

**FACULTY OF ENGINEERING & TECHNOLOGY**

**SYLLABUS**

**FOR**

**DIPLOMA (ANIMATION)**

**(SEMESTER: I & II)**

**SESSION: 2015–16**



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**GURU NANAK DEV UNIVERSITY**  
**AMRITSAR**

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DIPLOMA (ANIMATION)  
(Semester System)

**Eligibility:**

+2 pass in any stream.

**Scheme****SEMESTER – I:**

Sr. No.	Course No.	Title	Max. Marks		
			Th.	Pr.	Total
1.	AGM 101	Effective Business Writing and Soft Skills	35	15	50
2.	AGM 102	Computer Fundamentals for Animation – I	50	-	50
3.	AGM 103	Art Foundation – I	20	30	50
4.	AGM 104	2D Animation & Storyboard Pro	50	50	100
5.	AGM 105	Photoshop	50	50	100
6.	AGM 106	Adobe Illustrator	50	50	100
7.	AGM 107	Flash	50	50	100
8.	AGM 108	E- Content/ Hands on Practice/ Workshop	-	50	50
		<b>Total:</b>			600

DIPLOMA (ANIMATION)  
(Semester System)

**SEMESTER – II:**

Sr. No.	Course No.	Title	Max. Marks		
			Th.	Pr.	Total
1.	AGM 201	Computer Fundamentals For Animation – II	20	30	50
2.	AGM 202	Art Foundation – II	20	30	50
3.	AGM 203	Sound & Video Editing	50	50	100
4.	AGM 204	Animation in Toon Boom	75	50	125
5.	AGM 205	3D Animation Using Max	75	50	125
6.	AGM 206	Gaming Technology	50	50	100
7.	AGM 207	E- Content / Hands on Practice / Workshop	-	50	50
		<b>Total:</b>			600

DIPLOMA (ANIMATION)  
(Semester – I)

**AGM 101: EFFECTIVE BUSINESS WRITING AND SOFT SKILLS**

**Time: 3.00 Hours**

**Max. Marks: 50**

**Theory: 35**

**Practical: 15**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**BUSINESS CORRESPONDENCE:** Presentation of Business Documents.

**LETTER WRITING:** Writing styles and formatting of letters, business letters, request letters, good news and bad news letters, Persuasive letters, sales letters, collection letters etc.

**ROUTINE BUSINESS DOCUMENTS:** Enquiries and replies, Orders and fulfillment  
Creative writing, Dialogue writing  
Resume Writing.

**PART – II**

**PRACTICAL**

- Greeting
- Introducing Oneself
- Invitation
- Making Request
- Expressing Gratitude
- Complimenting and Congratulating
- Expressing Sympathy
- Apologizing
- Asking for Information
- Seeking Permission
- Complaining and Expressing Regret

**References:**

1. Shirley Taylor, Model Business Letters, E-Mails and other Business Documents, Pearson Education.
2. V. Sasikumar et al, A Course in Listening and Speaking, Foundation Books.
3. K. S. Smita, Annie Pothan. English Conversational Practice. Sterling Publication Pvt. Ltd.

DIPLOMA (ANIMATION)  
(Semester – I)

**AGM 102: COMPUTER FUNDAMENTALS FOR ANIMATION - I**

**Time: 03.00 Hours**

**Max. Marks: 50**

**Theory: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**INTRODUCTION TO COMPUTERS:** Computer basics, History of computers, Classification of computers, Hardware and software. Components of computer Operating system, Input and output devices, Motherboard, CPU, Memory, Storage devices.

**GRAPHICS DEVICES AND SUPPORTING SOFTWARE:** Graphic cards, Open GL, Hardware drivers.

**PART – II**

**COMPONENTS OF MULTIMEDIA:** Text and Image

**TEXT:** About fonts and faces, Using text for multimedia, Introduction to Typography, Designing with text.

**IMAGE:** Pixel, Vector and Raster graphics, Color Depth, Resolution, Aspect ratio, File formats, compression and Techniques.

**References:**

1. An Introduction to Digital Multimedia by T. M. Savage, K. E. Vogel
2. Multimedia: Making It Work By Tay Vaughan
3. Computer Basics and Beyond by Michael A. Price.

