Scheme & Syllabus of

B.Sc. MultiMedia

SRI SAI UNIVERSITY
PALAMPUR (H.P),INDIA

SCHEME OF EXAMINATION

BACHELOR OF SCIENCE (ANIMATION & MULTIMEDIA)

THREE YEAR PROGRAMME (SEMESTER SYSTEM)

Semester First

Course Code	Title of Course	L	T	P	Marks Int.	Marks Ext.	Maximum Marks
BSM101	Basic Computer Fundamentals	3	0	0	30	50	80
BSM102	Principles of Animation & Multimedia Studies	3	0	0	30	50	80
BSM103	Fundamentals of Communication Skills	3	1	0	50	50	100
BSM104	Basic Digital Art Lab	0	0	4	30	20	50
BSM101P	Basic Computer Fundamentals Lab	0	0	4	--	20	20
BSM102P	Principles of Animation & Multimedia Lab	0	0	4	--	20	20
	Total	**9**	**1**	**12**	**140**	**210**	**350**

Semester Second

Course Code	Title of Course	L	T	P	Marks Int.	Marks Ext.	Maximum Marks
BSM201	Computer Graphics	3	0	0	30	50	80
BSM202	Computer Programming	3	0	0	30	50	80
BSM203	2 D Animation	3	0	0	30	50	80
BSM 201P	Computer Graphics Lab	0	0	4	--	20	20
BSM 202P	Computer Programming Lab	0	0	4	--	20	20
BSM203P	2 D Animation Lab	0	0	4	--	20	20
	Total	**9**	**0**	**12**	**90**	**210**	**300**

Semester Third

Course Code	Title of Course	L	T	P	Marks		Maximum Marks
					Int.	Ext.	
BSM301	Introduction to Web Designing & Development	3	1	0	30	50	80
BSM302	Fundamentals of Pre-Production	3	1	0	50	50	100
BSM303	Digital Film Making Lab	0	0	6	30	20	50
BSM304	Print & Advertising Graphic Design Lab	0	0	6	30	20	50
BSM 301P	Web Designing & Development Lab	0	0	6	--	20	20
	Total	**6**	**2**	**18**	**80**	**220**	**300**

Semester Fourth

Course Code	Title of Course	L	T	P	Marks		Maximum Marks
					Int.	Ext.	
BSM401	Essentials of Execution & Post-Production	3	1	0	50	50	100
BSM 402	History of Motion Picture Industry	3	1	0	50	50	100
BSM 403	Virtual Set Designing Lab	0	0	6	30	20	50
BSM 404	Camera & Lighting Techniques Lab	0	0	6	30	20	50
BSM 405	Texturing & Shading Lab	0	0	6	30	20	50
BSM 406	Animation – Rigging Lab	0	0	6	30	20	50
	Total	**6**	**2**	**24**	**220**	**180**	**400**

Semester Fifth

Course Code	Title of Course	L	T	P	Marks Int.	Marks Ext.	Maximum Marks
BSM501	Fundamentals of Aesthetics	3	1	0	30	50	80
BSM502	Media Theory	3	1	0	30	50	80
BSM503	Television and Graphics Lab	0	0	6	30	20	50
BSM504	Acting and Direction for Animation Lab	0	0	6	30	20	50
BSM505	Digital Compositing Lab	0	0	6	30	20	50
BSM506	Project - I	0	0	6	50	50	100
	Total	**6**	**2**	**24**	**200**	**210**	**410**

Semester Sixth

Course Code	Title of Course	L	T	P	Marks Int.	Marks Ext.	Maximum Marks
BSM601	Publicity Designing and Media Laws	3	1	0	50	50	100
BSM602	Animation Dynamics	3	1	0	50	50	100
BSM603	Special Effects in Feature Films Lab	0	0	6	30	20	50
BSM604	Introduction to Game Designing Lab	0	0	6	30	20	50
BSM605	Project – II	0	0	12	50	50	100
	Total	**6**	**2**	**24**	**210**	**190**	**400**

SEMESTER – I

Course Code:BSM101

Basic Computer Fundamentals

I. Computer Basics

Introduction of Computers : · Basic introduction of computer, Types of computer, Characteristics , Applications, components of computer, Block diagram of Computer, significance of each part control unit, storage unit, main memory, study of input/output devices, keyboard, hard disk, floppy disk, CD-ROM, DVD, mouse, study of various printers, various types of software: application software, system software, application of Computers indefense industry, management, e-commerce and role of Computers in Animation Industry.

II. Operating System: Introduction: Introduction to Operating System, its need and Operating System services, Operating System classification - single user, multi-user, simple batch processing,Multiprogramming, Multitasking, Parallel system, Distributed system, Real time system

III. Basic Designing Software
Windows Paint, Basics Concept making and Implement on Computer, colour knowledge, generating ideas, Basics about Various Software's in Industry for still image manipulating,knowledge about pixels, measuring units in diff image manipulating software's.

Text Book:-
Computers Fundamental by Pradeep k .Sinha , BPB Publication(India)

References books:-
1. Introduction to computer by Alexis Leon, Mathew Leon , Vikas Publishing House Pvt Ltd(India)
2. Windows XP Simplified by Ruth Maran John Wiley & Sons Publication (India)

Course Code: BSM102

Principles of Animation & Multimedia Studies

Introduction to multimedia: Introduction to Multimedia Systems: History of Multimedia Systems, What is Multimedia, Challenges for Multimedia Systems, Desirable Features for a Multimedia System, Components of a Multimedia System, Applications, Trends in Multimedia.

