

**Study Scheme & Syllabus of
Master of Science in
ANIMATION AND MULTIMEDIA TECHNOLOGY
(M.Sc. AMT)**

Batch 2018 onwards



By

Board of Study Computer Application

Department of Academics

IK Gujral Punjab Technical University

IK Gujral Punjab Technical University
M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Courses & Examination Scheme:

First Semester

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L*	T*	P	Internal	External		
MAMT101-18	Core Theory	PRINCIPLES OF ANIMATION	4	0	0	30	70	100	4
MAMT102-18	Core Theory	SCRIPTWRITING FOR ANIMATORS	3	1	0	30	70	100	4
MAMT103-18	Core Theory	FILM APPRECIATION	3	1	0	30	70	100	4
MAMT104-18	Core Theory	COMMUNICATION SKILLS	4	0	0	30	70	100	4
MAMT105-18	Core Theory	2D ANIMATION	3	1	0	30	70	100	4
MAMT106-18	Core Practical /Laboratory	PRINCIPLES OF ANIMATION LABORATORY	0	0	4	70	30	100	2
MAMT107-18	Core Practical / Laboratory	2D ANIMATION LABORATORY	0	0	4	70	30	100	2
TOTAL			17	3	8	290	410	700	24

Semester 1

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M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Course Code: **MAMT18-101**

Course Name: **Principles of Animation**

Program: MAMT	L:4 T:0 P:0
Branch : Animation	Credits:4
Semester:1	Contact hours:40
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Detailed contents	Contact hours
Unit 1 <ul style="list-style-type: none"> ○ Evolution of animation ○ Animation before Disney ○ Early Disney’s Cell Animation Processes. ○ Delving into animation history- both of India and the world. ○ Precursors to animation: Cave paintings, animation toys ○ Animation Today ○ Stop Motion Photo Animation, ○ Zoetrope, ○ Thaumatrope ○ Paper Animation 	10
Unit 2 <ul style="list-style-type: none"> ○ 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, ○ Delayed Secondary Action. ○ Understanding principles for cell animation that translate sequential images into motion ○ Emphasizing the difference between caricature, drama, humor 	10
Unit 3 <ul style="list-style-type: none"> ○ Animation Drawings ○ Rough Drawings ○ Color reference drawings 	10

Unit 4	<ul style="list-style-type: none">○ The use of anticipation, action, reaction○ Planning accents, beats, scene timing, spacing of drawings, holds, easing in and out○ Animating to music○ Understanding the meaning of movement and movement in nature and what movement expresses○ Awareness of how mood and feeling can be conveyed through movement in both animate and inanimate objects○ Examining the laws of motion in the context of animation; cause and effect, thrown objects, rotating, force, oscillating movement, friction, resistance	10
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Text Books:

1. Leonard Maltin, *Of Mice and Magic – A History of American Animated Cartoons* Plume, Penguin Books. USA, 1990
2. Bob Thompson, *Disney’s Art of Animation – From Mickey Mouse to Hercules* Hyperion, NY, 1997
3. Donald Craften, *Before Mickey – The Animated Film [1898 – 1928]*, The University of Chicago Press, 1993
4. Peter Hames (edited by), *Dark Alchemy, The Films of Jan Svankmajer*, Greenwood Press, 1995
5. John Culhane, *Disney’s Aladdin – The Making*

Reference Books:

1. Harold Whitaker and John Halas, *Timing for Animation*, Focal Press, Oxford, 20022.
2. Preston Blair, *Cartoon Animation*, Walter Foster Publishing Inc., CA, 1995
3. Edited by Peter Hames, *Dark Alchemy, The Films of Jan Svankmajer*, Greenwood Press, 1995
4. John Culhane, *Disney’s Aladdin – The Making of an Animated Film* Hyperion, NY, 1992
5. Dave Smith, *The Official Encyclopedia – Disney A to Z* Hyperion, NY, 1998

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Course Code: **MAMT18-102**

Course Name: **Script Writing for Animators**

Program: MAMT	L:3 T:1 P:0
Branch: Animation	Credits:4
Semester:1	Contact hours:40
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Detailed contents	Contact hours
Unit 1 <ul style="list-style-type: none"> ○ Introduction to Scriptwriting ○ Basics of Scriptwriting, Use of scriptwriting, Action, Scene Headings, Character Name, Screenplay Page Breaking, Short Lines/Poetry/Lyrics, Titles or Opening Credits, Screenplay Title Page, Continued and Revisions, Header Text + Do's & Don'ts, 	10
Unit 2 <ul style="list-style-type: none"> ○ Principles of script Writing, Its analysis, narrative strategy, genre & structure. ○ Storyboarding for animation ○ Importance, formats, characteristics ○ Expression ○ Create a Timeline ○ Key framing, inbetweening & cleanups 	10
Unit 3 Scriptwriting for both short film: Dialogue, Parenthetical, Extension, Shot Transition, Dual-Column Dialogue, Act numbers, Scene Numbers, Cast List, short lines, dialogue paragraphs, Script Styles & Types, Script Length Scene Heading Action Description , Character Name, Dialogue, Parenthetical, Extension, Transition, Shots.	10
Unit 4 Scriptwriting for film: Dialogue split by Action, Emphasis in Action, Abbreviations, Short Lines, Dialogue Paragraphs, Montage & Series of Shots, Supers - Titles, Signs, etc, Phone Calls and Inter cuts between two people talking at the same time.	10

Text Books:

1. Wells, Paul, *Scriptwriting*, AVA Academia, Published by-AVA publishing SA, 2007, ISBN 2-940373-16-7
2. Rubenstein, Paul Max-Martin J. Maloney, *Writing for the Media-Film, Television, Video and Radio*, Prentice Hall, New Jersey 07632, 1988, ISBN 0-13-971508-8 01
3. Wright Jean Ann, *Animation Writing and Development*, Elsevier Publication, London, 2005, ISBN 0-240-80549-6
4. Katherine Atwell Herbert – *The perfect screenplay: writing it and selling it* 2006
5. Andrew Horton – *Writing the character-centered screenplay* 1999

