ORDINANCE

FOR

B. Sc. OF ANIMATION & MULTIMEDIA

GNA UNIVERSITY

Inspiring Innovation.....

(THIS ORDINANCE HAS BEEN APPROVED IN THE MEETING OF BOARD OF STUDIES HELD ON DATED 20 MAY, 2022)

APPLICABLE W.E.F. ACADEMIC SESSION 2022-2023

GNA UNIVERSITY

SRI HARGOBINDGARH, PHAGWARA – HOSHIARPUR ROAD, PHAGWARA 144401, PUNJAB

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ORDINANCE FOR B. Sc. OF ANIMATION & MULTIMEDIA

SHORT TITLE AND COMMENCEMENT

I. This ordinance shall be called the ordinance for the B.Sc. ANIMATION & MULTIMEDIA of GNA University, Phagwara.

II. This ordinance shall come into force with effect from academic session 2022-23.

1. Name of Program: B.Sc. ANIMATION & MULTIMEDIA

2. Name of Faculty: ANIMATION & MULTIMEDIA

3. Program Outcomes:

- **PO-1** Enhance knowledge of Animation and Multimedia Industry.
- **PO-2** Ability to work in the various fields of Animation and Multimedia.
- **PO-3** Ability to work in specific field like CG, Graphics and VFX as per their specialization

4. Program Specific Outcomes:

- **PSO-1** Understanding of photography and cinematography.
- **PSO-2** Ability to work as CG Graphics and VFX artist in the industry.
- **PSO-3** Understanding of 2D and 3D Modeling and Animation.
- **PSO-4** Potential to work on video editing and motion graphics.
- **PSO-5** Ability to work in 3D architectural and 3D gaming Industry.
- **PSO-6** Potential to work as Sketching artist & Graphic designer.

5.General Regulations for Faculty of Animation & Multimedia:

- The University may introduce programs under Faculty of Animation & Multimedia which are specified under the UGC Act 1956. The Governing Body may approve the introduction, suspending or phasing out a program on the recommendation of the Academic Council either on its own or on the initiative of faculty.
- The admissions to a Faculty of Animation & Multimedia programs shall be generally governed by the rules of the UGC/AICTE or any other competent authority of the MHRD or as approved by Governing Body of University and shall be as notified in the admission notification of the respective academic year.

The minimum entry qualification for admission to the students of Faculty of Animation & Multimedia shall be such as may be laid down in the regulations or specified by the

Governing Body like Minimum qualification for admission to the first year program of Faculty of Animation & Multimedia shall be the Senior Secondary School Certificate (10+2) examination. While deciding the admission procedure, the University may lay down compulsory subjects in qualifying examination for admission for various programs in the admission policy.

•A student shall be required to earn a minimum number of credits through various academic components of a curriculum, as provided for in the regulations.

•A student shall be required to complete all the requirements for the award of the degree within such period as may be specified in the regulations.

•A student may be granted such scholarship as may be specified in accordance with the directions of the Governing Body from time to time or regulations laid down for the same.

•A student admitted to the programs shall be governed by the rules, regulations and procedures framed and implemented by the University from time to time.

•The students shall abide by the regulations mentioned in student handbook issued by the University. These standing regulations shall deal with the discipline of the students in the Hostels, Faculty, and University premises or outside. The standing orders may also deal with such other matters as are considered necessary for the general conduct of the students' co-curricular and extra-curricular activities.

•In exceptional circumstances the chairman of Academic Council may, on behalf of the Council, approve amendments, modifications, Insertions or deletions of an Ordinance(s) which in his/her opinion is necessary or expedient for the smooth running of the program: provided all such changes are reported approved to the Council in its next meeting.

6.General Regulations for the B.Sc. Animation & Multimedia:

•**Short Title and Commencement:** These regulations shall be called regulations for the UG program in Faculty of Animation & Multimedia of the University and shall come into force on such a date as the Academic Council may approve.

Duration: The duration of the UG program leading to degree of B.Sc. Animation & Multimedia shall be minimum three years and each year will comprise of two semesters. However, the duration may be extended up-to five years from the registered batch. The maximum duration of the programs excludes the period of withdrawal, due to medical reasons. However, it shall include the period of rustication or any other reason of discipline /academics e.g., detention, willful absence by the student, not ge ng promotion to the next class due to poor academic performance etc. Under detention, the student shall attend the University for an additional semester or more time, as equated to period of absence/suspension.

•**Starting or phasing out of Program:** A program may be phased out on recommendations of the Academic Council and approval of the Governing Body, on account of continuous low registration in the program or any other justifiable reason like becoming obsolete etc. Similarly, the Academic Council may approve starting of a new program or modifying the existing one on the recommendations of the Academic Council.

•**Admissions:** The centralized admission cell shall make selection for admission to the program. Admission to this program shall be made as per procedure to be approved by the Academic Council, and further by Board of Management and Governing Body and may be reviewed periodically as required. Eligibility criteria for the program, meriting and selection policy, fee structure, refund policy, total number of seats etc. shall be defined in the admission policy.

Students studying in the Certificate Program of Animation and Multimedia from GNA University are eligible to get direct admission in the second year of B.Sc. Animation and Multimedia.

•**Eligibility for Admission:** 10+2 or equivalent with 50% (45 % for SC/ST/OBC) marks in aggregate from any recognized board or as per AICTE Norms.

•**Semester System:** The B.Sc. Animation & Multimedia academic program in the University shall be based on Semester System, namely, even (Jan to June) and Odd (July to Dec) Semesters, in an academic year. The courses whether offered in regular semester shall be evaluated as per the policy and procedure laid down.

•**Semester Duration:** A semester will be of approximately 18-20 weeks duration. Of these, 90 days will be available for actual instructions including Mid Semester Exam. In final semester, students can choose between internship or regular classes.

Curriculum: The three years curriculum has been divided into six semesters and shall include lectures/ tutorials/ lab work/ field work/ outreach activity/ project work/ viva/ seminars/ presentations/ assignments etc. or a combination of some of these. The curriculum will also include other curricular, co-curricular and extra-curricular activities as may be prescribed by the university from time to time.

8.Choice Based Credit System:

The University has adopted Choice Based Credit System (CBCS), which provides an opportunity to the students to choose courses from the offered courses comprising of Core, Elective, Ability Enhancement and Audit Courses. The choice-based credit system provides a "flexible" approach in which the students can take courses of their choice, learn at their own pace, undergo additional courses and acquire more than the required credits, and adopt an interdisciplinary approach to learning. Following are the types of courses and structure for the program:

9.Courses:

I.Core Course: A course, which should compulsorily be studied by a candidate as a core requirement to complete the requirement of program in a said discipline of study.

II.Elective Course: Generally, a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/subject of study or which provides an extended scope or which enables an exposure to some other discipline/subject/domain or nurtures the candidate's proficiency/skill is called an Elective Course.

i.Discipline Specific Elective (DSE) Course: Elective courses may be offered by the main discipline/subject of study, is referred to as Discipline Specific Elective. The University/Institute may also offer discipline related Elective courses from unrelated discipline (to be offered by main discipline/subject of study).

ii.Generic Elective (GE) Course: An elective course chosen generally from an unrelated discipline/subject, with an intention to add generic proficiency to the students.

Note: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Generic Elective. Elective Course(s) may also be called an **"Open Elective"**

III.Foundation Course: The Foundation Courses may be of two kinds: Compulsory Foundation and Elective foundation. "Compulsory Foundation" courses are the courses based upon the content that leads to Knowledge enhancement. They are mandatory for all disciplines.

IV.Ability Enhancement Courses (AEC): The Ability Enhancement (AE) Courses may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Courses (SEC). "AECC" courses are the courses based upon the content that leads to Knowledge enhancement; Environmental Science and ii. English/MIL Communication. These are mandatory for all disciplines. SEC courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc.22

i.Ability Enhancement Compulsory Courses (AECC): Environmental Science, English Communication/MIL Communication.

ii.Skill Enhancement Courses (SEC): These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.

10.Medium of Instructions:

10.1. The medium of instructions and examination will be English.

10.2. Practical work/Project Work / Project Report / Dissertation / Field Work Report / Training Report etc., if any, should be presented in English.

11.Mode: The program is offered in 'Full Time' mode of study only.

12.Attendance Requirement to be Eligible to Appear in End Semester Examination:

12.1 Every student is required to attend at least 75% of the lectures delivered squaring tutorials, practical and other prescribed curricular and co-curricular activities.

12.2 Dean of Faculty may give a further relaxation of attendance up to 5% to a student provided that he/she has been absent with prior permission of the Dean of the Faculty for the reasons acceptable to him/her.

12.3 Further, relaxation up to 10% may be given by the Vice Chancellor to make a student eligible under special circumstances only.

12.4 No student will be allowed to appear in the end semester examination if he/she does not satisfy the attendance requirements. Further, the attendance shall be counted from the date of admission in the University or commencement of academic session whichever is later.

12.5 Attendance of N.C.C/N.S.S. Camps or Inter collegiate or Inter University or Inter State or International matches or debates or Educational Excursion or such other Inter University activities as approved by the authorities' involving journeys outside the city in which the college is situated will not to be counted as absence. However, such absence shall not exceed four weeks per semester of the total period of instructions. Such facility should not be availed twice during the course of study.

13.Credit: A unit by which the course is measured. It determines the number of hours of instruction required per week. Each course, except a few special audit courses, has a certain number of credits assigned to it depending upon its lecture, tutorial and/or laboratory contact hours in a week.
A letter grade, corresponding to specified number of grade points, is awarded in each course for which a student is registered. On obtaining a pass grade, the student accumulates the course credits as earned credits. A student's performance is measured by the number of credits that he/she has earned and by the weighted grade point average. A minimum number of credits should be acquired to qualify for the programs.

Earned Credits (EC): The credits assigned to a course in which a student has obtained 'D' (minimum passing grade) or a higher grade will be counted as credits earned by him/her. Any course in which a student has obtained F, or W or "I" grade will not be counted towards his/her earned credits.

Contact Hours per Week	Credit Assigned
1 Hr. Lecture (L) per week	1 credit
1 Hr. Lecture (T) per week	1 credit
2 Hrs. Practical (Lab) per week	1 credit

14. Program Structure: As per GNA University

Details of Courses under B.Sc. Animation & Multimedia

Details of Courses under B.Sc. Animation & Multimedia

Course	Credits	
	Theory & Tutorials (A)	Theory, Theory + Practical (B)
I. Core Course: (15 Papers of 4 credits each)		15 x 4= 60
II. Generic Elective Course (4 papers of 3 credits each from each discipline of choice including paper of interdisciplinary nature)	3 x 3=9	1x3=3
III. Ability Enhancement Courses		
1. Ability Enhancement Compulsory	1 x 2=2	2 x 3=6
2.Generic Elective Courses (Skill Based) (3 Papers of 4 credits each)		3x4=12 1x1=1
IV. Discipline Specific Elective (8 Papers of 4 credits each)		8x4=32
Total credits	**11(A)**	**113(B)**

Program Structure B.Sc. ANIMATION & MULTIMEDIA

A) Core Courses

Sr. No.	Pre-Requisites	Course Code	Course Name
C1	N.A.	BAM 101	Fundamentals of Animation
C2	N.A.	BAM 102	Digital Illustration & Image Processing
C3	N.A.	BAM 103	Experimental Animation
C4	N.A.	BAM 201	Introduction to 3D Modeling
C5	BAM 105	BAM 202	Art of Visualization
C6	BAM 102	BAM 203	Print Media & Advertisement Design
C7	BAM 201	BAM 301	Texturing Shading Lighting & Rendering
C8	BAM 204	BAM 302	Video Editing & Motion Graphics
C9	N.A.	BAM 303	Animation
C10	N.A.	BAM 304	Architecture Pre-Viz- Modeling & Texturing
C11	BAM 303	BAM 401	3D Animation
C12	BAM 301	BAM 402	Dynamics
C13	BAM 304	BAM 403	Architecture Pre-Viz - Lighting & Rendering
C14	N.A.	BAM 407	Multimedia Copyrights
C15	N.A.	BAM 405	Digital Compositing

B) Ability Enhancement Compulsory Courses (AECC)

Sr. No.	Pre-Requisites	Course Code	Course Name
AECC1	N.A.	COM 101	English Communication
		COM 121	English Communication Lab
AECC2	COM 101	COM 201	Business Communication
		COM 221	Business Communication Lab
AECC1	N.A.	EVS 101	Environmental Science

C) Skill Enhancement Course (SEC)

Sr. No.	Pre-Requisites	Course Code	Course Name
SEC 1	N.A.	BAM 105	Drawing for Animation
SEC 2	N.A.	BAM 204	Digital Photography and Cinematography
SEC 3	N.A.	BAM 406	Sound Editing & Mixing

D)Discipline Specific Elective Courses (DSE) (Credit: 04 each)

(DSE 1, DSE 2, DSE3, DSE4, DSC5, DSE6, DSE7, DSE8)

VISUAL EFFECTS

Sr. No.	Pre-Requisites	Course Code	Course Name
DSE1	N.A.	BAM 501	Match moving
DSE2	BAM 302	BAM 502	Node Based Compositing
DSE3	BAM 402	BAM 503	Dynamics Simulation Techniques
DSE4	BAM 302	BAM 504	Art of Editing
DSE5	BAM 502	BAM 604	Color Grading for Production
DSE6	BAM 503	BAM 602	Fluid Fx Simulation
DSE7	BAM 503	BAM 605	VFX Production
DSE8	N.A.	BAM 621	Portfolio Graduating Project

CG ASSET DEVELOPMENT

Sr. No.	Pre-Requisites	Course Code	Course Name
DSE1	BAM303 BAM401	BAM 517	Rigging and Animation for Production
DSE2	BAM 301	BAM 518	Sculpting, Texturing & Shading for Production
DSE3	BAM 304	BAM 508	Modeling & Texturing for Gaming
DSE4	N.A.	BAM 519	CG Technologies
DSE5	BAM 510	BAM 609	Level Design in Game Engine
DSE6	BAM 301	BAM 607	Lighting & Rendering for Production
DSE7	BAM 403	BAM 608	Advanced Lighting & Rendering
DSE8	N.A.	BAM 626	Portfolio Graduating Project

GRAPHICS DESIGNING

Sr. No.	Pre-Requisites	Course Code	Course Name
DSE1	BAM 203	BAM 511	Print & Publishing Design
DSE2	BAM 405	BAM 512	Digital Graphic Design
DSE3	N.A.	BAM 513	Concept Art
DSE4	N.A.	BAM 514	Motion Design & Typography
DSE5	BAM 302	BAM 611	Branding & Package Designing
DSE6	BAM 511	BAM 612	Social Media Design
DSE7	BAM 512	BAM 613	Digital Graphics for Media
DSE8	N.A.	BAM 631	Portfolio Graduating Project

D) General Elective Courses (GE)

Sr. No.	Pre-Requisites	Course Code	Course Name
GE1	N.A.	BCA 121	Computer Fundamentals & IT Lab
GE2	N.A.	BAM 307	Film Appreciation
GE3	N.A.	BAM 308	Game Technology Fundamentals

VISUAL EFFECTS

Sr. No.	Pre-Requisites	Course Code	Course Name
GE4	N.A.	BAM 516	VFX Technologies

CG ASSET DEVELOPMENT

Sr. No.	Pre-Requisites	Course Code	Course Name
GE4	N.A.	BAM 510	Introduction to Game Engine

GRAPHICS DESIGNING

Sr. No.	Pre-Requisites	Course Code	Course Name
GE4	N.A.	BAM 515	Aesthetics and Principles of Design

Program Structure (B.Sc. AM)

Semester	Core Course (CC)	Ability Enhancement Courses (AECC)	Skill Enhancement Course (SEC)	Discipline Specific Elective (DSE) 6 credits	Discipline Specific Elective (GE) 6 credits
I	CC 1	AECC 1	SEC 1		
	CC 2	AECC 1			
	CC 3	AECC 1			
II	CC 4	AECC 2	SEC 2		GE 1
	CC 5	AECC 2			
	CC 6				
III	CC 7				GE 2
	CC 8				
	CC 9				GE 3
	CC 10				
IV	CC 11		SEC 3		
	CC 12				
	CC 13				
	CC 14				
	CC 15				

