Raja Mansingh Tomar Music & Arts University Gwalior (M.P.)
B.F.A. Annual Program (Bachelor of Fine Arts) Regular

BFA ANIMATION YEAR I

Sr. No.	Subjects Nature core (Main subject) (Section-A) THEORY CORE 1	Subject code	Credit	Class room teaching weeklyDuration/Hours	Total teaching duration/ hours	Mid terms/ internal valution & attendence	End term valution marks percentage	Total Marks Percentage	Passing minimum marks/ percentage
BFA ANNUAL PROGRAM REGULAR FIRST YEAR (ANIMATION)
1	HISTORY OF ART		2	2	72	15+05	80	100	33
2	Fundamental Of Art		2	2	72	15+05	80	100	33
	PRACTICAL CORE 2								
3	DRAWING		3	6	288	15+05	80	100	33
4	PAINTING		3	6	144	15+05	80	100	33
5	APPLIED ART		3	6	144	15+05	80	100	33
6	SCULPTURE		3	6	144	15+05	80	100	33
7	**SECTION - B ELEETIVE OPEN SUBJECT ONLY PRACTICAL**								
	Choose opposite subject with your own subject i.e. (photography/Murals/miniature /sketching/folk-art/pottery)		2	2	72	15+05	80	100	33
	SECTION -C FOUNDATION COURES								
8	Hindi Languages Moral Value-I		2	2	108	15+05	80	100	33
9	English Languages- II		2	2	108	15+05	80	100	33
10	Entrepreneurship-III		2	2	108	15+05	80	100	33
	Total		24	36	1260				

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BFA ANIMATION YEAR II

Sr. No.	Subjects Nature core (Main subject) (Section -A) THEORY CORE 1	Subject code	Credit	Class room teaching weekly Duration/ Hours	Total teaching duration/ hours	Mid terms/ internal valuation & attendance	End term valuation marks percentage	Total Marks Percentage	Passing minimum marks/ percentage
1	HISTORY OF ART		2	2	72	15+05	80	100	33
2	HISTORY OF ANIMATION		2	2	72	15+05	80	100	33
	PRACTICAL CORE 2								
3	Figure Analysis, Life Drawing & Dynamic Anatomy.		3	6	216	15+05	80	100	33
4	Principles Of Animation, Action Analysis		3	6	216	15+05	80	100	33
5	Story Development, Layout & Dimensional Drawing		3	6	216	15+05	80	100	33
6	Introduction To Digital Tool		3	6	216	15+05	80	100	33
7	**Section - B Eleetive Open Subject Only Practical**								
	Choose opposite subject with your own subject i.e. (photography/Murals/miniature /sketching/folk-art/pottery)		2	2	72	15+05	80	100	33
	SECTION -C FOUNDATION COURES								
8	Hindi Languagesae Moral Value-I		2	2	72	15+05	80	100	33
9	English Languagesae- II		2	2	72	15+05	80	100	33
10	Environmental Study		2	2	72	15+05	80	100	33
	Total		24	36	1296				

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Paper – II (Theory) – HISTORY OF ANIMATION

UNIT - 1

Pre-Cinema Visual Entertainment-puppets, magic lantern, comics, "The Persistence of Vision," flipbooks, the thaumatrope, the phenakistoscope, the zoetrope, Emile Reynaud and his Praxinoscope, the significance of the shutter to motion pictures.

UNIT – 2

The Mechanics of Motion Pictures and the First Films, Legendary Women in Animation, Early Stop Motion Animation.
Walt Disney's Beginnings - The Silent Era, MGM, Warner Brothers, Dream Works. The History of Indian Animation, Brief History of Russian Animation and Japanese Animation.