Reference Books:

1. Syd Field *Screenplay: the foundations of screenwriting*- 2005
2. Rachel Friedman Ballon *Blueprint for screenwriting: a complete writer's guide to story ...* 2005
3. Lisa Frankfort, *Patrick Fanning How to Stop Backing Down & Start Talking Back*- 2005
4. Eugene Vale – *The technique of screenplay writing: an analysis of the dramatic* 1972
5. Marina Samouilova Scordato – *Exploring the Screenplay Writing Process Implications for 2009*

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Course Code: **MAMT18-103**

Course Name: **Film Appreciation**

Program: MAMT	L:3 T:1 P:0
Branch: Animation	Credits:4
Semester:1	Contact hours:40
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Detailed contents	Contact hours
Unit 1 History of Cinema and Genre Studies <ul style="list-style-type: none"> ○ Film as a medium, ○ Characteristics of Good Cinema ○ Importance and its status in present scenario. ○ Film Appreciation, Principles of Film Appreciation. 	10
Unit 2 Story structure: Story / script / Story boarding Case Study of films, dissecting all elements like opening credits, end credits, editing, sound design, costume design, story elements, plot points, etc. Case studies of Films by various accomplished directors and establishing and critiquing their specific styles. Developing Story ideas, designing the Plot, Plot development and Plot devises, Story narration, Character development in the story.	10
Unit 3 Film Grammar <ul style="list-style-type: none"> ● How To Read A Film: Understanding Camera Movements, ● Shots And Angles, ● Lighting Techniques Etc. ● Different Aspects Of Film Making: Literary, Dramatic And Cinematic ● Acting And Types Of Acting 	10
Unit 4 Film Language <ul style="list-style-type: none"> ● Film Appreciation vs. Film Criticism, ● Film Review, ● Film Journalism; Institutes like FTII, SRFTII. ● Film Censorship: Central Board of Film Certification, ● Directorate of Film Festivals Role of Censor Board in terms of Film Appreciation 	10

Text Books:

- Shrivastava, K.M, (2005), Broadcast Journalism in the 21st century , New Dawn Press Group, New Delhi.
- The Analysis of Film by Raymond Bellour and Constance Penley (Editor).
- How to Read a Film: Movies, Media, and Beyond by James Monaco.
- Film Art: An Introduction - Paperback (Nov. 25, 2009) by David Bordwell and Kristin Thompson.

Reference Books:

1. Film Form: Essays in Film Theory - Paperback (Mar. 19, 1969) by Sergei Eisenstein and Jay Leyda.
2. Fulding, Ken, (1990), Introduction to Television Production, Longman, New York.
3. Kaushik, Sharda, (2000), Script to Screen: An Introduction to TV Journalism, Macmillan, New Delhi.
4. Yves Thoraval, (2000), The Cinema of India, MacMillan India.
5. Nasreen Munni Kabir, (2005) Guru Dutt life in Cinema, Oxford University Press.

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Course Code:**MAMT18-104**

Course Name: **Communication skills**

Program: MAMT	L:4 T:0 P:0
Branch: Animation	Credits:4
Semester:1	Contact hours:40
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Detailed contents	Contact hours
Unit 1 Sentence, Parts of speech, Tenses, Active passive voice, Direct Indirect speech, Comprehension passage, Knowledge of 10 leading animation companies profile	10
Unit 2 Business communication-Types, Medias, Objectives, Importance of understanding Barriers to communication and ways to remove barriers.	10
Unit 3 Presentation skills-Its Purpose in business world, How to find material for presentation, How to sequence the speech with proper introduction and conclusion, How to Prepare PPT& Complete set of required body language while delivering presentation. Reading & writing skills- Importance of reading and writing, improving writing skills through understanding and practicing Notice, E-mail, Tenders, Advertisement, formal letter	10
Unit 4 Listening skills-Its importance as individual and as a leader or as a worker, Its types, barriers to listening & remedies to improve listening barriers. Non verbal Communication- understanding what is called non verbal communication, its importance as an individual, as a student, as a worker and as a leader, its types.	10

Text Books:

1. Effective Business Communication, M.V. RODRIGUEZ
2. Business Communication, Meenakshi Raman, Parkash Singh, Paperback Edition, Oxford University Press.

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Course Code:**MAMT18-105**

Course Name: **2D Animation**

Program: MAMT	L:3 T:1 P:0
Branch: Animation	Credits:4
Semester:1	Contact hours:40
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Detailed contents	Contact hours
Unit 1 Introduction to visual script Animation film language - Plot structure - Dialogs - Music and sound effects - Sound Track - Voice- Over Acting & voice characterization	10
Unit 2 Animation scene planning Post-Production Lip synchronize with expression Audio mixing	10
Unit 3 Introduction to flash, after effects, animation using illustrator Various output formats Rendering and Authoring Clean up Publishing	10
Unit 4 Breaking apart and distribution Managing layers Motion guide Masking layers Walk cycle Run cycle	10

Text Books:

1. Sandro Corsaro, Richard M Sherman, Clifford J. Parrott , -*Hollywood 2D digital animation: the new Flashproduction revolution* 2004
2. Steve Roberts *Character animation in 3D: use traditional drawing techniques to ...: Volume 1-* 2004
3. Bill Davis, *Gardner's Guide to Creating 2D Animation in a Small Studi* , 2006
4. Steve Roberts, *Character Animation: 2D Skills for Better 3D* – 2007
5. Carol Green, *2D Animation* – 2010

