4
Version No.	1.0	
Course Prerequisites	Nil	
Objectives	• Interpret storytelling skills • Formulate the ways of creating plot driven stories according to genre • Demonstrate the knowledge of character, environment and illustration for the story	
Expected Outcome	• Analyze the effective techniques involved in storytelling. • Classify story based on a genre and express opinions from a narrative point of view. • Design character driven stories. • Create environment for the story. • Design Storyboard Panels for Visual narration of story.	
Unit No.	**Unit Title**	No. of hours (per Unit)
Unit I	What is Story:	8Hrs
• Introduction of Unit • Relevance in society • Introduction to ideation and Imagination of storytelling. • Resources and Text –Oral – and performance – film as different mediums. • Story genres and different audience.		
Unit II	Story -Plot & sub plots:	10Hrs
• Introduction of Unit • Plot devices – Other Devices • Dramatic structure –Conflict - Setting mood, Rising • action -Falling Action – Dénouement – Resolution • Narrative point of view - Linear &non linear – linear story structures		
Unit III	Characters:	10Hrs
• Introduction of Unit, • Characters from the story- to explore different aspects of a character. • Character driven stories. • Character attributes • Different characters from the story. • Characters from various contexts and cultural and class backgrounds.		
Unit IV	Environment of the story:	10Hrs

• To study the environment of the story • Characters and their relations to the place geographical • Historical and any other associations with places • To learn to understand and construct different events • Events – driven stories		
Unit V	Visual narration through Illustration:	10Hrs
• Single panel to multiple panels Storytelling in Comics. • Storyboard with pictures. • To learn various attributes of Comics – Visualization – Narration – Dialogue writing etc. for comics.		
Text Books	1.Story:Substance, Structure,StyleandthePrinciplesofScreenwriting.ByRobertMcKee1997.	
Reference Books	1.MakingComics: StorytellingSecretsof ComicsbyScottMcCloud2006	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome for AN3205

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Students will able to Understand the process of film making and script writing.	2	Emp
CO2	Students will be able to Create the imaginary characters and layout for programs	2	S
CO3	Students will able to Relate with the visual and technical requirements of production	6	S
CO4	Students will able to Understand the process of audio recording and voice over techniques	6	Ent
CO5	Students will able to describe the multiple characters and their description	2	None

CO-PO Mapping for AN3205

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)											Program Specific Outcomes		Program Educational Outcomes	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3206	Title: 3DAssets	L T P C 2 0 8 6
Version No.	1.0	
Course Prerequisites	Nil	
Objectives	• Product Development: Analyse, design and develop novel products and solutions for emerging new media opportunities. • Formulate the ways of creating polygon modeling. • Demonstrate a complete output of polygon and UV unwrapping.	
Expected Outcome	• Examine object behaviour in 3D space • Demonstrate tools and techniques required for polygon modelling and UV unwrapping. • Create simple Animations including Expressions, constraints and cycles using dope and graph editor. • Exhibit Rigging techniques for props, using deformer, and basic understanding of joints and control types. • Demonstrate Skinning techniques for various objects.	
Unit No.	Unit Title	No. of hours (per Unit)
Unit I	Interface and Concept of 3D modeling:	5 Hrs
• Being familiar with Maya viewport, user interfaces, status line, shelf, layers, channel box, etc; • Understanding the 3 Dimensions, Isometric & Orthographic projection, 3D space, difference between 2D & 3D and xyz coordinates Introduction to modeling tools: • Introducing tool box, basic primitives, Mesh, edit mesh, outliner, pivot point etc; Establishing different type of geometries, nature of difference meshes, and advantage and disadvantage of these geometries		
Unit II	Concepts of UV unwrapping:	4 Hrs
• Understanding the concept of UVs, • UV texture space and how to map them to a surface, and subsequently lay them out accurately is essential for producing textures on polygonal and subdivision surfaces when working in Maya. Working with UV tools & techniques: • Understanding the UV Texture editor and technique of how to cut, merge, relax, unfold, and layout the UVs. • Experiment exercise on unwrapping techniques using a simple model. Explaining UV resolution settings, and how to capture a UV snapshot from Maya UV, texture editor, and getting in to paint software.		
Unit III	Animation:	5 Hrs

• Applying the principles of animation using standard cycles -Timing the animation, Adding weight. • Mastering the use of Graph editor and Dope sheet, Morph or Animate - Universal Expressions, Other Expressions, Constraining and parenting for animation. • Object Character interaction. • Character- Character Interaction. • Telling a story – Mime. • Attitude/Personality – Human Figure Walk cycles. • Adding personality and appeal. • Acting out a scene/referencing. • Thumb nailing. • Staging a shot/scene/sequence. Animation Blocking		
Unit IV	Rigging:	5 Hrs
• Deformers – Nonlinear, Bend, Flare, Sine, Squash, Twist and Wave, Concept of Animating the Envelope, Lattice, Cluster, Sculpt, Jiggle, Wire, Wrap, Edit membership (Including, Excluding, Pruning members) Painting memberships/Weights, Cluster Curve, • Deformers – Blend Shape, Creating the Shapes. Rigging Basics – Bones and Joints Skin, Binding Kinematics (IK & FK), Requirements for a clean Model, Clean UVs.		
Unit V	Skinning:	5 Hrs
• Binding - Smooth Binding. • Concept of a single cluster. Max Influence & Drop-off rate. • Rigid Binding Concept of a Multiple cluster, • Practice of Rigid and Smooth Binding, Editing the Smooth Skin, • Adding influence objects, • Painting of skin weights, Editing Skin weights, • Mirror Skin Weights Copy skin weights Resetting, Skin weights, • Pruning small weights, Normalize Weights, Export/ import skin weight maps, Editing Rigid Skin, Creating and Editing Flexors, Lattice, Sculpt, joint Cluster, Painting Cluster weights, Rigid Binding Practice. • Rigging the controls – IK and FK, Joints and hierarchies Concept of Skeleton, Connect Joint, Remove, joint, Insert joint, Re-root joint Mirror, Joint, Set preferred angle, Assume preferred angle		
Text Books	1. Introducing Autodesk Maya 2015 by DariushDerakhshani Publisher: Sybex;1 edition(June16, 2014)	
Reference Books	1. Basics Animation: Digital Animation by Andrew Chong(Author), Andrew McNamara(Author)Publisher: BloomsburyPublishingIndia PrivateLimited (3 December 2007) 2. The Animator's Survival Kit--Revised Edition: A Manual of Methods, Principles and Formulas for Classical, Computer, Games,StopMotionandInternetbyRichardWilliams:Publisher:Farrar,Strausan dGiroux; Fourth Edition, Revised edition(25September2012)	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	

Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3206

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Students will able to Understand the process of film making and script writing.	2	Emp
CO2	Students will be able to Create the imaginary characters and layout for programs	2	S
CO3	Students will able to Relate with the visual and technical requirements of production	6	S
CO4	Students will able to Understand the process of audio recording and voice over techniques	6	Ent
CO5	Students will able to describe the multiple characters and their description	2	None

CO-PO Mapping for AN3206

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)											Program Specific Outcomes		Program Educational Outcomes
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3207	**Title: Preproduction**	**L T P C** 2 0 4 4
Version No.	1.0	
Course Prerequisites	Nil	
Objectives	• To interpret preproduction and storytelling skills • Formulate the ways of creating Storyboard with the help of scripts. • Demonstrate a complete output of animatics with sound.	
Expected Outcome	• Describe the films formats and aspect ratio of early films. • Outline the script writing skills. • Examine the significance of storytelling through drawing skills. • Identify the use of storyboard in film. • Design sound and use it to visualize film through animatics.	
Unit No.	**Unit Title**	No. of hours (per Unit)
Unit I	Film Format and its Ratios:	5 Hrs
• Medium and Formats - Film, Frame Rate, Size and Gauge, Tele Cine and Reverse Tele Cine. • Television, Frame Rate, PAL, NTSC, SECAM. • Aspect Ratio, Camera, Lens and Projection Systems, TV Safe. • Emerging Trends and Digital Films, High Definition Imaging		
Unit II	Scripts:	5 Hrs
• Anatomy of a Script, • Script Elements and Scene Heading, Action, Characters. • Dialogue - Parenthetical - Extension - Transition - • Shots - Page Breaking, Finer Points, Dual Dialogue, • and Adlibs - Abbreviations and Montages – • A Series of Shots and Short Lines/Poetry/Lyrics – • transitions, continuity etc. • Titles or Opening Credits, and Superimpose or Title • -Title Page -Production Drafts, Top Continued and • Bottom Continued - Locking Script Pages and • Locking Scenes -Header, • Do's and Don'ts - Other Script Formats, • Reading Scripts from Popular Television Shows and Animation Films		
Unit III	Storytelling Techniques:	5 Hrs

• Research - Period - Historic / Scientific facts, Society Costumes Props, Food etc. • Illustration, • Anatomy, Rendering your drawings, • Techniques and styles, Inking – Graphic styles, Text – as image, • Page Elements and Composition, • Projecting figures in Deep space, • Framing and Composition, Perspective and Camera. • Concept Art and Matte Painting (using Advanced Photoshop Technique)		
Unit IV	Storyboarding:	5 Hrs
• What is Storyboard, Importance of Story Board, difference between storyboard and Graphic Comic, • Difference between Storyboard and Presentation Board? • Advantages of Storyboard in Animation, Anatomy • of a Storyboard, Thumbnail Storyboard, • Preparing Storyboards using Digital software. • Advanced Storyboard Techniques, • Various Camera Shots and Camera Moves and their meaning, Transitions, Aspects of the story board.		
Unit V	Sound editing and Design:	4 Hrs
• Sound Effects Music and Foleys – Dialogue. • Dialogue writing. • Recording of dialogue, the spoken language Dialect and Accent. • Voice acting/ modulation. Cast, Scratch Audio • Track, • Shooting the Storyboard, • Slugging the Storyboard, • Animatics.		
Text Books	1. The Art of story board by John Hart	
Reference Books	1. 'How to Write for Animation 'by Jeffrey Scott's book	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome ForAN3207

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Students should be able to Implement the basics Drawing.	1	Emp
CO2	Students should be able to describe all types of pencils, life drawing, and environment study.	4	S
CO3	Students must be able to differentiate all different human poses, and drawing lines.	1	Ent
CO4	Students must be able to Describe the rules of animation, warm up exercise, imagination and memory drawing.	2	Ent
CO5	Students must be able to understand how to operate different traditional techniques of drawing different human anatomy parts.	6	S

CO-PO Mapping for AN3207

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

CE3102	Title: Disaster Management	L T P C 2 0 0 2
Version No.	1.0	
Course Prerequisites	Nil	
Objectives	The course is intended to provide a general concept in the dimensions of disasters caused by nature beyond the human control as well as the disasters and environmental hazards induced by human activities with emphasis on disaster preparedness, response and recovery.	
Expected Outcome	Enhance the knowledge by providing existing models in risk reduction strategies to prevent major causalities during disaster.	
Unit No.	Unit Title	No. of hours (per Unit)
Unit: 1	Introduction on Disaster	5 Hrs
Different Types of Disaster : A) Natural Disaster: such as Flood, Cyclone, Earthquakes, Landslides etc B) Man-made Disaster: such as Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters, Accidents (Air, Sea, Rail and Road), Structural failures(Building and Bridge), War and Terrorism etc. Causes, effects and practical examples for all disasters.		
Unit II	Risk and Vulnerability Analysis	4 Hrs
Risk: Its concept and analysis 2. Risk Reduction 3. Vulnerability: Its concept and analysis 4. Strategic Development for Vulnerability Reduction		
Unit III	Disaster Preparedness	5 Hrs
Disaster Preparedness: Concept and Nature, Disaster Preparedness Plan Prediction, Early Warnings and Safety MeasuresofDisaster. Role of Information, Education, Communication, and Training, . Role of Government, International and NGO Bodies. . Role of IT in Disaster Preparedness. Role of Engineers on Disaster Management.		
Unit IV	Disaster Response	5 Hrs
Introduction Disaster Response Plan Communication, Participation, and Activation of Emergency Preparedness Plan Search, Rescue, Evacuation and Logistic Management Role of Government, International and NGO Bodies Psychological Response and Management (Trauma, Stress, Rumor and Panic). Relief and Recovery Medical Health Response to Different Disasters		
Unit V	Rehabilitation, Reconstruction and Recovery	5 Hrs
Reconstruction and Rehabilitation as a Means of Development. Damage Assessment Post Disaster effects and Remedial Measures. Creation of Long-term Job Opportunities and Livelihood Options, Disaster Resistant House Construction Sanitation and Hygiene Education and Awareness, Dealing with Victims' Psychology, Long-term Counter Disaster Planning Role of **Educational** Institute.		
Text Books	1. Bhattacharya, Disaster Science and Management, McGraw Hill Education Pvt. Ltd.	
Reference Books	1. Dr. Mrinalini Pandey, Disaster Management, Wiley India Pvt.Ltd. 2. Jagbir Singh, Disaster Management: Future Challenges and Opportunities, KW Publishers Pvt.Ltd.	
Mode of Evaluation	Internal and External Examinations	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome for CE3102

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Students will be able to aware with current scenario of society.	2	Emp
CO2	Students will be understand the contemporary issue and able to related the things	2	S
CO3	Students will be able to develop the opinion and create the new thought about it	2	S
CO4	Students will be able to collect lot of information.	3	Ent
CO5	Students will be able to inculcate the new perception about current scenario.	5	None