UNIT – 3

Recent International Animation: Major Figures & Films – Ratatouille, Ice Age, Shrek, Up, Wall-E, Chicken Run, One Punch Man, Dragon Ball Super, Toy Story, How to Train Your Dragon, Shingeki noKyojin, Inside Out, The Polar Express, Chota Bheem, The Take of Princess Kaguya

UNIT – 4

Twelve Principles of Animation (Timing, Ease In and Out (or Slow In and Out), Arcs, Anticipation, Exaggeration, Squash and Stretch, Secondary Action, Follow Through and Overlapping Action, Straight Ahead Action and Pose-To-Pose Action, Staging, Appeal, Personality) . Arcs of motion, hook-up and in-between, wave principal, S and C curve, follow through and overlap Action.

UNIT – 5

Proportion, Balance, Weight and Silhouette, What is Arc of movement? Its uses. Its importance in animation. Basic Principals of Animation in relation with walk cycle - Timing, staging, arc of motion, mass, and weight, center of mass, path of action, squash, and stretch

.Suggested Reading
1. Understanding Animation by Paul Wells
2. Cartoon Capers: The History of Canadian Animators by Karen Mazulewich, Bendazzi
3. Cartoons: One Hundred Years of Cinema Animation by G Bendazzi
6. Carton Animation by Preston Blair
7. Timing for Animation by Harold Whitaker
8. The Animators Survival Kit by Richard Williams
9. Principles of Colour by Faber Birren

PRACTICAL

PRACTICAL 1 - FIGURE ANALYSIS, LIFE DRAWING & DYNAMIC ANATOMY.

Human Anatomy: Anatomy of different age groups (Babies, Kids, Teens, Young Adults, and Aged). Basic Proportions, Basic understanding of the skeletal and muscle system, Human forms in perspective. Male and female anatomy. Body Structure .Proportion and construction of body parts (Torso, Face, Eyes, Nose, Ears, Mouth, Hand, Feet etc.) Motion analysis, Study of poses. Anatomy of animals, birds, reptiles. Body structure: Basic forms, Proportion, and construction of body parts: head, legs, tails. Use of perspectives while drawing animals, birds, reptiles, and Insects. Understanding motion and grace.

PRACTICAL 2 - PRINCIPLES OF ANIMATION

Twelve Principles of Animation (Timing, Ease In and Out (or Slow In and Out), Arcs, Anticipation, Exaggeration, Squash and Stretch, Secondary Action, Follow Through and Overlapping Action, Straight Ahead Action and Pose-To-Pose Action, Staging, Appeal, Personality) .

Arcs of motion, hook-up, & in-between, wave principal, S & C curve, follow through, & overlap Action. Posing and Gesture, blocking performance through thumbnails. Rough in-between, key frames. Character design & Character rotation.

Turn around character developed both human & animal. Hook-up, In-between, Wave principal, S and C, Posing and Gesture curve

Mannequin for animation using basic shapes. Principles of the anthomorphic walking character.

Extension and Application of Animation concepts. Create mouth shapes that synchronize with supplied dialogue.

Anthomorphic Walking Character , Walk Cycle, Head Turn and Lip Sync, Flour Sack Assignment, Animate flour sack, Output using line test camera.

PRACTICAL 3 -STORY DEVELOPMENT & DIMENSIONAL DRAWING, ANIMATION & LAYOUT

Analysis in Visual Storytelling, Fundamental Elements of Story, Storyboards - Layout Analysis, Colour Analysis, Lighting Analysis. Principles of Composition, Perspective, Camera - Position /Angles, Types of Layout, Level separation (Foreground, middle ground, background). Animation- dialogue and design, Beat boards and character sketches Storyboard pitches, Exterior study with painting (outdoors), effect of light on mood, layout with vertical panning, layout with horizontal panning, BG layout with colour of interior. Multi-plane layout, Layout package, and labeling.

Case Study of movies – Study the layouts & style of the following movies. Introduction to advanced concept art. Create television storyboards & sequences of feature storyboards using professional terminology & templates.

PRACTICAL – 4 - INTRODUCTION TO DIGITAL TOOLS

Introduction to hardware and software - Digital asset management and directory structure, Pros and Cons of Digital Animation, Digital vs. Analogue, Screen resolution: NTSC, Wide-screen, PAL , Using Layers, Using the scanner, Raster vs. Vector graphics, RGB vs. CMYK, Output formats and file compression, Additional tools and workflows, Using Alpha Channels and Layer Masks.