Multimedia Systems and Applications: Categorization of Multimedia, Major Characteristics of Multimedia, Terminology, Usage, Structuring Information in a Multimedia Form.

Computer Graphics: Computer Graphics, Bitmap Images, Vector Graphics, Graphics Software, Graphics File Format.

Multimedia in Education: Introduction, Terminology, Education Online, The Problem is the Solution, A Vision for the Future.

Desktop publishing: Basic design concepts, User interface design, Hypermedia authoring concepts, Process of multimedia production, various file formats of text, audio, video, graphics and animation, File compression techniques, creating web based multimedia

Introduction to animation: its definition,types of animation : 2D & 3D animation ,Basic Principles of Animation **:**Illusion of Life, straight action and pose to pose timing, exaggeration, drama and psychological effect, fade in and fade out, squash and stretch, anticipation, staging, follow through and overlapping action, arcs, solid Drawing ,appeal, slow in and slow out, Secondary Action

Text book:-

1. The complete animation course by Chris Patmore Pub.-Baron's Educational Series.(New York)

Reference book:-

1. Animation Unleashed by Ellen Bessen, Michael Weise Productions,2008(U.S.A)
2. The Animator's Survival Kit by Richard Williams , Arrar Straus & Giroux Pub.(U.S.A)

Course Code: BSM103

Fundamentals of Communication Skills

Introduction: Communication, Its types & Significance: Communication; process of communication; its kinds, channels and role in the society.

Reading Skills: Process of reading; reading purposes, models, strategies, methodologies, reading activities, structure of meaning techniques, Writing Skills: Elements of effective writing; writing styles; scientific and technical writing. Grammar: Transformation of sentences, words used as different parts of speech; one word substitution; abbreviations, technical terms etc.

Business Correspondence : Business letters; elements of business writing, kinds of business letters – office order memorandum, report, purchase order, quotations and tenders, job application letters, personal resume and curriculum vitae etc.

Listening Skills: The process of listening; the barriers to listening, the effective listening skills, feedback skills, Speaking Skills: Speech mechanism, organs of speech, production and classification of speech sounds, phonetic transcription, the skills of effective speaking, the components of an effective talk, oral presentation and the role of audio visual aids in it.

Text Books :

1. Vandana R Singh, The Written Word, Oxford University Press, New Delhi
2. KK Ramchandran, et al Business Communication, Macmillan, New Delhi
3. Swati Samantaray, Busines Commnication and Commnicative English, Sultan Chand, New Delhi.

Course Code: BSM104

Basic Digital Art Lab

Visual and creative development of an Artist-Demonstration and lectures on required skills for an artist, difference between seeing and observing **.**

Drawing and Skecthing:- Concept of drawing, free hand drawing exercises from object and nature to study proportion, volume and visual perspective, rapid sketching techniques, rapid sketching from live models, sketching from memory, live action.

Various Mediums :- Pencil Colours, Charcoal, Pen and Ink, Water Colours, Poster Colours, Oil Pastel Colours, other waste material such as sand,stones,grass,hardboard,colour papers &clay etc**.**

Still Life:- Study from any kind of form(basket, artificial fruits books, containers, bottles, round objects, drapery etc), still life with line as well light and shade. Rhythmic relationshipbetween line, mass, value and texture; emphasis on variety of visual experiences**.**

Anatomy Study:- Simple free-hand drawing from human figure to study proportion. Centre of gravity,inclination of main masses based on anatomical structure.

Memory Drawing and Outdoor Sketching:- Exercises in drawing from memory to develop the sense of observation and the capacity to retain and recall images and their co-ordination Introduction to various aspects and techniques of drawing and sketching both indoor and outdoors**.,m**

Text book:-
1. Basc Drawing Techniques by Richard Box Pub: Winsor & Newton, (U.S.A)

Reference books:-
1. Still Life by Sanjay Shelar, Jyotsana Prakashan(India).Pub.
2. 2.Drawing and Anatomy by Victor Perard , Kingsport Press Pub(U.K).

Course Code: BSM105

Basic Computer Fundamental Lab

Practice on MS-Word : Making and formatting Documents, Inserting Pictures, Using spell check, Mail merge, Formatting Text, Using additional features.

Practice on Ms-Excel:- Manipulating cells, rows and columns,Create a new blank spreadsheet,Preview and print spreadsheet, Preparing Data Sheets.

Practice on Ms-Power Point : Making Slide, Display the presentations in different views: slide show, normal and outline , Set up the presentations with manual delivery,

Practice on internet : Mailing , Attaching file in mail,Searching and printing mail.

Text Book:-

Computers Fundamental by Pradeep k .Sinha , BPB Publication(India)

References books:-

1. Introduction to computer by Alexis Leon, Mathew Leon , Vikas Publishing House Pvt Ltd(India)
2. Windows XP Simplified by Ruth Maran ,John Wiley & Sons Publication (India)

Course Code: BSM106

Principles of Animation & Multimedia Lab

Compositing a 2-D Design: Using Different Geometrical shapes

Color Combination:- · Making Color Wheel, · Making composition with Colors .

