Master of Arts

in

ANIMATION

PROGRAMME STRUCTURE AND SYLLABUS
2019-20 ADMISSIONS ONWARDS

(UNDER MAHATMA GANDHI UNIVERSITY PGCSS REGULATIONS 2019)

THE EXPERT COMMITTEE IN MULTIMEDIA (PG)
MAHATMA GANDHI UNIVERSITY

2019

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M.A. Animation Degree Program

(Mahatma Gandhi University Regulations PGCSS2019 from 2019-20 Academic Year)

1. Aim of the Program

Animation is moving from the margins of the media industries toward an ubiquitous role in every moving-image medium, from animated effects in live-action filmmaking to immersive animated worlds in videogames. Computer animation is probably the most successful application of digital technology in the creative arts. It complements the work of traditional animators by providing an exciting, flexible medium for undertaking more ambitious and imaginative animated films. It has revolutionized the world of special effects in films and has created a totally new leisure activity - computer games.

The course is oriented towards the creation of graduates with a combination of artistic sensibilities, problem solving and technical skills. Main objective of MA curriculum in ANIMATION is to educate internationally successful creators of animated films possessing theoretical knowledge and practical skills, thereby contributing to global development of animation as an art form. The Animation pathway seeks to explore and develop creative and critical practices within the Animation field.

Post Graduate of the curriculum shall possess the ability to operate successfully in the specialty of animation as scriptwriter, artist or director, the skill to operate as member and/or head of creative team of animation studio, the skill to orient and operate in academic research related to animation, the comprehension of developments and trends in global animation, their reasons and relations, as well as skill to place him/herself and own creation into correct background system, the skill to understand and communicate with operating mechanisms of international film and art world.

The following syllabus tries to impart adequate training in Animation at the M.A. level.

2. Eligibility for Admissions

I.   Basic academic qualification is a graduation in Animation or related fields OR a graduation in any field and a Diploma in Animation with keen drawing skills and adequate software knowledge

II.   Candidate should submit a port-folio of their works along with their application

III. Candidates will be finally selected after a qualifying examination and an interview.

IV. Merit list will be drawn on the basis of the port-folio, qualifying examination and interview (that is, 20:40:40)

3. Medium of Instruction and Assessment

The medium of instruction shall be **English**.

3.1 PATTERN OF QUESTIONS

a) Questions shall be set to assess knowledge acquired, standard, and application of knowledge, application of knowledge in new situations, critical evaluation of knowledge and the ability to synthesize knowledge. Due weightage shall be given to each module based on content/teaching hours allotted to each module.

b) The question setter shall ensure that questions covering all skills are set. He/she shall also submit a detailed scheme of evaluation along with the question paper.

c) A question paper shall be a judicious mix of short answer type, short essay type /problem solving type and long essay type questions.

d) The question shall be prepared in such a way that the answers can be awarded A+, A, B, C, D, E grades.

e) There shall be no separate minimum grade point for internal evaluation of Theory, Practical, Project, and Comprehensive viva-voce.

f) Weight : Different types of questions shall be given different weights to quantify their range as follows:

Sl. No.	Type of Questions	Weight	Number of questions to be answered
1.	Short Answer type questions	1	8 out of 10
2	Short essay/ problem solving type questions	2	6 out of 8
3.	Long Essay type questions	5	2 out of 4

All questions shall be set in such a way that the answers can be awarded A+, A, B, C, D, E grade.

Proper guidelines shall be prepared by the Board of Studies/Expert committees for evaluating the assignment, seminar, practical, project and comprehensive viva-voce within the framework of the regulation.

3.2 <u>DIRECT GRADING SYSTEM</u>

Direct Grading System based on a 7 – point scale is used to evaluate the performance (External and Internal Examination of students)

For all courses (theory & practical) / semester/overall programme Letter grades and **GPA/SGPA/CGPA** are given on the following scale:

Range	Grade	Indicator
4.50 to 5.00	A+	Outstanding
4.00 to 4.49	A	Excellent
3.50 to 3.99	B+	Very good
3.00 to 3.49	B	Good(Average)
2.50 to 2.99	C+	Fair
2.00 to 2.49	C	Marginal
up to 1.99	D	Deficient(Fail)

No separate minimum is required for internal evaluation for a pass, but a minimum **C** grade is required for a pass in an external evaluation. However, a minimum **C grade** is required for pass in a course

<u>External and internal evaluation-First stage- To be done by the examiners.</u>

Direct Grading System based on a 6– point scale is used to evaluate the internal and external examinations taken by the students for various courses of study.

Grade	Grade Points	Range
A+	5	4.50 to 5.00
A	4	4.00 to 4.49
B	3	3.00 to 3.99
C	2	2.00 to 2.99
D	1	0.01 to 1.99
E	0	0.00

Theory-External

Maximum weight for external evaluation is **30.**Therefore Maximum Weighted Grade Point (WGP) is **150**

Weight: Different types of questions shall be given different weights to quantify their range as follows:

Sl.No.	Type of Questions	Weight	Number of questions to be answered
1.	Short Answer type questions	1	8 out of 10
2	Short essay/ problem solving type questions	2	6 out of 8
3.	Long Essay type questions	5	2 out of 4

Theory-Internal

For Theory (Internal)- Components and Weightage

	Components	Weightage
i.	Assignment	1
ii	Seminar	2
iv	Best Two Test papers	2 (1each)
	Total	**5**

(*For test papers all questions shall be set in such a way that the answers can be awarded A+,A,B,C,D,E grade. Average grade of best two test papers shall be*

Example:-Calculation – Overall grade of an answer paper of a course

Type of Question	Qn. No's	Grade Awarded	Grade point	Weightage	Weighted Grade Point
Short Answer	1	A+	5	1	5
	2	-	-	-	-
	3	A	4	1	4
	4	C	2	1	2
	5	A	4	1	4
	6	A	4	1	4
	7	B	3	1	3
	8	A	4	1	4
	9	B	3	1	3
	10	-	-	-	
Short Essay	11	B	3	2	6
	12	A+	5	2	10
	13	A	4	2	8
	14	A+	5	2	10
	15	-	-	-	-
	16	-	-	-	-
	17	A	4	2	8
	18	B	3	2	6
Long Essay	20	A+	5	5	25
	21	-	-	-	-
	22	-	-	-	-
	23	B	3	5	15
			TOTAL	**30**	**117**
Calculation : Overall Grade of the theory paper = Sum of Weighted Grade Points / sum of the weightage 117/30 = 3.90 = Grade B+					

Example

Maximum weight for internal evaluation is **5.** Therefore Maximum Weighted Grade Point (WGP) is **25**

components	Weight (W)	Grade Awarded	Grade Point(GP)	WGP=W *GP	Overall Grade of the course
Assignment	1	A	4	4	**WGP/Total weight = 24/5 =4.8**
Seminar	2	A+	5	10	
Test paper 1	1	A+	5	5	
Test paper 2	1	A+	5	5	
Total	**5**			**24**	**A+**

Practical

For Practical (External)-Components and Weightage

Components	Weightage
Written / Lab test	7
Lab involvement and Record	3
Viva	5
Total	**15**

(The components and the weightage of the practical (External) can be modified by the concerned BOS/Expert Committee without changing the total weightage 15.)

Example

Maximum weight for external evaluation is **15.** Therefore Maximum Weighted Grade Point (WGP) is **75**

components	Weight (W)	Grade Awarded	Grade Point(GP)	WGP=W *GP	Overall Grade of the course
Written/ Lab test	7	A	4	28	**WGP/Total weight = 58 / 15 = 3.86**
Lab involvement & record	3	A+	5	15	
viva	5	B	3	15	
Total	**15**			**58**	**B+**

Practical-Internal

For Practical (Internal)- Components and Weightage

Components	Weightage
Written/Lab test	2
Lab involvement and Record	1
Viva	2
Total	**5**

(The components and the weightage of the components of the practical (Internal) can be modified by the concerned BOS/Expert Committee without changing the total weightage 5.)

<u>**Example**</u>

Maximum weight for internal evaluation is **5.** Therefore Maximum Weighted Grade Point (WGP) is **25**

components	Weight (W)	Grade Awarded	Grade Point(GP)	WGP=W *GP	Overal Grade of the course
Written/ Lab test	2	A	4	8	**WGP/Total weight = 17/5 = 3.40**
Lab involvement & record	1	A+	5	5	
viva	2	C	2	4	
Total	**5**			**17**	**B**

<u>**Project- External**</u>

<u>**For Project (External) Components and Weightage**</u>

Components	Weightage
Relevance of the topic and analysis	3
Project content and presentation	7
Project viva	5
Total	**15**

(The components and the weightage of the components of the Project (External) can be modified by the concerned BOS/Expert Committee without changing the total weightage 15.)