 FLIPBOOK - Shooting, Timing, Scrubbing, Light Bulb feature, Cycle, Exporting, Colouring, Exporting Frames
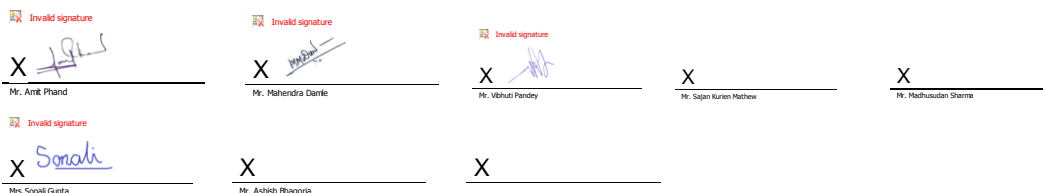
 Digital Storyboard - Introduction to Digital Storyboard, Introduction to Animatics, Paperless traditional animation, Additional tools and work-flows, Working with textures, pegs and interpolation, Multi-plane backgrounds, Camera moves.

Make a sequence using any 2d Application.

 Introduction to Animatics, Scene editing and transitions, Working with sound

Suggested Reading

1. Animation from Pencils to Pixels: Classical Techniques for the Digital Animator by Tony White
2. Adobe Flash Professional CS5 Bible by Todd Perkins
3. Animate to Harmony: The Independent Animator's Guide to Toon Boom by Adam Philips
4. Color by Betty Edwards
5. Animation Survival Kit by Richard Williams

6. Carton Animation by Preston Blair

7. Timing for Animation by Harold Whitaker
8. An Atlas of Animal Anatomy for Artists by W.Ellenberger
9. Animal Anatomy for Artists: The Element of Form by Goldfinger
10. Adobe Photoshop CS6 Bible by Lina Danae Dayley
11. Animate to Harmony: The Independent Animator's Guide to Toon Boom by Adam Phillips
12. The Animation Book: A Complete Guide to Animated Filmmaking--From Flipbooks to Sound Cartoons to 3- D Animation by Kit Laybourne
13. Perspective Drawing Handbook by Joseph D Amelio

14. Film Directing: Visualizing from Concept to Screen (Michael Weiese Production) by Steven Katz

15. Five C's of Cinematography Motion Picture Filming Techniques by Joseph V. Mascelli
16. An Atlas of Anatomy for Artists by Fritz Schider, Anatomy & Drawing by Victor Perad.

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BFA ANIMATION YEAR III

Sr. No.	Subjects Nature core (Main subject) (Section -A) THEORY CORE 1	Subject code	Credit	Class room teaching weekly Duration/Hours	Total teaching duration/ hours	Mid terms/ internal valuation & attendance	End term valuation marks percentage	Total Marks Percentage	Passing minimum marks/ percentage
1	History Of Art		2	2	72	15+05	80	100	33
2	Basic of Computer Graphics		2	2	72	15+05	80	100	33
	PRACTICAL CORE 2								
3	Figure Analysis – Morphing, Character Design		3	6	216	15+05	80	100	33
4	Acting For Animation		3	6	216	15+05	80	100	33
5	2d Applications		3	6	216	15+05	80	100	33
6	3d Modeling & Rigging, Animation & Leica Reel		3	6	216	15+05	80	100	33
	SECTION - B ELEETIVE OPEN SUBJECT ONLY PRACTICAL								
7	Choose opposite subject with your own subject i.e. (photography/Murals/miniature /sketching/folk-art/pottery)		2	2	72	15+05	80	100	33
	SECTION -C FOUNDATION COURES								
8	Hindi Languages Moral Value-I		2	2	72	15+05	80	100	33
9	English Languages- II		2	2	72	15+05	80	100	33
9	Basic Of Computer & I.T.		2	2	72	15+05	80	100	33
	Total		24	36	1296				