CO-PO Mapping for CE3102

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	1	1	1	1	1	1	1	1	0	0	2	1	2	2	0
CO 2	1	0	0	0	1	0	2	0	0	0	1	0	2	3	3
CO 3	0	2	3	0	1	1	2	0	0	0	1	0	1	3	3
CO 4	2	0	1	0	0	1	0	0	0	0	0	0	3	3	3
CO 5	3	0	2	0	2	2	2	0	0	0	3	1	3	3	2
Avg	1.4	0.6	1.4	0.25	1	1	1.25	0.2	0	0	1.4	0.4	2.2	2.8	2.2

AN3209	**Title: Project - II**	**L T P C** 0 0 4 2
Version No.		
Course Prerequisites	Nil	
Objectives	To interpret the 3D project pipeline. To identify story and visualization To elucidate the identification and execution of 23D Project To apply the communication skills To describe presentation skills	
Expected Outcome	To understand the 3D project pipeline. To demonstrate story and visualization To analyze the identification and execution of the 3D Project To apply communication skills in the project To create 3D Animation project	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Introduction to Project**	8 Hrs
Pipeline of 3D Animation, project management,		
Unit II	**Ideation of Project**	10 Hrs
Idea, story and script for 3D animation		
Unit III	**Visuals in Project**	9 Hrs
Drawing, storyboard, visualization, identification and execution, Modelling, rigging and animationfor 3D animation		
Unit IV	**Communications for Project**	9 Hrs
Communications within the team for finishing the project on the deadline. Proper naming conventions for the project.		
Unit V	**Presentation**	12 Hrs
Creating handouts for the project, presenting the 3D animation.		
Text Books	Ideas for the Animated Short: Finding and Building Stories The Digital Art Technique Manual for Illustrators & Artists: The Essential Guide to Creating Digital Illustration and Artworks Using Photoshop, Illustrator, and Other Software by Joel Lardner, Paul Roberts Autodesk Maya 2022 Basics Guide	
Reference Books	The Animator's Survival Kit: A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome ForAN3209

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the history of printing in India	2	Emp
CO2	Understand the elements and principles of design.	2	S
CO3	Understand & design the layout and composition for graphics	2	S
CO4	Analyze the Techniques of News Editing	3	Ent
CO5	Understand the basic of Photoshop	5	None

CO-PO Mapping for AN3209

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	2	1	1	2	2	0	1	0	2	1	1	2	2	2	3
CO 2	2	3	1	3	2	2	3	2	0	2	3	0	3	3	0
CO 3	1	0	2	0	3	2	3	3	2	2	2	3	0	0	3
CO 4	2	3	2	3	3	3	2	2	3	3	0	2	2	3	2
CO 5	3	3	3	3	0	3	2	3	3	3	3	3	3	1	2
Avg	2	2	1.8	2.2	2	2	2.2	2	2	2.2	1.8	2	2	1.8	2

Second Year
SEMESTER-III

AN3302	**Title: History of VFX**	**L T P C** 3 0 0 3
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To describe the evolution of Art in the realm of visual effects • Development of the visual effects from both global and Indian perspectives • To evaluate the changing bounds of visual effects with the rise of the digital age. • To display development of VFX • To learn digital world skills	
Course Outcome	• Recall the Pioneers of Visual Effects who contributed towards the evolution of art. • Discuss the warfare impact in shaping the future of visual effects • Describe the people in the making both from a global as well as Indian Perspective. • Determine the evolution of visual effects films with the rise of computers • Analyze the state of art technologies in the realm of the digital world.	
Unit No.	**Unit Title**	No. of hours (per Unit)
Unit I	The Evolution of the Art:	8 Hrs
• The Evolution of the Art – Theoretical Analysis – Hollywood – Pioneers of VFX.		
Unit II	Things to Come:	9 Hrs
• The Shaping of Things to Come – Warfare Impact – The Continued Innovation - Dashing Spaceships.		
Unit III	People in Making:	9 Hrs
• 1970s - George Lucas - Stephen Spielberg – Industrial Lights & Magic – Indian VFX history.		
Unit IV	Development of Vfx of Films:	9 Hrs

• Development of Vfx of Films - Rise of Computers Systems – 1980s a slow evolution with Highlights.		
Unit V	Digital World:	10 Hrs
• Putting Digital Realm on the Map – 1990s Enthralling CGI – Changing the Lingo – Massive Lords - Avatar Box - The State of the Art.		
Text Books	1.Story: Substance, Structure, Style and the Principles of Screenwriting.ByRobertMcKee1997.	
Reference Books	1.MakingComics: Storytelling Secrets of ComicsbyScottMcCloud2006	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome ForAN3302

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the meaning of Digital effects, effects in Animation & VFX.	1	Emp
CO2	Understand the meaning of Digital effects, effects in Animation & VFX.	2	S
CO3	Create the vector art forms, Create different art works in Photoshop. The student will also be able to make a newcomer understand the basics much proficiently.	1	S
CO4	Understand the color theory in Photoshop software.	2	Ent
CO5	Student should able to understand about the combination of lights and use of diffusers and reflectors	2	Emp

CO-PO Mapping for AN3302

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3303	**Title: Compositing Techniques**	**L T P C** 2 0 8 6
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To familiarize the students with the history of compositing using various Compositing techniques. • Illustrate Layer manipulation and its usage with the Layer based compositing package – After Effects • Application of Lighting, render passes and video art for various application's like music, dance, media, automation and interactive film.	
Course Outcome	• Recall the evolution of the traditional methods of compositing to the modern techniques • Interpret various color manipulation techniques used for digital image generation • Demonstrate Layer manipulation techniques of the layer based compositing software – After Effects • Demonstrate the Lighting and advanced compositing techniques of the layer based compositing software – After Effects • Create Video Art for various application's like music, dance, media, automation and interactive film.	
Unit No.	**Unit Title**	No. of hours (per Unit)
Unit I	History of Compositing:	6 Hrs
• History of Compositing, Terminologies, Physical Compositing, Multiple exposure, Background Projection, Matting, Digital Compositing, Node based and Layer Based • Compositing. Visual information and the camera, The Camera and Parameters, Resolution Limits, Focus, Depth of field, Motion blurs Lens correction.		
Unit II	Digital Image:	6 Hrs
• Digital Image Generation, Pixels, Components and Channels, Bit Depth, Floating point and High Dynamic Range Imagery, HSV Color, YUV color, Digital Image file formats, Channels, Compression. Color Manipulation, Levels, Variations, Multiply, Add, Gamma Correction, Exposure Correction, Invert, Contrast, HSV manipulations.		
Unit III	Layers:	6 Hrs
• Layer and Node based compositing, Blending layers, Matte Image, Masking, Morphing • - Chroma Keying, Garbage Mattes, Edge Mattes, Luminance Keying, Chrominance Keying, Difference Matting, Plug-ins and tools for keying. Tracking and Stabilization, Tracking an element, 2D tracking, Perspective tracking, Stabilizing footage, Limitations of tracking and stabilizing tools, Tools for advanced tracking and match moving. Digital Imagery, Color Correction.		
Unit IV	Lighting and Composition:	6 Hrs

• Creating elements, Lighting in compositing tool, matching live and virtual cameras. 3D Compositing, vanishing point conversion, creating 3D compositing using 2D images, working with camera and lighting, effects, Working with Multipass Rendering, Alpha and Luma mattes, Z depth maps, Blending passes and effects. Animation, 2D and 3D transformation, Temporal and spartial interpolation, speed graph, optimizing key frames, expressions for animation, Time Remapping		
Unit V	Theory and Practice of Video Art:	6 Hrs
• History of Video Art, Contemporary video style, culture and emotion reference - Video synthesizer, realtime video art, tools and techniques, applications - music visualization and media art, automation to music, applications and tools - Video art as art form, Interactive film, display and projection, case studies.		

Text Books	1. Compositing Digital Images by T. Porter and T. Duff I Proceedings of SIGGRAPH '84, 18 (1984) I 2. The Art and Science of Digital Compositing by Ron Brinkmann
Reference Books	1. Wright's Compositing Visual Effects: Essentials for the Aspiring Artist [Paperback]2007) – Paperback (2007) by S.Wright 2. The VES Handbook of Visual Effects by Okun J, Zwerman S.
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome ForAN3303

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand user interface of after effect.	2	Emp
CO2	Understand graph editor.	2	S
CO3	Apply Track Matte and remove chroma key.	2	S
CO4	Apply tracking on video footage.	3	Ent
CO5	Create motion graphics projects.	5	Emp

CO-PO Mapping for AN3303

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	0	2	2	2	2	3	0	3	3	1	0
CO 3	1	3	1	2	3	0	3	1	0	0	3	2	2	3	3
CO 4	2	2	3	3	2	3	1	3	2	3	2	2	0	3	3
CO 5	3	1	0	1	2	3	3	1	3	3	3	1	3	3	3
Avg	2.2	2.2	1.8	2.2	2	2	2	1.8	1.8	2.4	2.2	2.2	2	2.4	2.2

AN3303	**Title: Compositing Techniques LAB**	L T P C 2 0 8 6
Course Objectives	• To familiarize the students with the history of compositing using various Compositing techniques. • Illustrate Layer manipulation and its usage with the Layer based compositing package – After Effects • Application of Lighting, render passes and video art for various application's like music, dance, media, automation and interactive film.	
Course Outcome	• Recall the evolution of the traditional methods of compositing to the modern techniques • Interpret various color manipulation techniques used for digital image generation • Demonstrate Layer manipulation techniques of the layer based compositing software – After Effects • Demonstrate the Lighting and advanced compositing techniques of the layer based compositing software – After Effects • Create Video Art for various application's like music, dance, media, automation and interactive film.	

Lab Experiments:

1. Create a 2D ball bounce animation using key frame interpolations and graphs inside the compositing software.
2. Create a video collage wishing Independence Day with photos and text
3. Create a typography animation using 3D layers for a song.
4. Convert the day shot to night using color correction.
5. Track the TV monitor and replace with a news on disaster.
6. Stabilize the shot and composite a CG car inside it.
7. Create a speed graph of a funny cartoon character
8. Create a greenscreen composite of two characters in a forest.
9. Create a CG composite with varying focus with the implementation of z-depth maps
10. Composite the cg elements inside the live action shot and match the elements using the render passes.
11. Create a 3d walkthrough of a house using 3d compositing of 2d images
12. Work with Time-remapping and rotoscopy techniques to create a composite with shot where the character is frozen on air while jumping and the rest of the shot is moving.
13. Create a loop video art using plugins for display projection for a stage event.

Text Books	1. Compositing Digital Images by T. Porter and T. Duff I Proceedings of SIGGRAPH '84, 18 (1984) I 2. The Art and Science of Digital Compositing by Ron Brinkmann
Reference Books	1. Wright's Compositing Visual Effects: Essentials for the Aspiring Artist [Paperback]2007) – Paperback (2007) by S.Wright 2. The VES Handbook of Visual Effects by Okun J, Zwerman S.

AN3304	**Title: 3D Dynamics**	**L T P C** 2 0 8 6
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To elucidate basic physics involved behind effect creation • To explain dynamic body simulation in CG space • To create particle simulation for liquids and gaseous medium • To use soft bodies and goals • To design particle systems and simulate for motion graphics and other CGI productions	
Course Outcome	• Describe physics requirement in effects creation • Demonstrate believable rigid body collisions in CG space • Create effects using particles like dust, fire, crowd, water spray and many more • Formulate strategies for creating Vortex, Rain and other soft body simulation • Demonstrate nature element simulations in motion graphics and other CG production	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Applied Physics**	6 Hrs
• Introduction to Applied Physics and Quantum mechanics, Kinetic Motion, Energy Conversion, Quantum Physics		
Unit II	**Dynamic Bodies**	6 Hrs
• Introduction to special effects — Rigid bodies – Active and passive rigid bodies -Physics based procedural animation using rigid bodies Collisions –Norma's –Fields and its attributes–Simulation of fields		
Unit III	**Particle System**	6 Hrs
• Particles – Emitters – Emitter types and attributes – Deflectors and its attributes Simulating particle effects, Particle effects and collisions, Collision events, connecting camera with particles.		
Unit IV	**Soft Bodies and Goals**	6 Hrs
• Goals–SoftBodies–Animatingsoftbodies-Springs–Simulatingspecialeffects–vortex -gravity –lighting– rain		
Unit V	**Effects**	6 Hrs
• Destruction of objects experiments, nature elements simulation using particles [Water, smoke, fire etc.] Rendering simulations, Optimizing simulations, Simulation for Video and motion graphics		
Text Books	1. Maya Studio Projects: Dynamics -Todd Palamar, Publisher: Sybex;**1**edition	

Reference Books	1. Modeling the Environment: TechniquesandToolsforthe3DIllustrationofDynamicLandscapes-BradleyCantrellandNatalieYates **(Mar27, 2012)**
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome ForAN3304

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand fx and simulation principle and use particle system to create simulation.	2	Emp
CO2	Understand nParticles and create fluid	2	S
CO3	Create ocean, pond etc.	2	S
CO4	Apply nHair to objects and simulate nhair.	3	Ent
CO5	Understand rigid body, soft body and create realistic simulation, which allow him to work for animation and visual effects studios, film companies, game design companies globally.	5	None