Floral Designs:- Different patterns of design , making special occasion designs.

Introduction to Adobe Photoshop :- Graphics in Design and Communications, Tools :cutting tools , mixing pictures, making composition with pictures , making small compositions .

Introduction to Corel Draw :- Tools :cutting tools , mixing pictures, making composition with pictures , making small Compositions

Text books:-

1) Design and Communication: A Foundation Course By Peter Gowers, Blackie, 1988 Pub.(UK)
Reference book:-
2) Design for communication: conceptual graphic design basics By Elizabeth Resnick ,John Wiley & Sons Pub(India).

Semester- II

Course Code: BSM201

Computer Graphics

Introduction : What is computer graphics, elements of computer graphics, Workstation, Graphics hardware, I/O devices, Display devices

Basic Raster Graphics: Scan Conversion, filling, clipping.

Geometric Manipulation: Transformation , Matrices, Homogeneous Co-ordinates.

Elementary 3D graphics : Plane Projection , vanishing points, specification of a 3D View.

Visibility: image and object precision , z- buffer algorithms, area based algorithms, floating horizon.

Curves and Surfaces : Parametric representation representation , Bezier and B- Spline Curves

Text Books:
1. Computer Graphics by Lipschutz (MC Graw Hill)
2. Hearn and P. Baker Computer Graphics, Prentice Hall
3. C. Graphics by Yashwant Kanetkar

Reference Books:
1. D.Rogers and J.Adams , Mathematical Elements for Computer Graphics, Mc Graw- Hill International edition.
2. David F. Rogers , Procedural Elements for Computer Graphics, McGraw Hill Book Company

Course Code: BSM 202

Computer Programming

Introduction: Elements of computer processing, hardware and software, background of various programming languages, program structure and syntax, algorithms, flowcharts.

Data Representation: Number Systems , conversion from one number system to another such as binary to decimal, octal and hexadecimal and vice versa.

C Programming Basics : Basic program construction, Structure of C program, Compilation process, Preprocessor directives, Comments, data types, type Conversions, Various operators such as arithmetic, relational, logical, conditional, increment/decrement, library functions and header files.

Loops and DecisionMaking Statements: for loop, while loop, do-while loop, various forms of if statements, switch statement, break statement, continue statement, goto statement.

Arrays and Strings: Declaring an array, Initializing arrays, Accessing the array elements, working with multi-dimensional arrays, declaring and initializing string variables, various operations on characters, various string handling functions.

Overview of Networking and Internet: Various types of network topologies (LAN, WAN, MAN), IP address, Broadcasting and Multicasting, Various protocols models, Internet, WWW, Domain Name System(DNS), URL, Client- Server architecture.

Textbooks:

1. Nitin Upadhay , "Let Us C"
2. P.K. Sinha, " Computer Fundamentals" BPB Publications.
3. Behrouz A. Frouzan, "Data Communication and Networking", Tata Mc Graw-Hill Publishing Company Limited

Course Code: BSM 203

2 D Animation : Corel Draw

Object Overview: Object Overview, Pick Tool Overview, Shape Tool Overview, Zoom Tool Overview, Freehand Tool Overview, Rectangle Tool Overview, Ellipse Tool Overview, Spiral Tool Overview, Polygon Tool Overview, Graph Paper Tool Overview.

Tools: Selecting Objects, Align Objects, Distribute Object Sets, Group and Ungroup Objects, Modify Multiple Objects, Copy Object Properties, Using Guidelines, Undo/Redo/Revert Commands, Changing Object Order, Cut or Copy an Object.

Pattern Fill: Pattern Fill Overview, Using Preset Full color Fills, Loading Full Color Fills, Using Bitmap Pattern Fills, Load External Bitmap Fills, Using Pattern Fill Options.

Fill Tool: Fill Tool Overview, Creating Solid Fills, Fountain Fill Overview, Creating Linear Fountain Fills, Creating Radial Fountain Fills, Creating Conical Fountain Fills, Creating Square Fountain Fills, Creating Custom Fountain Fills.

Text Tool: Text Tool Overview, Create Artistic Text, Create Paragraph Text, Change Font, Set Default Font and Size, Align Artistic Text, Align Paragraph Text.

Vectors and Bitmaps: Vectors and Bitmaps, Set View, Work in Wire frame View, Hints for Learning CorelDraw, Menu Overview: Part 1, Menu Overview: Part 2, Dockers Overview.

Import/Export Overview: Import/Export Overview, Import a File, Edit Vector Import, Edit Bitmap Import, Export a File, Export GIF File, Export JPG File, Export AI File, Export CDR File.

Textbooks :

1. Steve Bain. "Corel Draw 12: The official Guide",McGraw Hill Professional
2. Dinesh Maidasani, "Straight to the point- Coreldraw X3".
3. Foster D. Coburn , "CorelDRAW X3 Unleashed" .

Course Code: BSM201P

<u>Computer Graphics Lab: Adobe Photoshop</u>

Introduction: What is Photoshop?, The RGB Color Space, Digital Image Types: Vectors and Bitmaps, Internet Image , Standards ,Photoshop Workplace: The Workplace, The Photoshop Workspace, Preferences, Image Ready.