Reference Books:

1. Mark Simon, *Producing independent 2D character animation: making and selling a ...* – 2003
2. Tony White, *Animation from pencils to pixels: classical techniques for digital ...-* 2006
3. Michael Morrison, *Sams teach yourself game programming in 24 hours* – 2003
4. Steve Roberts, *Character Animation Fundamentals: Developing Skills for 2D and 3D ...* – 2011
5. Tina O'Hailey, *Hybrid Animation: Integrating 2D and 3D Assets*

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Course Code: **MAMT18-106**

Course Name: **Principles of Animation Laboratory**

Program: MAMT	L:0 T:0 P:4
Branch: Animation	Credits: 2
Semester:1	Contact hours: 40
Theory/Practical: Practical	Elective status: core
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Task 1	Introduction with the tools for drawing:
Task 2	Drawing pencils:- (hb, b, 2b,4b, 6b,8b, 10b, 12b), charcoal pencil, clutch pencil.
Task 3	Sheets:- cartridge, hand made, ivory, art card, duplex, news print, mount board sheet etc.
Task 4	Colors:- poster color, water color, pastel color, pencil color, waterproof ink.
Task 5	Brushes:- round and flat
Task 6	Object drawing:
Task 7	Introduction to object drawing,
Task 8	Creating basic shapes and forms on a two-dimensional surface using geometry –
Task 9	Structure, surface and texture,
Task 10	Perspective and points of view,
Task 11	Exploring line and the effects it can produce,
Task 12	Introduction of light and shadow on objects
Task 13	An assessment and representation of the impact of light on simple forms and objects –
Task 14	Change in mood,
Task 15	Surface quality,
Task 16	Density,
Task 17	Drama,
Task 18	Impact.
Task 19	Perspective drawing:
Task 20	Perspective drawing.
Task 21	Principles of perspectives,
Task 22	One point and two point perspective.
Task 23	Perspective as applied to objects, furniture, interior and exteriors of the buildings,
Task 24	Study of light and shade etc.
Task 25	Nature study:
Task 26	Drawing from nature,
Task 27	Location drawing
Task 28	Learning to represent trees, plants, bushes, shrubs, insects, birds, and animals with attention to structure and morphology, proportion, volume, and behavior.
Task 29	Dramatizing what has been recorded.
Task 30	Human drawing:
Task 31	Introduction to human figure drawing –
Task 32	Drawings from mannequin,
Task 33	quick sketching of human figure from out door, indoor.
Task 34	To capture the gestures of the human form, weight, balance, rhythm and proportion.
Task 35	Creating storyboard
Task 36	Introduction to storyboard,

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Task 37	Uses of story board, drawing of story board,
Task 38	Understanding and drawing camera movements in story board.
Task 39	Introduction to animation
Task 40	Origin and development of animation
Task 41	Early animation- victorian, zoetrope, the magic lantern, thaumatrope
Task 42	Flip book,
Task 43	praxinoscope

Reference Books:

1. Complete Book of Drawing Technique - Peter Stanyer.
2. Fun with the Pencil – Loomis.
3. Dynamic Figure Drawing – Burne Hogarth.
4. Human anatomy :- By VICTOR PERADS
5. Drawing on the Right Side of the Brain : Betty Edwards.

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Course Code:**MAMT18-107**

Course Name: **2D animation**

Program: MAMT	L:0 T:0 P:4
Branch: Animation	Credits: 2
Semester:1	Contact hours: 40
Theory/Practical: Practical	Elective status: core
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Task 1	Interface of adobe flash/ animator
Task 2	Understanding different file types, size, and frame rate.
Task 3	Using tools to create character for animation,
Task 4	Understanding between,
Task 5	Symbol
Task 6	Key frames.
Task 7	Basic animation
Task 8	Principles of animation,
Task 9	Creating bouncing ball
Task 10	Applying different weights on different ball.
Task 11	Facial animation
Task 12	Adding life to characters using expressions.
Task 13	Classical approaches to depict various expressions and emotions.
Task 14	The mechanics of eye movements,
Task 15	Blinking,
Task 16	Talking
Task 17	Making various gestures,
Task 18	lip sync with dialog.
Task 19	Character in motion
Task 20	Animate a character to depict a perfect normal human walk and run.
Task 21	Use a rigged human character to depict a perfectly normal human walk and run
Task 22	Cycle with appropriate movement from head to toe.

Text Books:

1. Sandro Corsaro, Richard M Sherman, Clifford J. Parrott ,*-Hollywood 2D digital animation: the new Flashproduction revolution 2004*
2. Steve Roberts *Character animation in 3D: use traditional drawing techniques to ...: Volume 1- 2004*
3. Bill Davis,*Gardner's Guide to Creating 2D Animation in a Small Studi , 2006*
4. Steve Roberts,*Character Animation: 2D Skills for Better 3D – 2007*
5. Carol Green,*2D Animation – 2010*

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Second Semester

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L*	T*	P	Internal	External		
MAMT201-18	Core Theory	STORYBOARD AND CINEMATOGRAPHY	3	1	0	30	70	100	4
MAMT202-18	Core Practical/Laboratory	STORYBOARD AND CINEMATOGRAPHY LABORATORY	0	0	4	70	30	100	2
MAMT203-18	Core Theory	GRAPHIC DESIGN AND VISUAL ARTS	3	1	0	30	70	100	4
MAMT204-18	Core Practical/Laboratory	GRAPHIC DESIGN AND VISUAL ARTS LABORATORY	0	0	4	70	30	100	2
MAMT205-18	Core Theory	3D ANIMATION	3	1	0	30	70	100	4
MAMT206-18	Core Practical/Laboratory	3D ANIMATION – 1 (CHARACTER DESIGN AND MODELLING) LABORATORY	0	0	4	70	30	100	2
MAMT207-18	Core Practical/Laboratory	3D ANIMATION – 2 (DIGITAL MEDIA AND SOUND EDITING) LABORATORY	0	0	4	70	30	100	2
	TOTAL		9	3	16	370	330	700	20