DIPLOMA (ANIMATION)  
(Semester – I)

**AGM 103: ART FOUNDATION - I**

**Time: 03.00 Hours**

**Max. Marks: 50**  
**Theory: 20**  
**Practical: 30**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**INTRODUCTION:** Introduction to art, Purposes of Art, Art and morality, Art and Religion. Indian art concept of art and classification of art.

**VISUAL ELEMENTS:** Line/Shape/Form/Mass/Value/Color/Texture

**PRINCIPLES OF DESIGN:** Balance/Unity/Variety/Emphasis/Direction/Movement/ Scale/ Proportion/ Repetition

**FINE ARTS:** Drawing and Painting Tools and Techniques, terms of arts, Color Theory.

**PART – II**

The Creative Impulse. Art in society. Indian art, concept of art and classification of art.

**ART EVALUATION AND CRITICISM:** Meaning of symbol, Art and symbolism.

**PRACTICAL USE OF ART:** Sketching, Shading, Free hand shading,

**References:**

1. Foundations of Art and Design by Lois Fichner-Rathu.
2. Complete Art Foundation by Chris Tappenden , Nick Tidnam , Paul Thomas , Anita Taylor

DIPLOMA (ANIMATION)  
(Semester – I)

**AGM 104: 2D ANIMATION & STORYBOARD PRO**

**Time: 03.00 Hours**

**Max. Marks: 100**

**Theory: 50**

**Practical: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**FUNDAMENTAL & CONCEPT OF 2D:** Introduction to Drawing and Design, Perspective Study and Background Design, Posing and Character Design, Eye Blink.

**STORYBOARD PRO:** Fundamental of Storyboarding & Camera angles, creating a storyboard with paper and pencil, Introduction to Storyboard Pro.

**DRAWING TOOLS**

**SYMBOLS AND LAYERS:** Library, Insert layer, Motion Guide

**FRAME AND ANIMATION:** Frame rate, making animation

**INTERACTIVE ADVENTURE:** Compiling objects

**FRAMES:** Key frames, Frame by Frame Animation, Onion Skins, Frame Rate, Motion Tweening, Stop Action, Rotate & Spin, Info Panel, Movie Explorer, Shape Tweening, Button Symbols, Action, Adding Sound to Buttons, Publishing and Exporting.

**PART – II**

**CARTOON ANIMATION:** 2D workspace, Character development, Model sheet creation, Cartoon animation, Draw expressions, Lip synchronization, Exposure to theatre, 2D animation for web and broadcast, Doing and recording voice over Music selection for background, working with a music composer.

Producing 2D animated advertisement, producing 2D animated presentation, producing 2D animated portfolio.

**NOTE:** Tool used Anime Studio Pro 10.

**References:**

1. Ramesh Bangia (Khanna Book Publishing Co. Pvt. Ltd).
2. Learning Flash MX 2004

DIPLOMA (ANIMATION)  
(Semester – I)

**AGM 105: PHOTOSHOP**

**Time: 03.00 Hours**

**Max. Marks: 100**

**Theory: 50**

**Practical: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**INTRODUCTION TO ADOBE PHOTOSHOP:** About Photoshop, Navigating Photoshop, Menus and panels, Opening new files, Opening existing files.

**GETTING STARTED WITH PHOTOSHOP:** Exploring the Toolbox, Exploring Panels & Menus, Creating & Viewing a New Document, Customizing the interface, Setting Preferences.

**WORKING WITH IMAGES:** Zooming & Panning an Image, Working with Multiple Images, Rulers, Guides & Grids, Undoing Steps with History, Adjusting Color with the New Adjustments Panel, The New Masks Panel & Vibrance Color Correction Command, The New Note Tool & the Save for Web & Devices Interface, The New Auto-Blend & Auto-Align Layers Commands. Converting B/W image to Colour

**RESIZING & CROPPING IMAGES:** Understanding Pixels & Resolution, The Image Size Command, Resizing for Print & Web, Cropping & Straightening an Image, Adjusting Canvas Size & Canvas Rotation.

**WORKING WITH BASIC SELECTIONS:** Selecting with the Elliptical Marquee Tool, Using the Magic Wand & Free Transform Tool, Selecting with the Regular & Polygonal Lasso Tools, Combining Selections, Using the Magnetic Lasso Tool

**GETTING STARTED WITH LAYERS:** Understanding the Background Layer, Creating, Selecting, Linking & Deleting Layers, Locking & Merging Layers, Copying Layers, Using Perspective & Layer Styles, Filling & Grouping Layers, Introduction to Blending Modes, Blending Modes, Opacity & Fill.