V				DSE 1	GE 4
				DSE 2	
				DSE 3	
				DSE 4	
VI				DSE 5	
				DSE 6	
				DSE 7	
				DSE 8	

Course Scheme: B.Sc. AM

Semester-I

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	C1	N.A.	BAM101	Fundamentals of Animation	3	1	0	4
2	C2	N.A.	BAM102	Digital Illustration & Image Processing	2	1	2	4
3	C3	N.A.	BAM103	Experimental Animation	2	1	2	4
4	SEC 1	N.A.	BAM105	Drawing for Animation	2	1	2	4
5	AECC1	N.A.	COM101	English Communication	2	0	0	2
6	AECC1	N.A.	COM121	English Communication Lab	0	0	2	1
7	AECC1	N.A.	EVS101	Environmental Science	2	0	0	2
Total credits								**21**

Semester-II

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	C4	N.A.	BAM 201	Introduction to 3D Modeling	2	1	2	4
2	C5	BAM104	BAM 202	Art of Visualization	2	1	2	4
3	C6	BAM102	BAM 203	Print Media & Advertisement Design	2	1	2	4
4	AECC2	COM101	COM 201	Business Communication	2	0	0	2
5	AECC2	COM121	COM 221	Business Communication Lab	0	0	2	1
6	SEC2	N.A.	BAM 204	Digital Photography & Cinematography	0	3	2	4
7	GE1	N.A.	BCA 121	Computer Fundamentals & IT Lab	0	2	1	3
Total credits								**22**

Semester-III

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	C7	BAM 201	BAM 301	Texturing Shading Lighting & Rendering	2	1	2	4
2	C8	BAM 204	BAM 302	Video Editing & Motion Graphics	2	1	2	4
3	C9	N.A.	BAM 303	Animation	2	1	2	4
4	C10	N.A.	BAM 304	Architecture Pre-Viz-Modeling & Texturing	2	1	2	4
5	GE2	N.A.	BAM 307	Film Appreciation	1	2	0	3
6	GE3	N.A.	BAM 308	Game Technology Fundamentals	2	1	0	3
Total credits								**22**

Semester-IV

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	C11	BAM 303	BAM 401	3D Animation	2	1	2	4
2	C12	BAM 301	BAM 402	Dynamics	2	1	2	4
3	C13	BAM 304	BAM 403	Architecture Pre-Viz Lighting & Rendering	2	1	2	4
4	C14	N.A.	BAM 407	Multimedia Copyrights	4	0	0	4
5	SEC 3	N.A.	BAM 406	Sound Editing & Mixing	2	1	2	4
6	C15	BAM 302	BAM 405	Digital Compositing	2	1	2	4
Total credits								**24**

Specialization - Visual Effects

Semester-V

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	DSE1	N.A	BAM 501	Match Moving	2	1	2	4
2	DSE2	BAM 302	BAM 502	Node Based Compositing	2	1	2	4
3	DSE3	BAM 402	BAM 503	Dynamics Simulation Techniques	2	1	2	4
4	DSE4	BAM 302	BAM 504	Art of Editing	2	1	2	3
5	GE4	N.A.	BAM 516	VFX Technologies	2	1	2	4
Total credits								**19**

Semester-VI

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	DSE5	BAM 502	BAM604	Color Grading for Production	2	1	2	4
2	DSE6	BAM 503	BAM602	Fluid FX Simulation	2	1	2	4
3	DSE7	BAM 503	BAM605	VFX Production	2	1	2	4
4	DSE8	N.A.	BAM621	Portfolio Graduating Project	0	0	8	4
Total credits								**16**

Specialization - CG Asset Development

Semester-V

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	DSE1	BAM 303 BAM 401	BAM517	Rigging and Animation for Production	2	1	2	4
2	DSE2	BAM 301	BAM518	Sculpting, Texturing & Shading for Production	2	1	2	4
3	DSE3	BAM 304	BAM508	Modeling & Texturing for Gaming	2	1	2	4
4	DSE4	N.A.	BAM519	CG Technologies	2	1	0	3
5	GE4	N.A.	BAM510	Introduction to Gaming Engine	2	1	2	4
Total credits								**19**

Semester-VI

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	DSE5	BAM 510	BAM609	Level Design in Game Engine	2	1	2	4
2	DSE6	BAM 301	BAM607	Lighting & Rendering for Production	2	1	2	4
3	DSE7	BAM403	BAM608	Advanced Lighting & Rendering	2	1	2	4
4	DSE8	N.A.	BAM626	Portfolio Graduating Project	0	0	8	4
Total credits								**16**

Specialization - Graphics Designing

Semester-V

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	DSE1	BAM 203	BAM511	Print & Publishing Design	2	1	2	4
2	DSE2	BAM 405	BAM512	Digital Media Design	2	1	2	4
3	DSE3	N.A.	BAM513	Concept Art	2	1	2	4
4	DSE4	BAM 302	BAM514	Motion Design & Typography	2	1	2	4
5	GE4	N.A.	BAM515	Aesthetics & Principles of Design	2	1	0	3
Total credits								**19**

Semester-VI

Sr. No.		Pre-requisite	Course Code	Course Name	Contact Hours			Credits
					L	T	P	
1	DSE5	BAM 511	BAM611	Branding and Package Design	2	1	2	4
2	DSE6	BAM 512	BAM612	Social Media Designing	2	1	2	4
3	DSE7	BAM 513	BAM613	Designing for Digital Media	2	1	2	4
4	DSE8	N.A.	BAM631	Portfolio Graduating Project	0	0	8	4
Total credits								**16**

15. Graduating Project:

Graduation Project as per their specialization in CG Assets (CG) and Visual Effects (VFX) in the 6th Semester to complete their Graduation Program

Student must complete their Graduation Project as per the following Criteria.

Graduation Project:

Project in specialization field i.e., CG, Graphics Designing or VFX.

Project should be made under Faculty Guide from Faculty of Animation & Multimedia.

Project Should be approved by the Faculty Guide.

Project Report should be submitted along with the project

Graduation project is all about creating the final Show-Reel work and or creating a major project in form of a film so students get ready for the industry job. It depends on the students to choose a particular field work and complete the work as their final output of the Graduation Program.

16. Grading System: University follows eight letter grading system (A+, A, B+, B, C+, C, D, and F) that have grade points with values distributed on a 10-point scale for evaluating the performance of student. The letter grades and the corresponding grade points on the 10-point scale is as given in the table below.

Academic Performance	Range of marks	Grades	Grade Points
Outstanding	≥90	A+	10
Excellent	≥80 & < 90	A	9
Very Good	≥70 & < 80	B+	8
Good	≥60 & < 70	B	7
Fair	≥50 & < 60	C+	6
Average	>40 & < 50	C	5
Minimally Acceptable	40	D	4
Fail	< 40	F	0
Incomplete		I	–
Withdrawal		W	–
Grade Awaited		GA	–
S-Satisfactory, US-Unsatisfactory Minor Project		**S/US**	

Description of Grades:

A. D Grade: The D grade stands for marginal performance, i.e. it is the minimum passing grade in any course.

B. F Grade: The 'F' grade denotes a very poor performance, i.e. failing a course. A student has to repeat all courses in which she/he obtains 'F' grade, until a passing grade is obtained. In the case of 'F', no Grade points are awarded. However, the credits of such courses shall be used as denominator for calculation of GPA or
CGPA.

C .W Grade: The 'W' grade is awarded to a student if he/she is allowed to withdraw for an entire Semester from the University on medical grounds for a period exceeding five weeks.

D. I" Grade: The 'I' grade is awarded when the student is allowed additional opportunity like make up Examination etc. based on which the grade is to be decided along with other components of the evaluation during the semester. An incomplete grade of 'I' may be given when an unforeseen emergency prevents a student from completing the work in a course. The 'I' must be converted to a performance grade (A to F) within 90 days after the first day of classes in the subsequent regular semester.

E. X Grade: It is equivalent to Fail grade but awarded due to student falling below the laid down attendance requirement. Students having X grade shall be required to re- register for the course, when offered next.

Cumulative Grade Point Average (CGPA), it is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all Semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

NB: The CGPA can be converted to percentage by using the given formula:

CGPA x 10 = % e.g.

7.8 x 10 = 78%

Based on the grades earned, a grade certificate shall be issued to all the registered students after every semester. The grade certificate will display the course details (Course title, number of credits, grade secured) along with SGPA of that semester and CGPA earned till that semester.

16.1 Acceptance of MOOC courses

GNA Business School accepts the MOOC course available on SWAYAM platform for credit transfer 40% of the courses can be taken from the available list of MOOCs on SWAYAM.

Instructions for MOOC courses

I. MOOC courses taken for credit transfer must be approved and recommended by Dean Academics and Dean of the Faculty before the start of the semester. Get that course recommended by Dean and Dean Academics in triplicate, One copy with ERP, One with COE and one with respective departments.

II. MOOC course should be done from SWAYAM platform as per the guidelines of UGC.

III. To obtain the credit the student needs to complete the assessment of the course and provide the certificate of the course issued by the SWAYAM/NPTEL. After completing the certificate, the student must submit the certificate within a week to the department.

I**V.** The fees (if any) for the registration and / or assessment of the MOOC course must be borne by the student only.

. The student can opt for a particular online MOOC course if and only if the credit of that course is equivalently mapped with the program structure.

VI. If the student obtains the same course credit which mapped with the course then credit shall be considered for this course and the grade/marks provided by the accessing authority shall be transfer to the student. The result of the MOOC shall be taken on record by the university examination cell and a result declared for these papers.

VII. For any particular semester, all results for the MOOC course must be submitted along with

the marks of other papers of the same semester by the course coordinator.

VIII. MOOC course coordinators shall be appointed for each of the course taken by the student.

17. Examination/Evaluation System: The evaluation system of the University shall be oriented to encourage the academic qualities. The University follows two components to evaluate student's performance:

17.1. Internal Assessment: which includes attendance, mid semester examination and other components (Project 1, Project 2, Mid Term Exam, Attendance, Class Test) carrying a weightage of 40%. This is applicable for all theory courses.

17.2. Practical Courses: The examination/evaluation criteria of the practical courses shall be decided by the respective faculty member and wherever required on the availability of the external experts/visiting faculty. Faculty may set/design the practical exercises out of any marks but the overall weightage shall be in pre-defined percentage, which the concerned faculty/course coordinator shall announce in the first class of the semester and upload on the GU-MS. Methodology for evaluation of Lab component may include day to day work, lab records, quantity/quality of work and Viva/Seminar/Practical as may be decided.

17.3. External Assessment: i.e., End Semester Examination, carrying a weightage of 60%.

a) End Semester Examination: These examinations shall be conducted under Controller of Examination. The examination dates and schedule shall be released by the University's Controller of Examination.

b) Similar division of marks may be created for special courses like Major Projects, seminars, term papers, internship etc. by respective faculty but same shall also be predefined.

c) Every student has to score at least 25% marks each in Continuous Assessment and End Semester examination. The minimum pass percentage is 40% in aggregate. In case a student scores more than 25% each in Continuous Assessment and End Semester Examination, but overall percentage in the concerned subject remains less than 40%, then student has to repeat End Semester Examination in that subject.

17.4. Failing to meet Attendance Requirement:

a) A student is required to attend all the classes.

b) If the attendance profile of a student is unsatisfactory, he/she will be debarred. Any student, who has been debarred due to attendance shortage, shall not be allowed to take the supplementary Examination. The student shall have to register for the course in the regular semester when offered.

17.5. Make Up Examinations for Mid Semester Examination: A student may apply for a makeup examination where he/she is not able to attend the examination schedule due to reasons of personal medical condition or compassionate reason like death of a very close relative. No other contingencies are acceptable. Except in case of medical emergency, a student needs to seek advance approval from appropriate authority before missing the Examination.

Theory Courses:

• A student missing Mid Term Examination only shall be required to take a make-up Examination.

• The students must put-up the request for make-up Examination along with the medical documents to prove the genuineness of the case (for having missed the Examination) within 5 days of last date of Examination.

• The genuineness shall be reviewed and approved by the Vice Chancellor, whose decision shall be final.

• In case a student misses the make-up Examination also, then no further chance will be provided.

• The duration of Examination shall be as decided by the faculty member.

• Genuine approved cases shall be notified by the Controller of Examination based on the requests received and only such students shall be allowed to take make-up Examination in the subjects where approval has been granted.

• The date sheet need not be taken out as the makeup examination shall be conducted under arrangement concerned faculty, who after evaluation and sharing the evaluated answer sheet with student shall submit marks to the Controller of Examination.

17.6. Makeup of End Semester Examination: It is mandatory to appear the end semester major examination to obtain any grade for a course. A student who misses the end semester major examination shall follow a similar procedure as outlined above, to obtain approval of the Vice Chancellor to prove genuineness of the case. The student whose case is approved as genuine shall be awarded "I" Grade in the semester results in the given subject. The student shall be allowed to appear in the supplementary examination of the said subject. However,

the grades shall be worked out by computing the marks obtained by students in Mid Term Exams, TA, Lab and supplementary examination (equated to the weightage of end semester examination). The total marks shall be compared with the marks of the class as in the regular semester for award of grade.

17.7. Makeup of End Semester Viva of Projects: It is mandatory to appear in the final Viva examination to obtain any grade for a project course. In case of student missing the same for genuine reasons; similar method as given for written examination of theory courses shall be followed.

a. Procedure to be adopted by students in case of missing any of the specified Examination(s): Following procedure shall be adopted for establishing genuineness of the case.

b.Action by the student (Medical Cases)

I. They should report absence from the Examination(s) by fastest possible means to the Controller of Examination. It could be email or written communication by speed post or sent by hand through any means. In case of Hosteller's, if a student falls sick while residing in the hostel, he/she should seek advice of the available qualified doctor.

II. The said report should preferably be sent prior to the Examination, but not later than 5 days after the last date of the said Examination.

III. The student should on rejoining:

a. Report to the Controller of Examination with complete medical documents to include referral/Prescription slip of the doctor specifically indicating the disease and medicine prescribed, investigation/Lab reports and discharge slip in case of admission should be provided.

b. Submit the Documents to the Controller of Examination, not later than 5 days after the last date of Examination.

c. Action by students (any other reason) In case the student must miss Examination due to genuine reason other than medical, prior written sanction of Vice Chancellor and in his absence Dean is mandatory. No post facto requests shall be accepted in any case. The approval should be deposited with the Controller of Examination before the examination.

18. Supplementary Examination:

18.1. The supplementary examinations shall be held for each commiserating semester in December for Odd semester and May/June for Even semester respectively.

For the final semester students, there is privilege to appear in the supplementary exams of all pervious semester.

18.2. Eligibility: Student with 'F' grade is eligible to appear in the Supplementary Examination.

18.3. Supplementary for Projects: There shall be no supplementary examinations for the projects, except make up examination for missing the final viva as per rules outlined above.

19. General Rules: Examinations:

a) Showing the Answer Scripts: The answer scripts of all written Examinations i.e. Mid Term or end semester examination or any other written work conducted by a teacher shall be shown to the students. Students desirous of seeing the marked answer scripts of end Semester Examination, has to ensure their presence before results are declared, as per dates notified by the Controller of Examination.

b) Marks/Answer Sheets of all other tests shall also be shared with the students and thus, there shall be no scrutiny of grades. However, before the grades are forwarded to Registrar/Controller of Examination, they should be displayed on GU-MS and time given to students, to discuss the same with respective faculty.

c) No appeal shall be accepted for scrutiny of grades.

d) Examination Fee for Supplementary. A fee of Rs.1000/- per course or as decided by the Management from time to time will be charged from the students.

19.2 Improvement of overall Score: A candidate having CGPA < 5.5 and wishes to improve his/her overall score may do so within two academic years immediately after passing the degree program by reappearing into maximum four course(s)/subject(s). The improvement would be considered if and only if the CGPA becomes > 5.5.

a) Program qualifying criteria: For qualifying the Program every student is required to earn prescribed credits (i.e., 124). If any student fails to earn prescribed credits for the program, then he/she will get a chance to complete his/her Program in two more years than the actual duration of degree.

b) Revision of Regulations, Curriculum and Syllabi: The University may revise, amend, change or update the Regulations, Curriculum, Syllabus and Scheme of examination through the Board of Studies and the Academic Council as and when required.