PAPER – II (THEORY) – Basic of Computer Graphics

Unit -1
Computer graphics; Definition of Computer graphics, Introduction to Raster & Vector Graphics, 3d computer graphics, Pixel, Resolution, Render, Anti-aliasing.
Unit -2
Color Theory & Modes; Color Models (Additive Primary Colors & Subtractive Primary Colors), Color Modes; RGB, CMYK, Grey Scale, Indexed Colour, etc., Primary color, Secondary & Tertiary Color, warm & cool color. Term definition: Hue, Saturation, tint, Brightness, Tone, Shade, Chrome.
Unit -3
Types of Animation – Types of Animation, cell/paper animation, digital Animation, 3d Animation, puppet Animation, Clay Animation etc. Intro and Workflow Theory. Differences between Paperless Animation and Traditional Animation.
Unit-4 Different types animation - Rough in-between, key frames, (pose to pose) and straight-ahead animation.
Unit-5
Principles of the anthomorphic walking character. Character Types and their responses to aging

PRACTICAL

### PRACTICAL 1 - FIGURE ANALYSIS – MORPHING, CHARACTER DESIGN

Morphing object, shapes, and alphabets. Lip synch principles, Lip Synchronization – Use Exposure sheet, Caricature, Animating clothing, Character designing, Features of a character, Types/Kinds of characters, Designing props and assets of character, Creating turnarounds/Character model sheets, Blueprints, Character size comparison charts, Character attitude poses,, Clay sculpture

PRACTICAL 2 - Acting For Animation

Acting and Stating are absolute essentials for making the characters and story to Come alive.
• Introduction to stagecraft for theatre, liveaction film and animation
• Understanding characters and their back stories
• Interpreting the importance of the scene through action & staging
• Acting workshop
• Using editing and understanding film language to enhance character development and story telling.

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PRACTICAL 3 - 2D APPLICATIONS

Introduction and Workflow Theory, Paperless Drawings and Color Management, Use of Camera and Pegs, Symbol Based Animation.
PHOTOSHOP - Horizontal Pans and Working with Underlay and Overlays
 TOONBOOM ANIMATE PRO - Camera moves & Compositing effects, Introduction to Cut-Out Animation, Cut-Out character break-down and rigging & Cut-Out animating
 FLASH - Motion Tweens and Shape Tweens & 3D Transformation - Inverse Kinematics

## PRACTICAL 4 -3D MODELING & RIGGING, ANIMATION & LEICA REEL

Introduction to Maya and 3ds max.3D Modeling Interface, use of mouse and keyboard, basic tools to be used in creating polygonal shapes and models. Descriptions of polygons, and the elements that make up a polygon in Maya, such as vertices, edges, faces, and UVis. Overview of file keeping, saving files and workspace views. Moving, scaling, rotating and placement of objects in the 3D environment.
3d character modeling, environment modeling, fur, hair, Flag stimulation
Character Rigging, Texturing, Lighting, Rendering.

Suggested Reading
1. Dream Worlds: Production Design for Animation by Don Hahn

2. Setting the Scene: The Art & Evolution of Animation Layout

3. Layout & Composition for Animation by Ed Ghertner
4. How to write for animation by Jeffrey Scott
5. Digital Modeling by William Vaughan
6. Maya Character Creation: Modeling and Animation Controls by Chris Maraffi
7. Rig it Right! Maya Animation Rigging Concepts by Tina O'Hailey
8. Character Design from the Ground Up: Make Your Sketches Come to Life by Kevin Crossley

9. Creating Characters with Personality: For Film, TV, Animation, Video Games, and Graphic Novels by Tom Bancroft

10. A History of Costumes by Carl Kohler

11. Character Costume Figure Drawing: Step-by-Step Drawing Methods for Theatre Costume Designers by Tan Huaixiang
12. Animation from Pencils to Pixels: Classical Techniques for the Digital Animator by Tony White
13. Mastering Autodesk Maya 2016: Autodesk Official Press by Todd Palamar
14. How to Cheat in Maya 2014: Tools and Techniques for Character Animation by Kenny Roy
15. Mastering Autodesk 3ds Max 2013 by Jeffery M. Harper
16. Autodesk 3ds Max 2014 Bible by Kelly L. Murdock