Creating Images: Creating New Images, Contents, Image Window, Scanning Images into Photoshop, Importing Existing , Images into Photoshop, Magnification/Navigation Controls, The History Palette, The Snapshot.

Creating and Using Selections: Selections and Channels, Multiple Selections, Modifying Selections, The Info Palette, Moving Selections, Selection Tool Options, Creating Selections in Quick Mask Mode.

Photoshop's Layer: Layers, Using Layers, Creating New Layers, Text and Layers, Layer Styles, Managing Layers.

Editing Images: Using the Painting and Drawing Tools, Pattern Stamp Tool, Gradient Tool, Using the Type Tool, The Character Palette, The Paragraph Palette, Fine-Tuning Filters with Fade, Curves, Adjustment and Fill Layers.

Editing Vector Shapes: Working with Vector Content, Creating a Selection from a Path, The Shape Tools, Combination , Options, Generic Shape Tool Options, Layer Style.

Creating Static Image: Creating a Logo in Photoshop, Preparing the Logo for the Internet, Save for Web, Creating a Custom Logo.

<u>Textbooks:</u>

1. Bittu Kumar , "Adobe Photoshop Paperback – 2013" V & S Publisher
2. Lowery J , "Adobe Dreamweaver CS6 Bible: The Comprehensive, Tutorial Resource Paperback) WILEY INDIA PVT. LTD.-NEW DELHI

Course Code: BSM 202P

Computer Programming Lab

Familiarization with the Computer System: To explore different parts of the computer system such as system unit, input devices, output devices connected to the computer.To explore the inside view of the system unit that includes the motherboard,processor, expansion slots, various add-on cards, storage devices, power supply, fans. To understand the booting process that includes switching on the system,execution of POST routine, then bootstrap loader, and loading of the operatingsystem, and getting it ready for use.

Navigating with Window Explorer: Navigate with the drives, creation of new folders search files and folders, share files and folders, view and/or change the attributes of the files and folders.

Working with Control Panel: creation of new user accounts, installation of new hardware and configuring existing hardware, installation new software or remove existing installed software

Exploring various programs using C programming language

Textbooks:

1. Nitin Upadhay , "Let Us C"
2. P.K. Sinha, " Computer Fundamentals" BPB Publications.

Semester - III

Course Code: BSM301

<u>Introduction to Web Development</u>

Introduction to the Internet : Modes of connecting to internet, search optimization on internet, applications of internet, introduction to World Wide Web (WWW).

Introduction to HTML : HTML tags, HTML Editor.

Tags, Attributes, Lists and Tables: Structure Tags (HTML,HEAD,TITLE,BODY),Paired and unpaired tags, Ordered list, unordered list, formatting list, tables in HTML, formatting table, cell spacing, cell padding

Links and Images : Making hyper links- anchor tag, images as link, Adding Images, Aligning the image Using Images as a link, Using Background images.

Cascading Style Sheets: Concept of CSS , Creating Style Sheet ,CSS Properties CSS Styling(Background, Text Format, Controlling Fonts) ,Working with block elements and objects , Working with Lists and Tables CSS Id and Class , Box Model(Introduction, Border properties, Padding Properties, Margin properties) CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align, Pseudo class, Navigation Bar, Image Sprites, Attribute sector) , CSS Color Creating page Layout and Site Designs.

Creating a Basic Web Page : Creating web pages using basic HTML Tags.

Typography: Composition, Font selection

Text rollovers: Text rollover techniques and applications

Text Book:

Deborah Ray, "Mastering HTML 4" Sybex Publications Inc.
Sybex , "HTML Complete" BPB Publications

References:
Web Design for dummies – Lisa Lopuck, Pub.- For Dummies

Course Code: BSM302

Fundamentals of Pre-Production

Introduction to Pre-production:· The basics of Pre Production, Importance of pre Production in creating a Project.

Concept, Story writing: · Developing a Concept for Animation, Essentials Elements of a story: Start, Middle and Ending of a story

 Screenplay: · Definition and Elements of Screenplay, Creating a Screenplay.

Character development: · Physical Attributes, Visual appearance.· Nature, Characteristics, Model Sheet.

Props & Environment development: · Props & Environment illustration, Blueprint.

Storyboarding: · Process of creating storyboard.· Importance of storyboard in Film making.

Visual References: · Types of visual references.

 Dubbing, Songs: · Process of Dubbing of Dialogues, Voiceovers, songs etc.

Text Book:

1. How to write for animation – Jeffrey Scott, Pub.- Overlook TP

References:

1. 1Animation writing & development – Jean Wright, Pub.-Focal Press.
2. 2 Survival kit – Richard Williams,Pub.-Faber and Faber.
3. 3The Illusion of life – Frank Thomas,Pub.- Disney Editions.

Course Code: BSM303

<u>Digital Film Making Lab</u>

Digital Camera Functioning: Types of Digital Cameras, Working of a Digital Camera.

Shooting a Clip/Footage: Outdoor, Indoor, Landscapes, live action.

Software's used in Editing: Fundamentals of non-linear & digital Audio/Video editing

Role of an Editor in Film making : Do's and don'ts of Editing, working on an Editing Table, Project setting, Clips management, Timeline Settings & Controls, Tools.

Audio Track Editing: Audio Editing ,Normalization, Mixing, Cross-fading, Dynamics, Filters, Mono/stereo formats, Noise gate.