19.3 Conditions for Award of a Degree:

a) Earning a minimum credit as specified in the curriculum of respective program. In case of lateral entry students (direct entry into second year) the minimum credits shall be equivalent to total credits for the program less the credits of first year. This excludes the credits required to be obtained by the student of lateral entry, who is advised to take some equivalence courses.

b) Should complete the requirements of the Degree in maximum duration specified for the program. Semester withdrawals due to medical reasons are not counted in six years. However, forced withdrawal of students e.g., rustication or expulsion or nonattendance by student due to any other reasons, shall count in the maximum period of six years and minimum period of four years.

c) Successfully completing the Internship studies.

d) Should have cleared all the foundational and core courses of the programs. In case of lateral entry students (direct entry into second year) the student should have completed the foundational/core courses/equivalent courses, as approved at the time of admission in the programs.

GNA UNIVERSITY
Inspiring Innovation.....

Annexure-I

B. Sc. OF ANIMATION & MULTIMEDIA

Semester-I

BAM 101: Fundamentals of Animation
Credits: : 4
LTP 310

Course Description: The course aims to equip the students to understand about history and origin of animation and gaming. The course includes principles of animation and how they are implemented while creating animation films and games.

Course Outcomes (CLO):
Upon successful completion of the course, the students should:

CO1: Learn the Evolution of Animation.
CO2: Understanding the principles of animation.
CO3: Learn about the Gaming and Animation Industry.
CO4: Understand how games are made.

Course Content

Unit I

Origin & Types of Animation: History of Animation, People involved in Early Animation, Early Animation Films (Trip to the moon 1902, old mickey mouse cartoons, tom and jerry, Snow white). Cell Animation, Stop Motion Animation, Claymation, 2d Animation, 3d Animation.

Unit II

Principles of Animation: Illusion of Life, straight action and pose to pose, Timing, Exaggeration, Drama and Psychological Effect, Fade in and fade out, Squash and Stretch, Anticipation, staging, follow through and overlapping action, Arcs, Solid Drawing, Appeal, slow in and slow out, Secondary Action.

Unit III

Milestones Films in Animation History: Showcase of milestones films in Animation history. History of Disney and Pixar, Key people of Disney and Pixar, Projects Disney and Pixar worked on. Current Scenario of Animation industry and future of Animation.

Unit IV

Advancement of Animation and Games: Storytelling through gaming (uncharted, Undertale, Mario), Animation in games (loops), AAA games and indie games, Game genres, gaming studios, Understanding FPS and frame rate. Level designing and game layouts. Concept art, AR & VR.

Recommended Books / Suggested Readings:

1. Lasseter, JohnEd Catmull, Steve Jobs and Karen Paik. (1 November 2007), To Infinity and Beyond: The Story of Pixar Animation Studios, Chronicle Books.
2. William, Richard, (5 November 2009), Animator's Survival kit, Faber; third edition, Revised edition.The Illusion of Life: Disney Animation, Disney Editions; Rev Sub edition.
3. *Level Up! The Guide to Great Video Game Design Paperback – Illustrated*, 9 May 2014
4. Thomas, Frank, (October 5, 1995)
5. Blood, Sweat, and Pixels: The Triumphant, Turbulent Stories Behind How Video Games are Made – 30 September 2017,

BAM102: Digital Illustration and Image Processing
Credits: 4
LTP 212

Course Description: The course aims to equip the students' knowledge about the principles of design and their implementation in digital design.
The course includes understanding difference between raster and vector graphics and practical experience of creating Digital paintings using Adobe Photoshop and Illustrator

Course Outcomes:
Upon successful completion of the course, the students should be able to:

CO1: Know about digital graphics and color compositions.
CO2: Use Illustrator tools to create logical and aesthetical vector designs.
CO3: Learn various techniques of creating matte paints.
CO4: Create magazine covers and promotional material.

Course Content

Unit I

Principles of design: Balance, proportion, Rhythm, Harmony and unity, Emphasis.

Unit II

Vector Graphics Designing: (Character Creation) Introduction to Illustrator, Introduction to User Interface, Understanding tools, Working with Image and Shapes Manipulation, Selecting and Aligning, grouping, Exploring object arrangement, working with nested group, Creating and Editing Shapes, Understanding Drawing modes, Joining Paths, Using Image Trace to create Shapes, Transforming objects, Working with Color and Pencil Tools, drawing with the Pencil tools, Path finding & Graphics type panels, Painting with Patterns, Working with Live Paint, Understanding the Perspective Grid, Preset Grid, Active Grid, Understanding Symbols, Illustrator Symbols Library, Creating and Editing Symbols

Unit-III

Raster Graphics Designing- Photo manipulation, restoration, concept art- Introduction to Photoshop, digital art and platform, pixel, Raster, vector, Bit depth, Resolution, working with layers and tools, Layer management, understanding menu bar, retouching photo and images, Text, understanding tool bar, understanding channels, Layer mask, Quick mask tool, Composition and Color Correction, Understanding compositing, Color correction tools and techniques.

Unit-IV

Matte Painting & Digital Painting: Understanding Digital painting, Tools and techniques of digital painting, concept of Matte painting, Tools, and techniques of matte painting, Understanding various filters and effects. Using Layers to create depth in a matte painting. Using various tool to re-touch and restore an old image. Color grading an image. Brush patterns and creating brushes in photoshop.

Recommended Books / Suggested Readings:

1. Lidwell, William, (October 1, 2003), Universal Principles of Design, Rockport Publishers.

2. Adobe Photoshop Classroom in a Book, 3 February 2021 by Conrad Chavez (Author), Andrew Faulkner (Author)

3. Mattingly, David B, (8 April 2011), The Digital Matte Painting Handbook, Sybex; Pap/Dvdr edition.

4. Adobe Creative Team, (July 5, 2013), Adobe Illustrator CC: Classroom in a book, Adobe Press; 1 Edition

BAM103: Experimental Animation
Credits: 4
LTP 212

Course Description: The course aims to equip the students to gain knowledge about stop motion animation and how to create them

The course includes storyboarding concept and how to create a storyboard for a project, Students will able to create different types of traditional animation techniques like flipbook, stop motion, clay animation etc.

Course Outcomes:
Upon successful completion of the course, the students should be able to:

CO1: Apply concepts of storyboarding, storytelling, visual narrative to a project.
CO2: Use paper cutouts and clay for creating characters.
CO3: Create a Set and background for animations.
CO4: Understand use of props for creating realistic outputs.

Course Content

Unit I

Storyboarding: Rules of making storyboard, Techniques of Storyboard. Principle of Staging and appeal. Understanding camera angles and shots for storyboarding. Creating original Characters.

Unit II

Animation: Stop motion Animation, stop motion using (Video, Photograph, and Sketch, Objects, Cut-out), Paper Animation: Animation using paper shapes, Flip Book: Rules of making flip book, Techniques of flip book.

Unit III

Clay Modeling & Animation: Designing Character, Props using box and oil-based clay, Animation using Clay Characters and props

Unit-IV

Set designing: An Introduction to Experimental work using different medium like Stone, Grass, Sand, Hardboard, Pen and ink, Water Colors, Poster Color, Dry brush etc..

Recommended Books / Suggested Readings:

1. Priebe, Ken A, (July 11, 2006), The Art of Stop motion Animation, Course Technology PTR; 1 edition.
2. Specc, Marc, (June 1, 2000), Secrets of Clay Animation Revealed 3, Create Space Independent
Publishing Platform; Updated edition.
3. Robert Russet and Cecile Starr, (1976 (U.S.A), Experimental Animation: An Illustrated Anthology, Van Nostrand Reinhold Compare.
4. Flipping Out: The Art of Flip Book Animation – Learn to Illustrate & Create Your Own Animated Flip Books Step by Step a book By David Hurtado

BAM105: Drawing for Animation
Credits: 4
LTP 212

Course Description: The course aims to equip the students with fundamentals and basics of drawing for animation

The course includes knowledge about Principles of Design and their use in Pre-Production of animation projects and to understand Human Anatomy and color theory used in animation.

Course Outcomes:
Upon successful completion of the course, the students should be able to:

CO1: Create light/shadow effect on paper cutout
CO2: Create model sheet for the 3D projects, models, and video compositions
CO3: Understand various kinds of perspectives and visually communicating a story through them
CO4: Get hands on practice to create realistic human face by using light and shading

Course Content

Unit I

Fundamentals of Drawing: Introduction to 2D and 3D object, Learning shapes and Forms. Cartoon Drawing, Proportions, Weight and Balance, Stick figures, Gesture drawing. Drawing same objects on foreshortening. Creating model sheets for props (battle axe, barrels etc). Concept art – making fantasy props and objects.

Unit II

Principles of Design: Visual communication through Basic shapes and forms, color tones, shapes and forms, overlapping lines, sizes, Introduction to frame composition.

Unit III

Anatomy & Still Life: An Introduction to Human study, Animal study, Bird study, An Introduction to Volume study, Light and shade study, to perspective design, 1 - Point Perspective, 2 - Point Perspective, 3 Point Perspective.

Unit-IV

Color theory: Primary colors, secondary colors, tertiary colors, Color wheel, Color scale

Recommended Books / Suggested Readings:

1. Lazzari, Margaret R, (March 1990), Art and Design Fundamentals, Van Nostrand Reinhold.
2. Barber, Barrington, (August 1, 2011), Drawing Anatomy, Arcturus Publishing.
3. Sanmiguel, David, (March 28, 2006), Art of Still Life Drawing, Sterling; 18954th edition

COM101: ENGLISH COMMUNICATION
LTP 200

Course Objectives:
1. To make students capable of using English language in context.
2. To enhance effective reading and writing skills.

Course Outcomes:
After completion of this course, students will be enable to -
1.The students will develop a minute practical knowledge about English grammar and its usage
2.The students will develop an understanding of the importance of free expression

Course Content

Unit I

Reading Skills: Comprehension Strategies- Skimming, Scanning & Inferencing, Summarising of Newspaper Articles, Paraphrasing of Complex Sentences

Unit II

English Grammar and Usage: Parts of Speech, Common Errors in writing, Tenses, Change of Voice, Transformation of Sentences

Unit III

ABasic Writing Practices: Paragraph writing, Picture Composition, University based Notices, Notes Making after listening to a Motivational Speech, Formal Letter based on University concerns, MS Word (font style, size, format, spacing)

Unit-IV

Vocabulary Enrichment: Word Coinage, Synonym, Antonym, Homophones, Idioms and Phrasal verbs

Recommended Books / Suggested Readings:

Functional English Grammar by Graham Lock, 1995

Suggested Readings:

Practical English Usage. Michael Swan OUP. 1995
On Writing Well. William Zinsser. Harper Resource Book. 2001
Communication Skills. Sanjay Kumar and Pushp Lata.Oxford University Press. 2006
Exercises in Spoken English. CIEFL, Hyderabad. Oxford University Press
Internet Links:
https://www.englishgrammar101.com/
http://learnenglish.britishcouncil.org/en/english-grammar
http://www.englishgrammarsecrets.com/
http://www.myenglishpages.com/
http://www.english-for-students.com/Homonyms-B.html

COM121 : ENGLISH COMMUNICATION LAB
Credits: 1
LTP 002

Course Description: The course aims to equip the students with focus on the production and practice of sounds of language and familiarizes the students with the use of English in everyday situations both in formal and informal contexts.

Course Outcomes:
Upon successful completion of the course, the students should be able to:

CO1: Develop better understanding of nuances of English language through audio- visual experience and group activities.
CO2: Hone speaking skills with clarity and confidence.
CO3: Have better comprehension of accent of people of different backgrounds and regions.
CO4: Use English grammar accurately.

Course Content

Unit I

Daily Discourse: Common Everyday Situations: Conversations and Dialogues (Unit 1-6), Monologue(2D/4D/5D/6D), and Communication at workplace,

Unit II

Listening Skills: Listening skills on Social Interactions (Unit 1), work and study (Unit 2), daily life (Unit 3), food (Unit 4), Places (Unit 5) and Family (Unit 6)

Unit III

Phonetic Skills: Pronunciation, Intonation, Stress (Unit 1-6) and Rhythm

Unit-IV

Speaking Skills: Group Discussion / Debate, Role Plays

Recommended Books / Suggested Readings:
1. Cambridge English Empower Elementary Student's Book by Cambridge University Press

Suggested Readings
1 . *Exercises in Spoken English*. Parts. I-III. CIEFL, Hyderabad. Oxford University Press
2. *Study Writing.* Liz Hamp-Lyons and Ben Heasly, Cambridge University Press.2006.
3. *On Writing Well. William Zinsser.* Harper Resource Book. 2001
4. *Practical English Usage.* Michael Swan. OUP. 1995.

EVS101: ENVIRONMENTAL SCIENCE

Credits : 2

LTP 200

Course Description: The course aims to equip the students with causes and consequences of different kinds of global environmental problems and develop the thinking about the remedial measures of these problems.
The course includes the scope of environmental study, ecosystem, natural resources, biodiversity and its conservation, various types of environmental pollutions, policies & practices.

Course Outcomes (CLO):
Upon successful completion of the course, the students should be able to:

CO1: To understand the multidisciplinary nature of environmental studies and ecosystem
CO2: To provide an introduction to renewable and non-renewable resources of energy
CO3: To become familiar with biodiversity and its conservation
CO4: To analyze the various environmental practices, policies and pollutions

Course Content

Unit I

Introduction to environmental studies: Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development.
Ecosystems: What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession.
Case studies of the following ecosystems:
a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds,streams, lakes, rivers, oceans, estuaries)

Unit II

Natural Resources: Renewable and Non-renewable Resources: Land resources and land use change; Land degradation, soil erosion and desertification.
Deforestation: Causes and impacts due to mining, dam building on environment, forests,

biodiversity and tribal populations.

Water: Use and over exploitation of surface and ground water, floods, droughts, conflicts over water (international & interstate).

Energy resources: Renewable and nonrenewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit III

Biodiversity and Conservation: Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hotspots India as a mega biodiversity nation; Endangered and endemic species of India Threats to biodiversity: Habitat loss, poaching of wild life, man wild life conflicts, biological Invasions; Conservation of biodiversity: Insitu and Exsitu conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit IV

Environmental Pollution: Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution. Nuclear hazards and human health risks Solid waste management: Control measures of urban and industrial waste. Pollution case studies.

Environmental Policies & Practices: Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.

Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wild life Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD). Nature reserves, tribal populations and rights, and human wild life conflicts in Indian context.

Human Communities and the Environment

Human population growth: Impacts on environment, human health and welfare. Resettlement and rehabilitation of project affected persons; case studies. Disaster management: floods, earthquake, cyclones and landslides. Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.

Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Fieldwork

Visit to an area to document environmental assets: river/forest/flora/fauna, etc.

Visit to a local polluted site: Urban/Rural/Industrial/Agricultural.

Study of common plants, insects, birds and basic principles of identification.

Study of simple ecosystems pond, river, Delhi Ridge, etc.

Recommended Books / Suggested Readings:

1.Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.

2.Gadgil, M., & Guha, R.1993. This Fissured Land: An Ecological History of India. Univ. of California Press.

3.Gleeson, B. and Low, N.(eds.)1999. Global Ethics and Environment, London, Routledge.

4.Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.

5.Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.

6.Grumbine, R. Edward, and Pandit, M. K. 2013. Threats from India's Himalaya dams. Science, 339:36 -37.

7.McCully, P. 1996. Rivers no more: the environmental effects of dams (pp.29-64). Zed Books.

8.Mc Neill, JohnR. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.

9.Odum, E .P, Odum, H.T. & Andrews, J. 1971.Fundamentals of Ecology. Philadelphia: Saunders.

10.Pepper, I.L., Gerba, C.P. & Brusseau, M.L.2011. Environmental and Pollution Science. Academic Press.