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BFA ANIMATION YEAR IV

Sr. No.	Subjects Nature core (Main subject) (Section -A) THEORY CORE 1	Subject code	Credit	Class room teaching weekly Duration/ Hours	Total teaching duration/ hours	Mid terms/ internal valuation & attendance	End term valuation marks percentage	Total Marks Percentage	Passing minimum marks/ percentage
1	FOLK,TRIBAL ART & CONTEMPORARY SCULPTURE		2	2	72	15+05	80	100	33
2	VISUAL EFFECTS, DIGITAL COMPOSITING MOTION CAPTURE		2	2	72	15+05	80	100	33
PRACTICAL CORE 2									
3	STOP MOTION SET & CHARACTER DESIGN		4	8	288	15+05	80	100	33
4	STOP MOTION ANIMATION		4	8	288	15+05	80	100	33
5	VISUAL EFFECTS		4	8	288	15+05	80	100	33
6	PROJECT 3D SHORT FILM PROJECT		4	8	288	15+05	80	100	33
	Total		20	36	1296				

PAPER – I (THEORY) – VISUAL EFFECTS
UNIT - 1
Intro to the Motion Picture/VFX Pipeline. What is movie making & VFX? Principles of motion picture & VFX. Origins of Visual Effects & VFX concepts. Structure of Digital Images –The Pixel, Grayscale Images, Colour Images & Four Channel Images. Different of Visual & Special effects, Image Resolution, Image Aspect Ratio, Pixel Aspect Ratio, Display Aspect Ratio, Bit Depth, Floating Point, Photographic Images vs. Graphics.

UNIT - 2 The tools of Cinematography – The frame, the lens, light and colour, texture, movement, establishing, point of view. Shooting methods – What is cinematic, the frame, cinema as a language, master seen method, coverage, overlapping or triple take method, free form method

UNIT - 3 Cinematic Continuity – Shooting for editing, Types of continuity, The prime directive, screen direction, issues in continuity, types of cuts – Content cut, action cut, POV cut, Match cut, conceptual cut, zero cut .Camera Movement – Types of moves, Moving shots, camera mounting, the crab dolly, cranes, car shots, aerial shots, other types of camera mounts

UNIT - 4
Rotoscoping, Motion Tracking & 2D Match moving – The golden rules of roto, Types of 2D motion tracking, comparing good & bad tracking targets & 2D motion tracking applications. How 3D CGI is created & its applications. 3D motion tracking & its applications.

UNIT - 5 Compositing –Compositing Applications, Layer Based Compositors, Nodal Based Compositors, Keyer Types & Concepts. Different between live action & CGI. What is Blue screen & Green screen? & their use in VFX. Methods of warping & morphing

PRACTICAL

PRACTICAL 1 - STOP MOTION SET & CHARACTER
Types of stop motion animation, set creation for different types of stop motion, character construction for stop motion. Camera and light set up.

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PRACTICAL 2- STOP MOTION ANIMATION
Make a short film in various type of stop motion animation.

PRACTICAL 3- VISUAL EFFECTS

After Effects, Pf Track, Nuke, Fusion, Mocha, Real Flow

PRACTICAL 4- PROJECT 3D SHORT FILM PROJECT DESIGN

Make a 3d animated short film using MAYA. VFX has to be used.

Suggested Reading
1. Nuke 101: Professional Compositing and Visual Effects by Ron Ganbar.

2. Creating Motion Graphics with After Effects: Essential and Advanced Techniques by Chris Meyer.

3. Adobe After Effects CS6 Classroom in a Book by Adobe Creative Team.

4. Visual Effects and Compositing by John Gress.

5. Masters of FX: Behind the Scenes with Geniuses of Visual and Special Effects by Ian Failes.

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