Example

Maximum weight for external evaluation is **15.** Therefore Maximum Weighted Grade Point (WGP) is **75**

components	Weight (W)	Grade Awarded	Grade Point(GP)	WGP=W *GP	Overal Grade of the course
Relevance of the topic & Analysis	2	C	2	4	**WGP/Total weight = 59 / 15 = 3.93**
Project content & presentation	8	A+	5	40	
Project viva-voce	5	B	3	15	
Total	**15**			**59**	**B+**

Project- Internal

For Project (Internal)- Components and Weightage

Components	Weightage
Relevance of the topic and analysis	2
Project content and presentation	2
Project viva	1
Total	**5**

(The components and the weightage of the components of the project (Internal) can be modified by the concerned BOS/Expert Committee without changing the total weightage 5.)

Example

Maximum weight for internal evaluation is **5.** Therefore Maximum Weighted Grade Point (WGP) is **25**

components	Weight (W)	Grade Awarded	Grade Point(GP)	WGP=W *GP	Overall Grade of the course
Relevance of the topic & Analysis	2	B	3	6	**WGP/Total weight = 21 / 5 = 4.2**
Project content & presentation	2	A+	5	10	
Project viva-voce	1	A+	5	5	
Total	**5**			**21**	**A**

Comprehensive viva-voce

Comprehensive viva-voce(External)-components and weightage

Components	Weightage
Course viva (all courses from first semester to fourth semester)	15
Total	**15**

(The components and the weightage of the components of the Comprehensive viva-voce can be modified by the concerned BOS/Expert Committee without changing the total weightage 15.)

Example

Maximum weight for external evaluation is **15.** Therefore Maximum Weighted Grade Point (WGP) is **75**

Components	Weight (W)	Grade Awarded	Grade Point(GP)	WGP=W *GP	Overall Grade of the course
Course viva-voce	15	A	4	60	**WGP/Total weight = 60 / 15 = 4**
Total	**15**			**60**	**A**

Comprehensive viva (Internal)- Components and Weightage

Components	Weightage
Course viva (all courses from first semester to fourth semester)	5
Total	**5**

(The components and the weightage of the components of the Comprehensive viva-voce can be modified by the concerned BOS/Expert Committee without changing the total weightage 5.)

Example

Maximum weight for internal evaluation is **5.**Therefore Maximum Weighted Grade Point (WGP) is **25**

Components	Weight (W)	Grade Awarded	Grade Point(GP)	WGP=W *GP	Overall Grade of the course
Course viva-voce	5	A+	5	25	**WGP/Total weight = 25/ 5 = 5**
Total	**5**			**25**	**A+**

Elective courses and Groups

- There shall be at least two and not more than four elective groups(Group A, Group B, Group C, etc.) comprising of three courses each for a programme and these elective courses shall be included either in fourth semester or be distributed among third and fourth semesters.

- The number of elective courses assigned for study in a particular semester shall be the same across all elective groups for the programme concerned.

- The colleges shall select any one of the elective groups for each programme as per the interest of the students, availability of faculty and academic infrastructure in the institution.

- The selection of courses from different elective groups is not permitted.

- The elective groups selected by the College shall be intimated to the Controller of Examinations within two weeks of commencement of the semester in which the elective courses are offered. The elective group selected by the college for the students who are admitted in a particular academic year shall not be changed.

Attendance

- The minimum requirement of aggregate attendance during a semester for appearing at the end-semester examination shall be 75%.

- Condonation of shortage of attendance to a maximum of 15 days in a semester subject to a maximum of two times during the whole period of the programme may be granted by the University.

- A student having 75% attendance and who fails to register for examination of a particular semester will be allowed to register notionally and is promoted to the next semester, provided application for notional registration shall be submitted within 15 days from the commencement of the next semester.

- If a student represents his/her institution, University, State or Nation in Sports, NCC, or Cultural or any other officially sponsored activities such as college union / university union etc., he/she shall be eligible to claim the attendance for the actual number of days participated subject to a maximum 15 days in a Semester based on the specific recommendations of the Head of the Department or teacher concerned .

- There shall be no separate minimum grade point for internal evaluation.
- No separate minimum is required for internal evaluation for a pass, but a **minimum C grade is required for a pass** in an external evaluation. However, a minimum C grade is required for pass in a course.
- **There shall not be any chance for improvement for internal grade.**
- The external evaluation of project work shall be conducted by **two External examiners from different colleges and an internal examiner from the college concerned.**
- Comprehensive Viva-voce shall be conducted at the end of fourth semester of the programme and its evaluation shall be conducted **by the examiners of the project evaluation.**
- **Evaluation second stage (GPA),Third stage(SGPA) and Fourth stage(CGPA)- To be done by the University.**

4. Faculty under which the Degree is Awarded

Faculty of Social Sciences

5. Specializations offered, if any

Two groups of electives are offered to the students during the fourth semester of their PG program. Both groups have three electives each, from which the college can select one.

Electives		
Elective Group	**Course Code**	**Title of the Course**
A	MM800401	Media Research Studies
	MM800402	Matte Painting Techniques
	MM800403	Techniques of Editing
B	MM810401	Match moving Techniques
	MM810402	Programming for Animation
	MM810403	Green Screen Shooting

6. Note on compliance with the UGC Minimum Standards for the conduct and award of Post Graduate Degrees

The program is offered in compliance with the provisions of UGC Minimum Standards for the conduct and award of Post Graduate Degrees. The student has to attain 80 credits to complete the program successfully

7. **THE PROGRAM STRUCTURE**

Course Code	Title of the Course	Type of the Course	Hours per week	Credits	Total Credits
FIRST SEMESTER					
MM500101	Introduction to Visual Language	Common	**5**	**4**	
MM500102	Introduction to Art: Theory and Criticism	Common	**5**	**4**	
MM010101	Production Art	Core	**5**	**4**	**20**
MM010102	Digital Modeling	Core	**5**	**4**	
MM010103	Two Dimensional Animation	Core	**5**	**4**	
SECOND SEMESTER					
MM010201	Techniques of Animation	Core	**5**	**4**	
MM010202	Advanced Modeling and Sculpting	Core	**5**	**4**	
MM010203	Techniques of Surfacing	Core	**5**	**4**	**21**
MM010204	Character Animation	Core	**5**	**4**	
MM010205	Collaborative Project 2D + 3D	Core	**5**	**5**	
THIRD SEMESTER					
MM010301	Acting for Animators	Core	**5**	**4**	
MM010302	Rigging For Animation	Core	**5**	**4**	
MM010303	Dynamic Simulations	Core	**5**	**4**	**21**
MM500301	Ethics and Laws for Media	Common	**5**	**5**	
MM010304	Digital Compositing	Core	**5**	**4**	
FOURTH SEMESTER					
	Elective 1	Elective	**4**	**3**	
	Elective 2	Elective	**4**	**3**	
	Elective 3	Elective	**4**	**3**	
MM010401	Internship	Core	1 Month	**2**	**18**
MM010402	Final Project – Animation Short	Core	**10**	**5**	
MM010403	Comprehensive Viva	Core	-	**2**	
				Total Credits	**80**

Elective - Group A					
MM800401	Media Research Studies	Elective	**4**	**3**	
MM800402	Matte Painting Techniques	Elective	**4**	**3**	**9**
MM800403	Techniques of Editing	Elective	**4**	**3**	
Elective - Group B					
MM810401	Match moving Techniques	Elective	**4**	**3**	
MM810402	Programming for Animation	Elective	**4**	**3**	**9**
MM810403	Green Screen Shooting	Elective	**4**	**3**	

FIRST SEMESTER COURSES

Course Code	Course	Course Type	Category	Credits
MM500101	Introduction To Visual Language	Common	Theory	4
MM500102	Introduction to Art: Theory and Criticism	Common	Theory	4
MM010101	Production Art	Core	Project	4
MM010102	Digital Modeling	Core	Practical	4
MM010103	Two Dimensional Animation	Core	Project	4

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Course 1 -1

MM500101 – INTRODUCTION TO VISUAL LANGUAGE

(Theory)

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Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

The academic work in the Semester aims at an understanding of the basic elements of compositions that merge to form the language of visual communication.