CO-PO Mapping for AN3304

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	2	3	3	0	3	2	3	2	2	1	3	1	0	2	2
CO 2	2	2	2	1	0	3	3	3	1	3	0	3	1	0	0
CO 3	1	0	3	2	3	1	1	0	0	1	3	2	2	3	3
CO 4	2	1	1	3	2	3	1	3	2	3	3	1	3	3	0
CO 5	3	3	3	2	2	0	3	2	2	1	3	3	2	1	2
Avg	2	1.8	2.4	1.6	2	1.8	2.2	2	1.4	1.8	2.4	2	1.6	1.8	1.4

AN3304	Title: 3D Dynamics Lab	L T P C 2 0 8 6
Course Objectives	• To elucidate basic physics involved behind effect creation • To explain dynamic body simulation in CG space • To create particle simulation for liquids and gaseous medium • To use soft bodies and goals • To design particle systems and simulate for motion graphics and other CGI productions	
Course Outcome	• Describe physics requirement in effects creation • Demonstrate believable rigid body collisions in CG space • Create effects using particles like dust, fire, crowd, water spray and many more • Formulate strategies for creating Vortex, Rain and other soft body simulation • Demonstrate nature element simulations in motion graphics and other CG production	

Lab Experiments:

1. Create dynamic simulations of objects colliding with each other.
2. Create dynamic simulations of exploding objects in scene.
3. Create particle simulation to simulate different liquid properties.
4. Create dynamic and particle simulations to simulate nature elements like rain, vortex, fire etc
5. Create dynamic simulations of object bouncing and contracting through force.
6. Create dynamic simulations of moving nature elements [Fire, smoke etc]
7. Create dynamic foliages and elements for nature scene[Grass, Trees, Water Streams etc]

Text Books	1. Maya Studio Projects: Dynamics -Todd Palamar, Publisher: Sybex;**1**edition
Reference Books	1. Modeling the Environment: TechniquesandToolsforthe3DIllustrationofDynamicLandscapes-BradleyCantrellandNatalieYates **(Mar27, 2012)**

Course Outcome ForAN3304

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand fx and simulation principle and use particle system to create simulation.	2	Emp
CO2	Understand nParticles and create fluid	2	S
CO3	Create ocean, pond etc.	2	S
CO4	Apply nHair to objects and simulate nhair.	3	Ent
CO5	Understand rigid body, soft body and create realistic simulation, which allow him to work for animation and visual effects studios, film companies, game design companies globally.	5	None

CO-PO Mapping for AN3304

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	2	3	3	0	3	2	3	2	2	1	3	1	0	2	2
CO 2	2	2	2	1	0	3	3	3	1	3	0	3	1	0	0
CO 3	1	0	3	2	3	1	1	0	0	1	3	2	2	3	3
CO 4	2	1	1	3	2	3	1	3	2	3	3	1	3	3	0
CO 5	3	3	3	2	2	0	3	2	2	1	3	3	2	1	2
Avg	2	1.8	2.4	1.6	2	1.8	2.2	2	1.4	1.8	2.4	2	1.6	1.8	1.4

	Title: Graphic Design	**L T P C** 3 0 0 3
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To understand history of Graphic design • To explain elements of typography • To describe logo and branding • To understand product packaging techniques • To elucidate how design affect emotions	
Course Outcome	• Formulate history of graphic design • Demonstrate elements of typography • Create Logo and branding • Plan product packaging techniques • Demonstrate how design affect emotions	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Introduction to Graphic Design**	8 Hrs
• Introduction of Unit, History of Graphic Design, Writing, Calligraphy, Graffiti, Emergence of the Print and Design Industry, Engraving, Etching, Heraldry, Logos and Trademarks, Pioneers of Modern Graphics and Graphic Design – Album Cover Art, Graphic Design – Movies, Elements of a Great Movie Poster Design, Graphic Design – Opening and Closing Credits, Graphic Design – Political Posters, Propaganda and Political Posters, Poster Art during the Inter-War Years, Placards and Posters, Indian Posters, Political Cartoons		
Unit II	**Typography:**	9 Hrs
• The Intangible Elements of Typography, Page Layout and the Grid, Type & Image, Light & Shade in Graphic Design, Impact of Type and Image on Each Other, The Union of Type and Image, The Concept of Light & Shade in Design, Using Light & Shade in Design: Source of Light, Gradients, Highlights, Basic Shadows, Advanced Shadows		
Unit III	**Logo and Brands**	9 Hrs
Graphic Design and Company Logos, Corporate Identity, The Logo, Different Logo Designs, Web 2.0 Logos, Psychedelic Backgrounds, Typographic Logo Designs, Pictogram Logos, Modernist Logos, Street Art Logos, Arabesque Logos, Geometrical Logos, Puzzle Patterns, Creativity in Logos, Redesigning of Logos, Bad Logos, Graphic Design and Corporate Identity, Letterheads, Business Cards, Websites, Characteristics of a good website, Use of Colors in Branding, Design Principles in Web Sites		
Unit IV	**Packaging:**	9 Hrs
• Packaging to Sell, Strategy in Packaging, Ideas in Package Designs, Package Design as the Product Identity, Graphic Design: Its Emotional Effects and Its Future, Emotional Effects of Graphic Design, Emotional Effects of Color, Emotional Effects of Shape		

Unit V	**Ways in which design affect emotions**	10 Hrs
• Changing Scenario of the Graphic Design Industry, Technology and the Future of Graphic Design		
Text Books	1. The Elements of Graphic Design – Alex w. White 2. Thinking with Type - By Ellen Lupton 3. Interaction of Color - Josef Albers's	
Reference Books	1. Paul Rand: a designer's art 2. Type: A Visual History of Typefaces and Graphic Styles – Jan Tholenaar	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the language of cinema and the primary knowledge of making	2	Emp
CO2	Understand the sequence for a film	2	S
CO3	Understand the history of early stage cinema in India and the most important changes in Indian cinema and its culture.	2	S
CO4	Write script and screenplay for the film and documentaries.	3	Ent
CO5	Understand the roles and responsibilities of the cinematographer and its tool and techniques.	5	None

CO-PO Mapping

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	2	3	3	0	3	2	1	2	2	1	3	3	2	2	2
CO 2	2	2	2	3	0	2	3	1	2	3	2	0	1	0	0
CO 3	3	1	3	2	3	2	3	0	2	1	0	1	3	2	3
CO 4	2	1	1	3	2	3	1	3	2	3	3	2	3	3	3
CO 5	3	1	3	3	1	0	3	2	2	1	1	3	2	2	1
Avg	2.4	1.6	2.4	2.2	1.8	1.8	2.2	1.6	2	1.8	1.8	1.8	2.2	1.8	1.8

AN3305	**Title: Lighting & Rendering**	**L T P C** 0 0 4 2

Course Objectives	• To classify shading attributes • To illustrate Light attributes with respect to shading • To explain different types of lights and its uses • To appraise the concept of rendering • To distinguish different render passes and its role in final image composition	
Course Outcome	• Describe the significance of light and surface properties in real life and CG. • Justify the role of different elements in CG lighting and shading. • Inspect tools and techniques available in Lighting and suggest appropriate strategies for CG imagery • Compose a visual expression for artwork for desired styling. • Describe the Indirect lighting techniques	

Lab Experiments:

1. Create Material Shader for Wood and Metal
2. Create Shaders for Plastic
3. Create Rock Surface.
4. Creating CG lighting for interior & Exterior
5. UV unwrapping for Interior & Exterior
6. Create a Product Lighting for given asset.
7. Create Candle Light Effect
8. Create 2 - Point Lighting for Given Character
9. Create 3 - Point Lighting for Given Character
10. Mental ray & Software rendering fog
11. Render layers
12. Render passes

Text Books	1. Lighting and Rendering in Maya: Lights and Shadows by Jeremy Birn 2. Digital Lighting and Rendering (2nd Edition) by Jeremy Birn(May 7, 2006) 3. ShaderX7: Advanced Rendering Techniques by Wolfgang Engel (Mar 12, 2009)
Reference Books	3. Light Shadow Space: Architectural Rendering with Cinema 4D® by Horst Sondermann 4. Advanced Lighting and Materials with Shaders by Kelly Dempski and Emmanuel Viale (Oct 31, 2004)

Course Outcome for AN3305

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Student should able to memorize about concept of photography and its process, camera parts and features	4	none
CO2	Student should able to understand about the types of camera and lenses and their modes	3	S
CO3	Student should able to memorize about composition and framing of the shot and lighting setup in photography	3	S
CO4	Student should able to understand the basic concept of photo editing and color correction	3	Ent
CO5	Student should able to understand about the combination of lights and use of diffusers and reflectors	3	Emp

CO-PO Mapping for AN3305

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3306	Title: **Project - III**	L T P C 0 0 4 2

Version No.		
Course Prerequisites	Nil	
Objectives	To interpret the 3D Dynamics To identify story and visualization To elucidate the identification and execution of 3D Dynamics Project To apply the communication skills To describe presentation skills	
Expected Outcome	To understand the 3D Dynamics project pipeline. To demonstrate story and visualization To analyze the identification and execution of the 3D Dynamic Project To apply communication skills in the project To create 3D Dynamics project	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Introduction to Project**	12Hrs
Pipeline of 3D Dynamics, project management		
Unit II	**Ideation of Project**	12Hrs
Idea, story and script for 3D Dynamics		
Unit III	**Visuals in Project**	12Hrs
Drawing, storyboard, visualization, identification and execution for 3D Dynamics		
Unit IV	**Communications for Project**	12Hrs
Communications within the team for finishing the project on the deadline. Proper naming conventions for the project.		
Unit V	**Presentation**	12Hrs
Creating handouts for the project, presenting the 3D Dynamics. Creating a report.		
Text Books	1.Ideas for the Animated Short: Finding and Building Stories 2.The Digital Art Technique Manual for Illustrators & Artists: The Essential Guide to Creating Digital Illustration and Artworks Using Photoshop, Illustrator, and Other Software by Joel Lardner, Paul Roberts 3. Autodesk Maya 2022 Basics Guide 4. Maya Studio Projects: Dynamics - Todd Palamar, Publisher: Sybex; 1 edition	
Reference Books	The Animator's Survival Kit: A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome for AN3306

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Student should able to memorize about concept of photography and its process, camera parts and features	4	none
CO2	Student should able to understand about the types of camera and lenses and their modes	3	S
CO3	Student should able to memorize about composition and framing of the shot and lighting setup in photography	3	S
CO4	Student should able to understand the basic concept of photo editing and color correction	3	Ent
CO5	Student should able to understand about the combination of lights and use of diffusers and reflectors	3	Emp

CO-PO Mapping for AN3306

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

SEMESTER IV

AN3402	**Title: Character & layout Design Concepts**	**L T P C** 3 0 0 3
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To elucidate visualization skills for character design • To explain anthropomorphism in character • To create handouts • To use layout design in animation • To design back ground with planning	
Course Outcome	• Discover the significance of BG and Character in media. • Appraise the possible strategies in designing BG and Character for preferred media. • Analyze the significance of background and character in cinematography. • Design the Layout for visual expression for preferred genre. • Create character and background design for animation.	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Character Design:**	8 Hrs
• Character Design - Character Visualization, Character Bible, Stereotypes, Developing Character for Comics, Films and TV Episode. Elements of Character Design Creating Characters from Life		
Unit II	**Anthropomorphism**	9 Hrs
• Anthropomorphism , Definition and meaning, Use of Anthropomorphic Characters in Modern Literature, Films and Television, Theo Morphs and Pathetic Fallacy		
Unit III	**Handouts:**	9 Hrs
• Preparing handouts, Importance of Handouts, Various Elements of Handouts, Model Sheet, Turnaround Sheet, Proportion Chart, Scale Sheet, Expression and Mouth Chart, Color Ref Sheet, Prop Sheet, Contemporary Designs.		
Unit IV	**Layout Design**	9 Hrs
• Layout Design - Introduction to Layout, importance of layout in Animation, Perspective- one point, two point, Three point, Warped, Schematics Projection, Cinematic Camera Angles. Preparing/Posing Layouts, Aspect Ratio, field guides, Schematic mapping, Camera Movements – tracking, zoom, panorama, Camera movement calculation to animation – matching speeds		
Unit V	**BG Design**	10 Hrs

• Multi plane, BG Design and painting – levels, depth, perspective - transitioning to move from one kind of space to another in a single background. Planning and design. Color Notations, Landscapes, Cityscapes, Laying out the Animation, Concept sketches, Interior/exteriors, Passage of time, Different moods, Spaces, Design of elements, Treatment	
Text Books	1 Animation Background Layout: From Student to Professional by MikeS. Fowler 2 Setting the Scene: The Art & Evolution of Animation Layout by Fraser MacLean 3 Cartoon Animation (The Collector's Series) [Paperback], Preston Blair
Reference Books	1. Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI- Jerry Beck
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3402

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the language of cinema and the primary knowledge of making	2	Emp
CO2	Understand the sequence for a film	2	S
CO3	Understand the history of early stage cinema in India and the most important changes in Indian cinema and its culture.	2	S
CO4	Write script and screenplay for the film and documentaries.	3	Ent
CO5	Understand the roles and responsibilities of the cinematographer and its tool and techniques.	5	None