11.Rao, M.N. & Datta, A.K.1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.

12.Raven, P. H., Hassenzahl, D. M. & Berg, L. R. 2012. Environment. 8th edition. John Wiley & Sons.

13.Rosencranz, A., Divan, S., & Noble, M.L.2001. Environmental law and policy in India. Tripathi 1992.

14.Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.

15.Singh, J. S., Singh, S. P. and Gupta, S. R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.

16.Sodhi, N.S., Gibson, L. & Raven, P. H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.

17.Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.

18.Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.

19.World Commission on Environment and Development. 1987. Our Common Future. Oxford University Press.

Semester II (BOCD)

BAM201: Introduction to 3D Modeling

Credits : 4

LTP 212

Course Description: The course aims to equip the students with understanding the basics of 3D modeling and sculpting using Autodesk Maya

The course includes modeling of 3d object such as Character modeling, prop modeling and creating gaming assets.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand the basics of 3D Modeling

CO2: Create hard surface gaming props and character model.

CO3: Understand the mesh flow on a production level.

CO4: Get hands on creating low poly 3d models and props.

Course Content

Unit I

Introduction to Maya: Understanding User Interface, understanding 3D Concept, working in various units (centimeter, inches, foot), setting up image planes and working in multiple viewports. Learning the difference between NURBS and Polygon modeling, using curves and Boolean techniques to create basic shapes.

Unit II

Polygon Modeling: Introduction to polygon modeling, Making hard surface objects and props like guitars, speakers, pen, watches and various house hold objects.

Unit III

Game assets Modeling: Using Modeling toolkit to create Props for a gaming environment and setting up a small game scene, setting up proper model sheet for the props and assets like riffles, bombs etc.

Unit IV

Character Modeling: Understanding the mesh flow of a character. Keeping the model rig ready with edge loops in mind. Working on various techniques to create a character's face. Learning how to use the Append to poly tool, Insert Edgeloop tool and Multicut Tool for cutting and making custom mesh cuts and edgeloops.

Recommended Books / Suggested Readings:

1. Autodesk Maya 2022 Basics Guide Book by Kelly L. Murdock

BAM202: Art of Visualization

Credits: 4

LTP 212

Course Description: The course aims to equip the students to learn about different types of colors and color mediums.

The course includes outdoor sketching and drawing and able to visualize a story and create storyboards for the same

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand the behavior of natural light and shadows.

CO2: Know technicalities of environment and its textures through sketching.

CO3: Create anatomy structure of human, birds and animals.

CO4: Understand Visualization & story.

Course Contents:

Unit I

Studying colors and color mediums: To understand the formal structure of color through analysis of color theory and notation. Experience of color through experiments in various mediums: Poster colors, water colors, Pastels, Acrylic etc. Color Harmonies: Complementary, Split Complementary, Warm Colors, Cool Colors, Hue, Tint and Shades etc.

Unit II

Sketching and Background Creation: Indoor and outdoor Studies, Landscape in pencil Crayons, Pen and ink, Water Color, Poster colors etc. Drawing backgrounds with proper scaling.

Gesture drawings, Quick Figures, 5-minute figure studies, Poses- Balance, moods expression through body. Studying paintings and sculptures by artists like Da Vinci, Van Goh etc.

Unit III

Story Boarding & Manga Art: To understand the formal structure of story through storyboard drawings, creating storytelling images, working with single images to tell stories and do gag drawings, structuring a scene. Making manga backgrounds and characters. Understanding Comic paneling.

Unit IV

Cartoon Character Anatomy: Cartoon Drawing, Proportions, Weight and Balance, Stick figures, Gesture drawing, Expressions. Model Sheet: To understand the different poses of any character through model sheets.

Recommended Books / Suggested Readings:

1. Hart, Christopher, (May 6, 2008), Cartooning the ultimate character design book, Chris Hart Books; 1 edition.

2.Powell, William, (1 January 2003), Drawing Landscapes with William F. Powell: Learn to paint step by step, Walter Foster Publishing.

3.Hart, John, (29 January 1999), the Art of Storyboard: Storyboarding for Film, TV and Animation, Focal Press.

BAM203: Print Media & Advertisement Design
Credits: 4
LTP 212

Course Description: The course aims to equip the students about the fundamentals and basics of Printing and Advertisement designing
The course includes about various aspects of Advertisement Layout and designing different kinds of advertisements using Adobe Illustrator

Course Outcomes:
Upon successful completion of the course, the students should be able to:
CO1: Create graphics for branding and campaigning.
CO2: Create professional ads using design principles and elements.
CO3: Recognize the essentials of newspaper- digital as well as print, understanding RGB and CMYK.
CO4: Create innovative designs for film promotional material.
Course Content

Unit I

Introduction to Print Media & Advertisement: What is Advertisement, what is Print Media, A brief history of advertisement & Print media, the role of advertisement in print media, various aspects of advertisements, understanding the difference between RGB and CMYK color modes. Difference between print media and digital media.

Unit II

Advertisement Layout & Design Elements: Understanding Size, Balance, Typography, Understanding the design elements of logo, Signage, Branding and creating office stationeries.

Unit III

Graphic Design for Media and publishing House: Understanding Book design, Magazine, Advertisement full page, Half page and for magazine/newspaper and its essentials.

Unit-IV

Designing for Advertisement: Understanding Poster designing and its essentials, Poster as a strong medium of Advertising Innovative Designs for Animation Films, Slogan, Designing brochure.

Recommended Books / Suggested Readings:

1. Cambridge English Empower Elementary Student's Book by Cambridge University Press

Suggested Readings

1. Landa, Robin, (27 October 2010), Advertising by Design: Generating and Designing Creative ideas across Media, John Wiley & Sons; 2nd Edition edition.
2. Ken Burtenshaw and Nik Mahon, (2011), The Fundamentals of Creative Advertising, Ava Publishing; 2nd revised edition edition.

BAM204: Digital Photography and Cinematography

Credits: 4

LTP 032

Course Description: The course aims to equip the students with history of photography and camera. The course includes about working of DSLR camera, photography and cinematography and Editing software such as Adobe Premiere to be used for video editing

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: work with DSLR cameras to do digital photography

CO2: Understand different types of camera lenses and functioning of DSLR camera.

CO3: Shoot videos professionally with light setup.

CO4: Learn methods of cinematography.

Course Contents:

Unit I

Photography: Origin of Photography, History of Camera, and Early-stage challenges, Lenses and Cameras. Understanding Framing, Understanding Composition, and Understanding Rule of thirds. Understanding Nature, People, Product, Still Life, City & Architecture, Landscape, Experimental and HDR Photography.

Unit II

Cameras, Lenses & its fundamentals: Understanding different types of Cameras- SLR, DSLR etc. Types of lenses and their uses, Zoom Lens, Prime Lens, L lens, Cinema Lenses. Difference between Film Camera and Still Cameras. Lens filters, infrared Photography, Astronomy Photography. Mirrorless cameras- how do they work. Resolution, aspect ratio and types of camera Sensors

Unit III

Cinematography: Understanding the role of DOP (Director of Photography – Cinematographer), Understanding types of camera shots, angles and movements. Storytelling through visual elements of variety- contrast, color, hue, saturation, values, lighting setup. Building look and visual feel of a film using contrasting colors. Achieving the "film look" according to the emotions. Color temperatures - Warm colors, Cool colors, Black and white, Mono tones. Learning how colors can provoke emotions in a film and help with the storytelling. AR/VR Cinematography- Ready player one.

Unit IV

Lighting: Quality of light- harsh, soft, specular, diffuse. Creating depth using lights by separating the characters from the background. Using colored lights to achieve colored depth contrast. Key Light, Fill light, back light, Film Noir lighting setup. Psychology of color in lights to create moods. Focusing on light direction and contrast. Lighting Equipment: Types of bulbs, LED Lighting, Tungsten-Halogen lights, Fluorescent, tube lights, spot lights. Reflectors, soft box, color gel sheets and light filters. Day time and Night time light setup.

Reference books:

1. Cinematography: Theory and Practice: Image Making for Cinematographers and Directors by Blain Brown

2. Arena Syl, (7 October 2012), Lighting for digital Photography: From Snapshots to Great Shots (Using Flash and Natural Light for Portrait, Still Life, Action, and Product Pho, Peachpit Press.

COM 201: Business Communication

LTP 200

Course Objective:

1. To make students develop business writing etiquette in terms of formats.
2. To develop their reading skills and enhance their vocabulary

Course Outcomes (CLO):

After completion of the course, learners will be able to:

1.The students will be able to develop effective reading and writing skills.

2.The students will learn vocabulary and technical jargons as used in business communication.

Course Contents:

Unit I: Communication & Interpersonal Skills

Process of Communication, Types of communication, Modes of Communication, Barriers to Communication, Delivering Effective PPT.

Unit II: Technical Writing

Memorandum, Notices, Blog Writing, Report Making, Minutes of Meeting, E-Mail, Press Note, Resume & Cover Letter, Formal Letter- Complaint Letter, Inquiry Letter, Confirmation Letter, Resignation Letter, Permission Letter,

Unit III: Vocabulary Building

Misspelt words, Techno based Acronyms, Word formation- prefix, suffix, Foreign Words, Phrases

Unit IV: Functional Grammar

Conditional Sentences, Degrees of Comparison, Punctuation, Question Tags

Reference Book: **Functional Skills English by Roselyn Whitley, 2008**

Recommended Books / Suggested Readings:

1.*Exercises in Spoken English*. Parts. I-III. CIEFL, Hyderabad. Oxford University Press

2.*Study Writing.* Liz Hamp-Lyons and Ben Heasly, Cambridge University Press.2006.

3.*On Writing Well. William Zinsser.* Harper Resource Book. 2001

4.*Practical English Usage. Michael Swan.* OUP. 1995.

COM 221: BUSINESS COMMUNICATION LAB

Credits: 1

LTP 002

Course Description: The course aims to equip the students with business communication principles through creation of effective business and oral presentations. Includes study and application of team communication and use of technology to facilitate the communication. The course includes designing and mastering the most important communication skills, from professional writing presentations.

Course Outcomes (CLO):

After completion of the course, learners will be able to:

CO1: Acquire in-depth knowledge of principles of business communication

CO2: Acquire in-depth knowledge of principles of business communication

CO3: Deliver high-quality oral presentations

CO4: Develop Nonverbal communication, interview preparation and resume writing

Course Contents:

Unit I

Listening Skills

Listening Exercises on Journeys (Unit 7), Fit and healthy (Unit 8), Clothes and shopping (Unit 9), Communication (Unit 10), Entertainment (Unit 11) and Travel (Unit 12)

Unit II

Presentation Skills

Making PPT and Presenting Power Point Presentation

Unit III

Phonological Skills

Pronunciation, syllables and word stress.

Unit IV

Speaking Skills

Interviw skills

Recommended Books / Suggested Readings:

Cambridge English Empower Elementary Student's Book by Cambridge University Press

Suggested Readings:

1.*Exercises in Spoken English.* Parts. I-III. CIEFL, Hyderabad. Oxford University Press

2.*Study Writing.* Liz Hamp-Lyons and Ben Heasly, Cambridge University Press.2006.

3.*On Writing Well. William Zinsser.* Harper Resource Book. 2001

4.*Practical English Usage. Michael Swan. OUP. 1995.*

BCA121: Computer Fundamentals & IT Lab

Credits: 3

LTP 021

Course Description: The course aims to equip the students with the knowledge of computer fundamentals.The course includes Data Processing Cycle, History and Generations of Computers, Memory structure and Types of Memory.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand basic computer architecture.

CO2: Understand the fundamental Computer components that make up a computer's hardware and the role of each of these components.

CO3: Recognize when to use each of the Microsoft Office programs to create professional business documents.

CO4: Gain hands-on experience of working in Microsoft products such as: MS Word, MS Excel and MS PowerPoint.

Lab Exercises:

1.Identify computer hardware and software (in the lab).

2.Draw and explain the block diagram of computer system.

3.Demonstrate various peripherals and their applications.

4.Demonstrate the usage of various storage devices.

5.Illustrate the booting procedure (using windows).

6.Demonstrate installation of application software (in windows).

7.Introduction to DOS Commands.

8.Introduction to Windows.

9.Introduction to Microsoft Office.

10.Introduction to MS-Word.

11.Define page size and margins for a document.

12.Insert graphics (a picture for example) in a document.

13.Prepare a document with at least three fonts and four different font sizes. Include superscript and subscript.

14.Prepare your biodata in one A-4 size page.

15.Prepare a document with at least three fonts and four different font sizes. Include superscript and subscript.

16.Explain the use of spell check.

17.Introduction to MS-Excel.

18.Open a work sheet, name it and save it.

19.Change the width of a column/ range of columns.

Semester III

BAM301: Texturing Shading Lighting and Rendering

Credits: 4

LTP 212

Course Description: The course aims to equip the students to understand the Role of Lighting in 3D Pipeline.

The course includes natural behavior of textures and create similar in software's and knowledge of camera parameters and realistic rendering techniques.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Gain knowledge about the functioning of Maya shaders.

CO2: Understand UVs and UV Editing.

CO3: Create realistic renders using Indirect lighting for gaming environments.

CO4: Create realistic textures for their Character and models.

Course Contents

Unit I

Texturing & Shading: Introduction to texturing and shading, working with Shader - Blin, Phong and Lambert etc. Working with Shader Properties - Ambient, Diffuse, Specular, gloss, opacity. Understanding UVW Mapping and the UV editor. Creating seams for Unwrapping Complex Character Mesh. Working with Maps Bump and Opacity, Reflection & Refraction. Creating custom shaders in Maya using the hyper shade.

Unit II

Lighting: Introduction to lighting, understanding different types of Lights, 3 Point Light Setup, Working with Advanced Properties, Volume Lights and FOG. Working with Spot lights and the cone properties. Adding mesh and point lights. Working with light linking in Autodesk Maya.

Unit III

Camera: Camera set up, Camera types, framing objects, Motion blur, Depth of field, using a stereoscopic camera, Setting the aspect ratio of the lens. Staging the foreground and background elements to create the illusion of depth while rendering.

Unit IV

Rendering: Understanding the Rendering Basics, Introduction to ARNOLD in Autodesk Maya. Understanding Arnold lighting, Arnold preview rendering. Rendering different types of materials under various light setups.

Reference books:

1. Advanced Maya Texturing and Lighting Book by Lee Lanier
2. Birn, Jeremy, (November 21, 2013), Digital Lighting & Rendering, New Riders; 3 editions.

BAM302: Video Editing and Motion Graphics

Credits : 4

LTP 212

Course Description: The course aims to equip the students about video Editing techniques used in Industry

The course includes Abode Premier used for video editing and use of motion graphics and how to create them by using adobe after effects software

Course Outcomes (CLO): Upon successful completion of the course, the students should be able to:

CO1: Know weaving a story together using footage.

CO2: Add sound, music and graphics to enhance a story

CO3: Create motion graphics using different types of graphic elements.

CO4: Work on Linear and Non-linear editing timelines.

Course Content:

Unit I

Introduction to Editing: History and evolution of Editing. Understanding importance of editing in the flow of a narrative, Pace and Rhythm in editing. Linear and Non-Linear Film Editing, Offline and Online Editing. 5 stages of film production – Development, pre – production, production, post-production and Distribution.

Unit II

Adobe Premiere: User Interface, Understanding Footage, understanding tools, Understanding Film and video Resolutions, Aspect Ratio, Fps. Editing with Premiere Pro: Working with Footage, color grading, raw cuts and edits, dubbing, adding background music. Creating stream highlights videos and edits, montages, trailers, animatic and teasers.

Unit III

After effects: - Animation tools, Title Designer, Photoshop Graphics, Video Transition Effects, Working with Audio, Audio Effects, and Video Output. Working on timing using various types of key frames. Creating film titles, channel titles, news bulletin promos, lower thirds, channel logos.

Unit IV

Motion graphics: Motion graphics- Design Concepts, Typography. Using space to create composition. Creating cartoony animations to make snappy looking icon packs. Creating music lyrical videos keeping continuity in mind. Making Lower thirds and news promos. Creating custom color and twitch animation edits with background music.