Unit I Visual Perception:

    1.1   The Psychology of Visual Perception

    1.2   Human eye and vision

    1.3   Perceiving Objects, Colour, Depth and movement.

    1.4   Spatial Vision

    1.5   Colour Spectrum & Psychology of Colour

Unit II Visual Components:

    2.1   Art and Science of Imaging: Human eye and Camera

    2.2   Composition and Framing & Image Lay out

    2.3   Basic features and operation of Camera

    2.4   Image Formation – Aperture, Shutter speed, Depth of Field and Depth of Focus.

    2.5   Basic techniques for Composition - Principles and Rules

Unit III Elements of Visual composition:

    3.1   Space – Line – Shape –Form

    3.2   Horizontal and vertical compositions

    3.3   Golden ratio-1/3 rule

    3.4.   Movement – Rhythm, Pattern etc.

Unit IV Developing Visual Grammar:

    4.1   Imaging Techniques – Image size, Angle etc.

    4.2   View Points – Moving shots – Camera Movement – Subject Movement – Combined Movement

    4.3   Simple Editing Principles-Cut, fade, Dissolves etc..

4.4   Scenes & Sequences and visual narratives

4.5   Mise – en – scene -

Unit V Creating a Visual Structure:

5.1   Narrative art forms- Types and characteristics

5.2   Art of Film Making – Stages in Brief

5.3   Elements of a Story-Plot, Character, plot structures

5.4.   Development of a Story Board from a story

5.5   Analyzing the visual structure of different visual story telling aids

Student Learning Outcomes

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

- Become aware of the principles and elements of visual design, and develop verbal and visual understanding.
- Gain the ability to compose visually.
- Develop creative problem solving skills used in communicating visually as an artist.
- Develop a working vocabulary of visual design allowing creation, interpretation, and critical thinking and analysis within all fields of the visual arts.

REFERENCE

1. Film and the Director   :   Don Livingston
2. Film Technique and Film Acting   :   V.I. Pudovkin
3. Technique of Film   :   Spottis Woode
4. Film Form   :   S.Eisenstein
5. Art of Pictorial Composition   :   Wolohomok
6. Cinema As A Graphic Art   :   V. Nilsen
7. Ways of seeing   :   John Berger
8. Visual Communication   :   Paul Martin Lester
9. Visual Grammar   :   Leborg Christian
10. Visual Storytelling: Inspiring a New

    Visual Language   :   Robert Klanten, S. Ehmann and F. Schulze
11. Design Basics   :   David Lauer and Stephen Pentak
12. Visual Thinking   :   Rudolf Arnheim

13. The Visual Story: Creating the
    Visual Structure of Film, TV and
    Digital Media   :   Bruce Block
14. Art and Visual Perception –
    A Psychology of the Creative Eye   :   Rudolf Arnheim
15. A Primer of Visual Literacy   :   Dondis

MM500102 – Introduction to Art: Theory and Criticism

Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

Introduction to Art Theory & Criticism aims to shed light on some aspect of the project of defining art or to theorize about the structure of our concept of art. This course allows students to explore the various dimensions and forms of art as practiced today.

Unit I	**1.1**	What is art? Introduction to basic Theories of Art- Imitationalism, formalism, emotionalism
	1.2	Various Functions of Art- Art as social phenomena and art as object of perception
	1.3	Diversity of form and design-Analysis of various art work citing examples from Sculpture, Painting, Photography, Films, Performing art forms, Music etc- Aesthetic creation theories
Unit II	**2.1**	Exploring Art Criticism- Description, Analysis, Interpretation and Judgment of different art forms/works-Taking examples from various forms of art
	2.2	Aesthetic qualities, literal qualities, formal qualities and expressive qualities
	2.3	Establishing personal style of art criticism citing examples from Sculpture, Painting, Photography, Films, Performing art forms, Music etc.
Unit III	**3.1**	Ideas of life and art according to Indian philosophy-Early reference to art and beauty
	3.2	Indian aesthetics and relation to philosophy
	3.3	Indian aesthetics and theory of Rasa- Alankara, Guna, Riti, Dwani, Vakrokthi, Auchithya, etc. - Rasa and its application in various art forms.
Unit IV	**4.1**	Introduction to modern art forms- Films & Animations
	4.2	Modern theories of authorship-Auteur theory-Theory of Montage
Unit V	**5.1**	Modern art forms-Time, Space and other formal elements of art-New Media art forms
	5.2	Site Specific Works-Issue based Art-Environmental Art-Installations
	5.3	Digital works-AR/VR and Emerging New forms.

Student Learning Outcomes

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

- Define, discuss and develop critical writings on art.
- Understand and elaborate on various art forms
- Will have an idea of theories related to art and will be able to develop further on it
- Demonstrate an understanding on the emerging new forms of art.

REFERENCE

1. The Social History of Art : Arnold Hauser
2. The Story of Art : E H Gombrich
3. Ways of Seeing : John Berger
4. Theories of Modern Art : B Chipp
5. The Power of Art : Eric Fernie (ed.)
6. Women, Art and Power : Linda Nochlin
7. Anywhere or Not at Al- Philosophy of Contemporary Art : Peter Osborne
8. History of Beauty : Umberto Eco
9. Why painting is Like a Pizza: A guide to Understanding and enjoying Modern Art : Nancy G Heller
10. The Art-Architecture Complex : Hal Foster
11. The Art Instinct: Beauty, Pleasure, and Human Evolution : Denis Dutton
12. Art and Visual Perception: A Psychology of the Creative Eye : Rudolf Arnheim
13. A short Guide to Writing about Art : Sylvan Barnet
14. Art in Theory 1900-2000: An Anthology of Changing Ideas : Charles Harrison, Paul J. Wood
15. Contemporary Art: World Currents : Terry Smith
16. Indian Aesthetics an Introduction : V S Sethuraman
17. Engaging Cinema: An Introduction to Film Studies : Bill Nichols
18. How to Read a Film: Movies,

	Media and Beyond	:	James Monaco
19.	The Major film Theories	:	Dudley Andrew
20.	Concepts in Film Theory	:	Dudley Andrew
21.	A Practical Guide to Indian Aesthetics	:	Neerja Arun
22.	Natya Shastra	:	Bharatamuni
23.	Indian Art	:	Roy C Craven
24.	Studies in Indian Aesthetics and Criticism	:	K. Krishnamoorthy
25.	Practical Augmented Reality: A Guide to the Technologies, Applications, and Human Factors for AR and VR	:	Steve Aukstakalnis
26.	Augmented Reality and Virtual Reality: Empowering Human, Place and Business	:	M. Claudia Dieck and Timothy Jung
27.	Defying Reality: The Inside Story of the Virtual Reality Revolution	:	David M. Ewalt
28.	Painting Beyond Pollock	:	Morgan Falconer
29.	Performance art	:	Roselee Goldberg
30.	The Art-Architecture Complex	:	Hal Foster

MM010101 – PRODUCTION ART
(Project)

Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

Production art is a product of pre-production artwork that helps a production crew gets an idea of what they are producing. This course allows students to explore the possibilities of Concept Art, Character design, BG Design, Storyboards, etc.

Unit I   Research for the story – Analysis of different styles of storytelling – Identifying personal style of storytelling.

Unit II   Exploring Script writing formats – Establishing personal style of script writing.

Unit III   Visual development/Look development: Working with visualization of Character, Costumes, Props, Backgrounds, Atmosphere and Lighting – Preparation of Model Sheets.

Unit IV   Preparation of Storyboards – Animatics/Leica Reels – Techniques of Sound Recording and track break down.

Unit V   Exploration for development of personal style of storytelling – Production of an Animatic/Leica Reel.

Student Learning Outcomes

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

- Define detailed stages of pre-production.
- Visualize characters, Props, BGs, etc. based on different story situations.
- Step by step production process of scriptwriting and story boarding for animation.
- Demonstrate understanding on the production of Animatics/ Leica Reels.

REFERENCE

1. Character Design from the Ground Up   :   Kevin Crossley

2. Figure Drawing: Design and Invention :   Michael Hampton

3. The Beginner's Guide to Sketching:
   Characters, Creatures and Concepts   :   3DTotal.com

4. Animation Writing and Development,

	From Script Development to Pitch	:	Jean Ann Wright
5.	The Art of the Storyboard: Storyboarding for Film, TV, and Animation	:	John Hart
6.	The Noble Approach	:	Tod Polson
7.	Layout & Background	:	Disney Book Group
8.	Layout and Composition for Animation	:	Ed Ghertner
9.	The Animator's Eye: Adding Life to Animation with Timing, Layout, Design, Color and Sound	:	Francis Glebas
10.	Dream Worlds: Production Design for Animation	**:**	Hans Bacher

MM010102 – DIGITAL MODELING

(Practical)

Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

This course focuses on the creation of virtual three dimensional form and space using the professional modeling and Sculpting softwares.

Unit I   Understand the principles of 3D modeling – Know what makes a model "good", including a clean topology and edge flow –   project structure – Presenting ideas in sketch and physical model forms for the design of props and environments.

Explore different 3D modeling techniques like Box modeling, Edge modeling, Spline/NURBS modeling, Polygon modeling, etc.

Unit II   Prop Design**:** Research and design various props for different situations – Preparing model sheets for props – Use of modeling tools to convert the drawings in to 3D space – Study of good topology according to industrial standards – Automobile modeling: Techniques and methods.