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Course Code : MAMT201-18
 Course Name : STORYBOARD AND CINEMATOGRAPHY

Program: M Sc (AMT)	L:3 T:1 P:0
Branch: Animation	Credits:4
Semester:2	Contact hours:40
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes:

CO#	Course Outcomes
CO1	To learn script visualization
CO2	To learn filming the action
CO3	To learn about camera setups and video composition

Course content	Contact hours
Part A Introduction to Storyboard, Boarding a Script, Importance of Characters, Location and Background Composition and Drawing, Time and Space, Importance of Camera in Storyboarding, Transitions and Hookups, Visual Storytelling: Dialogue, Using the Medium, The Opening, Timing, Format, Rough or Tight, Labeling for Boards, Wrapping up, Checklist	20
Part B Introduction to Camera Angles, Selection of Area and Viewport, Continuity, Cinematic Time & Space Time & Space Continuity, Filming the Action, Use of Camera Setups to Establish & Maintain Proper Screen Direction on Moving Player or Vehicle, Introduction to Cutting, Types of Film Editing, Editorial Requirements, Close-ups in Motion Picture, Types of Close-ups, Use of Cut-in Close-up, Composition, Compositional Language, Types of Balance, Center of Interest, Compose in Depth	20

Suggested Books:

1. Animation Writing and Development by Jean Ann, Wright-2005
2. The Five C's of Cinematography. By: Joseph V. Mascelli, First Silman – James press 1965

Software & Tools Suggested:

1. Adobe Photoshop
2. Adobe Illustrator
3. After Effects
4. Adobe Premiere Pro

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M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Course Code : MAMT202-18
 Course Name : **STORYBOARD AND CINEMATOGRAPHY LABORATORY**

Program: M Sc (AMT)	L:0 T:0 P:4
Branch: Animation	Credits: 2
Semester:2	Contact hours: 40
Theory/Practical: Practical	Elective status: core/elective
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes:

CO#	Course Outcomes
CO1	To learn script visualization
CO2	To learn filming the action
CO3	To learn about camera setups and video composition

TASK 1	Write a Script and Create Model sheet, Background for your Storyboard	10 HOURS	Unit 1
TASK 2	Create a complete Storyboard including (Dialogue, Using the Medium, The opening, Timing, Format, Rough or Tight, Labeling for Boards, Wrapping up, Checklist)	4 HOURS	Unit 2
TASK 3	Shoot your Storyboard scenes using different Camera angles	6 HOURS	Unit 3
TASK 4	Compose your Shot Scenes of your Storyboard and Render it for Final Output	20 hours	Unit 4

Suggested Books:

1. Animation Writing and Development by Jean Ann, Wright-2005
2. The Five C's of Cinematography. By: Joseph V. Mascelli, First Silman – James Press 1965

Software & Tools Suggested:

1. Adobe Photoshop
2. Adobe Illustrator
3. After Effects
4. Adobe Premiere Pro

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Course Code : MAMT203-18
 Course Name : GRAPHIC DESIGN AND VISUAL ART

Program: M Sc (AMT)	L:3 T:1 P:0
Branch: Animation	Credits:4
Semester:2	Contact hours:40
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes:

CO#	Course Outcomes
CO1	Develop skills used to build visual communication.
CO2	Analyze, synthesize, and utilize design processes
CO3	Utilize relevant applications of tools and technology in the creation and distribution of visual messages

Course Content	Contact Hours
Part A Introduction to Graphic Designing, Exploratory Drawing, Visual Ideas, Theories of Image and Text, Fundamentals of Composition: Basics of Composition, Form and Space, Basic Principles of Design Layout, Styles of Layout, Pace and Contrast, Size and Format, Photography and Illustration. Introduction to Typography, The Anatomy of Type, Typographic Emphasis and Hierarchy, Typographic Rules/ Boxes and Ornaments, Fundamentals of Colors: Color Legibility, Contrast and Harmony, Color as Information.	20
Part B Introduction to Visual Art: Tools and Technologies, Photography Basics and Sourcing Images, Print Production and Presentations: Printed Color, Print Media, Digital Printing, Correcting Color Proofs and Press Check. Web Designing, Project Structures, Web Tools, Designing for Web, Mobile Application Design, and Banner Ad Design.	20

Suggested Books:

1. Graphic Design School by Thames and Hudson-2017
2. Classroom in a Book, Adobe Illustrator CC. Dorley Kindersley. 2014
3. Classroom in a Book, Adobe Photoshop CC. Andres Faulkner, Conrad Chavez. Pearson -2017

Software & Tools Suggested:

1. Adobe Photoshop
2. Adobe Illustrator
3. After Effects
4. Adobe Premiere Pro

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Course Code : MAMT204-18
 Course Name : GRAPHIC DESIGN AND VISUAL ARTS LABORATORY

Program: M Sc (AMT)	L:0 T:0 P:4
Branch: Animation	Credits: 2
Semester:2	Contact hours: 40
Theory/Practical: Practical	Elective status: core/elective
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes:

CO#	Course Outcomes
CO1	Develop skills used to build visual communication.
CO2	Analyze, synthesize, and utilize design processes
CO3	Utilize relevant applications of tools and technology in the creation and distribution of visual messages