Editing the Footage: Importing clips, trimming clips, splitting clips, manipulating audio content, adding transitions, changing speed of a clip, changing opacity, applying special effects, superimposing an image, exporting a movie.

<u>Text books:-</u>

1. Editing Digital Video: The Complete Creative and Technical Guide byRobert Goodman (McGraw-Hill), Pub.- McGraw-Hill/TAB Electronics.

2. Adobe premiere pro Bible by Adele Droblas, Pub.-Wiley.

Course Code: BSM304

Print & Advertising Graphic Design Lab

The creative brief Fundamentals : Understanding Design Principles: Concept Formation, Format, Design, Layout, Graphics.

Designing of Office Stationery : Visiting Cards, Letter Heads, calendars.

Print Media: Trademark/Logo, Newspaper/Magazine Advertising, Direct Mail Advertising, Poster/Display Advertising, , Billboard Advertising, Kiosks.

Newspaper/Magazine Advertising: Full Page Ads, Double Split Ads,Teaser Ads, Product /Brand launching Ads.

Poster Designing : Essentials/Qualities of Poster Designing, Poster as a strong medium of Advertising, study of Classic Posters, Innovative Designs for Animation Films,Slogans .

Brochure / Pamphlet/Leaflet Designing : Designing Brochures for an Advertising Agency, Educational Institutions,Animation Company.

Text books:

1. Advertising by Design: Creating Visual Communications with Graphic Impact by Robin Landa, Publisher- Wiley .

2. Creative Advertising by Mario Pricken, Publisher-Thames and Hudson.

Note : Software's to be used Photoshop , Adobe Illustrator, Corel Draw

Course Code: BSM 301P

Web Designing & Development Lab

List of Practicals

1. Implements Basic HTML Tags
2. Implementation Of Table Tag
3. Implementation Of FRAMES
4. Design A FORM In HTML(Yahoo registration form)
5. Validation Of FORM Using Java Script.
6. Implementation Of CSS(All 4 Types)
7. Develop A Clock Using Java Script
8. DHTML(Layer/DIV)
9. ASPImplement Response Object
10. Connectivity To Database Through ASP
11. PROJECTDevelop A ECommerce Web Site

Text Book:

Deborah Ray, "Mastering HTML 4" Sybex Publications Inc.
Sybex , "HTML Complete" BPB Publications

References:
Web Design for dummies – Lisa Lopuck, Pub.- For Dummies

Semester - IV

Course Code: BSM401

Essentials of Execution & Post-Production

Modeling: Types of 3D Modeling, Advantages & Disadvantages of Nurbs modeling &Polygon Modeling.

Texturing: UV texturing: Texturing of Characters and Props , Shading: Different Maya Shaders.

Lighting: Sources of light: Natural and artificial Lights, Types of lights in Maya, Types of Shadows in Maya.

Rigging: Joints, Inverse Kinematics, Forward Kinematics, Types of Skinning.

Animation: Types of Animation.

Rendering: Process, Types of Renderer.

Data Management: How to manage 3D Assets

Compositing: Process, Tools used

Visual Effects: Process, Tools used

Music & Dubbing: Process, Tools used

Editing: Process, Tools used

Output: Types of Output format.

Textbooks:

1. Editing Digital Video: The Complete Creative and Technical Guide by Robert Goodman (McGraw-Hill)
2. Maya Documentation

References:
1. Digital compositing for film & video by Steve Wright
2. Professional digital compositing: Essential Tools and Techniques by Lee Lanier, Pub. - Sybex.

Course Code: BSM 402

History of Motion Picture Industry

Evolution of Cinema – the early days.

Emergence of the narrative cinema and American, German, French and Russian Cinema in the era of silent motion pictures.

Advent of sound and color in motion picture, cinemas of the world in post salient motion picture era.

Evolution of cinema in India and the current status.

Cinematograph Act 1952: Introduction and its role in Motion pictures Business.

Significant Indian Films (Synopsis, Producer, Director, Actors).

Evolution of Film Indian Animation Film Industry and its Growth.

Present scenario of Indian Film Industry.

Text books:-

Frames of Fame: A Visual Voyage through Bollywood 1913 – 2004 – Shahab Ahmed, Pub. - Landmark Ltd.

Reference books:-

Indian Cinema: The Bollywood Saga - Dinesh Raheja and Jitendra Kothari,Pub.- Roli Books

Course Code: BSM 403

<u>Virtual Set Designing Lab</u>

Introduction to 3DS Max & Interface : Modeling, texturing, advanced lighting, animation.

Basics of AutoCAD:· Making basic Geometric shapes , Complete Basic CAD drawings, with borders, text and dimensions, Use Paper Space, and Model space ,Edit drawings with ERASE, OOPS, COPY, EXTEND, TRIM, MIRROR, UNDO REDO and MOVE commands.

Introduction to Adobe After Effects : Introduction to the After Effects interface , Effects,Parenting,Masking,3D,Lights and Cameras, Expressions, Painting, Motion tracking.

Lighting : Appling Lights in an Interior and creating shadows, Creating Lights in Cones, Bed Lights, Falls Lights, Table Lamps.

Rendering: Concepts of Rendering, Scan Line Rendered.