Recommended Books / Suggested Readings:

1. Editing Digital Video (Digital Video and Audio Series), Publisher: McGraw-Hill Education TAB; Pap/Cdr edition (16 October 2002)

2. Adobe Creative Team, Adobe Creative cloud: After Effects CC

3. Trish and Chris Meyer, (June 2003), Creating Motion Graphics for After Effects, CMP Books; 2nd edition.

BAM303: Animation

Credits: 4

LTP 212

Course Description: The course aims to equip the students to familiarize with the concept of basic character animation.

The course includes principles of animation and their usage and stories to life using digital 2D and 3D techniques.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create 2D Cartoon character with walk cycle.

CO2: Utilize various techniques like onion skin to clean up the rough drawings.

CO3: Create a character depicting balance and weight through squash and stretch principle.

CO4: Understand the basics of 3D Animation.

Course Contents

Unit I

Understanding 2D animation: Grasping the concept of 2D animation of Keyframes, in-betweens and breakdowns. Focusing on the leading and following action, arcs, timing and spacing. Diving into a bit of history of how things were done in the past- Disney's Magic multi pane camera.

Unit II

Animated CC: User Interface, Managing the Workspace, Creating Shapes, drawing with Pen, Pencil and Line Tools, Editing Shapes, Using the Selection Tools, Importing Files.

Creating and Editing Symbols: About Symbols, Converting Objects to Symbols, Importing Bitmap Images. Making a greeting card with small animated elements using movie clips and symbols.

Unit III

Animation in Autodesk Maya: Working on the animation interface. Getting to know the timeline, time range and the animation playback controls. Starting the animation with a basic bouncing ball focusing on the gravity, weights and arcs. Moving on to an interactive bouncing ball, Weighted bouncing ball studies (balloon, bowling ball). Making pendulum animation, working on arcs, timing and spacing.

Unit IV

Introduction to 3D Animation: Expressing emotions in a full body character by posing- Happiness, sadness, winning, balance, dancing. Animating a Tailed ball by applying the principles of arcs, follow through and overlapping action, squash and stretch.

Recommended Books / Suggested Readings:

1.Adobe Animate CC for Interactive Media: Adobe Certified Associate Exam Preparation.

2.Blair, Presto, (October 5, 1995), Illusion of Life, Disney Editions; Rev Sub edition.

3.Animator's survival kit by Richard Williams.

BAM304: Architecture Pre Viz – Modeling and Texturing

Credits:4

LTP 212

Course Description: The course aims to equip the students to model and texture a 3D asset and integrate it into a photographic plate

The course includes the understanding and workflow of 3D Modeling and Architectural Modeling.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Visualize ideas, concepts and convert them into realistic 3D outputs.

CO2: Create qualitative and innovative 3D architectural buildings.

CO3: Recognize need of utilizing colors, textures, materials, lighting conditions according to clients requirements.

CO4: work with the materials and textures to be used on 3D Models.

Course Contents

Unit I

3DS Max: Understanding User Interface, Standard Primitives, Extended Primitives, Customizing the Units, Basic Models using Parametric Deformers, AEC Extended objects, Advanced Set modeling- Buildings, Foliage-Exterior- Landscaping, 3D Boolean, Compound Objects, 2D Boolean.

Unit II

Modeling Techniques in 3Ds max: Understanding the Modifier Stack, Modeling with polygons and subdivision surfaces, Freeform sculpting, Modeling game assets to understand and grasp the basic concepts of modeling in 3DS Max. Linking objects in hierarchies.

Unit III

Architectural Modeling: Understanding the workflow of Architecture models, Interior Modeling, Exterior Modeling, Techniques used in Architectural modeling. Creating Game ready assets of fantasy and buildings and architecture.

Unit IV

Texturing and shading in 3Dsmax: Introduction to Texturing & Shading, building materials, texturing with bitmaps and procedurals, painting objects with Viewport Canvas, rendering a sequence, Adding special effects with mental ray.

Recommended Books / Suggested Readings:

1. Murdock, Kelly, 3D Studio Max Bible, Pub. - Wiley.

2. Daniele Todd, Poly-Modeling with 3ds MAX, Pub.- Focal Press

3. Autodesk 3ds Max 2021: Modeling Essentials, 3rd Edition by Pradeep Mamgain

BAM307: Film Appreciation

Credits: 3

LTP 120

Course Description: The course aims to equip the students with the knowledge of the history of films and how they are made. Reviewing and critiquing a film based on the art aspects. Learning about different Film genres and their significance in the Film Industry.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Demonstrate knowledge of film history and the process of film making

CO2: Understand the production process of the art of film making

CO3: Have level of expertise in identifying film vocabulary and various genres

CO4: Show the ability to appreciate innovations in cinematography, multilinear narratives and other contemporary styles and write a film review

Course Content

Unit I

History of Films - Early film history, development of film as a form, narrative structure in film making from the point of view of specific film clips- Technological innovations in cinema, directorial interventions, development of narrative. Films of Lumiere Brothers, George Melies, D.W. Griffith, Orson Welles. Soviet Montage: Battleship Potemkin (1925) Sergei Eisenstein, Strike (1925) Sergei Eisenstein. Editing -Films of Edwin Porter, Sergei Eisenstein and George Melies. Early Film development in India-a history: Contribution to cinema in India-Dada Saheb Phalke, Satyajit Ray and Guru Datt (Pyasa).

Unit II

Film Aesthetics - Mise-en-scene: Framing and Composition, Shots, Establishing Shot, camera angles, Camera Movement, POV shot, 180 Degree rule, Diegetic, Non-diegetic sounds. Lights and Colors to depict emotions and enhance the storytelling. The role of Contrast, Hue, Saturation and Values in a film. Film Genres – Noir, Horror, Fiction, Indie, Cult classics, Science fiction, action, adventure, comedy, social, satire, parody etc.

Unit III

Production Process – Pre- Production – Story, Script, Set Design, costume design, casting, scheduling, location scouting, preps and rehearsals, Equipment renting, setting up a crew for the production.

Production – Lights camera action! Clapperboard, tracking scenes and shots taken, Role of Director and DOP. Recording Voice Over and dubbing. **Post Production** – Visual FX, Background Score, Foley, Editing, Poster design, Film certification (U, A, PG etc.), trailer & teaser, Film Premiere and Launch. Film Distribution.

Unit IV

Appreciation and Analysis - Three-Act Structure: Act One: Setup; Act Two: Confrontation; and Act Three: Resolution. Plot of the film, plot differ from the story narrative. Does the film comment on the social and political issues at the time it was released, including questions of race, ethnicity and gender? Character Plot and development. Plot revolving around multiple characters.

Recommended Books / Suggested Readings:

1. 101 Things I Learned in Film School by Neil Landau

2. Visual Storytelling: How to Speak to the Audience Without Saying a Word by Morgan Sandler

3. Film Directing: Shot by Shot - 25th Anniversary Edition: Visualizing from Concept to Screen by Steve D. Katz

4. The Filmmaker's Handbook by Steven Ascher

5. Motion Picture and Video Lighting: For Cinematographers, Gaffers and Lighting Technicians by Blain Brown

●List of Films to watch -

	Name	Genre	Points of Focus and Discussion
1.	Pyasa, Mother India, Mughal-e-Azam, Bandini, Do Bigha Zameen, Jagte Raho	Indian Classics	**Pyasa** – Character Plot and development, Lighting and the ironic storyline. **Mother India** – Female lead, Struggle of a single mother, Character development. **Mughal-e-Azam** – Editing and the Mirrors Scene, Black and white to color. **Bandini** – Classic film on female criminals and prisoners, Story narrative and freedom struggle. **Do Bigha Zameen** – Crisis and struggle of Kisan in the 1950's. **Jagte Raho** – Satire on high society, character development.
2.	Trip to the Moon – George Melies, The Great Train Robbery – Edwin S Porter, Battleship Potemkin (1925) Sergei Eisenstein. 12 Angry Men.	Western Classics	**Trip to the moon** – old editing techniques, fiction and imagination years before the first moon trip **The Great Train Robbery** – First film that was shot on location and used propercamera shots and framing, edited to create a narrative story. Ending scene that stunned the audience. **Battleship Potemkin –** Montage and Jumpcuts defined in the classic scene of people on the port. Multiple individual shots came together to form the first montage. **12 Angry Men –** Multiple Characters in one room, editing and shots when characters are on the same side..
3.	Lawrence of Arabia, The Hobbit	Drama, War, Adventure, Fiction	Cinematography, World Building, Character driven plot, Art Direction, Writing, Music.
4.	Gladiator, 300	Action, Historical Fiction, Historical Drama	Set design, Costume Design and Props. Fighting choreography and action sequences.
5.	The Giver, The Grand Budapest Hotel, Hugo, The Hobbit	Fantasy, Adventure	Color Grading, Contrast. The Giver – Black and white to color as the story progresses. Two tone color grading in grand Budapest hotel and Hugo, The hobbit – fantasy world building.
6.	Parasite, Mother!, Psycho	Horror, Thriller	Cinematography, Plot, Thriller Story Narrative. Emotional horror, psychological Thriller.
7.	Ready Player One, Avatar, Pirates of Caribbean	Fiction	Ready Player One – Directed in VR. Avatar – World building, color and virtual Cinematography. Pirates of Caribbean – Multiple characters build up to one character, captain Jack
8.	Jane Bhi Do Yaaro, A Wednesday, Sawariya	Social Satire	Plot, social impact of political scenario on common man. Sawariya – RGB film, understanding the use of color on set to create and depict mood.
9.	Drishyam, Andhadhun	Thriller	Story Plot twist, Intense music and character emotion arc.

BAM308: Game Technology Fundamentals

Credits: 3

LTP 210

Course Description: This course aims to equip the students with the knowledge of gaming industry and how games are made. Learning about the key roles of game industry, game and level design, elements of games and game genres.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Recognize various genres of Video Games

CO2: Learn about the history and origin of game industry

CO3: From game director to play tester, learning about key roles in gaming

CO4: Engines that are used to make video games

Course Content

Unit I

Origin of Video Games & What is a Game? - Board games and Arcade game culture of the 80s, Early games like asteroid, space odyssey made in the MIT institute. Early Consoles to modern consoles – Atari, Nintendo, PlayStation 1 to 5, X-Box. Hand held game consoles like game boy, psp, Nintendo switch. Understanding elements of a video game. Understanding FPS and refresh rate.

Unit II

Key roles in Gaming industry and Game Genres- Game Director, Concept Artist, Game Developer, Level Designer, Game Designer, Modeling and Texturing Artist, SFX designers, AI Developers, Motion Capture team, Game animators and game cinematic animators. Genres- Action, Adventure, RPG, Educational, Party, Rhythm, Shooter, Simulation, Open World, Simulation, Sports, Strategy, Traditional.

Unit III

Types of Games- Platformer, 2.5 D, 3D, MMO, RPG, Web Gaming, 8-bit games, pixel games, MMORPG, Mobile games, sandbox, Real time strategy games. Game competitions, Game Dev conferences and Game Awards. Understanding gamification and core aspects of storytelling through video games.

Unit IV

Game Production pipeline: Story / Game Pitch – Idea development – Concept art – Game Mechanics – Game Economy – Game Design – Level Design and World Building – Recording Dialogue – Motion capture – Animation – Cinematics – Sound effects – Trailers, Teasers – Play testing and beta testing – Game Launch – Game updates for more content and bug fixes.

Recommended Books / Suggested Readings:

1. Level Up! The Guide to Great Video Game Design – Scott Rogers (Author)
2. Video Game the movie – 2014
3. The Game Production Toolbox by Chandler Heather Maxwell

Semester IV

BAM401: 3D Animation

Credits:4

LTP 212

Course Description: The course aims to equip the students to know the method used to create human walk and run animation. Understand the purpose of timing & spacing. Using weight and volume to make game animation loops look dynamic. Focusing on Idle animation loops and character breathing.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand the animation principles.

CO2: Work with character body mechanics.

CO3: Understand the Graph editor and create smooth movements.

CO4: Work on game animation loop cycles.

Course Content

Unit I

Overview of Animation Tools: Time Slider, Playback options & Preferences to optimize animation, Difference between Frame per second and Render every frame, planning proper animation, setting up reference in the viewports. Making basic Pendulum animations and interactive bouncing ball.

Unit II

Human Walk Animation: Human walk animation, Walk Cycle techniques, Animation keys, Playblast rendering, Ghosting and Motion trails to improve the arcs in animation. Focusing on Balance and weight. Creating a walk loop and a progressive walk animation.

Unit III

Body Mechanics: Working with pose-to-pose principle of animation to make key poses first and set their timing, adding in-betweens and breakdowns of action, finally splining the animation and polishing the shot.

Unit IV

IAnimating Head Turns: Setting in-betweens for a simple eye movement & head turns, Adjusting the timing and spacing of the head movements. Adding shock or surprise drama into the shot. Creating a pantomime shot. Problem solving and error handling.

Recommended Books / Suggested Readings:

1. Williams, Richard, (5 November 2009), Animation survival kit, Faber; Third Edition, Revised edition.
2. Timing for Animation by Tom Sito
3.The Illusion of Life – Disney Animation by Frank Thomas, Ollie Johnston

BAM402: Dynamics

Credits: 4

LTP 212

Course Description: The course aims to equip the students to understand rules of physics to simulate natural forces.

The course includes Fluid Effects and create a wide variety of 2D and 3D atmospheric, pyrotechnic, space, and liquid effects and creating dynamic animation using MASH network.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Differentiate between rigid and soft bodies and create realistic simulations.

CO2: Create Animation using the MASH network in Autodesk Maya.

CO3: Understand of how to create various kinds of cinematic effects like fire and smoke.

CO4: Recognize behavior of natural simulations and creating similar rendering fluid motions.

Course Content

Unit I

Dynamics and Particles: Understanding concepts of Dynamics, Uses of dynamics in production pipeline. Introduction to particle system, Introduction to Dynamic Fields, Techniques of creating particle simulations like Fire, Smoke, Water, Fireworks

Unit II

Soft/Rigid Bodies: Active and passive bodies working with Constraints, Working with springs and chains. Wall breaks and destruction dynamics. Problem solving and error handling.

Unit III

Fluid Effects: Introduction to 2D & 3D containers, Introduction to Maya Ocean, Learning the interaction of objects with dynamic fluids, Basic introduction to Fluids n Cache

Unit IV

MASH: Using MASH dynamic network to create procedural animations for 3D motion graphic backgrounds. Using MASH to create multiple instances to generate medical animations and simulations. Using various nodes to create looped animations.

Recommended Books / Suggested Readings:

1. Autodesk Maya 2020 Basics Guide by Kelly L. Murdock, Sdc Publications books from same Author: Kelly L. Murdock

2. Autodesk Maya 2019 for 3D Artists a book by Sham Tickoo/TIET

3. Learning Maya | Dynamics – by Alias Wavefront

BAM403: Architecture Pre-Viz – Lighting & Rendering

Credits: 4

LTP 212

Course Description: The course aims to equip the students to understand the photometric lighting technique. The course includes 3Ds Max Design lighting and rendering techniques.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand difference between light in Real world & CG work space

CO2: Utilize parameters of lighting-intensity, illuminations color, lens effects for realistic outputs

CO3: Recognize roles of different types of lights for Interior and Exteriors for gaming

CO4: Understand and learn application of 3-point lighting and render accordingly

Course Content

Unit I

3Ds Max Design Lighting: Autodesk 3ds Max Design Lighting Overview, Local vs. Global Illumination, Choosing a Lighting Strategy. Fundamentals of Standard Lighting, Types of Standard Lights, Shadow Types, Photometric Light Objects, Exposure Control, Daylight Lighting, Soft Shadows and Ambient Occlusion.

Unit II

Lighting and Rendering using Arnold: Scene Preparation for Arnold, Fundamentals of Arnold, rendering with Arnold, Arnold Interior Rendering, Controlling Arnold Quality, Physically based lighting, working with materials, Interactive rendering, Light path expression.

Unit III

Rendering Engines: Iterative Rendering, Single vs. Double-sided, Camera Parameters, Background Images, The Print Size Wizard, Selected Rendering Options, and Rendering Presets.