TASK	Description	Hours	Unit
TASK 1	Sketch a Graphic Layout using Visual ideas	3 hours	Unit 1
TASK 2	Create Vector image of your Sketch	3 hours	Unit 1
TASK 3	Use a mixture of Fonts/Text to create a Graphic Image	4 hours	Unit 2
TASK 4	Design a company Logo (to represent yourself, your company)	2 hours	Unit 2
TASK 5	Retouching of your Digital Image	2 hours	Unit 3
TASK 6	Capture Scenes of different times of the Day	8 hours	Unit 3
TASK 7	Design a Digital Collage of your captured Scenes	2 hours	Unit 3
TASK 8	Design a vector Webpage Template (to represent yourself, your company)	6 hours	Unit 4
TASK 9	Create Layout Design of a Product to be launched	6 hours	Unit 4
TASK 10	Design a Logo for Mobile Application	4 hours	Unit 4

Suggested Books:

1. Graphic Design School by Thames and Hudson-2017
2. Classroom in a Book, Adobe Illustrator CC. Dorley Kindersley. 2014
3. Classroom in a Book, Adobe Photo shop CC. Andres Faulkner, Conrad Chavez. Pearson -2017

Software & Tools Suggested:

1. Adobe Photoshop
2. Adobe Illustrator
3. After Effects
4. Adobe Premiere Pro

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M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Course Code : MAMT205-18
 Course Name : 3D ANIMATION

Program: M Sc (AMT)	L:3 T:1 P:0
Branch: Animation	Credits: 4
Semester:2	Contact hours: 40
Theory/Practical: Theory	Elective status: core/elective
Internal max. marks: 30	
External max. marks: 70	
Total marks: 100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes:

CO#	Course Outcomes
CO1	To learn 3D Modeling techniques and Character development
CO2	Creates more realistic and detailed Concepts for better Design Evaluation
CO3	Create a 3D environment featuring Lighting and Textures.

Course Content	Contact Hours
Part A 3D Modeling 1: Understanding Polygon Geometry, Using Sub Division Surfaces, Understanding NURBS, Modeling NURB- Surfaces, 3D Modeling 2: Modeling with Deformers, Combining M Meshes, Using Bevel Plus and Bevel Edges, Creating Curves, Converting NURBS Surfaces to Polygon, NURBS Extrusion, Boolean Operations, Sculpting Polygon, Advance Polygon Editing Tools, Working with SubDs, Modeling with SubDs, Introduction to Texturing, Adding Material to Objects, Types of Textures, UV Texture Layout, Unfolding UVS, Mirroring UVS, UV Tools, Arranging UV Shells, Additional UV Mapping, Transferring UVS, Multiple UV Sets.	20
Part B Introduction to Rigging, Creating Parent-child Hierarchies, Naming Joints, Mirroring Joints, Human, Inverse Kinematics, Creating Skeleton Generator, Character Controls, Skinning Geometry, Interactive/Smooth Binding, Understanding Muscle System, Editing Muscle Parameters, Converting the Smooth Skin to Muscle System. Introduction to Lighting, Understanding types of Lighting, Indirect Lighting, Indirect Illumination: Final Gathering, Image based Lighting, Physical Sun and Sky, Mental Ray Area Light, Light Shaders, Physical Light Shaders, Adding Shadow Effects, Using Ray Trace Shadows.	20

Suggested Books:

1. Mastering Autodesk 3Ds Max 2013 by Jeffrey M. Harper, Wiley and Sons - 2013
2. Mastering Autodesk Maya 2013 by Todd Palamar, Wiley and Sons - 2013

Software & Tools Suggested:

1. Autodesk Maya
2. Autodesk 3ds Max
3. Blender

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Course Code : MAMT206-18
 Course Name : 3D ANIMATION – 1 (CHARACTER DESIGN AND MODELING) LABORATORY

Program: M Sc (AMT)	L:0 T:0 P:4
Branch: Animation	Credits: 2
Semester:2	Contact hours: 40
Theory/Practical: Practical	Elective status: core/elective
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes:

CO#	Course Outcomes
CO1	To learn 3D modeling and Animation using computer graphics
CO2	Learn to generate photo realistic renders using software
CO3	Learn character rigging using variety of tools in software

TASK 1	Task Description	Hours	Unit
TASK 1	Create background using Inorganic Modeling (Props ,Interior, Exterior)	6 hours	Unit 1
TASK 2	Create organic 3D Models (Male, Female, Animals) according to task 1	6 hours	Unit 1
TASK 3	Texture you Inorganic Models created in task 1	4 hours	Unit 2
TASK 4	Texture your Organic models created In task 2	4 hours	Unit 2
TASK 5	Rig your 3D organic model`s created in task 3	10 hours	Unit 3
TASK 6	Add Lighting to your Scene	10 hours	Unit 4

Suggested Books:

1. Mastering Autodesk 3ds Max 2013 by Jeffrey M. Harper, Wiley and Sons - 2013
2. Mastering Autodesk Maya 2013 by Todd Palamar, Wiley and Sons – 2013

Software & Tools Suggested:

1. Autodesk Maya
2. Autodesk 3ds Max
3. Blender

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Course Code : MAMT207-18
 Course Name : 3D ANIMATION 2 – (DIGITAL MEDIA AND SOUND EDITING) LABORATORY

Program: M Sc (AMT)	L:0 T:0 P:4
Branch: Animation	Credits: 2
Semester:2	Contact hours: 40
Theory/Practical: Practical	Elective status: core/elective
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes:

CO#	Course Outcomes
CO1	To learn various Concepts and objectives of editing
CO2	How to use the Impact of Sound
CO3	To use various Concepts Techniques with Various relevant Software
CO4	How to make Credits and Graphics

TASK 1	Shoot a small Video Clip in natural surroundings as per your Story	8 hours
TASK 2	Remove all unwanted Noise from the Video	4 hours
TASK 3	Addition of Voice Over for the Video	4 hours
TASK 4	Make credits with appropriate Sound for the Video	6 hours
TASK 5	Add in motion Graphics for your Credit / Video	8 hours
TASK 6	Editing the Video for the Final Submission	10 hours