Unit III   Space Design: Using sketches, diagrams and photographs, modeling the architecture of living environments by employing and extending the modeling skills introduced in Unit I – Applying accuracy and details in models – Redesigning of current living environments – Basic principles of architecture uses to arrange interior and exterior space, to create visual impact.

Unit IV   Basics of texturing, lighting and rendering.

Unit V   Demo reel creation for modeling.

Student Learning Outcomes

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

- An overall understanding of work with digital modeling and sculpting tools.
- A solid foundation in the artistic and technical aspects of digital figure sculpture and Produce a visually strong design for a stylized character using a range of techniques.

- An understanding of how to work with low and high polygon models.
- Apply knowledge of character production work flows to create a production ready asset.
- Model and Sculpt a 3D character to specifications.

REFERENCE

1.	The Pushing Points Topology Workbook	:	William C Vaughan
2.	Digital Modeling	:	William Vaughan
3.	3D Modeling For Beginners	:	Danan Thilakanathan
4.	Anatomy for 3D Artists: The Essential Guide for CG Professionals	:	Chris Legaspi
5.	Virtual Vixens: 3D Character Modeling and Scene Placement	:	Arndt von Koenigsmarck
6.	Edge loop Character Modeling For 3D Professionals Only	:	Kelly L. Murdock and Eric Allen
7.	Solid Works Surfacing and Complex Shape Modeling Bible	:	Matt Lombard
8.	Sculpting from the Imagination	:	3dtotal Publishing
9.	Beginner's Guide to Sculpting Characters in Clay	:	3dtotal Publishing
10.	Beginner's Guide to Z Brush	:	3dtotal Publishing

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COURSE 1-5

MM010102 - TWO DIMENSIONAL ANIMATION

(Project)

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Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

This course explores observational figurative motion through animation drawing and study. Emphasis is placed on Character Animation and Principles Of Animation to enhance creative skills of the students.

Unit I	Introduction to two dimensional animations – 2D Production Pipeline – Character design: Cartoonish and Stylized – Elemental Constructions – Use of X-Sheets –2D Special Effects – Applications of basic principles of animation.
Unit II	Animation of two legged characters – Anthropomorphic animation – Lip Sync animation.
Unit III	Animating animals and birds.
Unit IV	Study of digital animation work flow and its major tools for 2D production.
Unit V	Demo-Reel Creation

Student Learning Outcomes

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

- Define and apply design principles and theories to animation production.
- Create accurate and aesthetically appealing computer generated animation.
- Demonstrate skills in the use of industry standard tools for 2D animation.
- Create traditional and computer generated animation based on current industry trends and practices.

REFERENCE

1. The Illusion of Life, Disney Animation   :   Frank Thomas and Ollie Johnston
2. Timing for Animation   :   Harold Whittaker, John Halas
3. The Animator's Survival Kit   :   Richard Williams

4. Acting in Animation: A Look at 12 Films   :   Ed Hooks

5. Action: Acting Lessons for CG Animators   :   John Gibbs and Kristin Gibbs

6. Animate to Harmony: The Independent
   Animator's Guide to Toon Boom   :   Adam Phillips

SECOND SEMESTER COURSES

Course Code	Course	Course Type	Category	Credits
MM010201	Techniques of Animation	Core	Project	4
MM010202	Advanced Modeling and Sculpting.	Core	Practical	4
MM010203	Techniques of Surfacing.	Core	Practical	4
MM010204	Character Animation.	Core	Project	4
MM010205	Collaborative Project 2D + 3D	Core	Project	5

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COURSE 2-1

MM010201 - TECHNIQUES OF ANIMATION (Project)

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Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

In this course students are introduced to a wide range of stop motion styles, materials and techniques including clay, object and puppet animation utilizing both tabletop and multi plane setups. Students are encouraged to develop a personal approach while exploring possibilities in character design, armature and set building, lighting, etc.

Unit I   Animation Principles – History of Stop Motion Techniques – Study of famous stop motion works and studios.

Unit II   Study of Time lapse and Pixilation – Project works in Time lapse and Pixilation techniques.

Unit III   Study of Cut out animation – Project works.

Unit IV   Study of Claymation – Different types of Armatures – Properties of Clays – Project works.

Unit V   Puppet Animation and Sand Animation – Building Puppets – Animating Puppets. Project works.

Student Learning Outcomes

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

- Create accurate and aesthetically appealing stop motion animation.
- Demonstrate progress in basic sculpting, puppet making and animation skills.
- Describe characteristics of well-designed and executed animation.
- Create traditional and computer generated animation based on current industry trends and practices.
- Assess and critique past and current animation trends.

REFERENCE

1. The Art of Stop motion animation   : Ken A Priebe
2. Stop motion: Craft skills for   : Susannah Shaw
   Model Animation
3. Stop motion: Passion, Process and   : Barry JC Purves

Performance

4. Creating 3D Animation- The   : Peter Lord and Brian Sibley
   Aardaman Book of Film making

5. Stop motion Armature Machining   : Tom Brierton
   A Construction Manual

6. A Century of Stop motion Animation : Ray Harry Hausen
   From Melies to Aardaman

7. Stop motion Filming and   : Tom Brierton
   Performance

8. Stop motion Puppet Sculpting   : Tom Brierton

COURSE 2–2

MM010202 - ADVANCED MODELING AND SCULPTING

(Practical)

Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

This course enables the students to have an in depth understanding of the art and techniques of Organic Modeling and Sculpting.

UNIT I   Anatomy basics – humans – animals – birds.

UNIT II   Introduction to organic modeling – modeling limbs. Modeling humans using reference images. Modeling animals and birds.

UNIT III   Comparing Traditional and Digital Sculpting – Anatomy for Sculptors like Skeleton, Muscles, Skin and Fat – Proportions and Measurements –   Form and Gestures – Sculpting in the Neutral Position– Sculpting a basic Figure.

UNIT IV   Digital Sculpting Methods – Detailing hi-res Models – Optimizing Models – Organic and Hard surface models – differences and techniques – Role of Anatomy and Facial Land marking – Topology and "Clean" modeling practice – Sculpting Simple and Complex character models–Painting Sculptures–Creating Normal maps and displacement maps–Exporting files.

UNIT V   Modeling for 3D Printing: Files and Scene setup – Mesh and Topology for 3D printing – Techniques and Methods.

Demo-reel Creation for Organic Modeling.

REFERENCE

1. 3D Human Modeling and Animation   :   Peter Ratner
2. Stop staring   :   Jaison Osipa
3. Virtual Vixens: 3D Character   :   Arndt von Koenigsmarck
   Modeling and Scene Placement
4. Edge loop Character Modeling For   :   Kelly L. Murdock and Eric Allen
   3D Professionals Only
5. Solid Works Surfacing and Complex   :   Matt Lombard

Shape Modeling Bible

6. Anatomy for the Artist   :   Sarah Simblet

7. An Atlas of Animal Anatomy for Artists   :   W. Ellenberger , H. Baum ,

                                                H. Dittrich , Lewis S. Brown

8. Beginner's Guide to Sculpting

    Characters in Clay   :   3dtotal Publishing

9. Anatomy for 3D Artists   :   Chris Legaspi

10. The A-Z 3D Printing Handbook   :   Sean Aranda

11. Make: 3D Printing   :   Anna Kaziunas France

MM010203 - TECHNIQUES OF SURFACING (Practical)

Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

The surfacing artist adds texture and color to 3D characters, environments and accessories in an animated project to enhance their visual appeal. This course offers an advanced study about the Surfacing techniques like shading, texturing, lighting, UVs, Hair and Fur, Rendering, etc.

Unit I   Study of UV layouts – UV editing tools – Unwrapping UVs – Creating a Functional UV Layout –UV Mapping strategies – Making UVs for complex objects – Camera Mapping.

Unit II   Exploring Shading models and textures – Procedural textures – Constructing materials with nodes – Relief mapping techniques: Bump mapping, Normal Mapping and Parallax Occlusion Mapping – Different types of utility nodes – LDR and HDR Images –Tone mapping HDRI's – Multi texturing – Dependent texture-mapping – Different types of texturing softwares.

Unit III   Introduction to dramatic lighting – 1-, 2-, and 3-point lighting – Naturalistic lighting – Types of lights used in production– Various effects created with lights – Solving light gap errors – Study of Shadows – HDR lighting.

Unit IV   3D Render Engines –Creating good set up for rendering. – Optimizing files for rendering – Render effects.

Unit V   Demo-Reel Creation

Student Learning Outcomes

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

- Produce and integrate art assets based on current industry trends and practices.
- Design art assets that reflect personality, atmosphere and emotional tone.
- Independently solve modeling problems.
- Identify and build an emotional impact using color, light, and camera perspective within a scene.

- Create surface, Shading, lighting, fur and hair set-ups that strengthen the overall project design.