<u>Reference books:-</u>

1. 3D Studio Max Bible – Kelly Murdock, Pub. - Wiley.
2. Creating Motion Graphics with After Effects by Trish Meyer, Pub.-CMP Books
3. Mastering AutoCAD 2011 and AutoCAD LT 2011 by George Omura, Pub.-Sybex.

Course Code: BSM 404

<u>Camera & Lighting Techniques Lab</u>

1) Nature of light, light sources.
2) Tree point Lighting.
3) Lights & shadows in Maya.
4) Ray tracing.
5) Light Rig.
6) Mood & Ambience.
7) Maya Software renderer.
8) Introduction to Mental ray.
9) Indoor & outdoor lighting.
10) Types of conventional cameras & its functioning.
11) Lenses, exposure & focus.
12) Cameras in Maya.
13) Shot planning.
14) Motion Blur & Depth of Field.

<u>Textbook:</u>

Maya Texturing & Lighting – Lee Lanier, Pub.-Sybex.

<u>Practicals:</u>

1) Interior lighting (Day/Night).
2) Exterior lighting (Day/Night).
3) Character lighting.
4) Walkthrough.

Course Code: BSM 405

Texturing & Shading Lab

Texturing:

1. Learning the Toolbar.
2. Practice of creating basic textures.
3. Basic Wrapping of textures onto surfaces.
4. Concept of UVs.
5. Difference between 2D maps and 3D maps.
6. Tiling, Placing, Cropping, Transforming, Blurring etc.
7. Planar, Cylindrical, Spherical.
8. Adjusting Textures on NURBS surfaces.
9. Polygon Projection Techniques.
10. Basics of unwrapping the UVs.
11. Transparency.
12. Alpha layering.
13. Raytrace Options.
14. Matte Opacity.
15. Making realistic textures.

Shading:

1. Other types of shaders
2. Layered Shader
3. Shading Map.
4. Utility nodes, Reverse Node.
5. Applying two materials on either sides of a surface.
6. 3D Paint.
7. Painting various attributes like Color, bump. Transparency etc.
8. Adding dust, dirt, rust etc. to an object.
9. Glossiness – Shading – Phong, Blinn, Phong E etc.
10. Transparency – Reflection-refraction.
11. Multilister and Hypershader.
12. Mixing various Basic Shader Materials
13. Concept of Bump Maps, Creating bumps, ridges, grooves, dents etc

Reference books:-

1. Digital Lighting & Rendering – Jeremy Birn, Pub. - New Riders Press.
2. Maya Texturing & Lighting – Lee Lanier, Pub.-Sybex.

Course Code: BSM406

Animation – Rigging Lab

1. Rigging Basics, Bones and Joints, Skin, Binding.
2. Kinematics (IK & FK)
3. Requirements for a clean Model.
4. Clean UVs.
5. Binding, Smooth Binding, Rigid Binding.
6. Editing the Smooth Skin, Painting of Skin weights, Editing Skin weights, Mirror Skin Weights, Copy skin weights, Resetting Skin weights, Pruninging small weights, Normalizing Weights, Creating and Editing Flexors.
7. Lattice, Sculpt, joint Cluster, Painting Cluster weights.
8. Rigging the controls
9. Joints and hierarchies, Concept of Skeleton.
10. Connecting Joint, Removing Joint, Inserting Joint, Re-rooting Joint, Mirror Joint, Orientation of joints, Joint limits & damping.
11. Set preferred angle, Assuming preferred angle.
12. IK handle tool, IK Solvers, IK Spline, IK controls, IK handle
13. End effectors.
14. Using locators.
15. Stickiness.
16. Switching between IK/FK.
17. Adding the controls and attributes.
18. Grouping and Parenting.
19. Rigging a arm and hand, Advanced rig.

Text books:-

1. An Introduction to Rigging in the Entertainment Industry (Applications & Techniques)
2. Art of Rigging by George Biddlecombe, Pub.- Dover Publications by Chris Higs,Pub.- Entertainment Technology Press Ltd.

Semester - V

Course Code: BSM501

<u>Fundamentals of Aesthetics</u>

Defining Aesthetics: What is Aesthetics,Aesthetic Experience, Plato , Aristotle.

History of Indian Aesthetics: Five Schools, Bharatmuni, Natyashashtra,

Nine types of Rasa: The principle study of Rasa like: Love, Joy, Wonder, Peace, Anger, courage, Fear, Sadness, Disgust.

Six types of Bhavas : The principle study of Bhavas like: Unruffled feeling, Comrade feeling, Servent-Master attitude, Mother Child feeling, Loved-Beloved feeling, Oneness with God.

Applied Media Aesthetics: What is Applied Media Aesthetics, Fundamental Elements of Applied Media Aesthetics, difference between Applied Media Aesthetics and Traditional Aesthetics.

<u>Text books:</u>

1. 1.Indigenous Aesthetics: Native Art, Media, and Identity by Steven Leuthold (University of Texas Press),Publisher- University of Texas Press.
2.   2.Art Beauty and Creativity: Indian and Western Aesthetics by Shyamala Gupta ,Publisher- D K Print World.