Reference Books:

1. Editing Digital Video, By Robert M. Goodman, Patrick McGrath . McGraw hill – 2003
2. Adobe Premiere Pro 2 Bible. Adele Droblas and Seth Greenberg, Wiley publishing – 2006
3. Sound Forge Power Book by Scott R Garrigus

Software & Tools Suggested:

1. Sound Forge
2. Adobe Premiere Pro

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Courses & Examination Scheme:

THIRD SEMESTER

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L*	T*	P	Internal	External		
MAMT301-18	Core Theory	Lighting and Rendering	4	0	0	30	70	100	4
MAMT302-18	Core Practical /Laboratory	Lighting and Rendering Laboratory	0	0	4	70	30	100	2
MAMT303-18	Core Theory	Direction and Advance Cinematic	3	1	0	30	70	100	4
MAMT304-18	Core Practical /Laboratory	Direction and Advance Cinematic Laboratory	0	0	4	70	30	100	2
MAMT305-18	Core Theory	3D Animation 3 - Animation and Dynamic Deformers	3	1	0	30	70	100	4
MAMT306-18	Core Practical /Laboratory	3D Animation 3 - Animation and Dynamic Deformers Laboratory	0	0	4	70	30	100	2
MAMT307-18	Core Theory	Voiceover and Sound Compositing	4	0	0	30	70	100	4
MAMT308-18	Core Practical /Laboratory	Voiceover and Sound Compositing Laboratory	0	0	4	70	30	100	2
	TOTAL		14	2	16	400	400	800	24

Semester 3

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M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Course Code: MAMT 301 – 18

Course Name: Lighting and Rendering

Program: M. Sc.	L:4 T:0 P:0
Branch: Animation and Multimedia	Credits: 4
Semester:3	Contact Hours: 44 Hours
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks: 100	

Prerequisite: - NA -

Co requisite: - NA -

Additional material required in ESE: - NA -

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Learn about sources of lighting
CO2	Understand the use of camera
CO3	Learn the concepts of final output

Course content	Contact hours
Part A Natural and artificial lighting, Standard lighting method, Shadows, Light types, Creating and positioning light objects, Viewing scene from a light, Altering light parameters, using the sunlight and daylight system, Configuring sunlight and skylight, Selecting advance lighting, Enabling light tracing, using local advanced lighting settings, Lighting for radiosity, Working with advance lighting material, Using Lighting analysis, Working with cameras, Setting camera parameters.	22
Part B Working with render parameters, Using render with frame window, Using templates and nesting states, Accessing Compositor view, Changing node parameters, Batch rendering scenes, Understanding network rendering, Setting up network rendering system, starting the network rendering system, Configuring the network manager and services, Logging errors, using the monitor. Enabling mental ray and Iray, Working with Iray and mental ray, Using external compositing packages, Using render elements, Completing Post-production with video post interface, Working with sequences, Adding and editing events, Working with ranges.	22

Text Books:

1. Autodesk 3ds Max 2014 Bible by Kelly L. Murdock, John Wiley-2014

Reference Books:

1. Mastering Autodesk Maya 2013 by Todd Palamar, wiley and sons - 2013

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Course Code : MAMT 302 – 18

Course Name : Lighting and Rendering Laboratory

Program: M. Sc.	L:0 T:0 P:4
Branch: Animation and Multimedia	Credits: 2
Semester: 3	Contact hours: 44 Hours
Theory/Practical: Laboratory	Elective status: core/elective
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Prerequisite: - NA -

Co requisite: - NA -

Additional material required in ESE: - NA -

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Understand the concept of natural and artificial lighting
CO2	Learn the Final output rendering process using software
CO3	Apply the concept of various lighting and rendering techniques

Task 1	Create an interior using natural and artificial lighting	10 Hours	Unit 1
Task 2	Create exterior using outdoor lighting tools	12 Hours	Unit 2
Task 3	Render an Interior created in task 1 by using different camera angles	10 Hours	Unit 3
Task 4	Render your exterior created in task 2 showing different times of day	12 Hours	Unit 4

Text Books:

1. Autodesk 3ds Max 2014 Bible by Kelly L. Murdock, John Wiley-2014

Reference Books:

1. Mastering Autodesk Maya 2013 by Todd Palamar, wiley and sons - 2013

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Course Code: MAMT 303 – 18

Course Name: Direction and Advance Cinematic

Program: M. Sc.	L:3 T:1 P:0
Branch: Animation and Multimedia	Credits: 4
Semester: 3	Contact hours: 44 Hours
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Prerequisite: - NA -

Co requisite: - NA -

Additional material required in ESE: - NA -

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Learn the concept of storyboarding
CO2	Understand the scene direction
CO3	Familiarize with camera handling techniques

Course content	Contact hours
<p>Part A Directing basic tips, Use of characters, Screenplay formats, Script tips for low budgets, Use of finance, Pre production casting, casting online resources, Production value, Storyboard abbreviations, Production budget, Shooting on stage and location, Script planning, Blocking, Costume designs, Makeup and hair, Use of props, Script timing, Set building, Stunts and Pyrotechnics, Catering , Shooting, pickups and reshoots, Mastering tips, World TV standards Use of filter and lighting, Filter theory, Measuring color temperature, Handling mixed lighting, Creating soft light and hard light, Balancing light level, Use of lighting equipments, Natural lighting effects</p>	22
<p>Part B Camera- Principle of intermittent movement, Camera speed and shutter speed, Use of lenses, Depth of field and focus, Use of camera equipments, Tripods, Dollies, Handheld and work, Time manipulation and cinematography, Camera troubles and tests, Exposure values, Film formats, , Shooting on location, Exterior shooting, Image manipulation, Special techniques, Sound recording with time code, Use of microphones and recorders. Post production, Video transfers, Telecins, Use of editing room equipments, Rough cut and fine cut, Non-linear editing, creating titles and effects, Sound mixing, Special shooting techniques, vehicle cinematography, shooting sunset, Master and dupes, VFX shooting formats, Post production Sound. Sales and Distribution, Film distributor shares, Handling Interviews, press screenings, publicity</p>	22