CO-PO Mapping for AN3402

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	2	3	3	0	3	2	1	2	2	1	3	3	2	2	2
CO 2	2	2	2	3	0	2	3	1	2	3	2	0	1	0	0
CO 3	3	1	3	2	3	2	3	0	2	1	0	1	3	2	3
CO 4	2	1	1	3	2	3	1	3	2	3	3	2	3	3	3
CO 5	3	1	3	3	1	0	3	2	2	1	1	3	2	2	1
Avg	2.4	1.6	2.4	2.2	1.8	1.8	2.2	1.6	2	1.8	1.8	1.8	2.2	1.8	1.8

AN3403	**Title: Rotoscopy & Paint**	**L T P C** 2 0 6 5
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To evaluate from the history to the latest tools and techniques used in rotoscopy • To familiarize the different types of splines used in various rotoscoping software's and fine-tuning them. • To discover tracking and match moving and using it for creating masks. • To learn rotoscoping organic objects like human, animal, and working on details. • To understand masking of cloth and working with secondary motion	
Course Outcome	• Usage of rotoscopy in various occasions in a composite. • Implement masking for simplification of other process like keying and tracking. • Composite organic and inorganic object on new BG with help of detailed rotoscopy. • Implement various tracking methods on compositing shots as per requirements. • Implement Paint techniques for the composited shots.	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Rotoscopy**	6 Hrs
• History of Rotoscoping, Latest tools for Roto, Terminologies, Shortcuts to work faster Understanding the frame, shot length, planning the matte usage, multiple shapes, Repeating shapes, Keying animation, Motion paths		
Unit II	**Creating Shapes**	6 Hrs
• Creating splines, transitioning between shapes, working with pivot points, Key frame placement and types, working with Blur, Motion blur, checking the mattes, jitter		
Unit III	**Tracking**	6 Hrs
• Tracking and scale, tracking and rotation, multiple transforms, averaging tracks, corner pinning, stabilizing footage		
Unit IV	**Rotoscoping Object**	6 Hrs
Rotoscoping Human, Isolating extremities, Joints, Hands, Overlap, fixed shapes, faces and heads, hair, Rotoscoping movement, fast and slow movement, tracking to optimize roto, Clothing, Shape breakdown, consistent point placement, secondary motion		
Unit V	**Painting**	6 Hrs
Concepts and tools for painting, Cleaning plates, Wire and Rig Removal, Pixel restoration.		

Text Books	1. Rotoscoping –Techniques and tools for the aspiring artists By Benjamin Bratt
Reference Books	1. Compositing Visual Effects–Essentials for the Aspiring Artist – Steve Wright
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome ForAN3403

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand fx and simulation principle and use particle system to create simulation.	2	Emp
CO2	Understand nParticles and create fluid	2	S
CO3	Create ocean, pond etc.	2	S
CO4	Apply nHair to objects and simulate nhair.	3	Ent
CO5	Understand rigid body, soft body and create realistic simulation, which allow him to work for animation and visual effects studios, film companies, game design companies globally.	5	None

CO-PO Mapping for AN3403

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	1	1	0	2	2	2	2	2	3	3	2	2	2	2
CO 2	2	2	2	3	0	2	3	2	2	3	3	0	1	0	0
CO 3	1	3	3	2	2	0	1	0	0	1	0	2	2	3	3
CO 4	1	1	1	3	3	3	1	2	2	3	1	2	3	2	3
CO 5	3	1	3	3	2	3	3	2	3	0	3	2	2	1	2
Avg	2	1.6	2	2.2	1.8	2	2	1.6	1.8	2	2	1.6	2	1.6	2

AN3403	**Title: Rotoscopy & Paint Lab**	**L T P C** 2 0 6 5
Course Objectives	• To evaluate from the history to the latest tools and techniques used in rotoscopy • To familiarize the different types of splines used in various rotoscoping software's and fine-tuning them. • To discover tracking and match moving and using it for creating masks. • To learn rotoscoping organic objects like human, animal, and working on details. • To understand masking of cloth and working with secondary motion	
Course Outcome	• Usage of rotoscopy in various occasions in a composite. • Implement masking for simplification of other process like keying and tracking. • Composite organic and inorganic object on new BG with help of detailed rotoscopy. • Implement various tracking methods on compositing shots as per requirements. • Implement Paint techniques for the composited shots.	

Lab Experiments:

1. Rotoscope the props in the lock of camera shot
2. Rotoscope the objects using basic shapes
3. Accurately rotoscope the character leg movement using multiple shape method
4. Animate 5 frames of the multi-shape roto for the character
5. Using the motion path animation method, rotoscope the TV frame
6. Work with the transition frame method and implement for the hand movement in the shot
7. Work with Key frame placement and types for better roto animation
8. Rotoscope the Blur shot
9. Analyse the jitter for the shot and fine tune the roto
10. Rotoscope the shot with motion blur
11. Track the shot and apply it for the roto for scale and rotation
12. Rotoscopy the human body with proper shape overlaps
13. Roto the secondary movement in the shot including cloth and replace the BG
14. Create a clean plate for the Shot and replace it with the BG
15. Perform Wire removal for the shot using paint techniques
16. Composite the Shot after removing the wires and rig and perform Keying for BG replacement.

Unit II	**Creating Shapes**	6 Hrs
• Creating splines, Transitioning between shapes, working with pivot points, Key frame placement and types, working with Blur, Motion blur, checking the mattes, jitter		
Unit III	**Tracking**	6 Hrs

• Tracking and scale, tracking and rotation, multiple transforms, averaging tracks, corner pinning, stabilizing footage		
Unit IV	**Rotoscoping Object**	6 Hrs
Rotoscoping Human, Isolating extremities, Joints, Hands, Overlap, fixed shapes, faces and heads, hair, Rotoscoping movement, fast and slow movement, tracking to optimize roto, Clothing, Shape breakdown, consistent point placement, secondary motion		
Unit V	**Painting**	6 Hrs
Concepts and tools for painting, Cleaning plates, Wire and Rig Removal, Pixel restoration.		
Text Books	1. Rotoscoping –Techniques and tools for the aspiring artists By BenjaminBratt	
Reference Books	1. Compositing Visual Effects–Essentials for the Aspiring Artist - SteveWright	

Course Outcome ForAN3403

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand fx and simulation principle and use particle system to create simulation.	2	Emp
CO2	Understand nParticles and create fluid	2	S
CO3	Create ocean, pond etc.	2	S
CO4	Apply nHair to objects and simulate nhair.	3	Ent
CO5	Understand rigid body, soft body and create realistic simulation, which allow him to work for animation and visual effects studios, film companies, game design companies globally.	5	None

CO-PO Mapping for AN3403

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	1	1	0	2	2	2	2	2	3	3	2	2	2	2
CO 2	2	2	2	3	0	2	3	2	2	3	3	0	1	0	0
CO 3	1	3	3	2	2	0	1	0	0	1	0	2	2	3	3
CO 4	1	1	1	3	3	3	1	2	2	3	1	2	3	2	3
CO 5	3	1	3	3	2	3	3	2	3	0	3	2	2	1	2
Avg	2	1.6	2	2.2	1.8	2	2	1.6	1.8	2	2	1.6	2	1.6	2

AN3404	**Title: Advanced Compositing Techniques**	**L T P C** 2 0 8 6
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To familiarize the students with compositing CGI with Live action using various Compositing techniques. • To describe various advanced compositing techniques like Camera Projection, tracking and Rotoscopy techniques. • To construct CGI elements within the realm of the 3D workspace of the Compositing Package. • To work on camera tracking skills	
Course Outcome	• Recall the integrating of passes for compositing using Nuke • Interpret various color manipulation techniques used for digital image generation • Demonstrate advanced compositing techniques of the node based compositing software – NUKE • Perform 3D manipulation techniques of working in the 3D work space of NUKE • Create seamless integration of CGI and live action Plates using Camera Projection, tracking and Rotoscopy techniques.	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Passes for Compositing**	6 Hrs
• Pass Management, Bit Depth Allocation, Finding the Best Depth Channels, Color Channels for the Project		
Unit II	**LUT**	6 Hrs
• The LUT use and Specifications, Finding the Black' sand White's, Node reusing to Maintain Color Correction, UseofPlugin'sin3DChannels		
Unit III	**Advanced Compositing**	6 Hrs
• Chroma Keying, Tracking and Stabilizing, Composite Hair and Fur, Using Vector Blur for Quicker Results		
Unit IV	**Working in 3D**	6 Hrs
• 3D Compositing workflow,3D match move, Environmental Mapping, Creating Reflections.		
Unit V	**Camera Projection and Tracking**	6 Hrs
3DCameraProjectionandTracking,3DChannelsandDepthCreationusingRelight and Rotoscopy Solutions.		

Text Books	1 Compositing Digital Images by T. Porter and T. Duff I Proceedings of SIGGRAPH '84, 18 (1984) I 2 The Art and Science of Digital Compositing by Ron Brinkmann 3 Wright's Compositing Visual Effects: Essentials for the Aspiring Artist [Paperback]2007) – Paperback (2007) by S.Wright
Reference Books	1 The VES Handbook of Visual Effects by Okun J, Zwerman S. 2 5. Compositing Visual Effects – Essentials for aspiring artists by Steve Wright
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome ForAN3404

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the basics of Composite.	2	Emp
CO2	Understand the use of types of key frames and graph editors.	2	S
CO3	Create different text animation.	2	S
CO4	Understand different principles of animation	3	Ent
CO5	Create motion graphics projects.	5	None

CO-PO Mapping for AN3404

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	3	0	3	2	2	3	0	0	1	0	0
CO 3	1	0	0	2	3	3	3	3	1	0	1	2	2	2	3
CO 4	2	2	2	0	0	3	1	3	2	3	2	1	1	3	2
CO 5	3	2	3	3	2	3	3	2	2	1	3	3	3	3	2
Avg	2.2	1.8	2	2	2.2	2.2	2.2	2.4	1.8	2	1.8	1.8	1.8	2	1.8

AN3404	**Title: Advanced Compositing Techniques Lab**	**L T P C** 2 0 8 6
Course Objectives	• To familiarize the students with compositing CGI with Live action using various Compositing techniques. • To describe various advanced compositing techniques like Camera Projection, tracking and Rotoscopy techniques. • To construct CGI elements within the realm of the 3D workspace of the Compositing Package. • To work on camera tracking skills	
Course Outcome	• Recall the integrating of passes for compositing using Nuke • Interpret various color manipulation techniques used for digital image generation • Demonstrate advanced compositing techniques of the node based compositing software – NUKE • Perform 3D manipulation techniques of working in the 3D work space of NUKE • Create seamless integration of CGI and live action Plates using Camera Projection, tracking and Rotoscopy techniques.	

Lab Experiments:

1. Create a 2D compositing using 2D draw nodes and roto inside Nuke
2. Render and compose cg passes using open extr and tga image
3. Compose different color space contain in one composition
4. Match the cg passes with live action footage using white and black point for each channel
5. Use of Plugin's in 3D Channels
6. Render and compose cg passes with depth Ext contain
7. Compositing Foliage, Hair and Fur
8. Add motion blur, depth of field/fog using auxiliary passes
9. Create Macros to compose rgb light pass
10. Create space scene using 3d space
11. 3D Camera Projection and Tracking
12. 3D Channels and Depth Creation
13. RGB Mattes and Rotoscopy Solutions

Text Books	1 Compositing Digital Images by T. Porter and T. Duff I Proceedings of SIGGRAPH '84, 18 (1984) I 2 The Art and Science of Digital Compositing by Ron Brinkmann 3 Wright's Compositing Visual Effects: Essentials for the Aspiring Artist [Paperback]2007) – Paperback (2007) by S.Wright
Reference Books	1 The VES Handbook of Visual Effects by Okun J, Zwerman S. 2 5. Compositing Visual Effects – Essentials for aspiring artists by Steve Wright

Course Outcome ForAN3404

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the basics of Composite.	2	Emp
CO2	Understand the use of types of key frames and graph editors.	2	S
CO3	Create different text animation.	2	S
CO4	Understand different principles of animation	3	Ent
CO5	Create motion graphics projects.	5	None

CO-PO Mapping for AN3404

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	3	0	3	2	2	3	0	0	1	0	0
CO 3	1	0	0	2	3	3	3	3	1	0	1	2	2	2	3
CO 4	2	2	2	0	0	3	1	3	2	3	2	1	1	3	2
CO 5	3	2	3	3	2	3	3	2	2	1	3	3	3	3	2
Avg	2.2	1.8	2	2	2.2	2.2	2.2	2.4	1.8	2	1.8	1.8	1.8	2	1.8