**DIPLOMA (ANIMATION)**  
(Semester – I)

**PART – II**

**PAINTING IN PHOTOSHOP:** Using the Brush Tool, Working with Colors & Swatches, Creating & Using Gradients, Creating & Working with Brushes, Using the Pencil & Eraser Tools, Painting with Selections, Matte painting, Digital painting, product design, web peg, visiting card, greeting card, photo manipulation, day to night, video point, and basic 3d in Photoshop. Typography and Poster making

**PHOTO RETOUCHING:** The Red Eye Tool, The Clone Stamp Tool, The Patch Tool & the Healing Brush Tool, The Spot Healing, Brush Tool, The Color Replacement Tool, Painting with History.

**INTRODUCTION TO COLOR CORRECTION:** Color Spaces & Color Modes, Adjusting Levels, Adjust Curves, Non-Destructively, with Adjustment Layers.

**USING QUICK MASK MODE:** Quick Mask Options, Painting a Selection, Saving & Removing a Selection from the Background, Layer Mask, Vector Mask, Color Range

**WORKING WITH THE PEN TOOL:** Understanding Paths & the Pen Tool, Creating Straight & Curved Paths, Creating Combo Paths, Creating a Clipping Path.

**EXPORTING YOUR WORK:** Saving with Different File Formats, Saving for Web & Devices, Printing Options, Credits.

**References:**

1. Teach Yourself Adobe Photoshop in 24 Hours, SAMA Publisher.
2. Adobe Photoshop CS5 BIBLE, Brad Dayley, DaNae Dayley John Wiley & Sons, Inc.
3. Inside Adobe Photoshop, Bouton, Gary David, Techmedia Delhi

DIPLOMA (ANIMATION)  
(Semester – I)

**AGM 106: ADOBE ILLUSTRATOR**

**Time: 03.00 Hours**

**Max. Marks: 100**

**Theory: 50**

**Practical: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**Introduction to Illustrator & GUI:**

New page open, size of page, difference between vector & raster, padding of page, color wheel, difference between CMYK & RGB.

**Working with Different Tools:**

**Working with Tools-** 2 Text & Text Wrap, pen tool, Pathfinder, Grid & Guides, Wrap Tools, Masking, Gradient, Mesh Tool & Live Paint, Graph, Trace, Pattern & Blend, Pencil, Brush & Symbol, Effects and Filters, Slice Tools, Action

**PART – II**

**Printing Method:**

Making of holding, creation of banner, designing of web page, designing of book layout, designing of visiting card, size of banner. Converting RGB to CMYK color.

**Logo Designing:**

Concepts of logo designing, color theme according to company color, logo from sketch, 2D logo, 3D logo

**References:**

1. Adobe Illustrator by Adobe Creative Team

DIPLOMA (ANIMATION)  
(Semester – I)

**AGM 107: FLASH**

**Time: 03.00 Hours**

**Max. Marks: 100**

**Theory: 50**

**Practical: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**INTRODUCTION:**

Introducing the Flash Interface, Adding Elements to the Stage, Duplicating Library Items, Introducing Keyframes, the Transform Tool, Creating Animations, Adding Audio, Swapping Symbols & Testing a Movie, Using Graphic Symbols, Combining Animations into One Project, Creating & Arranging Buttons, Adding & Labeling Action Keyframes, Adding Behaviors to Buttons, Using the Publish Preview Command. Navigating the Stage Area, Accessing & Organizing Panels, Saving, Exporting & Testing, Selecting a Flash Player Version for a New Project, Introducing Layers, Creating New Layers & Moving Items Between Layers, Customizing Keyboard Shortcuts & Locking Layers, Using Outline Mode, Layer Folders & Properties

**DRAWING TOOLS:**

Setting Up the Drawing Preferences, Exploring the Pencil Tool Options, Using the Line & Paint Bucket Tools, Distinguishing Between Strokes & Fills, Modifying Vectors Using the Selection Tool, Snapping & Modifying Curves with the Selection Tool, Altering Drawings with the Selection Options, Using the Brush & Paint Bucket Tools to Fill, Painting Using the Various Brush Modes. Working with a Stylus & a Tablet, Drawing with the Rectangle Tool, Drawing with the Oval Tool, Drawing with the PolyStar Tool, Working with the Eye Dropper Tool, Working with the Ink Bottle Tool, Working with the Eraser Tool.