REFERENCE

1. 3D lighting: history, concepts and techniques   :   Arnold Gallardo
2. Aesthetic 3D Lighting   :   Lee Lanier
3. Digital Lighting and Rendering   :   Jeremy Birn
4. Mastering 3D Lighting   :   Bill Fleming
5. Texturing Concepts & Techniques   :   Dennis Summers
6. Digital Texturing And Painting   :   Owen Demers.
7. How to Render: The Fundamentals of Light,
   Shadow and Reflectivity   :   Scott Robertson,
     Thomas Bertling

COURSE 2-4

MM010204 - CHARACTER ANIMATION (Project)

Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

This course enables students to specialize in the art of 3D animation, learning to transform animations into authentic interactions by characters. This course also provides artistic and technical knowledge of character animation.

Unit I   Review of basic animation principles – Planning a performance based on story – Thinking through and breaking down motions –Weight, mass, and physicality – Arced verses linear motion – Staging and animation layout in a 3D scene – Posing to the camera .

Unit II   Explore major animation techniques and tools – Creating stronger poses and factoring in timing Speed, performance, and the illusion of motion – Illusion of Friction – Preparing and importing audio for facial animation timing –Animating faces for emotion and dialogue – Facial GUI vs. facial joint array vs. blend shape driven expressions.

Unit III   Blocking in for elaborate movement and interaction – Animating Actor accessories – Transitioning between hand, holster, and free movement– Adding Dynamic effects to enhance character performance.

Unit IV   Body Mechanics – Moving with a purpose – Character interaction with props – Staging two or more characters – Action & Reaction Between two Characters.

Unit V   Demo-Reel Creation.

Student Learning Outcomes

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

- Apply principles of mechanics and physics to animation.
- Demonstrate skill in industry standard tools and techniques of 3D Animation.
- Construct animation that reflects distinctive character and personality.

- Discuss, analyze and evaluate work with appropriate terminology for content, technique and style.

REFERENCE

1. Inspired 3D Character Animation : Kyle Clark
2. 3D Animation Essentials : Andy Beane
3. Cartoon Character Animation with MAYA : Keith Osborn
4. The Alchemy of Animation : Don Hahn
5. Timing for Animation : Whitaker and Halas
6. Character Emotion in 2D and 3D Animation : Les Pardew
7. Character Animation Fundamentals : Steve Roberts
8. The Animator's Survival Kit : Richard Williams

MM010204 – COLLABORATIVE PROJECT 2D + 3D

Total Credits: 5   **Total Hours per Month: 20**

OBJECTIVE

To give students adequate confidence to do a professional work using 2D and 3D animation technique. Students will creative a cohesive animation work using their acquired skills to express their artistic vision.

Student should perform a one minute story using 2D and 3D Techniques i.e., 2D characters on 3D background. Project should be worked out through various production stages after the final approval by the supervising faculty. This project culminates in a final presentation along with a written component.

THIRD SEMESTER COURSES

Course Code	Course	Course Type	Category	Credits
MM010301	Acting for Animators	Core	Project	4
MM010302	Rigging for Animation.	Core	Practical	4
MM010303	Dynamic Simulations.	Core	Practical	4
MM500301	Ethics and Laws for Media	Common	Theory	5
MM010304	Digital Compositing.	Core	Practical	4

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COURSE 3-1

MM010301 - ACTING FOR ANIMATORS (Project)

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Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

This course focuses on acting and directing skills that will strengthen the animator's ability to communicate visually. Students act out their characters and complete drawings of motion studies, expressions and poses.

Unit I   Why Characters Differ? – Character Types and Their Motion – Acting as Responding to a Situation – Heroes and Villains – Domination and Subordination – Primary and Secondary Characters.

Unit II   'Anticipation–Action – Result' – Exaggeration – Walks: Acting and Attitudes – Tell the Story Visually –Clear Staging for the Audience: Keeping it simple and Readable.

Unit III   Emotion and Empathy– Emotional Involvement – Attaining Believability – Development of Drama– Conflict: Good Versus Evil – Character Goals – Mannerisms – Acting with senses–Animating force versus form– Blinks have Meaning – Camera itself an Actor (Subjective view Point).

Unit IV   Body Acting and Gestures – Facial expressions – Feeling of the Character: Actions that show Joy or Inner Torments – Space and Effort – Speech Analysis– Acting for Camera – Techniques of Acting – Pantomime – Voice-over acting.

Unit V   Demo-Reel Creation

Student Learning Outcomes

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

* Describe essential acting principles and performance techniques.
* Examine dialogue and audio to identify acting beats and performance possibilities.
* Combine knowledge of emotion, body language, acting and animation principles to enhance the believability of characters and their actions.

- Analyse the execution of acting and performance choices to evaluate the communication of thought, emotion and personality.

REFERENCE

1. The Illusion of Life, Disney Animation   :   Frank Thomas and Ollie Johnston
2. Timing for Animation   :   Harold Whittaker, John Halas
3. The Animator's Survival Kit   :   Richard Williams
4. Acting in Animation: A Look at 12 Films :   Ed Hooks
5. Action: Acting Lessons for CG Animators :   John Kundert-Gibbs and
                                               Kristin Kundert-Gibbs

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COURSE 3-2

MM010302 - RIGGING FOR ANIMATION (Practical)

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Total Credits: 5   **Total Hours per Month: 20**

OBJECTIVE

This course provides students technical skills needed to set up, rig, alter and support character animations effectively for 3D Animation production. Students can also apply skills learned in this course in other areas including game art, motion graphics, etc.

Unit I	Study of skeleton Setups – Rigging overview – Rig demonstrations – Joint creation, orientation and development – Rig Controls overview – Study of animation constraints – IK and FK setups.
Unit II	Attribute creation and editing – Expressions and Scripting for Rig – Reverse foot system – FK/IK switch system – Knee and elbow pinning – Twist joint setups – Stretching ability of rigs – Spine controls using clusters.
Unit III	Rigging for facial expressions – additional facial features setups – Facial control system overview (GUI vs. on face controls) – Space switching ability – Global switch setup –Character settings control (scale, geo display, smooth level).
Unit IV	Study of deformations – Skinning – Controlling skin weights – Skin sliding – Skin wrinkles – Muscle deformation– Muscle Dynamics – Pose Space Deformers (PSD) – Optimizations and clean up.
Unit V	Creating advanced Rigs for Props, two legged characters, four legged characters, etc. – Demo-Reel Creation

Student Learning Outcomes

Upon successful completion of this course, students will be able to:
- Create and edit joint deformers to create a skeleton rig for 3D models
- Apply and modify the bind and skin weights with editing tools
- Create rigging controls for joint chain skeleton
- Test / troubleshoot custom character rigs
- Design custom character rigs for animations

REFERENCE

1. Rig it Right! Maya Animation Rigging Concepts   : Tina O Hailey
2. Body Language: Advanced 3D Character Rigging : Eric Allen and Kelly L. Murdock
3. The Art of Rigging   : Kiaran Ritchie and Jake Callery
4. Animation Methods - Rigging Made Easy   : David Rodriguez
5. Inspired 3D Advanced Rigging and Deformations : Brad Clark, John Hood and Joe Harkins

COURSE 3-3

MM800301 – DYNAMIC SIMULATIONS (Practical)

Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

This course explores the main skills used in the Visual Effects (VFX) industry. Students learn how the VFX field integrates computer graphics and 3D components with live action plates.

Unit I   Explore the techniques and tools of: Particle Dynamics, Fluid Dynamics and Particle – Fluid integration.

Unit II   Research, Case study and demonstration of: Explosions – Fire Effects – Smoke – Pyrotechniques– Tornadoes – Volcanic activities – Water effects.

Unit III   Grooming realistic Hair– CG Hair styling – CG Hair Cut and Shave effect – Techniques of Fur creation – Shadowing Hair and Fur.

Unit IV   Cloth effects for a moving character – Application of Cloth effects in various situations.

Unit V   Combining Digital Plates with Live Action Footage – Colour Grading and Making Final Outputs – Demo-Reel Creation.

Student Learning Outcomes

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

- Design visual effects sequences using storyboarding and pre-visualization that meet production requirements.
- Complete the production of live action plates for use in visual effects.
- Create photo-real images to match live action footage by the application of advanced rendering techniques.

REFERENCE

1. Digital compositing for Film and Video   :   Steve Wright
2. Special Effects: An Oral History.   :   Pascal Pinteau
3. Special Effects: The History and Technique   :   Rickit, Richrd
4. Maya Visual Effects: The Innovator's Guide   :   Eric Kellur
5. Match moving: The Invisible Art of Camera Tracking   :   Tim Dobbert

COURSE 3 -4

MM500301 - ETHICS AND LAWS FOR MEDIA (Theory)

Total Credits: 5   **Total Hours per Month: 20**

OBJECTIVE

Study media laws and learn about their legal rights and obligations. Provide students with the knowledge of the basic concepts of ethics and its practical application to the field of media.