	Title: UX & UI DESIGN	**L T P C** 3 0 0 3
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To understand principles behind Human Computer interaction (HCI) • To recognise the importance of User Experience Design (UXD or UED) • Outline various methods of User Centered Design • Summarize User Interface requirements • Apply effective UI / UX designs with case studies.	
Course Outcome	• Apply principles behind HCI (Human Computer Interaction) • List User Experience Design (UXD) techniques • Capture User requirements • Create navigation structure, layout in UI Design • Build an application design	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	Introduction to HCI	6 Hrs
Introduction of Unit, Human-Computer Interaction Foundations, Models & Theories, Programming interactive systems, Conclusion of the Unit		
Unit II	User Experience Design (UXD or UED)	6 Hrs
Overview of UX, Elements of UX, UX Design Process – Research – Design – Prototyping – Testing Measurements, UX Analysis, Design Thinking – Thinking out of box – Empathy – Design Thinking Process, User research, Planning.		
Unit III	User Centered Design	6 Hrs
Introduction, Principles, Elements of UCD, User Centered design Process – Analysis – Design – Implementation - Deployment, Benefits of user centered process.		
Unit IV	User Interface Design (UI)	6 Hrs
Overview of UI – Importance of UI – Characteristics, Design Process, Visual design Concepts, Graphical User interface, Design Tools, Navigation and structure, Composition and Layout Design, Design Icons – Graphic symbols – typography – color theory, Design Patterns and Style guides, Interaction Styles, Naming & Abbreviations.		
Unit V	Case Studies	6 Hrs
Introduction of Unit, Effective UI Design examples, UX Design examples, Common Errors, Conclusion		
Text Books	1 Human-computer Interaction- by Alan Dix and Janet Finlay (Author) – Pearson Education (2004) - ISBN-10: 9788131717035. 2 The Elements of User Experience: User-Centered Design for the Web and Beyond - Voices That Matter Paperback – by Jesse James Garrett (Author) - New Riders; 2 editions (16 December 2010)	

Reference Books	1 UX Design for Mobile - Pablo Perea (Author), Pau Giner (Author)- Packt Publishing - ebooks Account (July 28, 2017)- ISBN-10: 1787283429, ISBN-13: 978-1787283428. 2 User-Centered Design: A Developer's Guide to Building User-Friendly Applications - by Travis Lowdermilk (Author) - O'Reilly Media; 1 edition (29 March 2013) - ASIN: B00C3NX1BW. 3 UI/UX Design Basic and Fundamentals - by Nathan Clark (Author) - Amazon Asia-Pacific Holdings Private Limited - ASIN: B07L6295PG
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the classical animation to different poses	2	Emp
CO2	Create the 2d animation drawings with character expressions	2	S
CO3	Understand & apply principles of animation for frame by frame animation.	2	S
CO4	Understand the animator's drawing tools in Character designing.	3	Ent
CO5	Understand human anatomy study and create different figure drawings.	5	None

CO-PO Mapping

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2		1	1	2	1	2	2	3	1	2	0	3	2	3
CO 3	0	2	1		2	3	2	2		2	2	0	1	3	1
CO 4	2	2	3	2	3	3	2	3	3	1	2	2	3	3	3
CO 5	3	2	1	3	1	0	3	2	1	3	3	3		2	2
Avg	2	2.25	1.8	2	2.2	1.8	2	2.2	2.25	2	2.4	1.6	2.25	2.4	2.2

AN3405	**Title: Match Moving**	**L T P C** 0 0 4 2
Course Objectives	• To Familiarize the tools and techniques to create Match moving and effects • To Understand the camera controls and techniques to shot for camera match-moving • To Discover the different types of tracking in 2d as well as 3d and their applications • To Learn Problem solving techniques to rectify the errors during the process of match-moving • To Create content for broadcast, feature film and animation with 3D match-moving	
Course Outcome	• Resolve stabilization issues in a footage • Integrate seamelessly2D & 3D elements in scene • Explain Photogrammetry process and its application in VFX space • Demonstrate expertise in calibrating camera and enable automatic tracking • Implement various tracking methods on compositing shots as per requirements	
Unit I	**Camera moves and basics of Tracking**	60Hrs
Lab Experiments: 1. Create lock-off camera shot for tracking 2. Create a hand held shot of a chase scene with less distortion 3. Shoot a scene using a handi cam for BG sky replacement 4. Shoot a hand movement scene for 2D tracking 5. Track the hand movement using one-point tracking and add an object on the hand 6. Use 2-point track method to replace the picture frame 7. Auto track the footage and analyze the 3D depth 8. Solve the pan shot and check the output using test objects 9. Replace the TV monitors in the panning shot using 2D tracking method 10. 3D track the shot and use graph editor for 11. Solve the complex camera movement using user tracker 12. Image based modeling on camera movement shot 13. Work with Rolling shutter solver 14. Work with Geometry based tracking for free camera, rotation and zoom shots 15. Hard track (object) & Soft track (object) using geometry-based tracking and user tracking. 16. Work with Mocap solver using multi camera		
Text Books	1. The Art and Technique of Match moving: Solutions for the VFX Artist, author: Erica Hornung, Routledge;1st edition (17 August 2010) 2. Compositing Visual Effects–Essentials for the Aspiring Artist, author: Steve Wright, Routledge;2ndedition (17 January 2013)	

	1. The VES Handbook of Visual Effects, author: Okun J, Zwerman, Focal Press; 1st edition (15 July2010) 2. Motion Picture and Video Lighting, author: Blain Brown, Routledge; Second edition (13September 2007)

Course Outcome for AN3405

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the history of printing in India	2	Emp
CO2	Understand the elements and principles of design.	2	S
CO3	Understand & design the layout and composition for graphics	2	S
CO4	Analyze the Techniques of News Editing	3	Ent
CO5	Understand the basic of Photoshop	5	None

CO-PO Mapping for AN3405

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PEO3
CO 1	2	1	1	2	2	0	1	0	2	1	1	2	2	2	3
CO 2	2	3	1	3	2	2	3	2	0	2	3	0	3	3	0
CO 3	1	0	2	0	3	2	3	3	2	2	2	3	0	0	3
CO 4	2	3	2	3	3	3	2	2	3	3	0	2	2	3	2
CO 5	3	3	3	3	0	3	2	3	3	3	3	3	3	1	2
Avg	2	2	1.8	2.2	2	2	2.2	2	2	2.2	1.8	2	2	1.8	2

AN3406	Title: Project – IV	L T P C 0 0 4 2
Version No.		
Course Prerequisites	Nil	
Objectives	To interpret the VFX project pipeline To identify story and visualization To elucidate the identification and execution of VFX Project To apply the communication skills To plan presentation skills for VFX project	
Expected Outcome	To understand the VFX project pipeline To demonstrate story and visualization To analyze the identification and execution of the VFX Project To apply communication skills in the project To create presentation for VFX project	
Unit No.	Unit Title	No. of hours (per Unit)
Unit I	**Introduction to Project**	12 Hrs
Pipeline of VFX, project management		
Unit II	**Ideation of Project**	12 Hrs
Idea, story and script for VFX		
Unit III	**Visuals in Project**	12 Hrs
Drawing, storyboard, visualization, identification and execution for VFX, rotoscopying, matchmoving and compositing.		
Unit IV	**Communications for Project**	12 Hrs
Communications within the team for finishing the project on the deadline. Proper naming conventions for the project.		
Unit V	**Presentation**	12 Hrs
Creating handouts for the project, presenting the VFX project. Creating a report.		
Text Books	1. Ideas for the Animated Short: Finding and Building Stories 2. The Art and Technique of Matchmoving: Solutions for the VFX Artist author: Erica Hornung,Routledge; 1st edition (17 August 2010) 3. Compositing Visual Effects–Essentials for the Aspiring Artist , author: Steve Wright,Routledge; 2nd edition (17 January 2013)	
Reference Books	1. The VES Handbook of Visual Effects ,author:Okun J, Zwerman ,Focal Press; 1st edition (15 July 2010) 2. Motion Picture and Video Lighting , author:BlainBrown,Routledge; Second edition (13 September 2007)	
Mode of Evaluation	Internal and External Assessment	

Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3406

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the history of printing in India	2	Emp
CO2	Understand the elements and principles of design.	2	S
CO3	Understand & design the layout and composition for graphics	2	S
CO4	Analyze the Techniques of News Editing	3	Ent
CO5	Understand the basic of Photoshop	5	None

CO-PO Mapping for AN3406

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	2	1	1	2	2	0	1	0	2	1	1	2	2	2	3
CO 2	2	3	1	3	2	2	3	2	0	2	3	0	3	3	0
CO 3	1	0	2	0	3	2	3	3	2	2	2	3	0	0	3
CO 4	2	3	2	3	3	3	2	2	3	3	0	2	2	3	2
CO 5	3	3	3	3	0	3	2	3	3	3	3	3	3	1	2
Avg	2	2	1.8	2.2	2	2	2.2	2	2	2.2	1.8	2	2	1.8	2

THREE YEAR SEMESTER V

AN3502	**Title: Film Appreciation and Analysis**	**L T P C** 3 0 0 3
Version No.		
Course Prerequisites	Nil	
Course Objectives	• Understand the process involved in analyzing films through language and grammar. • Understand history of cinema and its various genres and their evolution • Analyze films based on study and create documentation of feedback.	
Course Outcome	• Categorize the process involved in analyzing films through language and grammar. • Explain history of cinema, its various genres, and their evolution. • Analyze films based on study and create feedback documentation. • Examine elements involved in making a film • Evaluate film case studies	
Unit No.	**Unit Title**	No. of hours (per Unit)
Unit I	History of Cinema and Genre Studies:	8 Hrs
• History of Cinema and Genre Studies, A brief history of early evolution of cinema; Era of silent films. • Introduction to different approaches in storytelling as seen from Live Action, Documentary and Animation.		
Unit II	Film Genres:	9 Hrs
• Film Genres, Definition, Introduction to various film genres Categories, Film Noir.		
Unit III	Story structure:	9 Hrs
• Story structure: Story / script / Story boarding; Developing Story ideas, Designing the Plot, Plot development and Plot devises, Story narration, Character development in the story.		
Unit IV	Film Grammar & language:	9 Hrs

• Mise-En Scene, Elements of Mise-en scene: Representation of space. • Set designing –colour design and symbolism in sets lighting – costume designing, Acting and types of acting		
Unit V	Case studies:	10 Hrs
• Case studies, Film viewing and analysis.		
Text Books	1.Story: Substance, Structure,StyleandthePrinciplesofScreenwriting.ByRobertMcKee1997.	
Reference Books	1.MakingComics: Storytelling Secrets of ComicsbyScottMcCloud2006	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome for AN3502

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the classical animation to different poses	2	Emp
CO2	Create the 2d animation drawings with character expressions	2	S
CO3	Understand & apply principles of animation for frame by frame animation.	2	S
CO4	Understand the animator's drawing tools in Character designing.	3	Ent
CO5	Understand human anatomy study and create different figure drawings.	5	None

CO-PO Mapping for AN3502

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2		1	1	2	1	2	2	3	1	2	0	3	2	3
CO 3	0	2	1		2	3	2	2		2	2	0	1	3	1
CO 4	2	2	3	2	3	3	2	3	3	1	2	2	3	3	3
CO 5	3	2	1	3	1	0	3	2	1	3	3	3		2	2
Avg	2	2.25	1.8	2	2.2	1.8	2	2.2	2.25	2	2.4	1.6	2.25	2.4	2.2

AN3503	**Title: Motion Graphics**	**L T P C** 2 0 4 4
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To Familiarize the tools and techniques to create Motion graphics and effects • To Learn Problem solving techniques to rectify the errors during the process of motion graphics • To formulate content for broadcast, feature film and animation. • To understand the types of titles and implement animation methods in new titles • To discover the typography and effects used in film and other visual mediums.	
Course Outcome	• Discover the significance and evolution of Motion Graphics. • Appraise the strategies for tools and techniques in Motion Graphics. • Apply the graphical illustrations to produce interactive graphics. • Compose a visual expression for Artwork using motion graphics. • Create motion graphics with final output.	
Unit No.	**Unit Title**	No. of hours (per Unit)
Unit I	**Introduction to Motion Graphics:**	6 Hrs
• History of Motion Graphics, early animation techniques, early cinematic inventions, experimental animation, Motion graphics in Film titles and television, Montages, Film Titles, Network Branding, Commercials, Music videos, Interactive Media, Digital signage, New Technology		
Unit II	**Tools and Techniques:**	6 Hrs
• Creating a composition, A matter of Time and Space, Layer Essentials, trimming layers, Stretch, Reverse and Blend, Motion blur, Modes, Masks and Mattes		
Unit III	**Motion Theory:**	6 Hrs
• The language of motion, spatial and temporal motion, coordinating movement. Visual properties, Image considerations, Typography animation, blending all three mediums, pictorial composition, sequential composition.		