Course Code: BSM502

Media Theory

1. General Introduction :Film and TV , Theory of Production & Consumption of Media Content.
2. Theories of Spectatorship
3. Feminism and Film Theory
4. Reception Theory
5. Film Genres
6. Advertisements
7. Film Criticism
8. Film Theory
9. Media and Cultural Theory
10. Video – Everyday uses of Video, Video Art and Digital Video
11. Transformation of Consumer to User

Text Books

1. Movies & Methods: Vol. 1 & 2 by Bill Nichols,Publisher-University of California Press
2. Modern Criticism and Theory by David Lodge, Publisher- Longman
3. Concepts in Film Theory by Dudley Andrew,Publisher- Oxford University Press.

Course Code: BSM503

Television and Graphics Lab

Designing Graphics for Television: Introduction to Tools, Basic Shapes of 2-D & 3-D for Motion Graphics, Logo Designing for Television Graphics, Product Modeling. UV Unwrapping, Texturing.

Lighting for Computer Graphics (CG): Using lights & shadows on 3-d Environment, Glow Effects, Fog Effects, Volume Effects, Video Post.

Animating Graphics: Basics of Television Graphic Animation, Animating Logos, Titles, Camera Animation, Creating Fire Effects, Explosions.

Rendering of Graphic: Mental Ray Techniques, Layer Based Rendering, Global Illumination, Final Gather, Caustics.

Compositing: Introduction to Tools, Color Keying, Color Correction, Montage, Channel Ids, Composting CG with Live Footage.

SOFTWARES: Autodesk 3-D Max, Autodesk Maya, Adobe After Effects, Adobe Premier Pro.

Text books:

1. Bernard Mendiburu , "3-D Movie Making : Stereoscopic Digital Cinema" Focal Press Publication.
2. Ray Zone , "3-D Filmmakers: Conversations with Creators of Stereo"The Scarecrow Press Publication.

Course Code: BSM504

Acting and Direction for Animation Lab

Essential of Acting Concepts: Acting: Basic Performance skills, physical preparation.
Voice, Speech & Music: Exercises that focus on breathing, humming, pitch, volume and singing
Improvisation & Acting: Through improvisation, both silent and word-oriented, learning to see, hear, believe, react, observe and concentrate.

Facial expressions & Lip synchronization : How to use Character,s body, voice and imagination, How to be aware of Character's body ,facial expressions and to concentrate on its rhythm, enter space and loosen their limbs, Acquiring acting skills through sessions focused on an understanding of the self, Mimicking & Voice Modulation.

Directing Animation: Developing a Story for Animation, Scripting & Storyboarding, Fundamentals of Cinematography – Camera Angles, Lighting & creating mood, Shots, Screenplay.

Lab Project: Animation with dialogue & expressions(minimum one minute).

Text books:

1. Ed Hooks , "Acting for Animators" ,Heinemann Drama Publications; Revised edition
2. Gary Gaigin , "The artist's complete guide to facial expressions" ,Watson-Guptill Publictions.
3. Jason Osipa , "Stop staring : Facial modeling & animation done right" ,Sybex Publications.

Course Code: BSM505

Digital Compositing Lab

Digital Compositing: What is Compositing, Fundamentals of Digital Compositing, and Capturing through Fire wire, Various File Formats or video extensions.

Introduction to Adobe After Effects: Learning the toolbar, Introduction to the interface of the Adobe After Effects, Compositing the real life shoot with CG (Computer Generated) characters or Environment, Blending of CG (Computer Generated) lights & cameras with real shoot.

Project Setting, Timeline, Layers: Organizing Footages ,Composition settings in Adobe After Effects, Basic settings, Presets & Resolutions ,Advanced settings, Rendering plug-ins. Maintaining timing, spacing & proper play speed of video, Creating layers, Managing Layers & their Properties,Blending modes & Layer styles.

Key framing, Transitions : Basics of key framing (whether the video is in PAL or NTSC.), How to move & copy keyframes, Animate the keyframes ,Adding the key frames, Learning about the transition effect & transition completion, Learning transition gallery.

Video Effects & Motion : Color correction in video, Creating virtual animated backgrounds, Visual Effects Using Various Plug-in, Text animation in Adobe After Effects, Virtual cameras, lights, Leaning the uses of particles, & dynamics, Different types of effect making like fire, dust, etc.
Audio Effects : Sound Recording & Editing, Audio capturing & Synchronization, Controlling Pitch and tempo.

Chroma Keying : Basics of chroma keying, What is Blue/Green Screen Imaging, Why Blue/Green color be used? Lighting Chroma Key Properly, Green screen, Blue screen removal, Wire removal.

Output : Learning supporting output video formats, Work with output module settings, Rendering and exporting, Render Queue panel,Encoding & compression options for movies, Rendering final movie,Video & audio Editing & merging.

Textbooks:
1. Adobe After Effects Documentation.
2. Steve Wright , "Digital compositing for film & video" Focal Press Publication
3. Lee Lanier , "Professional digital compositing" , Sybex Publication; Pap/Dvdr O edition
4. Mark Christiansen, "Adobe after effect visual effects & compositing" Adobe Press

Course Code: BSM506

Project - I

The student is required to make a Show reel/Individual Project of minimum 2 Minutes. The student can choose between the following options:

1. Motion Graphics.
2. 3-D Animation.
3. Digital Compositing.

Semester - VI

Course Code: BSM601

<u>Publicity Designing and Media Laws</u>

1. Various Mediums of Publicity:

Print Media – Newspapers, Magazines, Brochures, Posters, Leaflets, Pamphlets, Danglers, posters etc.