UNIT 1   **1.1**   A brief introduction to Indian Constitution-Salient features,

1.2   Fundamental Rights, Freedom of Press

1.3   Concept of Freedom of Speech & Expression**.**

1.4   Democracy & Media as Fourth estate.

1.5   Press Council of India- Its organizational structure, functions, history and rationale behind its establishment, its powers; Code of conduct for journalists.

UNIT 2   **2.1**   History of Laws regulating the media in India.

2.2   Defamation clauses, Right to privacy, Right to Know, Laws related to Sedition, Obscenity.

2.3   Contempt of Court Act 1971, Information Technology Act 2000 and the amendment Act of 2008, Right to Information Act 2005, Contempt of Parliament, Working Journalists Act, Cyber Laws etc.

2.4   Laws related to Broadcasting media, Advertising, Advertising Council of India.

2.5   Copyright Act 1957, International Copyright laws, Concept of authorship.

UNIT 3   **3.1**   An Introduction to the Terms and Concepts of Ethics: Definition of Ethics and its branches, stages of ethical development.

3.2   Major theories in Ethics.

3.3   Role of conscience in ethical decision making; code of ethics.

3.4   Moral relativism and ethno centrism.

3.5   Principles of Ethical journalism.

3.6   Public relations & Ethics.

UNIT 4   **4.1**   Media ethics as applied ethics; ethics in changing media environment.

4.2 Media Ethics: Why Ethics Matters in the Field of Media, Ethical perspectives of print, audio and visual media; ethical values.

4.3 Ethical issues in the field of Advertisements.

4.4 Advertorials, Paid News, and News as a product.

4.5 Social Media and Fake news.

UNIT 5   **5.1** Media and Society: Mass Media as the Mirror of society and Promoter of Social Change: Mass media and its impact on society.

5.2 Transmission of culture and values through media; media and public opinion; media and family; social media addiction.

5.3 Sex and violence in media; media and de-humanization; media and consumerism: media as the trend setter; media and imperialism: cultural erosion and mental colonization.

5.4 Media as a business enterprise with profit motives.

5.5 Merger of news and entertainment.

Student Learning Outcomes

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

- Articulate and defend legal rights and obligations in the field of media.
- Equipped to recognize best contemporary ethical and professional practices in the digital space, as dictated by legal standards.
- Create a profound understanding of the possibilities and challenges of media enabling them to approach media critically and creatively.

REFERENCE

1. Introduction to the Constitution of India   :   Durga Das Basu
2. Press Laws and Ethics of Journalism   :   P.K. Ravindranath
3. Introduction to Media Laws and Ethics   :   Juhi P Pathak
4. Mass Media and the Moral Imagination   :   Philip J Rossi
5. Media Education in India   :   Jacob Srambickal
6. Media Ethics   :   Bart Pattyn
7. Digital Media Ethics   :   Charles Ess
8. The Ethical Journalist   :   Gene Foreman

MM800301 - DIGITAL COMPOSITING (Practical)

Total Credits: 4   **Total Hours per Month: 20**

OBJECTIVE

This course covers methods of Compositing Computers Generated Imagery and live action images along with advanced image manipulation techniques. High-end compositing tools are used to develop skills and presentation with meaningful effects.

Unit I   Course overview – Introduction to compositing – Digital image fundamentals, Structure and Attributes –Various Compositing Softwares – Node-Based vs. Layered-Based System – Types of Compositing: CGI, Multipass, Depth and Multiplane – Case study : Current trends in industry.

Unit II   Study on Alpha Channel – Green Screens and their production – Keyers for Compositing – Creating Masks –Matte creation– Different types of mattes – Rotoscoping – Rig and Wire removal.

Unit III   CGI Compositing – Set Extension – Motion Tracking – Warping and Morphing – 2D Crowd Duplication – Clean Plates – Managing noise and grain – Colour Grading .

Unit IV   Motion graphics in Film, Television, Interactive Media and Environment – Motion Language – Image and Type in Motion – Conceptualization of Motion Graphics – Spatial , Visual and Temporal Interpolations.

Unit V   Demo-Reel Creation.

Student Learning Outcomes

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

- Develop fluent industry-based software and production skills relating directly to effective production of time-based multimedia

- Identify and develop an advanced visual and conceptual knowledge in the area of digital post-production

- Effectively research and analyse the areas of compositing and digital visual effects

- Explore and experiment with a broad range of approaches to digital compositing

- Further develop their own production methods to incorporate the knowledge acquired in this course

REFERENCE

1. Digital compositing for Film and Video : Steve Wright
2. The Art and Science of Digital Compositing : Ron Brinkmann
3. Digital Compositing with Nuke : Lee Lanier
4. [Digital] Visual Effects and Compositing : Jon Gress
5. The Visual Effects Producer: Understanding
   the Art and Business of VFX : Charles and Susan Zwerman
6. The Green Screen Handbook : Jeff Foster
7. The Art and Technique of Digital Color Correction : Steve Hullfish
8. Motion Graphic Design: Applied History
   and Aesthetics : Jon Krasner
9. Transforming Type: New Directions in
   Kinetic Typography : Barbara Brownie
10. Motion Design: Moving Graphics
    for Television, Music Video, Cinema,
    and Digital Interfaces : Matt Woolman

FOURTH SEMESTER COURSES

	Elective 1	Elective	**4**	**3**	
	Elective 2	Elective	**4**	**3**	
	Elective 3	Elective	**4**	**3**	**18**
MM010401	Internship	Core	1 Month	**2**	
MM010402	Final Project – Animation Short	Core	**10**	**5**	
MM010403	Comprehensive Viva	Core	-	**2**	
				Total Credits	**80**

	Elective - Group A				
MM800401	Media Research Studies	Elective	**4**	**3**	
MM800402	Matte Painting Techniques	Elective	**4**	**3**	**9**
MM800403	Techniques of Editing	Elective	**4**	**3**	
	Elective - Group B				
MM810401	Match moving Techniques	Elective	**4**	**3**	
MM810402	Programming for Animation	Elective	**4**	**3**	**9**
MM810403	Green Screen Shooting	Elective	**4**	**3**	

Elective - Group A					
MM800401	Media Research Studies	Elective	**4**	**3**	
MM800402	Matte Painting Techniques	Elective	**4**	**3**	**9**
MM800403	Techniques of Editing	Elective	**4**	**3**	

MM800401 – MEDIA RESEARCH STUDIES (Practical)

Total Credits: 3   **Total Hours per Month: 20**

OBJECTIVE

To enable a student to identify a research problem, prepare a research proposal and pursue high quality research work. Gives him an insight to various types of research methodology.

Unit I   **Concept of Research**: Meaning and importance of Research – Types of Research – Selection and formulation of Research Problem – Identification of a research topic- Proposal writing-Research Design.

Unit II   **Research Methods:** *(a)* Traditional Methods – Historical, Institutional, Legal, Philosophical, Comparative, Ethical methods etc.

              (b) Modern Methods – Survey of Literature, Sampling method, Questionnaire, Schedule etc., Filed studies, Interview method and Focus Group discussion, Observation Method, Case Study method, Content analysis, Delphi method, Statistical Method, Experimental method, Brainstorming Techniques etc.

Unit III   **Data Collection and Data Analysis:** *I. Types of data* **-** (a) Primary, Secondary and Tertiary Data.(b) Construction and adaptation of instruments, Administration of questions and tests, Tabulation of data. (c) Data organization in SPSS and Excel (d) Graphical representation of data.

              II. Analysis of Data - (a) Discussion and Interpretation of results.(b) Testing of Hypothesis: Logical and Statistical Techniques.

Unit IV   **Report Writing**: Organization of the Research Report Preliminaries, Contents of Report, Bibliography, Appendices - Style Manuals - Criteria for the evaluation of the Research Report.

Unit V   **RESEARCH PROJECT SUBMISSION**: As part of the Course each student would have to conduct and analyze research, develop a thesis, and organize his/her ideas clearly on a very transformative aspect of Media and submit a thesis as bound document.

The topics will be of candidates own choosing, but approved by the faculty guide. The research has to be conducted and document developed under the guidance of the faculty guide. The copyright of the paper will rest with the college/University. The Literature and language of the paper should adhere to the MLA and APA Style sheets respectively for documentation purpose.

The Research paper should have the following components:

1. Abstract in 100 words, Keywords (5-7) Introduction, Discussion, Conclusion & Works Cited/References.

2. Keywords should avoid Proper names and words from the title of the article.

3. The document shall not be less than 100 pages on A4 size, Times New Roman, Font 12 with 1.5 line spacing and the title can be in font 14.

4. The entire document shall be 1.5 line-spaced and paragraphs should be indented from the left margin. Avoid justifying the pages.

5. Add the academic-research profile of the student in 50 words at the end of the paper to be included under "Note on Contributors."