Unit IV	**Animation in Motion Graphics:**	6 Hrs
• Animation process, Key frame animation, using • effects and expressions, animating using sound, Using the puppet tool and the Roto Brush Tool, Building 3D objects, using 3D Features		
Unit V	**Editing:**	6 Hrs
• Editing, Cuts and transitions, establishing pace and rhythm, Birth Life and death, appending audio, Final output		
Text Books	1. Creating Motion Graphics with After Effects: Essential and Advanced Techniques, by Chris Meyer 2. Adobe After Effects 2022 – Classroom in a book	
Reference Books	1. Techniques for Visual Effects, Animation and Motion Graphics (The Morgan Kaufmann Series in Computer Graphics) - Ron Brinkmann (Author)	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome ForAN3503

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand basic of 3d animaiton.	2	Emp
CO2	Understand playback controls in maya.	2	S
CO3	Understand and create graph editor.	2	S
CO4	Create animation Constrains in maya.	3	Ent

CO5	Understand and create animation tools.	5	None

CO-PO Mapping for AN3503

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	3	0	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	0	2	3	2	2	3	0	0	1	0	0
CO 3	1	3	3	2	3	1	3	0	0	1	0	2	2	3	3
CO 4	2	1	1	3	2	3	1	3	2	3	3	2	3	3	3
CO 5	3	1	3	1	2	3	3	2	2	1	3	3	2	1	2
Avg	2.2	2	2.4	1.8	2	2.2	2.2	1.8	1.6	2.2	1.8	2	2	1.8	2

AN3503	**Title: Motion Graphics lab**	**L T P C** 0 0 4 2
Course Objectives	• To Familiarize the tools and techniques to create Motion graphics and effects • To Learn Problem solving techniques to rectify the errors during the process of motion graphics • To formulate content for broadcast, feature film and animation. • To understand the types of titles and implement animation methods in new titles • To discover the typography and effects used in film and other visual mediums.	
Course Outcome	• Discover the significance and evolution of Motion Graphics. • Appraise the strategies for tools and techniques in Motion Graphics. • Apply the graphical illustrations to produce interactive graphics. • Compose a visual expression for Artwork using motion graphics. • Create motion graphics with final output.	
Lab Experiments: 1. Create an animated video using basic shapes 2. Animate the 2d text using presets 3. Animate a 3D typography using 3d composite 4. Blend typography and graphics for music 5. Create a Kinematic typography animation for a song 6. Create a motion graphics using inbuilt plugins like flare and particles 7. Create a logo intro using external plugins 8. Create a 3D logo using Element 3D 9. Using parallax animation method, create a motion graphics video 10. Bled the CG and Live action elements for a TV promo video 11. Create a 2d character animation using motion graphics 12. Create 45 sec title animation for a film 13. Create contemporary motion graphics using effects and live action 14. Create a broadcast logo animation for a TV channel		
Text Books	1 Creating Motion Graphics with After Effects: Essential and Advanced Techniques, by Chris Meyer 2 Adobe After Effects 2022 – Classroom in a book	

Reference Books	1. Techniques for Visual Effects, Animation and Motion Graphics (The Morgan Kaufmann Series in Computer Graphics) - Ron Brinkmann (Author)

Course Outcome for AN3503

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Student should able to memorize about concept of photography and its process, camera parts and features	4	none
CO2	Student should able to understand about the types of camera and lenses and their modes	3	S
CO3	Student should able to memorize about composition and framing of the shot and lighting setup in photography	3	S
CO4	Student should able to understand the basic concept of photo editing and color correction	3	Ent
CO5	Student should able to understand about the combination of lights and use of diffusers and reflectors	3	Emp

CO-PO Mapping for AN3503

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3504	**Title: Advanced 3D Animation**	**L T P C** 2 0 6 5
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To Understand Animation story telling techniques. • To Formulate Preproduction workflow for Animation pipeline. • To analyze various acting methodologies for effective storytelling. • To learn the tools to create 3d animation. • To apply principles of animation for 3D workflow.	
Course Outcome	• Knowledge of storytelling requirement for animation medium. • Improve knowledge of acting & body mechanics for realistic animation. • Evaluate strategy for animation workflow. • Demonstrate 3D animation techniques for small and big screens. • Create 3D animated walk cycles	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	Script and Story:	6 Hrs
• Acting for a script, animating from script– telling the story – Sequence and shots, Aspects of Staging the shots, Creating reference for Animation		
Unit II	Animation Pre-production:	6 Hrs
Planning out how the scene should be animated, Thumbnailing and basic staging of the Character, Staging/Camera/Layout - Setting the Stage, Exploring the he important concept for presenting an Clear Idea and Facial Emotion, Essence of Cinematography		
Unit III	Aesthetics:	6 Hrs
Acting aesthetics, Method Acting and Practical aesthetics, Difference between method acting and Practical Aesthetics, Performance of a shot, Aspects of hitting all the right beats clearly.		
Unit IV	Animation in process:	6 Hrs
Blocking, working out the Story Telling Poses, Working on the next level in Blocking. Adding in breakdowns, Built in Overlaps, Secondary animation, working on the Clothing and Animating Hair and appendages of the Character, Refinement of the Final Animated Scene.		
Unit V	Walk Cycles:	6 Hrs

Introduction to Animal Locomotion, Quadrupeds Walk cycles, Run Cycles, Edward Muybridge and his pioneering contributions to Human and Animal Locomotion, Principles of Locomotion, Fossorial Locomotion, Terrestrial Locomotion, Aerial and ArborealLocomotion, AquaticLocomotion, Legged locomotion.	
Text Books	1. "The Animator's Survival Kit" by Richard Williams 2. "The Animator's Workbook" by Tony White 3. "Shot by shot visualizing from concept to screen" by Steven D. Katz
Reference Books	1. "How to Cheat in Maya 2012" by Eric Luhta& Kenny Roy 2. Maya Character Animation, 2nd Edition by Jae-Jin Choi and Sybex (Feb 2, 2004)
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome ForAN3504

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand basic of 3d animaiton.	2	Emp
CO2	Understand playback controls in maya.	2	S
CO3	Understand and create graph editor.	2	S
CO4	Create animation Constrains in maya.	3	Ent
CO5	Understand and create animation tools.	5	None

CO-PO Mapping for AN3504

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	0	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	0	2	3	2	2	3	0	0	1	0	0
CO 3	1	3	3	2	3	1	3	0	0	1	0	2	2	3	3
CO 4	2	1	1	3	2	3	1	3	2	3	3	2	3	3	3
CO 5	3	1	3	1	2	3	3	2	2	1	3	3	2	1	2
Avg	2.2	2	2.4	1.8	2	2.2	2.2	1.8	1.6	2.2	1.8	2	2	1.8	2

	Title: Advanced 3D Animation Lab	L T P C 0 0 6 3
Course Objectives	• To Understand Animation story telling techniques. • To Formulate Preproduction workflow for Animation pipeline. • To analyze various acting methodologies for effective storytelling. • To learn the tools to create 3d animation. • To apply principles of animation for 3D workflow.	
Course Outcome	• Knowledge of storytelling requirement for animation medium. • Improve knowledge of acting & body mechanics for realistic animation. • Evaluate strategy for animation workflow. • Demonstrate 3D animation techniques for small and big screens. • Create 3D animated walk cycles	

Lab Experiments:

- Walk cycles biped character
- Biped Sad Walk cycle, Biped personality walk
- Quadruped walk,
- Create PPT on- Acting
- Story and Idea for small animation clip
- Story board and animatics for animation clip
- thumbnail & Story board for short animation clip
- Creating reference for animation short clip
- Thumbnail to animation planning for animation clip
- Animation layout blocking with timing
- Posing with Animation principals
- Animation blocking and breakdown keys of Animation clip
- Adding secondary action and principals in animation clip
- Animating cloths and hairs

Text Books	1. "The Animator's Survival Kit" by Richard Williams 2. "The Animator's Workbook" by Tony White 3. "Shot by shot visualizing from concept to screen" by Steven D. Katz
Reference Books	3. "How to Cheat in Maya 2012" by Eric Luhta& Kenny Roy 4. Maya Character Animation, 2nd Edition by Jae-Jin Choi and Sybex (Feb 2, 2004)

Course Outcome

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand user interface of after effect.	2	Emp
CO2	Understand graph editor.	2	S
CO3	Apply Track Matte and remove chroma key.	2	S
CO4	Apply tracking on video footage.	3	Ent
CO5	Create motion graphics projects.	5	Emp

CO-PO Mapping

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	0	2	2	2	2	3	0	3	3	1	0
CO 3	1	3	1	2	3	0	3	1	0	0	3	2	2	3	3
CO 4	2	2	3	3	2	3	1	3	2	3	2	2	0	3	3
CO 5	3	1	0	1	2	3	3	1	3	3	3	1	3	3	3
Avg	2.2	2.2	1.8	2.2	2	2	2	1.8	1.8	2.4	2.2	2.2	2	2.4	2.2

AN3504	**Title: Advanced Modeling and Texturing**	**L T P C** 2 0 6 5
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To illustrate different kinds of Environmental styles for effective layout design. • To discuss aesthetics of Automobile design and its implementation in 3D space • To analyses game asset creation requirements. • To create a Photorealistic biped and quadruped model • To experiment with advanced sculpting techniques using Z brush	
Course Outcome	• Create stylized and photorealistic environment. • Create photorealistic organic and inorganic models. • Formulate strategies for UV unwrapping. • Apply advanced shading techniques. • Stylize sculpting using advanced Z brush tools.	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Studying different kinds of Environment styles:**	6 Hrs
• Learning and observing the different styles, Architecture, learning the aesthetic sensibilities of different styles, Proportions, Volume and Scale. Creating your own concept and modeling a natural environment in 3d, working with complex shapes which are semi organic, learning the importance of detailing to achieve a realistic output. Creating your own concept and modeling a sci-fi environment in 3d, working with complex inorganic shapes. Creating your own concept and modeling an urban environment in 3d, working with complex structures.		
Unit II	**Auto mobile modelling & Creating a Quadruped model:**	6 Hrs
• Studying a simple automobile model of your choice, learning the different shapes in corporate in the model and creating the same in 3d. Studying a complex auto mobile model of your choice, learning the complex shapes in corporated in the model and creating the same in 3d. Studying a simple functional object, studying the mechanics of that object and modeling the same in 3d. Studying a complex functional object, studying the mechanics of that object and modeling the same in 3d. • Learning different styles of quadruped characters, creatingyourowncharacterdesignandimplementingthesamein3d.Modelingthequadrupedcharacterandachievingarealistic output.		
Unit III	**Understanding Human Anatomy:**	6 Hrs

• Learning the forms and shapes of the human body, understanding the bone structure, muscles and functionality of each, Mesh flow, Optimization, learning different styles of cartoonic characters, creating your own character design and implementing the same in 3d. Learning different styles of semi realistic characters, creating your own character design and implementing the same in 3d. Realistic human modeling. • Learning different styles of realistic characters and implementing the same in 3d at a blocking level determining the basic shapes and form. Modeling the human character up.		
Unit IV	**Unwrapping techniques for an organic model:**	6 Hrs
• Matching UV density, effectively layout the UV's. Creating basic textures in Photoshop for a 3d character, library for textures, photograph for texturing, hard surface texturing, soft surface texturing, various maps - diffuse map, specular map, bump map, normal map generation, occlusion map, etc.		
Unit V	**IntroductiontoZbrush / MudboxInterface:**	6 Hrs
• ThebasicinterfaceofZbrushorMudboxwillbeintroducedinthistopic.Thedifferent tools will be introduced here to explore the possibilities to create a realisticmodel. • Basic sculpting techniques for organicand inorganic models will be introduced heretoachievearealisticoutput, modelscreatedinthepreviousUnitswillbeusedhereto give added detail.		
Text Books	1. DigitalModeling,author:WilliamVaughan,(Jan2, 2012) 2. Maya2008CharacterModelingand Animation,author:TerezaFlaxman,CharlesRiverMedia;Pap/Comedition (7January 2008)	
Reference Books	1. ZBrush Studio Projects: Realistic Game Characters, author: Ryan Kingslien. Sybex; 1st edition (March 15, 2011) 2. Anatomy for 3D Artists: The Essential Guide for CG Professionals, Chris Legaspi and Matthew Lewis,2015	
Mode of Evaluation	Internal and External Assessment	
Recommendation by Board of Studies on	20-10-2022	
Date of approval by the Academic Council	20-10-2022	

Course Outcome ForAN3504

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand 3d views and user interface of maya.	2	Emp
CO2	Create 3d basic objects using NURBS tools.	2	S
CO3	Create 3d basic objects using polygon tools.	2	S
CO4	Understand importance of lighting.	3	S
CO5	Understand basic of texturing.	5	None

CO-PO Mapping for AN3504

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	2	1	3	1	3	3	2	3	3	2	3
CO 3	1	2	0	0	2	0	0	1	0	2	0	0	2	3	3
CO 4	2	2	3	2	2	3	2	2	2	1	2	2	3	0	0
CO 5	3	0	1	3	1	2	3	3	2	1	3	3	0	2	2
Avg	2.2	1.8	1.8	2	2	1.6	1.8	1.8	1.8	2	2	2.2	2	1.8	2

AN3504	**Title: Advanced Modeling and Texturing Lab**	**L T P C** 2 0 6 5
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To illustrate different kinds of Environmental styles for effective layout design. • To discuss aesthetics of Automobile design and its implementation in 3D space • To analyses game asset creation requirements. • To create a Photorealistic biped and quadruped model • To experiment with advanced sculpting techniques using Z brush	
Course Outcome	• Create stylized and photorealistic environment. • Create photorealistic organic and inorganic models. • Formulate strategies for UV unwrapping. • Apply advanced shading techniques. • Stylize sculpting using advanced Z brush tools.	