Text Books:

1. The Guerilla Film Makers Handbook by Chris Jones and Genevieve Jolliffe-2006

Reference Books:

1. Cinematography Third edition by Simon & Schuster - 2005

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Course Code: MAMT 304 – 18

Course Name: Direction and Advance Cinematic Laboratory

Program: M. Sc.	L:0 T:0 P:4
Branch: Animation and Multimedia	Credits: 2
Semester: 3	Contact hours: 44 Hours
Theory/Practical: Laboratory	Elective status: core/elective
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Prerequisite: - NA -

Co requisite: - NA -

Additional material required in ESE: - NA -

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Describe an animated story with details
CO2	Create a proper scene to give visual impact to the story
CO3	Implement the various camera angles to create a short film

Task 1	Write and Direct your first industry standards shot film	12 Hours	Unit 1
Task 2	Work as a part of a creative crew on a variety of different role including Director, Screen writer, Camera operator and Editor	8 Hours	Unit 2
Task 3	Make a short Documentary within a small team	12 Hours	Unit 3
Task 4	Compose your Documentary / Shot film and render it for final output	12 Hours	Unit 4

Text Books:

1. The Guerilla Film Makers Handbook by Chris Jones and Genevieve Jolliffe-2006

Reference Books:

1. Cinematography Third edition by Simon & Schuster- 2005

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Course Code: MAMT 305 - 18

Course Name: 3D Animation 3 – Animation and Dynamic Deformers

Program: M. Sc.	L:3 T:1 P:0
Branch: Animation and Multimedia	Credits: 4
Semester: 3	Contact hours: 44
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Understand the basic concepts of the human rig
CO2	Apply the concept of nParticles
CO3	Learn various types of visual effects

Course content	Contact hours
Part A Understanding rigging, Building a bones system, Using Bone tools, Forward and Inverse Kinematics, Skinning character. Using joints and constraints, The graph editor, Playblast and Fcheck, motion path animation, Animating Constraints Animating Facial expressions using blend shapes, Animating blend shapes Sequentially, Animating with Lattices, Animating object components with clusters, Animating a Scene using non-linear deformers	22
Part B Creating nParticles, making nParticles collides with nRigids, Using nParticles to stimulate liquids, Emit nParticles using texture, Shading nParticles using flame effects, Rendering particles with mental ray, creating nCloth object, Creating nCloth and nParticles Interaction, Rigid body dynamics, Soft body dynamics, Animating Instances using nParticles expressions Adding Fur to characters, Animating using dynamic curves, Adding hair to character, Creating clothing for characters, Using Fluid Containers, Creating a reaction, Creating Fluids and nParticle interactions, Creating water effect	22

Text Books:

1. Autodesk 3ds Max 2014 Bible by Kelly L. Murdock, John Wiley-2014

Reference Books:

1. Mastering Autodesk Maya 2013 by Todd Palamar, Wiley and Sons - 2013

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M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Course Code: MAMT 306 - 18

Course Name: 3D Animation 3 – Animation and Dynamic Deformers Laboratory

Program: M. Sc.	L:0 T:0 P:4
Branch: Animation and Multimedia	Credits: 2
Semester: 3	Contact hours: 44
Theory/Practical: Laboratory	Elective status: core/elective
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Prerequisite: - NA -

Co requisite: - NA -

Additional material required in ESE: - NA -

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Create different character rig
CO2	Demonstrate an understanding of character walk cycle
CO3	Implement the various dynamic techniques in a project

Task 1	Animate different poses of your rigged character (Male/Female/animal)	8 Hours	Unit 1
Task 2	Animate your Character on a path	6 Hours	Unit 2
Task 3	Animate a scene using nParticles and flame effects or Liquid animation	14 Hours	Unit 2
Task 4	Animate clothes of your character along with task 2	10 Hours	Unit 3
Task 5	Animate hair of your character along with task 4	6 Hours	Unit 4

Text Books:

1. Autodesk 3ds Max 2014 Bible by Kelly L. Murdock, John Wiley-2014

Reference Books:

1. Mastering Autodesk Maya 2013 by Todd Palamar, wiley and sons - 2013

Course Code: MAMT 307 – 18

Course Name: Voice Over and Sound Compositing

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Program: M. Sc.	L:3 T:1 P:0
Branch: Animation and Multimedia	Credits: 4
Semester:3	Contact hours: 44 Hours
Theory/Practical: Theory	Elective status: core
Internal max. marks: 30	
External max. marks:70	
Total marks:100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Learn the voice modulation
CO2	Understand the dubbing techniques
CO3	Describe and use of various sound mixing techniques

Course content	Contact hours
Part A Audio mixer control, Beat matching, Sync matching, Chaining the song, Beginning of the sequence, Recording, Splitting cutting and pasting, loops recording, Use of microphones, Audio monitoring, Use of codec, Voice modulation, Presentation speech development, Understand VO and narration Input output, Cable handling, Audio sample rates, Applying effects, exchanging audio files, Exporting media files, Exchanging information with other formats, Dubbing techniques, Presentation and speech development	22
Part B Mixing and mastering, optimizing sound, compression limiting and equalization, Testing, Audio CD Production, Scene making, Dubbing, Use of musical instruments, Diction and actual patterns, Art of good communication Audios used for web formats, Importing exporting graphics, Tuning, Planning and editing, Types of EDL, Streaming audio, Exporting Formats	22