Unit IV

V-Ray: Using V-Ray for realistic Rendering of all CG assets. Using Colored lights to create dynamic fantasy renders. Using isometric rendering technique to create miniature architectural models.

Recommended Books / Suggested Readings:

1. Autodesk 3ds Max 2021: A Detailed Guide to Arnold Renderer, 3rd Edition by Pradeep Mamgain

2. Architectural Rendering with 3ds Max and V-Ray: Photorealistic Visualization by by Markus Kuhlo (Author), Enrico Eggert.

BAM407: Multimedia Copyrights

Credits: 4

LTP 400

Course Description: The course aims to equip the students with the knowledge of copyrights and patent system in Multimedia field in India.

This course will teach students the importance of copyrights and help students to patent and copyright their original creations.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: File their work for Copyrights and patents

CO2: Familiarize them to the concept of plagiarism and copyright

CO3: Learn about Indian Intellectual property laws

CO4: Understand the digital intellectual copy right laws

Course Content

Unit I

Digital Licensing: Learning about copyright and citing multimedia sources. Copyrights works, public domain, Royalty free vs Loyalty free digital assets. Creative commons license and attributions.

Unit II

Copyrights and Plagiarism: Understanding copyright system in India. Learning about things that can and can't be copyrighted. Understanding Intellectual copyright and its uses. IPR system and its working. Articles from the Indian constitution that help artists to protect their work.

Unit III

Disclaimers & Fair Use of media: Fair use if the work used is noncommercial, educational, scientific, or historical. Creating a Disclaimer of “Fair use” to utilize existing art or media. Working with “credits to the owner” license.

Unit IV

Filing for Patent, copyright: Creating original content and patenting it. Text, drawings, graphics, photographs, film, video, wireless, audio, animation, VR & AR. Copyright in fictional characters owned by author or publisher, Photographic Artist's moral rights under Visual Artist's Rights Act or State Law, Copyright in the film, audio/video work or animation.

Recommended Books / Suggested Readings:

1. Media Laws and Ethics by M. Neelamalar

2. Media Ethics and Global Justice in the Digital Age (Communication, Society and Politics) by Clifford G. Christians

BAM406: Sound Editing & Mixing

Credits: 4

LTP 212

Course Description: The course aims to equip the students' knowledge about sound mixing for Film and Video and utilize the multi-track editor to adjust audio files. To be able to choose the right sound effects, dialogue, ADR, Foley effects, and music and assembling all the pieces into the film's final cut. The course includes process of sound mixing- tweaking levels on every audio file and mixing sound with ambient noise of the scene and the dialogue.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create sound for audios and videos using multi-track sessions.

CO2: Render professional level sound outputs through waveform enhancements and fixing noise issues

CO3: Recognize difference between amplitudes and frequencies and create a well edited sound for audio/video track..

CO4: Understand role of editor panel and sound editor.

Course Content

Unit I

Introduction to Adobe Audition: Software Workspace and Interface, setting up your project, Comparing the Waveform and Multi track editors, Basic components of the editors, working with audio in the Editor panel, connecting to audio hardware, application settings.

Unit II

Recording Audio: Append audio files to another, import a file as raw data, insert an audio file into a multi-track session, supported import formats, Monitoring recording and playback levels. Editing Audio: visually fading and changing amplitude, working with markers, converting sample types, frequency, and amplitude, Waveform editing enhancements. Recording Foley sounds to add into a scene and creating an animatic.

Unit III

Sound Mixing: Mixing Pop Rock, Mixing Hip Hop, Mixing EDM, Foley, Reverb, Modify-Routing, Gain Structure, Automation, Master Harmonic Distortion, Metering, Mid & side, Referencing, editing dialogue, Fixing hum and broadband noise issues with processing. Audio file formats and encoding

Unit IV

Equalization and Dynamics, Exporting Audio: EQ, Loudness Normalization &, Learn Compression, Panning, Level Balancing, Delay, Chorus, Phase and flange Delay Effects, EQ Types, Filters, Using Effects, Parameters, synchronizing sound effects (SFX), Automating volume. Printing the final mix stems, Exporting audio and video, format, rendering.

Recommended Books / Suggested Readings

1.Film Sound: Theory and Practice - by Elisabeth Weis (Editor), John Belton (Editor)

2. Sound for Film and Television- Tomlinson Holman.

3.Audio Postproduction for Film and Video - Jay Rose

BAM405: Digital Compositing

Credits: 4

LTP 212

Course Description: The course aims to equip the students to enhance their knowledge in the field of compositing.

The course includes learn about compositing in after effects and learn about camera and effects used in compositing

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand digital compositing software in the field of VFX.

CO2: Create a scene using keying and rotoscopy.

CO3: Create compositing shots with real cam shot.

CO4: Learn about various output formats and codecs.

Course Content

Unit I

Adobe After Effects: Understanding User Interface, Understanding Project, Footage, Composition, Timeline.

Animation: Basic Animation Advanced Animation, Temporal Interpolation, Spatial Interpolation and Motion Paths, Motion Sketch and Smoothing.

Unit II

Layers & Compositing: Layers & Composition: Layers, Trimming layers, Blending Modes and Adjustment Layers, Pre Composing, Frame Rate, Time Stretch and Time Remapping, Masking, Parenting

Unit III

Text Animation: Text & Transitions: Animator, Advanced Text Effect, Pick Whip Expressions, Wiggle Expressions, Transitions.2.5D: Understanding 3D Space, Animating in 3D Space, Lights, Camera, Using Effects and Stack order, Using Brainstorm, The Puppet

Unit IV

Effects: Effects and Rendering: Chroma & keying, Rotoscopy, Color Correction fundamentals, Blur and Sharpen Effects, Using Effects and Presets, Channels and other effects, Fundamental of Rendering, Output formats, Codec, Compression

Recommended Books / Suggested Readings

1. Adobe Creative Team, Adobe Creative cloud: After Effects CC

2. The Art and Science of Digital Compositing: Techniques for Visual Effects, Animation and Motion Graphics , Publisher : Morgan Kaufmann.

Semester V (Specialization Visual Effects)

BAM501: Matchmoving

Credits: 4

LTP 212

The course aims to equip the students with knowledge of Tracking Techniques and Camera Extraction.

The course includes 2d & 3d tracking, exporting data for 3d and compositing packages using PF Track.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create a Virtual camera of live action for compositing.

CO2: Create Survey Data for compositing.

CO3: Recognize different ways of tracking and compositing a footage.

CO4: Know how to do Auto Tracking and User Tracking.

Course Content:

Unit I

Methods of extracting/reproducing camera motion: Understanding Motion Control Rig, Understanding Matchamation and Matchmoving, Footage Preprocessing: Understanding Stabilization, Understanding, Distortion, Understanding Shutter fix

Unit II

Tracking: Using Geometry, 2d Tracking, 3d Tracking, OBJ and FBX to track an objector camera, non-conventional tracking, tracking non rigid objects and deformations, Camera and object Solution: Calibrating multiple cameras with and without motions and important steps for object tracking and mocap tracking.

Unit III

Scene setup: Scene scale, Scene orientation, Exporting Solution: Exporting data for 3d Packages, Exporting data for Compositing Packages.

Unit IV

Integration: Importing data into compositing software, Compositing live action and CG.

Recommended Books / Suggested Readings:

1.Dobbert, Tim, , The Invisible Art of Camera Tracking, John Wiley & Sons; 2nd Edition edition.

2.The Art and Technique of Matchmoving: Solutions for the VFX Artist (2017) by Erica Hornung

BAM502: Node Based Compositing

Credits : 4

LTP 212

Course Description: The course aims to equip the students with Knowledge of node-based compositing.

The course includes color grading, matte painting, rotoscopy, tracking and keying.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Know how a node functions and represent a relation between elements

CO2: Learn applications of Dynamic Color Scheme.

CO3: Arrange Render Passes and render composited shot.

CO4: Apply rotoscopy technique to any given footage.

Course Content:

Unit I

Fusion: Understanding User Interface, Understanding Nodes, Load and Save Files. Understanding Foreground and Background elements, Understanding Nodes, Basic Composition, Creating Masks, Understanding Alpha Channel, Color correction and making parallax effect

Unit II

Particles/3d: Light, Texture, Materials and Camera, Introduction to Render 3D, Shape 3D and Transform 3D. Particles: Understanding pAvoid, pBounce, pCustomForce, pEmitter, pMerge, pRender, pTurbulence. Controlling the life and death cycle of particles in simulation.

Unit III

Tracking and keying in silhouette: Understanding different types of tracking techniques, Understanding Warp and Transform, Understanding Matte (Alpha Divide, Alpha Multiply, Chroma Keyer, Difference Keyer, Matte Control. Separating footage into layers using making techniques.

Unit IV

Rotoscopy Techniques: Drawing Complex Shapes, Point Consistency control, Beauty Retouch, Working with Motion Blur. Multi-pass compositing: Understanding Render passes, Importing Render passes, Understanding Camera, understanding channels, Understanding Mode (Multiply, Screen, Dissolve, Soft Light, Hard Light etc.).

Recommended Books / Suggested Readings:

1. The eyeon Fusion 6.3L a Tutorial Approach by Prof. Sham Tickoo Purdue Univ, CADCIM Technologies.
2. VFX Fundamentals Visual Special Effects Using Fusion 8.0 2016 Edition by Wallace Jackson.
3.Digital Compositing for Film and Video: Production Workflows and Techniques by Steve Wright.

BAM503: Dynamics Simulation Techniques

Credits : 4

LTP 212

Course Description: The course aims to equip the students with dynamic forces and crowd simulations.The course includes bullet physics, N-cloth simulation, N-Hair simulation, particle systems and forces.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create realistic shatter, dust and fluid effects.

CO2: Customize FX simulations by altering strength, emission, direction.

CO3: Recognize impact of natural forces like earthquakes and create realistic effects.

CO4: Create crowd simulation.

Course Content:

Unit I

nDynamics Creating particles & nMesh, working with nConstraints. Learning techniques of controlling Nucleus and external dynamic forces, Controls complex motion & forces, Goals, Uses of Light, Reflection, Refraction and shadow, deform particles and controlling the life death cycles of particles., understanding pfxHair, hair System Shape, follicle Shape, hair Tube Shader.

Unit II

Bullet physics: Introduction to bullet physics, Different types of dynamics, Bullet solver, Rigid Sets, Shatter Effect, Dust Effects. Advanced Fluid Effects: Dynamic Fluid Effects, Advanced Fluid effects texturing and shading, Advanced Simulations, Working with Temperature, Rendering fluid and composition.

Unit III

Non-event- driven particle systems: Introduction to Non-Event-Driven particle system, Spray particle System, Snow particle System, Super Spray particle System, Blizzard Particle System, PCloud Particle system. Create and simulate crowd simulation.

Unit IV

Understanding forces: Push Space Warp, Motor Space Warp, Vortex Space Warp, Drag Space Warp, pbomb Space Warp, Path Follow space Warp, Gravity Space Warp, Wind Space Warp, Displace Space Warp.

Recommended Books / Suggested Readings:

1.Getting Started in 3D with Maya: Create a Project from Start to Finish—Model, Texture, Rig, Animate, and Render in Maya a Book by Adam Watkins

BAM504: Art of Editing

Credits : 4

LTP 212

Course Description: The course aims to equip the students with Knowledge of Video and Audio Editing. The course includes Video Editing and capturing, Teaser & Trailer cutting, Exporting, Codec.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create L-cut, J-Cut in Timeline.

CO2: Color grade the Raw Footage in different looks.

CO3: Recognize functions of Keying and Garbage matte in footage.

CO4: Learn editing in short movies and music videos.

Course Content:

Unit I

Introduction to Apple OS: User Interface of Apple OS, Basic Setting, Tools and Tricks, Working in Apple OS.

Unit II

Introduction to Final Cut Pro: User Interface of FCP, Managing Materials, Editing in Timeline, How to capture and Input Video.

Unit III

Editing in final cut pro: Three Point Editing, Capture and Input Video, Trimming Function, and Working with Audio, Transitions and effects, Multi video Layers, Creating Titles, Moving Filmstrip, and Alpha Mattes.

Unit IV

Export in final cut pro: Export Options for Final cut Pro, User Preferences, System Setting and Video Editing Terms. Understanding various file formats for apple, DV and HDV file formats.

Recommended Books / Suggested Readings:

1. Dobbert, Tim, The Invisible Art of Video Editing, John Wiley & Sons; 2nd Edition.
2. Hornung, Erica, the Art and Technique of Non-Linear Editing.

BAM516: VFX Technologies

Credits : 3

LTP 210

Course Description: The course aims to equip the students with knowledge of early stages and Evolution of visual effect.

The course includes Birth of cinema in context of the VFX industry and various technologies used in it.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Combine early techniques with modern and create artistic results.

CO2: Familiarize with the industry lingo.

CO3: Learn about various elements required to create a realistic VFX shot.

CO4: understand various modern VFX techniques through film studies.

Course Content:

Unit I

VFX: Understanding the term VFX. Origin of VFX – Charlie Chaplin, Edwin S. Porter, George Melies. Understanding the elements involved in the making of older 3D film integration techniques (Jurassic Park, Indiana jones, Star Wars).

Unit II

VFX Production: When to use the green screen and blue screen. Light filters, cinematic look, special effects make up. Motion capture, chroma screens, savage. Making of mirror scenes, shooting action shots and car chase scenes in films like fast and furious & speed. Set building and art direction, costume design, make up art. Various camera gimbals and robots that help in maintaining and creating the same shot over and over again. Techniques used in hyper lapse & infinity zoom through video Editing.

Unit III

Film Study: Study and film reports on techniques used while making a VFX film. Key Movies - Avatar, Matrix, Ready Player one, Upside down, Interstellar, Inception, Mission Impossible. A study of horror films in context of mood lighting, sound effects and special effects. Michael Jackson's ghost music video making

Unit IV

Industry Terminology: Aspect ratio, IMAX and 3D films, stereo 3D film, polarized 3D film, Camera lens filters (ND), Matchmoving, Rotoscopy, Parallax effect, Foreground and background elements, News room, editing, online and offline editing, Frame rate, Virtual Production, Chroma keying, Simulation, Tracking, Multi point tracking, Matte Painting, compositing.

Recommended Books / Suggested Readings:

1. Masters of FX: Behind the Scenes with Geniuses of Visual and Special Effects a Book by Ian Failes
2. Visual Effects and Compositing a book By Jon Gress

Semester - VI ((Specialization Visual Effects)

BAM604: Color Grading for Production

Credits : 4

LTP 212

Course Description: The course aims to equip the students with technique of color grading and editing in Final Cut Pro.

This course will aim to impart knowledge on how to create various looks and shots using only color grading techniques to change the mood of a film.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Color grade a given shot to a specific mood

CO2: Develop a working knowledge of color theory and how it applies to color grading.

CO3: Trace over motion picture shots to make creative music video shots.

CO4: Create cohesive looks for scenes.

Course Content:

Unit I

Advance editing with FCP – Learning advance techniques to color grade a film in FCP. Understanding 2 tones color grading, 3 tone and black and white. Pushing values and contrast. Using hue and saturation to change mid tones, shadows and highlights of a video and change moods.

Unit II

Details and strategies- working with various digital formats including raw formats. Exploring an overview of various color spaces and related topics, the optimum viewing environment and introduction to color management.

Unit III

Story and context - Creative uses of contrast and color scene to Scene color grading - Matching shots within a scene, and keeping a look cohesive and consistent throughout a scene or entire project

Unit IV

Color theory: reading color, visualizing and talking about color Working with videoscopes for analyzing color. Color Balancing: Exploring concepts of naturalistic color renditions, color casts, and balanced images. Color Grading: understanding 2 tones and 3 tones used by cinematographers to create the look of a film.

Suggested Readings:

1. Color Grading 101: Getting Started Color Grading for Editors, Cinematographers, Directors, and Aspiring Colorists a book by Charles Haine.

BAM602: Fluid Fx Simulation

Credits : 4

LTP 212

Course Description: The course aims to equip the students with Physics of fluids and its simulation.