Outdoor Advertising – Hoardings , Cutouts, Bus Panels, Posters.

Electronic Media – Audio(Radio, FM), Audio-Visual (Television)

Internet- Websites, Online advertising, Blogs, Banners,Emails.

Cinema.

Exhibitions, Trade Fairs.

2. Media Laws in India:

Indian print Media in the context of Globalization.

Copyright Act – Recent Indian Laws.

Contempt of Court- Civil and Criminal Contempt.

Defamation.

<u>Text Books:-</u>

1. John Steel , "Truth, Lies and Advertising : The Art of Account Planning" ,Wiley Publicaton
2. Bare Acts of Indian Copyright Act, Contempt of Court Act.

Course Code: BSM602

<u>Animation Dynamics Lab</u>

Introduction to Dynamics: The Overview of Fur menus, hair, Ocean locators and wakes, nParticles, Ultimate Fluid.

Hair & Fur: The time will spend more with the core node of the system of Hair and Fur description. The process will go through of the loading the plugin of fur and go through each of the attribute one b one in the fur and hair description.

Cloth : Overview of Nucleus node, Realistic cloth simulation, Scene scale and settings, time scale, Mass, Dynamics forces, Friction, rigidity, Passive object collisions, glue strength, Pressure, Tearing Surfaces, Caching ncloth, Deformation Resistance.

Introduction to n-particles : nParticles is the robust toolset for simulating complex physics simulations and an intuitive workflow for creating liquids, clouds, smoke, spray and dust effects using nParticles.

Introduction to Ultimate Fluids : It is used for to create realistic fire effects; Navier-strokes fluid solver; Spring mesh fluid solver, interactive fluids with particles, advanced heat dynamics, combustible fluids, soft surface simulations, realistic liquid simulations.

Introduction to Paint Effect : Popular highlights include toon rendering, mesh brush, optimizing scene, light based effects, control curves based effects, secondary animation, custom brushes.

<u>Text books:-</u>

1. Maya Documentation
2. Todd Palamar , "Maya Studio Projects: Dynamics" Sybex Publications

Course Code: BSM 603

Special Effects in Feature Films Lab

Essential concepts of Special effects : Visual or Special Effects and Concept Design about ideas and concept generation for the film and games industries - ranging from characters, vehicles, products, clothing, sets and environments. The content may be historical, contemporary or future-based ie 'visions' of society, lifestyles, environments as the game/film plot dictates.

Special effects planning : Overview of story boarding of effects, planning and managing the test shot and research about techniques.

Paint, Retouch & Wire removal : The complete and advance study of the usage of paint and brush tools like brush, clone, stamp, eraser and wire removal to suspend an actor or prop in mid-air.

Camera Matching, Tracking & Stabilizing: The study of Image stabilization consists in compensating for the camera motion by applying a suitable transformation (*warping*) to the image. In the stabilized image, scene points are motionless in spite of camera motion.

Maya render passes & 3D compositing : The study of render passes or diffuse or specular passes can even be rendered or composite on a light basis to increase the degree of post-control.

Combining live action & CG : The study of combining computer generated character or an object with live camera footage.

Text books:

1. Richard Rickitt , "Special effects : The History & Techniques", Watson-Guptill Publication.
2. Mark Christiansen , 'Adobe after effects CS4 Visual effects & compositing studio techniques", Adobe Press Publication.
3. Eric Keller , "Maya Visual effects : The innovator's guide", Sybex Publication

Course Code: BSM 604

Introduction to Game Designing Lab

Game Art designing fundamentals : Basic concept of game designing, Character sketching, concept of character developing.

Game character & Environment design : Modeling a base mesh in Maya, concept of topology, Environment devolving.

Introduction to Zbrush : User Interface, over view of tools, shortcuts, Import & Export of mesh

Detailing the base mesh into Zbrush : Tools and Technique for detailing the mesh

Normal Maps : Overview of Normal maps, import & Export of normal maps

Z-brush – Maya Integration : Overview of z-brush and Maya integration

Texturing : Process of texturing for game, UVW mapping , Texture making (using Photoshop)

Baking maps : Overview of Baking maps , process for baking maps

Light Baking : Overview of Light Baking, process for baking Lights

Scene Optimization : Overview of scene optimization, process for optimization

File Import Export : The concept of file importing and Exporting

References books:-

1. Jim Thompson , "Game Design: Principles, Practice, and Techniques - The Ultimate Guide for the Aspiring Game Designer" , Wiley Publications
2. Brad Strong , "Creating Game Art for 3D Engines" ,Charles River Media Publication.
3. Matthew Omernick , "Creating the Art of the Game" , New Riders Games Publication.
4. Eric Keller , "Introducing Zbrush" , Sybex Publications
5. Scott Spencer , "ZBrush Digital Sculpting Human Anatomy" ,Sybex Publications

Course Code: BSM605

<u>Project – II</u>

For Specialization Project,the students will have choice between the following Specializations :

1. Short Animation Movie (2-D /3-D).
2. Special Effects (VFX) Short Movie.
3. Advertising Campaign (Short Ad Film/Print Media).
4. Promotional Material (Promotional film, Brochure, Hanging, Posters)