Text Books:

1. Crafting Digital Media by Daniel James-2009

Reference Books:

1. Editing Digital Video by Goodman McGrath-2003

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Course Code: MAMT 308 – 18

Course Name: Voice Over and Sound Compositing Laboratory

Program: M. Sc.	L:0 T:0 P:4
Branch: Animation and Multimedia	Credits: 2
Semester: 3	Contact hours: 44 Hours
Theory/Practical: Laboratory	Elective status: core/elective
Internal max. marks: 70	
External max. marks: 30	
Total marks: 100	

Prerequisite: - NA -

Co requisite: - NA -

Additional material required in ESE: - NA -

Course Outcomes: After completion this course, students will be able to:

CO#	Course outcomes
CO1	Do sound recording, voice over, lip synching and final output for a documentary / short film / advertisement
CO2	Create dubbing for different Characters / Objects
CO3	Synchronize the audio with video

Task 1	Record an interview based program and edit it using music, sound loops	12 Hours	Unit 1
Task 2	Dub your short film with voices of different characters	10 Hours	Unit 2
Task 3	Make a documentary using voice over and sound effects	12 Hours	Unit 3
Task 4	Compose music using different audio loops and bass effects	10 Hours	Unit 4

Text Books:

1. Crafting Digital Media by Daniel James-2009

Reference Books:

1. Editing Digital Video by Goodman McGrath-2003

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M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Courses & Examination Scheme:

Fourth Semester

Course Code	Course Type	Course Title	Load Allocations			Marks Distribution		Total Marks	Credits
			L*	T*	P	Internal	External		
MAMT401-18	Core Theory	Foundation VFX	3	1	0	70	30	100	4
MAMT402-18	Core Practical /Laboratory	Foundation VFX Laboratory	0	0	8	30	70	100	4
MAMT403-18	Core Theory	Dissertation	0	0	24	150	150	300	12
	TOTAL		3	1	32	250	250	500	20

Semester 4

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M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Course Code: MAMT 401 – 18

Course Name: VFX Foundation

Program: M. Sc.	L:3 T:1 P:0
Branch: Animation and Multimedia	Credits: 4
Semester: 4	Contact hours: 44 Hours
Theory/Practical: Theory	Elective status: core
Internal max. marks: 70	
External max. marks: 30	
Total marks:100	

Prerequisite:

Co requisite:

Additional material required in ESE:

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Learn the concepts of workflow rendering and exporting composition
CO2	Understanding the animating effects on a text or object
CO3	Implement the advance editing techniques

Course content	Contact hours
<p>Part A Creating a project and Importing footage, creating composition and arranging layers, adding effect and modifying layer properties, Animating composition, Rendering and exporting your composition, Controlling the brightness of your user interface, applying effects to layers, Applying and controlling effects, Animating text, working with shape layers Animating multimedia presentation, Animating additional elements, Animating Pre-composed layers, Animating the background, Adding an audio track, Animating layers, Duplicating and animation, animating movement in the scenery, adjusting the layers and creating a track matte, Animating the shadows, adding video animation, rendering animation, retiming the composition, Working with makes</p>	22
<p>Part B Distorting objects with puppet tools, Animating pin positions, Squash and stretch, Recording animation, using the Roto brush tool, Creating a segment boundary, Find tuning the matte, Refine soft matte and hard matte effect, freezing your Roto brush tool, adding animated text, Performing color correction, Previewing your project on a video monitor, Color correcting using auto levels, Color grading, Using 3D features, Creating 3D text, Adding 3D lights Working with the 3D camera tracker, Creating realistic shadows, adjusting the cameras depth of field, advance editing techniques, Using wrap stabilizers VFX, Using single point motion tracking, Moving and resizing the track point, Rendering and outputting.</p>	22

Text Books:

1. Adobe After Effects CC 2017 By Pearsons, Gyncild Fridsma2017

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M.Sc. ANIMATION AND MULTIMEDIA TECHNOLOGY, Batch 2018 onwards

Course Code: MAMT 402 – 18

Course Name: Foundation VFX Laboratory

Program: M. Sc.	L:0 T:0 P:8
Branch: Animation and Multimedia	Credits: 4
Semester: 4	Contact hours: 88
Theory/Practical: Laboratory	Elective status: core/elective
Internal max. marks: 30	
External max. marks: 70	
Total marks: 100	

Prerequisite: - NA -

Co requisite: - NA -

Additional material required in ESE: - NA -

Course Outcomes: After completion of this course, students will be able to:

CO#	Course outcomes
CO1	Demonstrate an understanding by adding effects to a video / graphics / text/ object
CO2	Perform the background editing using Chroma Key in video production
CO3	Create final output of a project using different editing techniques

Task 1	Create a workflow in a project using footage rendering and exporting your composition	8 Hours	Unit 1
Task 2	Create a basic animation using effects and presets	8 Hours	Unit 2
Task 3	Create an introductory video of a product using various transition effects and suitable audio	9 Hours	Unit 3
Task 4	Create a text animation and animate a multimedia presentation	12 Hours	Unit 3
Task 5	Create a 3D animated video which explains a product model	10 Hours	Unit 3
Task 6	Create a short footage using puppet tool, rotoscoping and color correction	12 Hours	Unit 4
Task 7	Create a short clip using 3D features with 3D camera tracker and advance editing techniques	14 Hours	Unit 4
Task 8	Create a 1-hour video clip using Chroma Key which explains the different background in the video	15 Hours	Unit 4

Text Books:

1. Adobe After Effects CC 2017 By Pearson, Gyncild Fridsma 2017

Reference Books:

1. Adobe Premiere Pro CC 2017 By Pearson, Jago Maxin 2017