The course includes Particle simulation, mesh making and exporting for other 3d packages.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Gain knowledge of Realflow Fundamentals.

CO2: Create natural forces like tsunami by using Hybrido.

CO3: Create natural simulations in CG environments.

CO4: Understand the various ways of using Daemons.

Course Content:

Unit I

Introduction to Realflow: Introduction to User Interface, Understanding Realflow Project management, working with Realflow particle emitters.

Unit II

Particles: Understanding Particles (Gas, Liquid, Dumb, Elastics, Scripted), Understanding Object- particle Interaction parameters, Understanding Containers.

Unit III

Daemons: Introduction to Daemons, Understanding K Volume, K Age, K Speed, K Isolated, K collision, K Sphere, Gravity, Attractor, D Spline, Wind, Vortex etc.

Unit IV

Rendering: Rendering Meshes, rendering particles, Rendering Wet maps, Rendering Mesh Attributes

Recommended Books / Suggested Readings:

1. Realflow Software Documentation.

BAM605: VFX Production

Credits : 4

LTP 212

Course Description: The course aims to equip the students with extensive knowledge of NUKE compositing in vfx production.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Light, composite 3D objects and elements in Nuke

CO2: Use compositing and various nodes to create a shot

CO3: Use tracking and stabilizing techniques to get smooth video output

CO4: learn the uses of nodes and understand rendering

Course Content:

Unit I

Nuke Studio Workflow - Multi-track editorial timeline, In-timeline Soft Effects, Media bins, Comp Container, Spreadsheet view, Review & playback, 2D 3D Viewer changes, the menu bar, The Look feature Planar Tracker settings. **User Interface** Playback controls, timeline, Project settings, using property panels, adjusting node parameters, Keyframe animation, Using the Dope Sheet, navigating the Curve Editor Editing animation curves

Unit II

Tracking and Stabilizing - The Tracker node, Automatic tracking, Keyframe tracking, Stabilizing clips. Match-moving. Rotoscoping and Paint - Drawing roto shapes, animating shapes, Setting shape attributes, The Roto Paint node, Clone and Reveal. Keying -The Keyer node, Primatte keyer setup, Primatte fine details. Key light keyer setup, Key light fine details. Camera Tracking.

Unit III

Compositing: - Retiming clips, Retiming with OFlow, shifting clip timing, Freeze frames. Adding geometry and texture maps, adding cameras, adding lights, Rendering a 3D scene. Compositing: Shaders - The Phong shader, The ApplyMaterial node, Camera projection. 3D Compositing: Modifying Geometry - The TransformGeo node, Snapping geometry into position, The EditGeo node, The DisplaceGeo node.

Unit IV

3D system & Rendering - Using render layers, setting up render passes, creating 32-bit files, Adjusting the render quality settings, explaining final gathering, Rendering the final image. Creating Secondary Passes - Rendering matte passes, creating a ground occlusion pass, creating a ground shadow pass, adding ambient occlusion, Adding a fresnel pass. Compositing the Rendered Passes in Nuke - Adding a gamma correction in Nuke, 3D system in NUKE. Importing cameras and geometry, transforms and how to move in and out of 3d space in the same application. Rendering from the Scanline renderer and the start of a new 3D project.

Recommended Books / Suggested Readings:

1. The Foundry Nuke X 7 for Compositors by Prof. Sham Tickoo Purdue Univ

2. Nuke Software Documentation

BAM621: Graduating Project

Credits : 4

LTP 008

Course Description: The course aims to equip the students to create final project based on their specialization i.e., VFX.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

●**CO:** Create an industry ready show reel that acts as a best representation of the knowledge gained during entire graduation and offer something unique, entertaining and engaging on a particular topic related to Visual effects.

●**Film Project:** Working in a group project to create a VFX short film using all the softwares learned throughout the course of Animation and Multimedia.

Course Content

Practical/submissions:

Create a show reel using given modules:

1. Roto
2. Paint
3. Compositing
4. Matchmoving
5. FX

SEMESTER – V (Specialization - CG Asset Development)

BAM517: Rigging and Animation for Production

Credits :4

LTP 400

Course Description: The course aims to equip the students to know about the human and animal skeleton.

The course includes creating a rig similar to human/character's skeleton and able to create controllers for the animation.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Put bones into a mesh.

CO2: Create a rig similar to human/character's skeleton.

CO3: Understand the IK/FK switches to bring a character to life

CO4: Skin the bones to the model and paint the weights properly for softer movements

Course Content:

Unit I

Rigging: Understanding Skeleton Joints & Joint chain, Parent child Relationship, Understanding Joints and hierarchies & Concept of Skeleton. IK handle tool, IK Solvers & IK Spline. Using Hypershade to create node networks using utility nodes like multiply divide. MASH network animations to create effects.

Unit II

Intro to IK/FK: Arm & leg setup. Using constraints to setup up vehicle rigs and a character rig using blendshapes. Working with Connection editor and expression editor to code basic rigs. Painting skin weights to make a character animate. Human IK and FK setup.

Unit III

Animation: Learning how to plan an animation using thumbnail sketches. Animating a cartoony pantomime shot with body mechanics acting utilizing the 12 principles of animation. Starting with poses, adding in-betweens and then breakdowns, then stretching the keyframes to setup the timing. Using the graph editor to polish the shot.

Unit IV

Dialogue animation: Focusing on facial animation to create a dialogue shot, a small dialogue first. Learning about human behavior, observing eyebrow movements, eye tracking and mouth poses. Polishing the animation using ghosting, motion trails and graph editor. Learning about body language, diction & pronunciation, and accents.

Recommended Books / Suggested Readings:

1.Rig it Right! Maya Animation Rigging Concepts (Computers and People) Paperback – 20 March 2013

by Tina O'Hailey.

2.Cartoon Character Animation with Maya: Mastering the Art of Exaggerated Animation (Required Reading Range)

BAM518: Sculpting, Texturing & Shading for Production

Credits :4

LTP 212

Course Description: The course aims to equip the students to understand the role of Sculpting, Texturing & Shading in animation Production Pipeline.

The course includes difference between Shaders, Textures and Materials and able to make realistic textures that behaves similar to real world environment. Sculpting with the

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Know about all types of materials and shaders used to create surfaces.

CO2: Create custom maps for texturing using substance painter

CO3: Understand stitching and sewing in Marvelous Designer.

CO4: Sculpt a character according to the concept using Zbrush

Course Content:

Unit I

Introduction to zbrush: Introduction to user Interface, Customizing ZBrush interface, Understanding Edit mode, Different 3D primitives, Edge Control. Brush adjustments, Strokes, alpha, Masking. Creating layers and editable sculpts.

Unit II

Dynamesh, usage of zmodeler: Inserting additive and negative meshes, Intersecting Meshes, Adding shell. Actions and Targets, Edge Selector Widget, Working with Polygroups, Replay the Action, Masking, Actions, Targets. Baking, Effects, Smart Materials and Masks, Advanced Channel Painting, UV Re-Projection, Iray Render, Custom Shaders, Texture Set, Layer Stack, Shelf, Quick Mask, Clone Tools, Smudge Tools

Unit III

Substance Painter: Introduction to Substance Painter, Shader components, Using DMC Sampling to interact with Shaders, layering specular, Layering options. Employing Sample, Using the Sampler Info Utility, Using the Light Info Utility, Using the Particle Sampler Utility, Redirecting the Initial Shading Group Node, Connecting Multiple Materials in One Network. Using the 3D Paint Tool, PSD Support, Normal and Displacement Mapping.

Unit IV

Introduction to Marvelous Designer: Overview of the software interface – UI, Windows and modes, view control, importing files. Working with the tools to create cloth seams and stitches. Working with sewing and Drape, creating Pants, shirts and layering jackets and hoodies.

Recommended Books / Suggested Readings:

1. Masters of Contemporary Fine Art Book Collection - Volume 2 (Painting, Sculpture, Drawing, Digital Art) by Art Galaxie: Volume 2
2. Beginner's Guide to Zbrush By 3dtotal Publishing

BAM508: Modeling & Texturing for Gaming

Credits :4

LTP 212

Course Description: The course aims to equip the students to understand the process of detailed 3d Modeling for Gaming Industry

The course includes to create 3d Models, Environment and Textures for games and make student understand the gaming sector pipeline

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create real-time rendering and learn more detailed modeling art.

CO2: Develop customized architectural drawings or construction documents.

CO3: Create scenes for gaming.

CO4: Understand the gaming environment.

Course Content:

Unit I

Introduction to Modeling: Creating a surface using reference planes, dividing a surface, using model lines to create a basic structure, Testing the structure, Developing the structural pattern family.

Unit II

Creating site elements, generating conceptual architecture: 2D & 3D Sites, RPC, Vegetation, and Background. Analyzing digital design, Patterns, Extraction, Displacing, Merging and editing the displaced mesh, Creating Spline surface.

Unit III

Creating gaming scenes: Use of low poly modeling techniques to create gaming environment, placement of objects in the scene, import export the 3d objetcs in the scene, working with less detailed 3d models.

Unit IV

Creating textures using baking: Difference between Bump and Displacement map, Creating light maps, Importance of normal maps. Transfer maps to other objects

Recommended Books / Suggested Readings:

1. Mooney, Thomas, (31 October 2012), 3DS Max Speed Modeling for 3D Artists, Packet Publishing Limited.

2. 3ds Max for Engineers & Architects by C.S. Changeriya

3. Modeling the Environment - Techniques and Tools for the 3D Illustration of Dynamic Landscape (English, Paperback, Cantrell B)

BAM519: CG Technologies

Credits : 3

LTP 210

Course Description: The course aims to equip the students with the knowledge of multiple technologies used in the CG stream.

The course includes theoretical approach of CG technology.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand the role of CG in the Film and Video Game industry.

CO2: Learn about the CG industry lingo.

CO3: Know about various elements of CG.

CO4: Understand the origin and the future of the CG industry.

Course Content:

Unit I

CG: Understanding the term CG. Origin of CG and early films that used CG elements. Understanding the elements involved in the making of older 3D film integration techniques (Jurassic Park, Indiana jones, Star Wars). CG in Videogames.

Unit II

CG Production: Understand the production pipeline of CG elements. How characters are created from concept to the final look used in the film. Creating assets like props or virtual sets to create a believable environment. Understanding the use of CG in animated films vs live action films. Motion Capture animation, game animation loops, importance of creating loops in video-games.

Unit III

Film Study: Study and film reports on techniques used while making a CG film and Video Games. Key Movies and Video games - Avatar, Avengers endgame, Uncharted series, last of us, red dead redemption, assassin's creed Series, Prince of Persia, Tomb raider (old and new). Understanding world building and character development. Animated films: Toy story, Cars, Megamind etc.

Unit IV

Industry Terminology: 12 principles of animation, Modelling, texturing, sculpting, shaders, Materials, Video game, Gamification, Motion capture, animated film pipeline, Layouts, level design, game design, Play testing vs beta testing, AAA games, indie games, game studios and animated film studios. Game cinematic and cinematic animated films.

Recommended Books / Suggested Readings:

1. Computer Graphics from Scratch: A Programmer's Introduction to 3D by Gabriel Gambetta

BAM510: Introduction to Gaming Engine

Credits:4

LTP 212

Course Description: The course aims to equip the students to convey the knowledge about Unreal engine 5 to create a video game.

The course includes setting up the 3d models in the scene and use of proper lighting and elements to make it look more realistic.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Setting up the scene for the game

CO2: Understand the library to be used and importing models to the exiting scenes.

CO3: Utilize the quixel and lumen plugins to create AAA game environments.

CO4: Complete a game for the desktop.

Course Content:

Unit I

Introduction to UI of Unreal Engine: Breaking down the interface, File management, navigation and project organization. Level editor overview, creating a terrain, Painting the terrain, Set dressing the level. Working with actors, static and nav mesh, player start, creating sky and playing area, building structure of a level.

Unit II

Blueprints: Introduction to blueprints, understanding flowcharts. Working with functions and variables to control the flow of the game. Making player inputs, game modes, pawns, enemies and character controls. Creating user Interface – Canvas panel, horizontal and vertical boxes, common widget properties, visual designer,

Unit III

2D / 3D game: Designing multiple levels and connecting them to create a small indie game using the unreal engine's default players. Using blueprints to connect the 2 levels. Setting up UI design for the start of the game. Sculpting a landscape using sculpt, erase, smooth, flatten, ramp, erosion, noise and retopologize tools.

Unit IV

Creating a realistic environment: Using the sources available in the unreal engine store, making a playable environment and creating proper paths to make an RPG game. Understanding the builds to finally create a playable EXE file that can run on any computer. Learning about game optimization.

Suggested Readings:

1. Unreal Engine Software Documentation

Semester VI (Specialization - CG Asset Development)

BAM609: Level Design in Game Engine

Credits: 4

LTP 212

Course Description: The course aims to equip the students to understand the purpose of making a level design.

The course includes importance of where the player stars the game and how to setup hints so the players can path find to the end.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Making multiple levels in Unreal Engine.

CO2: Creating a good player experience.

CO3: Understand the map of a level and creating a map cam

CO4: Apply fundamentals of game design and make a level

Course Content:

Unit I

Creating level with map: Designing a map and creating a level to know, where the player is going to start and using paths to chart its journey. Adding exploding barrels to shoot. Using default unreal base character to create and connect multiple animations to make a 3D shooting game like CSGO or Valorant. Creating multiple maps and using the UI design, connecting them to create a full game experience for the players.

Unit II

Setting up post processing effects: Using the post processing effects to make the environment look cinematic. Using shaders, values, contrast etc to enhance the look of the game.

Unit III

Using particles: Setting up particles and portals in a game that lead to the second level. Learning how to make a loading screen, pause menu and game over screen. Connecting these elements using the blueprints and integrating them in the game.

Unit IV

Game build and publishing: After the final build is compiled, making a proper optimized 64-bit EXE for the levels designed to create a game.

Recommended Books / Suggested Readings:

1. Preproduction Blueprint: How to Plan Game Environments and Level Designs by Alex Galuzin

2. Games, Design and Play: A detailed approach to iterative game design by Colleen Macklin, John Sharp

3. The Art of Game Design: A Book of Lenses, Third Edition by Jesse Schell

BAM607: Lighting & Rendering for Production

Credits: 4

LTP 212

Course Description: The course aims to equip the students to get knowledge of production lighting techniques using mental ray.

The course includes knowledge of rendering techniques for production using ARNOLD and how to create render passes.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand linking lights sources to surfaces.

CO2: Know about renderings in ARNOLD.

CO3: Understand the render passes for compositing.

CO4: Understand about camera fundamentals like depth of field for realistic results.

Course Content:

Unit I

Light linking modes, utilizing viewport 2.0: Determine a light's area of illumination, Link light sources to surfaces, Link sets of lights and objects, select objects illuminated by a specific light, select lights illuminating a specific object. Benefits and limitations, lighting scene, improving playback performance, fixing transparency errors, Rendering with Maya hardware.

Unit II

ARNOLD workflow: Controlling the physical sun and sky lighting systems, Depth, setting up for caustics, Creating the caustic effect, Saving and reusing indirect illumination map files, Altering objects irradiance values, Density and Distribution.

Unit III

Camera fundamentals: Aspect ratio, Camera lenses, Motion blur, Depth of field, Camera settings, camera animation, locator & camera parent relationship.

Unit IV

Render passes: Layers, Passes, Creating and associating render passes, Light centric contribution maps, advanced render pass attributes. Using Keyshot to light a scene and create real-time 3D renders.

Recommended Books / Suggested Readings:

1. Keyshot 3D Rendering by Jo Jei Lee

BAM608: Advanced Lighting & Rendering

Credits: 4

LTP 212

Course Description: The course aims to equip the students to learn production lighting techniques using ARNOLD techniques and V-Ray

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create complex shader materials and define surface material within a photographically lit environment

CO2: Create Photometric lighting and a choice of rendering options for convincing illusions.

CO3: Understand about gamma correction and working with caustics photons

CO4: Achieve better photo-realistic results using ray-trace abilities.