Student Learning Outcomes

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

- Demonstrate knowledge of research processes (reading, evaluating, and developing).
- Perform literature reviews using print and online databases.
- Identify, explain, compare, and prepare the key elements of a research proposal/report.
- Compare and contrast quantitative and qualitative research paradigms, and explain the use of each in research.
- Describe, compare, and contrast descriptive and inferential statistics, and provide examples of their use in research.
- Describe sampling methods, measurement scales and instruments, and appropriate uses of each, explain the rationale for research ethics.

REFERENCE

1. Research Methodology: An Introduction : C.R Kothari.
2. Research Methodology: A Step by Step
   Guide for Research : Renjith Kumar.

3. Research Methodology : Paneerselvam.

4. Sampling Techniques : Cochran, William G.

5. Scientific Method and Social Research : B.N. Ghosh.

6. Methods in Social Research : Goodde and Hatte.

7. Management Research Methodology,
   Integration of Principles, Methods and
   Techniques : K. N Krishnaswami, ShivakumarAppa Ayyar and
   Mathiarajan M.

ELECTIVE – GROUP A
COURSE 4 -2
MM800402 - MATTE PAINTING TECHNIQUES (Project)

Total Credits: 3   **Total Hours per Month: 20**

OBJECTIVE

This course examines the art of matte painting and the role of the environment artist. With the advent of 3D CGI the matte painter's job has increasingly moved away from creating 2D backdrops of landscape and cityscape to include working with geometry in what is often phrased as 2.5D.In this course the student explores painting techniques and their role in creating environments.

Unit I   Concept of digital painting – Review and analysis of successful matte paintings in film production – Basic tools for painting – Digital creation of charcoal drawings, pastel, water color and oil painting, etc. – Illustration techniques – Compositions at various eye levels and perspectives moods – Sensual emotions in paintings using various colour concepts, depth, illusion of space in paintings.

Unit II   Character design: issues and limitations – Creating character history – Designing the physical look – Drawing, Sketching and painting of the character – Value and color in character creation.
Lighting for a character – Using and blending edges in painting – Creating textures and patterns – Painting an eye, face and hair – Painting real and fantasy characters.

Unit III   Matte painting: Study of surface properties: matte, shiny, translucent, transparent and metallic surfaces –Study of lighting in matte painting: direct and indirect lighting, creating bounce, creating mood through lighting – Preparing the background plate – Articulated mattes – Plate restoration – Plate extension – Plate clean up – Adding 3D elements – Creating sky mattes – Static matte and motion matte painting – Color grading – Final output.

Unit IV   Create Landscapes, cityscapes – Buildings: Interiors and exteriors – Objects, Ancient Architectures, pavilions, parks etc. – Blending two or more images to create entirely new and imaginative – Adding convincing weather and elements –

Painting realistic details: dust, dirt, scratches and aging – Day to night technique, Abandoned technique, Set extension technique.

Unit V   Demo reel creation

Student Learning Outcomes

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

- Plan, research and design digital matte paintings matching live action footage.
- Create custom digital images using photographs and digital painting techniques.
- Discuss, analyze and implement strategies for combining digital images with photographic footage.
- Analyze and creatively solve compositional and lighting problems related to digital matte creation.
- Perform efficient digital painting tasks in a specific time period.

REFERENCE

1.	Bold Vision: A Digital Painting Bible	:	Gary Tonge
2.	Digital Fantasy Painting Workshop	:	Martin Mckenna
3.	Digital Character Design and Painting	:	Don Seegmiller
4.	Complete Digital Painting Techniques	:	David Cole
5.	Digital Fantasy Painting	:	Michael Burns
6.	The Complete Guide to Digital Illustration	:	Steve Caplin, Adam Banks and Nigel Holmes
7.	100 Ways to Create Fantasy Figures	:	Francis Tsan
8.	Drawing and Painting Fantasy Landscapes and City Scapes	:	Rob Alexander and Martin Mckenne
9.	The Invisible Art: The Legends of Movie Movie Matte Painting	:	Mark Cotta Vaz and Craig Barron
10.	D'artiste Matte Painting	:	Alp Altiner, Dylan Cole and Chris Stoski.

ELECTIVE – GROUP A

COURSE 4 - 3

MM800403 – TECHNIQUES OF EDITING (Practical)

Total Credits: 3   **Total Hours per Month: 20**

OBJECTIVE

This course is designed to teach video and audio editing for a movie. The purpose is to train the next generation industry leaders who can effectively communicate visually, rather than simply through words.

Unit I   Video Editing- Need of editing- Linear and Non-linear editing-   Stages of Editing process. Factors for good edit-understanding the footage, matching eye line. Continuity in Cinema- Physical continuity and Emotional Continuity-plot line- Story structure- sound.

Unit II   Time concept – Real time and Filmic time- Cut and editing principles- Jump cut, match cut, cross cut, reverse cut, cut away, cut in. Constructive editing- meaning and emotion in juxtaposing fragments of action, Concept of unity of time and unity of actions. Networked Systems- SANs And NAS-Render Farms-Audio Equipment- Digital Video Cables And Connectors-FireWire- SDI And HD-SDI –Thunderbolt- RS-422 -Audio Interfaces Etc- Organizing The Media – Different Formats- Film,2K,4K HD And SD-Setting Up The Project-Importing, Transcoding, Logging And Capturing.

Unit III   Introducing a Non Linear Editing Software- Project setting- Introducing interface, Continuity Editing-Match cut, cross cut, jump cut, Dialogue overlapping, L-Cut, J-Cut, Slow motion Fast motion, Synchronizing and mixing Video and Audio - Working with effects, Adding different transitions and effects to Video- Working with Key frames, Compositing, Colour Correction, Titling, Exporting to different Video formats

Unit IV   Physiology of Sound – Methods of sound transmission – Human Ear and Audio recording devices – microphone and loud speaker audible spectrum of sound methods of communication – acoustics Reverberation – Echo etc. Sound Studio. Features of an audio Studio. Console, Control room, isolation booth. Different

types of audio Cables &Connecters etc. Digital Sound recording: Introduction to sound editing software. How to open a session, Different tools, importing audio files, Introductions to Basic Editing and mixing; single track Recording, Multi track recording. Recording on location. Sync sound Recording. - Concept of real space and psychological space. Recording Sound in Studio: Music recording, Voice over recording, Dubbing - Synchronization of video and audio.

Unit V   Demo reel creation

Student Learning Outcomes

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

- Understand the basic editing tools and techniques of sound and video recordings in preparation for the mastering of a television program, motion picture or web application.
- Plan, design, and create digital video projects incorporating graphic and audio elements.
- Transfer and capture digital video and audio from various cameras and external devices.
- Edit and compress video for use in various delivery modes of digital media using standard digital video editing software.
- Evaluate digital video projects, identify items for improvement, and implement changes.

REFERENCE

1. Editing Digital Video   :   Robert Goodman and Patrick Mcgrath.
2. Film and Video Editing   :   Roger Crittenden.
3. Grammar of the Shot   :   Roy Thompson.
4. Grammar of the Edit   :   Roy Thompson.
5. On Film Editing   :   Edward Dmytryk.
6. The Digital Filmmaking Handbook.   :   Sonja Schenk.
7. Editing Digital Video: The Complete
    Creative and Technical Guide   :   Robert Goodman, Patrick McGrath.
8. Digital Audio Editing   :   Simon Langford.
9. Digital Audio Editing Fundamentals   :   Jackson, Wallace.

Elective - Group B					
MM810401	Match moving Techniques	Elective	**4**	**3**	
MM810402	Programming for Animation	Elective	**4**	**3**	**9**
MM810403	Green Screen Shooting	Elective	**4**	**3**	

MM810401 – MATCH MOVING TECHNIQUES (Project)

Total Credits: 3   **Total Hours per Month: 20**

OBJECTIVE

By exploring concepts in 3D camera match move of live action scenes, as well as rigid object tracking, students experience tracking 3D shots by hand and by applying the use of Camera Tracking Softwares. Students analyze data and create seamless Camera connections between live action shots and 3D computer generated objects.

Unit I   History of tracking – Basics of Match moving – Camera tracking softwares – working method of film Cameras.

Unit II   2D tracking process – Track placements – Plate issues.

Unit III   Good calibration process, Calibrating cameras –Evaluating the solution for a camera tracking – Calibrations and Camera moves – Setting up a coordinate system supervised tracking.

Unit IV   Automatic tracking – Fitting the camera and set – Adding test objects – Getting right information from sets – Creating 3D coordinate frame – Export camera parameters and motion path to 3D softwares.

Unit V   Demo Reel Creation.

Student Learning Outcomes

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

- Work for Vfx using Tracking and Matchmoving techniques.
- Understand Camera and geometry depth.
- Create photo-real images to match live action
- Handle digital production and workflow as applied in current industry.