Lab Experiments:

1. Create a Sci-fi environment – concept & Creation
2. Simple automobile model
3. Working with complex automobile models, logo
4. Working with Functional objects and mechanics
5. Create four Props for given scene
6. Create a Low polygon for given character
7. Concept generation, low polygon environment for given scene
8. Create a Model according to the character sheet provided
9. Creating a simple quadruped model
10. Creating a quadruped model -detailed
11. Creating texture in Photoshop with photographs
12. Create occlusion map and normal map for the model
13. Using lightbox and canvas, Brushes, masks, create a basic model
14. Create primitive 3D meshes for hyper realistic model

Text Books	3. Digital Modeling, author: William Vaughan, (Jan2, 2012) 4. Maya2008CharacterModelingand Animation, author:Tereza Flaxman, CharlesRiverMedia;Pap/Comedition (7January 2008)
Reference Books	3. ZBrush Studio Projects: Realistic Game Characters, author: Ryan Kingslien. Sybex; 1st edition (March 15, 2011) 4. Anatomy for 3D Artists: The Essential Guide for CG Professionals, Chris Legaspi and Matthew Lewis,2015

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand 3d views and user interface of maya.	2	Emp
CO2	Create 3d basic objects using NURBS tools.	2	S
CO3	Create 3d basic objects using polygon tools.	2	S
CO4	Understand importance of lighting.	3	S
CO5	Understand basic of texturing.	5	None

CO-PO Mapping

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	2	1	3	1	3	3	2	3	3	2	3
CO 3	1	2	0	0	2	0	0	1	0	2	0	0	2	3	3
CO 4	2	2	3	2	2	3	2	2	2	1	2	2	3	0	0
CO 5	3	0	1	3	1	2	3	3	2	1	3	3	0	2	2
Avg	2.2	1.8	1.8	2	2	1.6	1.8	1.8	1.8	2	2	2.2	2	1.8	2

AN3505	**Title: Advanced Rigging**	**L T P C** 2 0 6 5
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To explain rigging for animals. • To analyse skeleton system in animals. • To assess full body controls • To appraise importance of multi pedal character. • To demonstrate skeleton systems of a bird.	
Course Outcome	• Discover the basic concepts of rigging and elements used in rigging. • The concept of Anatomy of prop, characters in rigging. • Rigging as a process and understand UI, Tools and Techniques in rigging. • Identify the Application of animation principles in Rigging.	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	Rigging a Crain and Snake:	6 Hrs
Understand the skeleton system of a four-legged character (dog/ horse) | create the skeleton system | attach mesh with joints(skinning).		
Unit II	Creating quadruped skeleton system and attach with mesh (skinning):	6 Hrs
Understand the skeleton system of a four-legged character (dog/ horse) | create the skeleton system | attach mesh with joints (skinning).		
Unit III	Creating full body controls for the quadruped character:	6 Hrs
Rig the quadruped with FK IK controls and FK-IK switch. Stretchable legs		
Unit IV	Creating skeleton of a multi pedal character with FK IK controls and skinning:	6 Hrs
Understand the skeleton system of a multi pedal character (spider / ant), create the skeleton system with FK-IK and attach mesh with the joints system (skinning)		
Unit V	Creating skeleton system of a bird complete rig of the bird with FK IK controls:	6 Hrs
Understanding skeleton structure of a bird, creates the skeleton system, attach mesh with the joints and Complete rig of the bird with wings controls		
Text Books	1. Body Language: Advanced 3D Character Rigging by EricAllen 2. Rig it Right! Maya Animation Rigging Concepts (Computers and People) by Tina O'Hailey	

Reference Books	1. Body Language: Advanced 3D Character Rigging by Eric Allen, Kelly L. Murdock, Jared Fong and Adam G. Sidwell (May 5,2008) 2. Inspired 3D Advanced Rigging and Deformations by Brad Clark, John Hood and Joe Harkins (Mar 25,2005
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome ForAN3505

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand Joints, IK/FK, handles/controls, constraints in maya.	2	Emp
CO2	Understand and create Skinning in maya.	2	S
CO3	Create Blend shapes in maya.	2	S
CO4	Undrstand and create Deformers in maya.	3	Ent
CO5	Create a rigging charater in maya.	5	None

CO-PO Mapping for AN3505

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	0	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	0	2	0	2	1	3	1	0	1	2	0
CO 3	0	3	0	2	3	1	3	1	0	1	2	2	2	3	3
CO 4	2	1	1	3	2	3	1	3	2	3	3	1	3	0	3
CO 5	3	1	3	1	2	3	3	2	2	1	3	3	2	1	2
Avg	2	2	1.8	1.8	2	2.2	1.6	2	1.4	2.2	2.4	1.8	2	1.6	2

AN3505	**Title: Advanced Rigging Lab**	L T P C 2 0 6 5
Course Objectives	• To explain rigging for animals. • To analyse skeleton system in animals. • To assess full body controls • To appraise importance of multi pedal character. • To demonstrate skeleton systems of a bird.	
Course Outcome	• Discover the basic concepts of rigging and elements used in rigging. • The concept of Anatomy of prop, characters in rigging. • Rigging as a process and understand UI, Tools and Techniques in rigging. • Identify the Application of animation principles in Rigging.	

Lab Experiments:

1. Create a rig setup for four legged animal (dog, horse)
2. Setup joints for given robotic mesh
3. FK IK joint setup for given mesh
4. Create FK IK switch for given rig
5. Joint setup for multi pedal character
6. Create a joint setup for given bird mesh
7. Skin given bird rig
8. Spaceship/ Vehicle Rig (All Kind)
9. Set a controller setup for given rig
10. Joint and controller setup for four legged rig
11. Controller setup for multi pedal character
12. Create controller setup for given bird mesh
13. FK IK controls and FK-IK switch. | Stretchable legs
14. Fish Rig (Automatic rig and Manually Animated rig)

Text Books	3. Body Language: Advanced 3D Character Rigging by EricAllen 4. Rig it Right! Maya Animation Rigging Concepts (Computers and People) by Tina O'Hailey
Reference Books	3. Body Language: Advanced 3D Character Rigging by Eric Allen, Kelly L. Murdock, Jared Fong and Adam G. Sidwell (May 5,2008) 4. Inspired 3D Advanced Rigging and Deformations by Brad Clark, John Hood and Joe Harkins (Mar 25,2005
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022

Date of approval by the Academic Council	20-10-2022

Course Outcome ForAN3505

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand fx and simulation principle and use particle system to create simulation.	2	Emp
CO2	Understand nParticles and create fluid	2	S
CO3	Create ocean, pond etc.	2	S
CO4	Apply nHair to objects and simulate nhair.	3	Ent
CO5	Understand rigid body, soft body and create realistic simulation, which allow him to work for animation and visual effects studios, film companies, game design companies globally.	5	None

CO-PO Mapping for AN3505

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	2	3	3	0	3	2	3	2	2	1	3	1	0	2	2
CO 2	2	2	2	1	0	3	3	3	1	3	0	3	1	0	0
CO 3	1	0	3	2	3	1	1	0	0	1	3	2	2	3	3
CO 4	2	1	1	3	2	3	1	3	2	3	3	1	3	3	0
CO 5	3	3	3	2	2	0	3	2	2	1	3	3	2	1	2
Avg	2	1.8	2.4	1.6	2	1.8	2.2	2	1.4	1.8	2.4	2	1.6	1.8	1.4

AN3505	**Title: Advanced CG Simulation and Effects**	**L T P C** 2 0 6 5
Version No.	**1.0**	
Course Prerequisites	Nil	
Course Objectives	• To explain importance of fluid animation. • To analyse particle morphing. • To assess scripting in fluid simulation. • To appraise the importance of pyro techniques. • To demonstrate methods of special effects.	
Course Outcome	• Discover the fundamentals of Fluid simulation in Real flow. • Demonstrate the significance of different properties of elements in fluid flow and simulation. • Analyze the significance of real world elements and CG elements. • Assess the simulation in houdini • Create Special effects for desired visual effect.	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Introduction to Fluid simulation:**	12 Hrs
• Introduction to Fluid simulations of t ware Real wave and Real flow, emitters, grid based particles, Natural fluid simulation, splash particles, mist and form particles, generation displacement maps, exporting simulation, Forms of liquids, Morphing fluids		
Unit II	**Fluid Simulation projects:**	12 Hrs
• Initial project setup, particle morphing, small-scale fluid simulation, large-scale fluid simulation.		
Unit III	**Using the fluid simulation scripting:**	12 Hrs
• Batch script, scripting reference, working with variables, custom emitter scripting. • Importing simulated meshes into 3D program, shading material for simulated geometry, reflection and refractive materials.		
Unit IV	**Pyro-techniques:**	12 Hrs
• Basic Fire simulation, oil and smoke simulation in houdini, Realistic fluid slighting and rendering using Maya		
Unit V	**Integration with rigid body and softbody/Ncloth:**	12 Hrs
• Understanding nucleus system, Nucleus simulation foundation, Integration of Ncloth / softand rigid body with fire simulation, Maya and real flow integration.		
Text Books	1. Fluid Simulation for Computer Graphics - Robert Bridson, Publisher: A K Peters/CRC Press (September 18, 2008) 2. Blender for Dummies - Jason van Gumster (May 3, 2011)	

Reference Books	1. Adobe After Effects CS6 Visual Effects and Compositing Studio Techniques - Mark Christiansen
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome ForAN3504

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand 3d views and user interface of maya.	2	Emp
CO2	Create 3d basic objects using NURBS tools.	2	S
CO3	Create 3d basic objects using polygon tools.	2	S
CO4	Understand importance of lighting.	3	S
CO5	Understand basic of texturing.	5	None

CO-PO Mapping for AN3504

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	3	2	1	3	1	3	3	2	3	3	2	3
CO 3	1	2	0	0	2	0	0	1	0	2	0	0	2	3	3
CO 4	2	2	3	2	2	3	2	2	2	1	2	2	3	0	0
CO 5	3	0	1	3	1	2	3	3	2	1	3	3	0	2	2
Avg	2.2	1.8	1.8	2	2	1.6	1.8	1.8	1.8	2	2	2.2	2	1.8	2

AN3505	**Title: Advanced CG Simulation and Effects Lab**	**L T P C** 2 0 6 5
Course Objectives	• To explain importance of fluid animation. • To analyse particle morphing. • To assess scripting in fluid simulation. • To appraise the importance of pyro techniques. • To demonstrate methods of special effects.	
Course Outcome	• Discover the fundamentals of Fluid simulation in Real flow. • Demonstrate the significance of different properties of elements in fluid flow and simulation. • Analyze the significance of real-world elements and CG elements. • Assess the simulation in houdini • Create Special effects for desired visual effect.	

Lab Experiments:

1. Create a water fall using fluids
2. Create a sea simulation using fluids
3. Create and animation involving scripting and fluid morphing
4. Create a rain scene at river side with water and other simulations and splashes
5. Create a chocolate add using fluids and models
6. Create a logo animation of logo creating from water to solid design
7. Create the dust simulation of dust falling from a sack and collision
8. Create a smoke simulation of Helicopter landing
9. Creating a simple quadruped model
10. Create a simulation of a space ship emerging from sea
11. Create an add with morphing of butter and chocolate to form a choc-bar
12. Create the water splash simulation from a racing car
13. Simulate realistic fog coming from mouth in a live action scene
14. Composite a real character forming from sand in the live action

Text Books	1. Fluid Simulation for Computer Graphics - Robert Bridson, Publisher: A K Peters/CRC Press (September 18, 2008)
Reference Books	2. Adobe After Effects CS6 Visual Effects and Compositing Studio Techniques - Mark Christiansen
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

	Title: Creative Computing	**L T P C** 3 0 0 3
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To understand functioning of multimedia eco system. • To discuss role of AV in creative computing. • To explain importance of software tools available for a AV design • To understand chroma key techniques • To analyse format requirements for various platforms.	
Course Outcome	• Present overview of multimedia eco system. • Explain the importance AV in knowledge dissemination. • Create an AV design with the given software tools. • Perform chroma key techniques. • List format requirements and video codec	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Multimedia**	8 hrs
Introduction to multimedia, Fundamentals of multimedia; types of Games, PC games, mobile games.		
Unit II	**Audio video Interpretation**	9 hrs
Introduction to computer graphics, image processing; importance of audio, shooting videos, adding sound to videos, diegetic and non-diegetic sound, live and non-live sound.		
Unit III	**Software**	9 hrs
Working with tools for various software like Adobe Photoshop, After Effects, Illustrator, InDesign, Audacity		
Unit IV	**Chroma key technique**	9 hrs
Green mat, blue mat, chroma key setup: keying, changing backgrounds, adding special effects, incorporation of audio video with special effects		
Unit V	**Exporting video**	10 hrs
Exporting techniques, Formats and various formats in exporting. Exporting for high resolution and low resolution, exporting for animation, exporting for various social media.		
Text Books	1. Introduction to Multimedia and Its Applications by V. K. Jain - Paperback – 1 Dec 2012 2. The Ultimate Introduction to DSLR Film Making: Book 1by Danny Yann Kindle Edition 3. Basic Guide Adobe CS5 and superior: Premiere, Media Encoder, Encore, After Effects by BetinaGoetjen Kindle Edition	
Reference Books	1. The Green Screen Handbook: Real-World Production Techniques by Jeff Foster, 1st Edition. 2. Video EditorAdobe After Effects Keyboard Shortcuts for Windows and Macintosh OS. U. C-Abel Books -February 2017 Kindle eBook	

ourse Outcome

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Understand the meaning of Digital effects, effects in Animation & VFX.	1	Emp
CO2	Understand the meaning of Digital effects, effects in Animation & VFX.	2	S
CO3	Create the vector art forms, Create different art works in Photoshop. The student will also be able to make a newcomer understand the basics much proficiently.	1	S
CO4	Understand the color theory in Photoshop software.	2	Ent
CO5	Student should able to understand about the combination of lights and use of diffusers and reflectors	2	Emp

CO-PO Mapping

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3506	**Title: Augmented Reality Lab**	L T P C 0 0 4 2

Version No.		
Course Prerequisites	Nil	
Course Objectives	• To familiarize the students with the history of photography. • To understand characteristics of light. • To develop students with techniques of lighting. • To formulate the ways of accessories used in photography. • To demonstrate the skills of creative photography.	
Course Outcome	• Develop interactive augmented reality applications for both PC based mobile devices using a variety of novel input devices • Understand the AR development techniques • Discuss about asset development required for the AR • Explore the process of building with the help of third-party plugins • Create the augmented reality app.	