Course Content:

Unit I

ARNOLD: Understanding of Final gathering, Accuracy, Point density, Interpolation, Diffuse scale, Diffuse bounce, Final Gathering map, Final gathering quality, Tracing, Using Global Illumination & Caustics, Understanding Photons, Photons emission and photon energy properties, Color attributes, Accuracy, Photon Tracing, Working with direct and indirect lighting, Caustic photons, Controlling caustic emission, Energy properties, Direct illumination, Using ray tracing attributes, Caustic patterns, Caustic photon map.

Unit II

V-ray: Anti-aliasing, Standard V-ray materials, Displacement mapping, physically accurate global illumination, Area lights, HDR/image-based lighting, Sun and sky system, physical camera, Lens effects, Real time renderer.

Unit III

Camera parameters: Environment range group, Match camera to view, Camera path animation

Unit IV

Creating high resolution studio renders, linear workflow rendering strategies: Real time lighting workflow, HDR light studio, HDRI, Finalizing the scene, Back burner. Understanding

BAM626: Portfolio Graduating Project

Credits: 4

LTP 008

Course Description: The course aims to equip the students to create final project based on their specialization of CG Assets.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

●**CO:** Create an industry ready show reel that acts as a best representation of the knowledge gained during entire graduation and offer something unique, entertaining and engaging on a particular topic related to Visual effects.

●**Film Project:** Working in a group project to create a CG short film using all the softwares learned throughout the course of Animation and Multimedia.

Practical/Submissions:

Create a show reel on one of the below given topics.

1.Character Modeling, Texturing, Lighting and Animation.

2.Environment Modeling, Texturing and Lighting.

3.Architectural Interior/Exterior Modeling, Texturing Lighting and Animation.

4.Prop Modeling, Texturing, Lighting and Animation.

5.Making a Game with multiple levels.

Semester V (Specialization - Graphics Designing)

BAM511: Print & Publishing Design

Credits : 4

LTP 212

Course Description: This course aims to equip students with knowledge about the world of print publishing design - Newspapers, Magazines, Book covers, Flexes and banners etc.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create original designs that are print ready.

CO2: Understanding various layouts for print setup.

CO3: Use Vector graphics elements to make aesthetically pleasing designs.

CO4: Make book covers, magazine covers etc. using Corel draw and Adobe InDesign.

Course Content:

Unit I

Introduction to Corel Draw: Interface of Corel draw, using tools to create shapes and manipulate them. Envelope tool (for distorting text or objects using a primary shape), Blend (for morphing shapes) and Perspective (to distort objects along X and Y axes). CDR file format in various different versions. Using the rectangle tool to create all shapes. Masking and clipping images into Corel draw.

Unit II

Creating Layouts: Learning about layouts of print media like Newspapers, Banners, flexes, standees, flyers, posters, book covers, invitation cards. Getting to know Margins, gutter space and space for printing. Learning about paper and types of papers used for printing. Thickness and size of various papers for various purposes

Unit III

Introduction to Adobe InDesign: User interface and tools of the software. Using the tools and alignments to make proper print layouts. Using vectors to create shapes and clipping images or vectors in them. Importing elements into the software

Unit IV

Print Publishing: Using the InDesign tools to create the magazine layouts, book layouts, making pdfs of books. Making book layouts with illustrated designs, storybooks for children, greeting cards. Learning about proper alignment of text in proportion to the content available.

Recommended Books / Suggested Readings:

1. Basics Design: Print and Finish by Gavin Ambrose, Paul Harris
2. Page Design: Printed Matter and Editorial Design by Wang Shaoqiang
3. Editorial Design: Digital and Print by Cath Caldwell

BAM512: Digital Media Design

Credits : 4

LTP 212

Course Description: The course aims to equip the students to know about the digital media design elements. The students will gain practical skills to create photo manipulations, color grade photographs and restore photos.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create photo manipulations

CO2: Re-balance the contrast and color of images, the core foundation of a colorist's work.

CO3: Work with various file formats including RAW

CO4: Use the concept of editing an image to restore it

Course Content:

Unit I

Advance Adobe Photoshop: Overview of the photoshop software, Using the custom brushes and make actions to simplify and speed up the workflow. Working in layers and layer masks for nondestructive work. Working with the camera raw to color grade an image. Setting up light filters on an image. Enhancing color and vibrance of an image. Curves, levels and color balance panels for color control.

Unit II

Photo Manipulation: Using multiple elements in layers to arrange them into one composition. Color grading each layer to match others properly and creating realistic looking photo manipulations of various themes like apocalypse etc. Using Levels, curves and color balance tools to match all layers.

Unit III

Photo Restoration: Using the tools like clone stamp, healing brush and spot healing, recreating broken parts of an old image. Painting over an image to restore an image back to its original form. Colorizing black and white photographs.

Unit IV

Creating Icon Packs: Understanding icons as symbols, Create original icons for social media. Designing small packages with themes like minimalistic, colored, monochromatic etc. Using 2 tones to create icon packs. Making mock UI designs.

Recommended Books / Suggested Readings:

1. The Complete Guide to Digital Graphic Design by Bob Gordon (Editor), Maggie Gordon (Editor)

2. How to use graphic design to sell things, explain things, make things look better, make people laugh, make people cry, and (every once in a while) change the world by Michael Bierut

3. Thinking with Type, 2nd revised and expanded edition: A Critical Guide for Designers, Writers, Editors, & Students (Design Briefs)

BAM513: Concept Art

Credits : 4

LTP 212

Course Description: The course aims to equip the students to know about the world of concept art. They will gain practical knowledge about how worlds and environments are built, whether it is for a live action film, video games or animated films.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand the key role of a concept artist

CO2: Work on creating their own environment and character concepts

CO3: Study texture painting, noise building and flora fauna of an environment and cloth materials

CO4: Work in layers for a non-destructible work flow

Course Content:

Unit I

Understanding Concept art: Concept art is a form of visual art used to convey visual representation of an idea for use in films, video games, animation, comic books, or other media before it is put into the final product. Creating sketches to build basic structures to establish main focal point of the character being created. Keeping in mind the Color, size and the textures of the characters and their props. Making Dynamic Poses to enhance a character's personality.

Unit II

Creating Mood Boards: Mood board is a visual tool used communicate concepts and visual ideas through arranged collages. Used to express idea or the type of feeling a design is going to convey through the particular topic. Researching for textures, materials, looks and colors for the final painting. Creating Characters from idea generators, or by using multiple existing animals or humans merged.

Unit III

Perspective Sketches: Creating sketches to build basic structures to establish main focal point of the world being created. Keeping in mind the Color, size and the textures of the world in

proportion to the characters. Giving characters props and weapons to make them interesting. Making both human and non-human characters, of life forms such as goblins, orcs, lions etc.

Unit IV

Digital Painting: Using photoshop or KRITA to paint digital world thumbnails and the creating actual paintings. Using the game art environments in reference and building worlds around various game themes. Creating thumbnails to make a smaller version of the digital world. Working with textures, to paint realistic looking materials in photoshop. Using the model sheets to create characters with story backgrounds and characters with style and personality.

Recommended Books / Suggested Readings:

1. How to Become a Video Game Artist by Kennedy Sam R.
2. Beginner's Guide to Digital Painting: Characters by Derek Stenning
3. The Ultimate Concept Art Career Guide by 3dtotal Publishing

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BAM514: Motion Design & Typography

Credits : 4

LTP 212

Course Description: The course aims to equip the students to know about the advanced editing techniques and typography animation using Adobe after effects

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: perform various trendy video edits

CO2: create typography animations using alphabetical animations

CO3: Work with element 3D to make cinematic titles

CO4: Use cameras to make interesting and dynamic animation

Course Content:

Unit I

Motion Graphics: Making edits in Adobe after effects, effects like 3D, twitch, color boom, Distorted, particle etc., using the pre- composition and layers. Understanding Masking and overlaying multiple effects to create a dynamic looking effect. Using tracking to pin point text elements onto a footage.

Unit II

Advance After Effects: Creating Loops using coding, working with null objects to parent various assets to each other and animate them together. Understanding timing and spacing to create smooth transition effects. Creating custom transition effects and layer masks with color bleed effect.

Unit III

Typography: Creating Lyrical typography using alphabet wise animation in adobe after effects. Synchronizing timing and spacing and using the composition rules to create dynamic timing in animation. Understanding Keys and loops in after effects by coding. Using camera moves to further enhance the typography. Using audio spectrum and particles to create audio waves.

Unit IV

Element 3D & Motion effects: Using the element 3D plugin, creating studio level product placement adverts. Composing 3D text in a footage to create cinematic typographical effect. Creating motion effects like the shock wave, synced with music. Making looped 3D pastel animated backgrounds. Using MASH from maya to create animation loops. Understanding its audio node, repeater, signal, flight etc to create smooth animations for looped backgrounds.

Recommended Books / Suggested Readings:

1. Design for Motion: Fundamentals and Techniques of Motion Design by Austin Shaw
2. Hands-On Motion Graphics with Adobe After Effects CC by Dodds David
3. The Graphic Language of Neville Brody Jon Wozencroft

BAM515: Aesthetics & Principles of Design

Credits : 3

LTP 210

Course Description: The course aims to equip the students to know about aesthetics and principles of design. The course includes learning about the theme building and the aesthetical aspect of any creative original design.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Understand Gestalt laws of organization

CO2: Learn about the principles of Design in the creative process

CO3: Understand the rules and then breaking them to make original content

CO4: Study good design elements and color aesthetics

Course Content:

Unit I

Elements of Design: Understanding the principles of design - shape, color, space, form, line, value, and texture. Working with them to build better designs. Understanding the Gestalt laws of perceptual organization – Proximity, closure, similarity, continuity, perception, organization & symmetry.

Unit II

Color schemes & Fonts: Seven major color schemes are monochromatic, analogous, complementary, split complementary, triadic, square, and rectangle (or tetradic). Understanding tones and colors according to the theme. Working with trends, font types and style families. Understanding the use and impact of fonts throughout history. Formal fonts, trendy fonts, cursive fonts, designing a new font.

Unit III

Aesthetics: Aesthetic principles that characterize art movements comprise a range of artistic elements such as pattern, color, texture, balance, and use of asymmetry, to convey values, capture emotion, create unity within an art piece, and communicate meaning. Building themes based on color and design.

Unit IV

Design Studies & Trends: Studying graphic designs in context of color, typography, art style, theme and the Layout of a design. Understanding Color symbolism and how it can be used creatively to drive emotion. Studying various brands like Starbucks, apple, Microsoft and why their logos work so well. Understanding trends and their history. Learning how are trends created and how they influence the design palette of artists. Finding out about the color of the year and its impact on design trends.

Recommended Books / Suggested Reads:

1. Digital Multimedia Perception and Design a Book by Gheorghita Ghinea

2. Universal Principles of Design, Completely Updated and Expanded Third Edition: 200 Ways to Enhance Usability, Influence Perception, Increase Appeal, Design by William Lidwell (Author), Kritina Holden, Jill Butler

Semester VI (Specialization - Graphics Designing)

BAM611: Branding & Package Design

Credits : 4

LTP 212

Course Description: The course aims to equip the students to understand the value of a Brand and the elements in Package design that come with it.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create Logos for a brand

CO2: Work on various print package designs

CO3: Understand various elements in a package design and their types

CO4: Making original content for a mock brand

Course Content:

Unit I

Understanding Branding: A brand is a name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers. Understanding that branding is the process of creating a strong, positive perception of a company. Designing products that are associated with a brand: letterheads, logo, visiting cards, brochure, diary cover design, I-D cards, certificates.

Unit II

Logo Designing: Creating logos in Illustrator according to the Brand identity. Coming up with logos using initials of the company, name or a symbol that denotes its work. Studying colorful logos, monochromatic logos, Angles and symmetry, rhythm and geometry of logo designing.

Unit III

Patterns & Variety: Creating custom patterns for backgrounds and printing. Understanding borders and frames. Using patterned variety and repetition to create aesthetically pleasing designs. Working with alignment and proximity to enhance patterns.

Unit IV

Package Designing: Creating custom package designs according to a brand. Understanding that Product packaging design refers to the creation of the exterior of a product. That includes

choices in material and form as well as graphics, colors and fonts. Creating Original font types and border designs to fit the packaging size.

Recommended Books / Suggested Reads:

1. How to be an Illustrator by Darrel Rees
2. 101 Things I Learned in Product Design School by Sung Jang, Martin Thaler, Matthew Frederick
3. Brand Storytelling: Put Customers at the Heart of Your Brand Story by Miri Rodriguez

BAM612: Social Media Designing

Credits : 4

LTP 212

Course Description: The course aims to equip the students to get knowledge of designing for social media. The relevance of social media is known throughout the world.
The students will learn various formats required for posting on social media and handling multiple social media platforms and create application publishing ready assets.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create trendy social media posts

CO2: Handle social media pages and content

CO3: Work with various sizes and formats required for social media posting

CO4: Make UI & UX design for applications

Course Content:

Unit I

Stills Designing: Creating image posts and graphics for posting on social media. Working with different resolutions and creating banners. Creating posts with borders and grids for a dynamic looking social media page.

Unit II

Video Designing: Creating videos and video reels for posting on social media. Working with aspect ratio and making original transition content. Working with color effects to create catchy content according to the requirements of the company or clients.

Unit III

Social Media Sizes: Getting to know size requirement for various social media like Instagram posts & reels, Facebook banners, posts and reels, snapchat videos, Twitter banners and profile. Learning about various video aspect ratios and portrait video editing effects to enhance the posts. Working with borders within the image sources.

Unit IV

Introduction to Adobe XD: Understanding the interface of Adobe XD. Understanding the concept of UI & UX through design. Working with tools to create buttons. Creating multiple

pages to and linking between them to make a prototype application. Making applications for various themes and purposes.

Recommended Books / Suggested Reads:

1. How to Be a Graphic Designer without Losing Your Soul (New Expanded Edition) by Adrian Shaughnessy
2. Faster, Smarter, louder: Master Attention in a Noisy Digital Market by Aaron Agius, Gián Clancey

BAM613: Designing for Digital Media

Credits : 4

LTP 212

Course Description: The course aims to equip the students to know about graphics specifically for media. They will learn how to create assets that are ready for news channels..

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create channel promos

CO2: Make lower thirds and news flash graphics

CO3: Create custom transition effects that are themed for channels

CO4: Generate content for news media

Course Content:

Unit I

Channel Packaging: Understanding the working of a broadcasting channel. Creating channel color, theme and design. Working with the elements of a channel – Channel Logo, Transitions, Promos, Border design, lower thirds, weather forecasting templates, score boards / member introduction graphics.

Unit II

Creating Channel Logos: Creating channel logo, 2D and 3D. Creating templates that run advertisements, making channel borders. Making promos and edits for an upcoming show for broadcasting. Working with television color systems and frame rates, understanding working with HD and 4K resolutions for channels.

Unit III

Transitions: Making dynamic channel and openings for various show transitions. Creating breaking news segways and promos. Creating running text and lower thirds for news channels. Working on creating the in-betweens for news channels and news flash graphics.

Unit IV

Designing for Shows: Making videos and show logos, promos for online news platforms like YouTube, vimeo. Coming up with transitions using motion design 2D and 3D. Creating show package with lower thirds, introduction opening sequence and information graphics.

Creating custom fonts and lettering.

Recommended Books / Suggested Reads:

1. Drawing Type: An Introduction to Illustrating Letterforms by Alex Fowkes
2. Logo Modernism - Multilingual Edition by Jens Müller, R. Roger Remington

BAM631: Portfolio Graduating Project

Credits : 4

LTP 008

Course Description: The course aims to equip the students to create final project based on their specialization of Graphics Designing.

Course Outcomes (CLO):

Upon successful completion of the course, the students should be able to:

CO1: Create an industry ready show reel that acts as a best representation of the knowledge gained during entire graduation and offer something unique, entertaining and engaging on a particular topic related to Computer Graphics

Practical/Submissions:

Create a Reel on one of the below given topics.

1.Creating a mock brand and designing all its peripherals

2.Making Motion Design showreel with 2D and 3D elements

3.Creating a mock channel with proper packaging

4.Make a showreel of product photography and editing