**PART – II**

**COLORS SETTING:**

Introducing Advanced Color Selection, Working with the Color Mixer, Creating Transparency & Sampling Colors, Using the Color Swatches Palette, Applying & Stylizing Strokes, Adjusting Cap, Join & Other Stroke Properties, Applying & Transforming Gradients, Saving & Locking Gradients, Choosing a Gradient Overflow, Adding Transparency to a Gradient.

**DIPLOMA (ANIMATION)**  
(Semester – I)

**USE OF TEXT:**

Auto-Sizing, Auto-Wrapping & Selecting Text, Changing a Font, Picking a Color & Checking Spelling, Using Rulers, Guides, Grids & Snapping, Aligning, Distributing & Spacing Text, Working with Device Fonts, Editing Files with Missing Fonts, Anti-Aliasing Text for Better Quality & Readability, Paragraph & Character Formatting, Using Text as a Design Element.

Text on a Path, Guide Layers & the Transform Panel. Insertion of Symbols and their effects. Tweening: Shape, Motion, Animation Techniques: Masks and Filters, Sound and Video. Flash Screen and presentation

**ACTION SCRIPTING:** Introduction to Action Script, Action Script Syntax and Structure, Controlling Animation with Action Script, Text and Form Handling, Managing movie clip, buttons, sound, Creating a Game-I

**USE OF FLASH:** Techniques of making web page, Liking page using action scripting, animate a character with the help of scripting like: walk, cycle, lapping, running, hand movement etc, Making of presentation in flash, Web graphic.

**References:**

1. Flash Boys, Michael Lewis
2. Adobe Flash Professional CC (2014 release) Classroom in a Book, Russell Chun
3. Macromedia Flash Professional Unleashed, Vogeeler David, SAMS.

DIPLOMA (ANIMATION)  
(Semester – I)

**AGM 108: E-CONTENT / HANDS ON PRACTICE/WORKSHOP**

**Max. Marks: 50**  
**Practical: 50**

Student will be evaluated on the basis of e-content /hands on practice/workshop as taught in Semester I.

DIPLOMA (ANIMATION)  
(Semester – II)

**AGM 201: COMPUTER FUNDAMENTALS FOR ANIMATION - II**

**Time: 03.00 Hours**

**Max. Marks: 50**  
**Theory: 20**  
**Practical: 30**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**INTRODUCING WINDOWS:** Using Windows 7.0 Navigation, Personalization, Viewing and sharing media, organizing data, working with Administrative tools and control panel

**MICROSOFT WORD :** Opening & Saving files, Editing text documents, Insert, Delete, Cut, Copy, Paste, Undo, Redo, Find, Search, Replace, Page setup and style Converting files to different formats, Sending files to others. Using Tool bars, Ruler, Using Icons, using help.

**FORMATTING DOCUMENTS-** Font styles, Font selection- style, size, color etc, Type face- Bold, Italic, Underline, Case settings, Highlighting, Special symbols, Paragraph style, Alignments, Indents, Line Space, Margins, Bullets & Numbers

**SETTINGS:** Header & footer, Setting Footnotes & end notes; Inserting manual page break, Column break and line break, Creating sections and frames.

**CREATION OF TABLE:** With index, page number, author name, date and time etc., Creating Master Documents, Web page. Table settings, Borders, Alignments, Insertion, deletion, Merging, Splitting, Sorting, and Formula.

**DRAWING-** Inserting Clipart, Pictures/Files etc.

**PRINTING DOCUMENTS –** Shortcut keys, Importing & Exporting documents

**PART – II**

**MS POWER POINT**

**INTRODUCTION TO PRESENTATION –** Opening new presentation, Different presentation templates, setting backgrounds, selecting presentation layouts.

**CREATING A PRESENTATION –** Setting Presentation style, Adding text to the Presentation.

**DIPLOMA (ANIMATION)**  
(Semester – II)

**FORMATTING A PRESENTATION** - Adding style, Color, gradient fills, Arranging objects, Adding Header & Footer, Slide Background, Slide layout.