Lab Experiments:

1. Creating model with texture for the AR Development
   - Create a character / alien 3d model with texture
   - Create a 3d car model with texture.
2. Creating Animation for AR development
   - Creating character – walk /jump/dance animation.
   - Creating Automobiles - controls animation.
3. Setting up an application using AR toolkit.
   - Set up the Vuforia license for the application.
   - Downloading the target manger database package.
4. Setting up an application using AR toolkit database in game engine
   - Import the AR toolkit package in game engine.
   - Import the database package and link the data set to the image target.
5. Create a simple Augment Reality App build for android.
   - Import assets on the image target in game engine
   - Setup the player settings and build an APK.

Text Books	1. Augmented Reality for Developers: Build practical augmented reality applications with Unity, ARCore, ARKit, and Vuforia - Jonathan Linowes (Author), KrystianBabilinski (Author) - Packt Publishing; 1 edition (October 9, 2017) - ASIN: B075V9X]3Z. 2. Unity 2018 Augmented Reality Projects: Build four immersive and fun AR applications using ARkit, ARCore, and Vuforia - Jesse Glover (Author) – Packt Publishing - ebooks Account July 30, 2018) - ISBN-10: 9781788838764, ISBN-13: 978-1788838764. 3. Practical Augmented Reality: A Guide to the Technologies, Applications, and Human Factors for AR and VR (Usability) 1st Edition - by Steve Aukstakalnis 4. (Author) - Addison-Wesley Professional; 1 edition (September 18, 2016) - ISBN- 10: 0134094239, ISBN-13: 978-0134094236
Reference Books	1. Augmented Reality Game Development - Micheal Lanham (Author) - Packt Publishing - ebooks Account (January 20, 2017) - ISBN-10: 1787122883, ISBN-13:978-1787122888. 2. Pro Android Augmented Reality - Raghav Sood (Author) - Apress; 1st ed. edition (July 13, 2012) - ISBN-10: 143023945X,ISBN-13: 978-1430239451. 3. Augmented Reality: Principles and Practice (Usability)- Dieter Schmalstieg (Author), Tobias Hollerer (Author) - Addison-Wesley Professional; 1 edition (June 13, 2016) - ISBN-10: 0321883578, ISBN-13: 978-0321883575

Course Outcome for AN3506

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Student should able to memorize about concept of photography and its process, camera parts and features	4	none
CO2	Student should able to understand about the types of camera and lenses and their modes	3	S
CO3	Student should able to memorize about composition and framing of the shot and lighting setup in photography	3	S
CO4	Student should able to understand the basic concept of photo editing and color correction	3	Ent
CO5	Student should able to understand about the combination of lights and use of diffusers and reflectors	3	Emp

CO-PO Mapping for AN3506

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

AN3507	**Title: Project - V**	**L T P C** 0 0 4 2
Version No.		
Course Prerequisites	Nil	
Objectives	• To interpret the advanced 3D Animation with CG simulation and motion graphics project pipeline • To identify story and visualization • To elucidate the identification and execution of 3D Animation with CG simulation and motion graphics Project • To apply the communication skills • To plan presentation skills for advanced 3D Animation with CG simulation and motion graphics	
Expected Outcome	• To understand the advanced 3D Animation with motion graphics project pipeline • To demonstrate story and visualization • To analyze the identification and execution of the advanced 3D Animation with motion graphics Project • To apply communication skills in the project • To create presentation for advanced 3D Animation with motion graphics project	
Unit No.	**Unit Title**	**No. of hours (per Unit)**
Unit I	**Introduction to Project**	12Hrs
Pipeline of advanced 3D Animation with motion graphics, project management		
Unit II	**Ideation of Project**	12Hrs
Idea, story and script for advanced 3D Animation and CG simulation with motion graphics		
Unit III	**Visuals in Project**	12Hrs
Drawing, storyboard, visualization, identification and execution for 3D Animation with CG simulation and motion graphics.		
Unit IV	**Communications for Project**	12Hrs
Communications within the team for finishing the project on the deadline. Proper naming conventions for the project.		
Unit V	**Presentation**	12Hrs
Creating handouts for the project, presenting the advanced 3D Animation with motion graphics project. Creating a report.		
Text Books	1. Ideas for the Animated Short: Finding and Building Stories 2.Fluid Simulation for Computer Graphics - Robert Bridson, Publisher: A K Peters/CRC Press (September 18, 2008) 3.Autodesk Maya 2023 Basics Guide By Kelly L. Murdock	

Reference Books	1. Motion Picture and Video Lighting, author:Blain Brown,Routledge; Second edition (13 September 2007) 2. Design for Motion: Fundamentals and Techniques of Motion Design 1st Edition by Austin Shaw
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3507

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Student should able to memorize about concept of photography and its process, camera parts and features	4	none
CO2	Student should able to understand about the types of camera and lenses and their modes	3	S
CO3	Student should able to memorize about composition and framing of the shot and lighting setup in photography	3	S
CO4	Student should able to understand the basic concept of photo editing and color correction	3	Ent
CO5	Student should able to understand about the combination of lights and use of diffusers and reflectors	3	Emp

CO-PO Mapping for AN3507

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related-0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	3	2	3	2	1	2	2	3	3	3	2	2	2
CO 2	2	2	2	0	2	1	3	1	3	3	2	3	3	2	3
CO 3	0	2	2	0	2	1	2	1		2	0	0	2	3	1
CO 4	1	1	3	2	2	3	2	2	2	1	2	2	3	1	0
CO 5	3	1	1	3	1	3	2	3	1	1	3	2	0	2	2
Avg	1.8	1.8	2.2	1.4	2	2	2	1.8	2	2	2	2	2	2	1.6

SEMESTER VI

AN3601	**Title:** Studio Design & Project Management	**L T P C** 4 0 0 4
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To explain importance of production pipeline. • To analyse infrastructure requirements • To assess human resource requirement • To appraise importance of market research • To explain approaching methods to control the risk.	
Course Outcome	• List production pipeline requirements • Describe hard and soft infrastructure requirements • Plan human resource deployment • Perform SWOT Analysis for a market • Present risk mitigation and remediation strategies	
Unit No.	**Unit Title**	No. of hours (per Unit)
Unit I	**Production Overview:**	12 Hrs
• Production pipeline – Study of various mediums of production such as Film, T.V, Games, etc.		
Unit II	**Pipeline:**	12 Hrs
• Requirement for a Production Pipeline -The process and the pipeline – A typical pipeline – Infrastructure.		
Unit III	**Project Management:**	12 Hrs
Pipeline Management - Project Management - The work force - The recruitment – Studio Design - India scenario		
Unit IV	**SWOT Analysis:**	12 Hrs
• Strengths, Weaknesses, OpportUnities, and Threats • Market opportUnities • Analysis, • Competitive Analysis, challenges, Approval.		
Unit V	**Risk Analysis:**	12 Hrs
• Identify risks – • Analyze each risk – • Prioritize each risk – • Risk classification grid, • Risk analysis spreadsheet, Risk Assessment, Risk control.		

Text Books	1. The Game Production Handbook, 3rd Edition - by Heather Maxwell Chandler (Author) - Jones & Bartlett Learning; 3 edition (March 20, 2013) - ISBN-10: 1449688098, ISBN-13: 978-1449688097. 2. Game Development Essentials: Game Project Management - by John Hight (Author), Jeannie Novak (Author) - Cengage Learning; 1 edition (March 27, 2007) - ISBN-10: 1418015415, ISBN-13: 978-1418015411. 3. Game Development Essentials: An Introduction - by Jeannie Novak (Author) - Cengage Learning; 3 edition (August 17, 2011) - 4. ISBN-10: 1111307652, ISBN-13: 978-1111307653
Reference Books	1. The Game Producer's Handbook Paperback – Dan Irish (Author) - ISBN-10: 1449688098, ISBN-13: 978-1449688097. 2. SWOT Analysis. Idea, Methodology And A Practical Approach - by Nadine Pahl (Author), Anne Richter (Author) – GRIN 1 edition (March 27, 2009) - ASIN: B01M0XIF87 3. The Visual Effects Producer: Understanding the Art and Business of VFX - Charles Finance, Susan Zwerman, Publisher: Focal Press; 1 edition (August 28, 2009) 4. The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures - Jeffrey A. Okun, Publisher: Focal Press; 1 edition (July 8, 2010)
Mode of Evaluation	Internal and External Assessment
Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3601

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Student will be able to understand the language of cinema	2	S
CO2	Students will able to understand the concept of reporting and the beats in reporting ; Political, Crime, Sports etc.	2	S
CO3	Students will able to understand the work functions of news room and its operations.	2	S
CO4	Understand the process of editing in print media; newspapers , magazines etc.	2	Ent

CO5	Understand & Investigate the facts from various sources and able to prepare questions for a specific interview; rewrite news stories from newspapers on national and international issues.	5	Emp

CO-PO Mapping for AN3601

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PS O1	PS O2	PE O1	PE O2	PE O3
CO 1	3	3	1	2	3	2	1	2	2	3	2	3	1	2	2
CO 2	2		2	0		1	3		3		2	3	3	1	2
CO 3	2	2	0	0	2	1	0	3	2	2	0	0	3	3	1
CO 4	2	1	3		2	3	2	2	1	2	2	2	3	0	2
CO 5	3	1		3	1	2	2	3	2	1	3	3	0	3	3
Avg	2.4	1.75	1.5	1.25	2	1.8	1.6	2.5	2	2	1.8	2.2	2	1.8	2

AN3602	**Title: Matte Painting**	**L T P C** 4 0 0 4
Version No.		
Course Prerequisites	Nil	
Course Objectives	• To discuss concepts and techniques of matte painting • To identify the tools for digital matte painting • To understand composition methods. • To describe lighting techniques in matte painting. • To explore stylized matte painting.	
Course Outcome	• Describe the Evolution of Matte Painting with CG, Live Action and VFX movie. • Outline students with software its interface, tools and techniques. • Examine the significance of Layers, Light, shadow and composition in matte painting • Identify the use of dark and light space in matte painting. • Design of advanced techniques in creating matte painting.	
Unit No.	**Unit Title**	No. of hours (per Unit)
Unit I	History of Matte Painting	12 Hrs
Matte painting in early cinema- front, rear & latent image projections, Digital Matte Painting- Paint v/s pixel - Analyzing work		
Unit II	Setting Digital tools	13 Hrs
Photoshop panels- To work with layers- Using custom brushes –Working with Image based Brushes.		
Unit III	Composition and concepts	12 Hrs
Visual elements –colour – light and textures and Basic Principles-Perspective study, projections in space.		
Unit IV		12 Hrs
Fantasy and symbolic visuals using paintings, photographs		
Text Books	1. The Invisible Art: The Legends of Movie Matte Painting - Bargain Price, Publisher: Chronicle Books (November 2002).	
Reference Books	1. Beginner's Guide to Digital Painting in Photoshop - NykolaiAleksander , Richard Tilbury, 3DTotal Team, Publisher: 3DTotal Publishing (January 31, 2012)	
Mode of Evaluation	Internal and External Assessment	

Recommendation by Board of Studies on	20-10-2022
Date of approval by the Academic Council	20-10-2022

Course Outcome for AN3602

Unit-wise Course Outcome	Descriptions	BL Level	Employability (Emp)/ Skill(S)/ Entrepreneurship (Ent)/ None (*Use , for more than One*)
CO1	Student will be able to understand the language of cinema	2	S
CO2	Students will able to understand the concept of reporting and the beats in reporting ; Political, Crime, Sports etc.	2	S
CO3	Students will able to understand the work functions of news room and its operations.	2	S
CO4	Understand the process of editing in print media; newspapers , magazines etc.	2	Ent
CO5	Understand & Investigate the facts from various sources and able to prepare questions for a specific interview; rewrite news stories from newspapers on national and international issues.	5	Emp

CO-PO Mapping for AN3602

Course Outcomes	Program Outcomes (Course Articulation Matrix (Highly Mapped- 3, Moderate- 2, Low-1, Not related- 0)										Program Specific Outcomes		Program Educational Outcomes		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO1	PSO2	PEO1	PEO2	PEO3
CO 1	3	3	1	2	3	2	1	2	2	3	2	3	1	2	2
CO 2	2		2	0		1	3		3		2	3	3	1	2
CO 3	2	2	0	0	2	1	0	3	2	2	0	0	3	3	1
CO 4	2	1	3		2	3	2	2	1	2	2	2	3	0	2
CO 5	3	1		3	1	2	2	3	2	1	3	3	0	3	3
Avg	2.4	1.75	1.5	1.25	2	1.8	1.6	2.5	2	2	1.8	2.2	2	1.8	2