REFERENCE

1. Match moving: The Invisible Art of

    Camera Tracking   :   Tim Dobbert.

2. The Art and Science of

Digital Compositing   :   Ron Brinkmaan.

3. The Filmmaker's Hand Book   :   Steven Ascher and Edward Pincus.

ELECTIVE – GROUP B

COURSE 4-2

MM810402 – PROGRAMMING FOR ANIMATION (Practical)

Total Credits: 3   **Total Hours per Month: 20**

OBJECTIVE

By exploring concepts of animation programming, you will be able to make your own tools as per production needs, using both MEL and Python.

Unit I   Maya Dependency Graph, Attributes, and Connections– Hierarchy and Parent/Child Relationships– Exploring Transform and Shape Nodes, Instancing, and History– Command Line and Command Feedback Line – Script Editor versus Command Shell – MEL Code – Basic Structure of MEL Commands – Maya's Expression Language – How Maya Implements Expressions – Controlling Particles with Expressions – MEL's Role in Maya pipe line– Creating, Editing, and Querying Nodes in MEL – Adding, Setting, and Getting Values of Attributes in MEL – Connecting Attributes – Creating and Connecting Expression Nodes.

Unit II   Different Variables and Data types – Structure and Use of MEL Command – Creating and Manipulating Nodes in a MEL Scene – Maya's Node Types and the DG Node Reference – Flow of Script Execution – Procedures and Functions – Naming Nodes, Scripts, and Variables – Namespaces and their usages –Designing and Testing a MEL User Interface – Validating User Input, Integers, Floating-Point Numbers and Object Names – Simple Dialogs and Input Validation – Creating Custom Dialog Boxes – Installing MEL Scripts in scenes – Using MEL with Particle and Solid Body Dynamics – MEL in Character Rigging.

Unit III   Installation and Working with Python – Understanding Python variables, Basic Operators, and Blocks – Declaring and using Numeric data types: int, float, complex – Use of string data type and string operations – list and list slicing – Use of Tuple data type – Conditional blocks using if, else and elif – Simple for loops in python – For loop using ranges, string, list and dictionaries – While loops – Loop manipulations – Programming using Python conditional and loops block.

Unit IV   Programming using functions, modules and external packages – Programming using string, list and dictionary in build functions – Python File Operation: Reading config files, Writing log files – Read and write functions – Programming using file operations – Python Object Oriented Programming (Oops) – Programming using Oops support –Python Regular Expression and related functions – Programming using Exception handling – Programming using database connections – Programming using multithreading.

Unit V   Writing python program for CGI applications – Creating menus and accessing files – Server client program – Python in Maya –The Maya Python Command Documentation – Calling MEL from Python –Maya Python Standalone Applications.

Student Learning Outcomes

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

- Acquire a good understanding of CG scripting languages and current uses computer graphics techniques for animation pipeline.
- Automate repetitive and/or tedious tasks.
- Produce more creative iterations in the feedback loop.
- Handle the advanced rigging and visual effects workflow as applied in current industry.

REFERENCE

1. MEL Scripting for Maya Animators   :   Mark R. Wilkins and Chris Kazmier
2. Practical Maya Programming with Python   :   Robert Galanakis
3. The Filmmaker's Hand Book   :   Steven Ascher and Edward Pincus
4. MEL Scripting a Character Rig   :   Chris Maraffi
5. Maya Python for Games and Film   :   Adam Mechtley and Ryan Trowbridge
6. Complete Maya Programming: An Extensive
    Guide to MEL and C++ API   :   David Gould
7. MEL Scripting a Character Rig in Maya   :   Chris Maraffi

COURSE 4-3

MM810403 – GREEN SCREEN SHOOTING (Project)

Total Credits: 3   **Total Hours per Month: 20**

OBJECTIVE

The course is an exploration of emerging techniques and technologies for visual effects in film/video. Students will learn how to light and shoot green screen footage and other live effects using camera and lights in a professional way.

Unit I   Mattes and their importants – Different types of mattes – Travelling Mattes - Sodium Vapor Traveling Matte Process – Blue and Green Screen Traveling Matte Process – Do's and Dont's of Green Screen – Green screen Vs Blue screen – Advantages and Difficulties of Green Screen process. – Difference Matte vs. Chroma Key – Hardware Matte Compositors and Chroma Keyers.

Unit II   Basic Setups for Shooting Green Screen – Generic Green Muslin – Popup, collapsible and reversible backgrounds (green & blue screens) - Chromakey Paper rolls - Chromakey Vinyl - Chromakey Paint - Chromatte -Other equipments required for a green screen studio - Space required for a Green Screen studio.

Unit III   Introduction to Studio Lighting - Incandescent Vs Fluorescent lights- Temperature and Kelvin - Different types of studio lighting- Different types of bulbs, Flash Lighting and Continuous Lighting - Diffusion, dispersal, reflection and bouncing of light techniques – Lighting the subject – 2, 3, 4 and 5 point lighting setups – Light measurement tools and techniques – Video formats for green screen shooting – Consumer and prosumer cameras for shooting – Film dimensions for green screens – Colour space, compression and sampling – Progressive Vs Interlaced – what do the p's and i's mean? – Choosing the correct exposures – Use white balance with green screens – Monitoring the results in softwares and hardware.

Unit IV   Lighting the green screen correctly –Avoiding shadows and light spill – Arranging smooth lighting effect – Cycloramas and how to light them – Proper light positions – Barn doors and reflectors – Wattages and dimmable lights – Diffuse light and

Softboxes – Gels and kicker lights – Light metering and IRE – Setting up camera, white balance and exposure levels – Choosing the correct film settings – Distances from green screen to subject – Framing the subject – Suitable clothing for green screen shoot – Avoiding shiny and reflective surfaces – Proper makeup and hair arrangement for green screen shoot – Creating invisible man effect – Shooting with gloves, masks and full bodysuits – Shooting of green referance objects for CGI integration – Using blue bodysuits and green screen together for double keys – Filming tips and techniques.

Unit V   Various Chroma keying softwares and their techniques – Available third party pluggins for keying.

Student Learning Outcomes

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

- Demonstrate the ability to shoot green screen footages with professional quality.
- Able to handle Camera and lighting equipments for a successful green screen shoot.
- Be aware of real-world production problems and timelines.
- Gain a broader conceptual foundation by evaluating relevant work and issues relating toartists working in the CG animation, and visual effects fields.
- Present projects for critique in a professional manor appropriate to the medium.

REFERENCE

1. Green Screen Made Easy: Keying and Compositing Techniques for
   Indie Filmmakers   :   Jeremy Hanke
2. The Green Screen Handbook: Real-World Production Techniques   :   Jeff Foster.
3. The Green Screen Makerspace Project Book   :   Todd Burleson.
4. The Filmmaker's Guide to Visual Effects: The Art and Techniques
   of VFX for Directors, Producers, Editors and Cinematographers   :   Eran Dinur.
5. How to Shoot Video That Doesn't Suck:Advice to
   Make Any Amateur Look Like a Pro   :   Steve Stockman.

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COURSE 4 -4

MM010401 – INTERNSHIP

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Total Credits: 2

OBJECTIVE

To acquire practical industry based experience

Internship is on the job training to assimilate professionalism in one's career. The students will have to undergo an Internship at an Animation Studio for a month during the fourth semester. The students would prepare individual reports after the Internship and the same should be attested by the organization under which the student did the internship. The students' comprehensive report will be submitted to the HOD for evaluation. A faculty member will monitor the students during the internship.

COURSE 4 -5

MM010402 - Final Project

Total Credits: 5

OBJECTIVE

At the end of the programme, the student should reach a professional standard in preparing the thesis project.

Student should work individually to achieve the production goal within the allotted time period under the guidance of a supervising faculty.

Final project comprises of following assignments:

- **An animation short:**
    - Students should develop an innovative and theoretically informed body of work which proves their Creativity, Aesthetic sense and Technical Skills.
    - The duration of the short should be a minimum of 90 seconds.
    - Students should submit the Movie along with the Comprehensive Report to the Head of the Department.

- **Viva-Voce**

- **Portfolio Presentation:**
    - Provides an opportunity to prepare a professional portfolio and exhibit student works at the end of the programme with proper guidance from the department.

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COURSE 4 -6

MM010403 – COMPREHENSIVE VIVA

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Total Credits: 2

The comprehensive viva - voce is scheduled at the end of the 4th semester in order to judge the integrated understanding as well as application of the knowledge gained by the students during the MA Animation programme. This is also to see the expression of what is being learnt by them. The idea is to see that students are able to digest what is being taught in two full year and see their relevance not only in the practical field but also their inter relationship. The main objective of this course is to prepare the students to face interview both at the academic and the industrial sector. The viva - voce is of 100 marks each to be conducted by a board of external examiners appointed by the University.