**ADDING GRAPHICS TO THE PRESENTATION-** Inserting pictures, movies, tables etc. into presentation, Drawing Pictures using drawing tools.

**ADDING EFFECTS**

**INTERNET:** Definition & History of Internet- Uses of Internet-Definition of Web Addressing- URL, web Browsers. Opening a web page, opening multiple browser windows, opening multiple tabs in a single browser windows and their management, working offline, deleting temporary files, exploring Internet Options

**E-MAIL:** Anatomy of e-mail, e-mail address, finding e-mail address, adding signature, attaching files, opening attachments, managing an e-mail account, Web mail, Gmail, yahoo mail.

**References:**

1. Windows Based Computer Courses, Rachhpal Singh & Gurvinder Singh.
2. Information Technology, Hardeep Singh & Anshuman Sharma.
3. Office Complete, BPB Publications.

DIPLOMA (ANIMATION)  
(Semester – II)

**AGM 202: ART FOUNDATION – II**

**Time: 03.00 Hours**

**Max. Marks: 50**

**Theory: 20**

**Practical: 30**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**AESTHETIC:** Introduction, A short history of Aesthetics, The field and scope of Aesthetics, Problems of Aesthetics.

**PHILOSOPHY OF ART:** Principle of ART, Suggestiveness of work of art, richness of ambivalence and Association.

**STYLIZATION:** Traditional, Decorative, Geometric

**PART – II**

**SPLITTING** (Abstract)

**STUDY OF LIFE MODELS:** Knowledge and proportion of human figure and various parts of the body and its proportion, planes masses, postures, rhythmic unity of body parts. Study of human figure in different mediums like: Pencil, charcoal, poster, water colours, pen and inks etc. to develop illustration techniques and skills. Study of full human figure in different postures with reference to live models i.e. Male/Female.

**References:**

1. Foundations of Art and Design by Lois Fichner-Rathus
2. Complete Art Foundation by Chris Tappenden, Nick Tidnam, Paul Thomas, Anita Taylor.



DIPLOMA (ANIMATION)  
(Semester – II)

**AGM 203: SOUND & VIDEO EDITING**

**Time: 03.00 Hours**

**Max. Marks: 100**

**Theory: 50**

**Practical: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

Broadcasting in India, type of broadcasting, Difference between PAL & NTSC

Introduction to digital editing, Principles of editing, broadcasting in India linear & Nonlinear Editing, on line & off line Editing. Analysis of film sequences from editing point of view. Introduction to Editing Software Introduction of Tools, Capturing Raw Data, and Editing - Action Sequence / match cut / continuity match.

The Nature of Sound, Human Voice and Speech, The Microphone and its creative use The loudspeaker and monitoring of sound, The Sound Mixer, Dialogue recording, Dubbing of recorded sequences, Practices and procedures for dialogue recording with reference to the visuals, continuity of sound quality and perspective, Handling voice in multi-track recording and mixing.

**Promo Designing, time remapping, multi cam editing**

**PART – II**

Music recordings, Familiarization with acoustic and electronic musical instruments, Types of microphones and their placement in recording music, Sound mixing and processing in multi-track recording of music. Critical listening in music recording, Outdoor sequence involving action, Dialogue, based short story, Song with musical composition, Scoring background music, Effect sounds, Techniques of recording spoken words and music for radio broadcasting and the Internet. Editing of sound Computer hardware and software's used in sound recording work Voice over and sound bytes, dubbing and mixing of sound.

**Software:** Adobe Premier CS6, Adobe Audition CS6

**References:**

1. Adobe Premiere Pro CS6 by Adobe Creative Team
2. Adobe Audition CS6 by Adobe Creative Team

DIPLOMA (ANIMATION)  
(Semester – II)

**AGM 204: ANIMATION IN TOON BOOM**

**Time: 03.00 Hours**

**Max. Marks: 125**

**Theory: 75**

**Practical: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**Introduction to Harmony UI:** Basic knowledge of interface and tools, create a canvas, size of canvas,

**Creating a complete Character:** Building a toon and stylizes character, basic concept of making character.

**Layout and Scene setup:** Size of layout, type of layout, back ground elements, golden rule, and rule of 3<sup>rd</sup>.

**PART – II**

**Understanding Character posing:** Shapes, movement of character

**Camera movement:** zoom, pan, dolly,

**Setting up 3D space, Integration of 2D & 3D elements, Preparation for character rig - creating movable body joints, rigging a deformable character, Animation principle-Timing**

**Reference:**

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

DIPLOMA (ANIMATION)  
(Semester – II)

**AGM 205: 3D ANIMATION USING MAX**

**Time: 03.00 Hours**

**Max. Marks: 125**

**Theory: 75**

**Practical: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

**Modeling:**

Intro to 3D world space, Industry Scenario about 3d animation, Introduction to 3d studio max (complete interface and tools), working with standard primitives, extended primitives etc, Working with splines, Introduction to modifier of splines and geometry, Modeling Operations, polytools, modeling aesthetics, Observation for crating assets, assets creations, 3d pipeline, understanding set references & proportional scale, Inorganic Modeling, Background Blocking, Background Detailing of elements, Hard surface modeling, misconception about some topology, organic Modeling, Toon modeling and stylized modeling approach, semi-realistic modeling, topological Flow For Animating the character, clothing, Creating morph targets.

**Lighting & Texturing:** Basic knowledge of lighting and texturing.

**Rigging:**

Basics Concepts of rig, Intro to rig, Child Parent relationships, Grouping, Working with Constraints, Wire parameters & Reaction manager, Build-hierarchy systems, Creating Controllers, Creating mechanical rig, Introduction to bone systems, Creating bone setup, Intro to IK and FK, Basic leg setup, Arm setup, Intro to biped rig, Complete biped system creation, Creating custom attributes for advanced rigging, Stretchy rig system, Intro to skinning, Working with diff. skinning options-envelop editing, weight table, painting eights, Advanced skinning modifiers- skin wrap, skin morph, Skinning a character, Deformable mesh, Facial rig(morphing method and bone setup), Intro to character studio(figure mode and physique).

**PART – II**

**Animation:**

History of animation, 2D vs. 3D method of animation, Intro to 3d animation, Animation panel in Max, key framing concepts, Importance of acting part in animation, Basic bouncing ball animation, Dope sheet, Curve editor, Basic rules of animation, Advanced bouncing ball animation, Pendulum animation exercise, Creating poses, Silhouette R&D, Pose to pose and straight ahead animation, wave principal, weight shift exercise, Walk cycles, Run cycle, Animating with props, Facial animation, Introduction to character studio, Footstep Mode, key frame animation of character studio, Motion Mixer.

**Dynamics:**

Intro to particle system, Intro to space warps, Parray and particle instancing, Forces, Linking forces to non-event particle system, Intro to vent base particle system, Deflectors, Working with pflow chart system, Working with operations and test in particle flow, Give material to particles, Case studies- fireworks, smoke etc., Intro to rigid body dynamics, Advanced rigid body simulations, Intro to Cloth system, Creation of Garments using cloth and garment maker modifier, Intro to hair and fur system, Hair styling and rendering.

**References:**

1. Mastering Autodesk 3ds Max by Jeffrey Harper
2. Autodesk 3ds Max Essentials by Randi L. Derakhshani, Dariush Derakhshani

DIPLOMA (ANIMATION)  
(Semester – II)

**AGM 206: GAMING TECHNOLOGY**

**Time: 03.00 Hours**

**Max. Marks: 100**

**Theory: 50**

**Practical: 50**

**Note: Eight questions are required to be set giving equal weight age to all the units. The candidates will have to attempt any five. All questions carry equal marks.**

**PART – I**

Origin and growth of gaming industry, Gaming: meaning and defining, Gaming as modern entertainment.

Classification of gaming, Game production cycle, Pre production – concept and idea. Production requirements.

Production planning.

**PART – II**

Production – plan implementation, Tracking progress and plan testing, Post production – archive and plan for future games. Structure and functioning of gaming company: Production, art, engineering, designing, Quality assurance testing, Game production team members and responsibilities.

**References:**

1. Gaming Technology (New Technology) by Chris Oxlade
2. The Art of Game Design by Jesse Schell.

DIPLOMA (ANIMATION)  
(Semester – II)

**AGM 207: E-CONTENT / HANDS ON PRACTICE/WORKSHOP**

**Max. Marks: 50**  
**Practical: 50**

Student will be evaluated on the basis of e-content/hands on practice/workshop as taught in Semester II.