

ADIKAVI NANNAYA UNIVERSITY

B.SC ANIMATION

2016-17 ADMITTED BATCH

Sl.No.	Subject	Total Marks	Mid Semester Exam *	Semester End Exam	Teaching Hours	Credits
1.	First Language :English	100	25	75	4	3
2.	Foundation Course: Human Values & Professional Ethics(HVPE)	50	0	50	2	2
3.	Foundation Course: Communication & Soft Skills	50	0	50	2	2
4.	D S C 1 A (Group Subject – 1)	100	25	75	4	3
5.	Practical - 1 A	50	0	50	2	2
6.	D S C 2 A (Group Subject – 2)	100	25	75	4	3
7.	Practical - 2 A	50	0	50	2	2
8.	D S C 3 A (Group Subject – 3)	100	25	75	4	3
9.	Practical - 3 A	50	0	50	2	2
	Total	650	100	550	28	24

*College has to conduct two mid semester examinations and average of those two will be the Mid Semester Exam marks.

*NO Practical for Mathematics and Economics.

Group Subjects:

Sl.No.	Name of the Subject	Model Question Paper	Model Practical Question Paper
01.	Computer Fundamentals & C- Language	Computer Fundamentals & C- Language	C- Programming Lab
02.	Photoshop	Photoshop	Photoshop Lab
03.	Basics of Animation	Basics of Animation	
04.			CorelDraw & Adobe Illustrator Lab

ADIKAVI NANNAYA UNIVERSITY

RAJAMAHENDRAVARAM

CBCS / Semester System

(W.e.f. 2016-17 Admitted Batch)

B.Sc. ANIMATION

I Semester Syllabus

COMPUTER FUNDAMENTALS AND C- LANGUAGE

UNIT-I

Introduction to Computers, Characteristics and Limitations of Computer, Block Diagram of Computer, Types of Computers, Uses of Computers, Computer Generations. Number systems: Binary, Hexa and Octal Numbering System.

UNIT-II

Input and Output Devices: Keyboard and Mouse, Inputting Data in other ways, Types of Software: System Software, Application Software, Commercial, Open Source, Domain and Free Ware Software, Memories: Primary, Secondary and Cache memory. Windows Basics: Desk top, Start Menu, Icons.

UNIT-III

Introduction to C: Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting.

UNIT- IV

Decision Control and Looping Statements: Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement.

Functions: Introduction – Using functions – Function Declaration/ Prototype – Function Definition – Function Call – Return Statement – Passing Parameters – Scope of Variables – Storage Classes – Recursive Functions – Type of Recursion – Towers of Hanoi.

UNIT - V

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations that can be performed on Array – One Dimensional Array for Inter-Function Communication – Two Dimensional Arrays – Operations on Two Dimensional Arrays.

REFERENCE BOOKS

1. Introduction to C programming by REEMA THAREJA from OXFORD UNIVERSITY PRESS
2. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.
4. Henry Mullah & Huubert L.Cooper: The Spirit of C An Introduction to modern Programming, Jaico Pub. House,1996.

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I Semester Syllabus

PHOTOSHOP

UNIT – I

Multimedia system Requirements – Introduction to multimedia – Multimedia application – virtual reality – types of colours - Colour Formats used for different types of Medias – types of graphics – Difference between Raster Graphic & Vector Graphic and its uses- Graphic Design – types of objects – audio formats – video formats – image formats – text document formats – Typographic alignments – types of video editing - Types of printers - printing outputs

UNIT – II

Introduction : Getting started with Photoshop – document dimension – orientation – color mode – Resolution - types of resolutions - title bar- menu bar – options bar – Status bar- text alignments – text wrapping options – working character and paragraph properties – text colors- Photoshop Ruler- grid and guide layers – drawing tool bar – layers

UNIT – III

Drawing tool bar : types of selections – selection fill and stroke –move tool- working with crop tool- working with slice tool – working with paint tools- brush styles – working with healing tool- working with clone stamp tool – working eraser tool- eraser styles – working with solid colors – working with gradient tools – blur and sharp tool – working with pen tool - working with custom shapes – working with zoom and hand tools- eye dropper

UNIT – IV

Layers: new layer – delete layer- fill layer – gradient layer – patterns – working with quick mask- purpose of image colour adjustment tools – working with levels- working with curves- colour balance – working with brightness and contrast working photo filters- hue and saturation- pasteurized and threshold colours – blending options importance – working with blending options- layer opacity – layer mode

UNIT – V

Menus: purpose of menus – new file- open file- print file – copying data – cut data- paste data- saving custom shape- working with transform options- define brushes- working with modes and adjustments – changing image size and canvas size- working with layers – merge – merge visible- link layers- importance of filters- working with filters – Editing your photo shoot – presentation – commercial adds – brochure- pamphlet- visiting card- wedding card.

Reference Books

1. Principles of Multimedia by Ranjan Parekh (Author)
2. Fundamentals of Multimedia 2005 by Li and Ze – Nian
3. Photoshop: Beginner's Guide for Photoshop – Digital Photography, Photo Editing, Color Grading & Graphic... 19 February 2016 by David Maxwell
4. Adobe Photoshop CC Bible Paperback – 7 Jan 2014
5. Adobe Photoshop CC Classroom in a Book Kindle Edition by Adobe Creative Team (Author)
6. Photoshop: The Complete Beginners Guide To Mastering Photoshop And Creating Amazing And Visually Stunning Photos (Adobe Photoshop, Photoshop, Digital Photography) Kindle Edition

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B.Sc. ANIMATION

I Semester Syllabus

BASICS OF ANIMATION

UNIT- I

What is Animation: Its definition, early examples of Animation. History of Animation: Stop Motion Photo Animation, Zoetrope, Thaumatrope, Cell and Paper Animation, early Disney's Cell Animation Processes

UNIT-II

Types of Animation: Cell Animation, Stop Motion Animation, Computer Animation, 2-D Animation, 3-D Animation. Skills for an Animation Artist: Visual and creative development of an Artist , importance of observation with minute details, efficiency to draw gestures, facial expressions, good listener, hard work and patience, creative and innovative.

UNIT-III

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.

UNIT-IV

An Introduction on how to make drawings for animation, Shapes and forms, About 2d and 3d drawings, Caricaturing – fundamentals, Exaggeration, Attitude, Silhouettes, Boundary- breaking exercises and warm ups, gesture drawing, Line drawing and quick sketches, Drawing from observation, memory and imagination.

UNIT-V

Various Terms: Animation Drawings/Cels, Rough Drawings , Clean ups, Color reference drawings, Layout, Model Sheet, Key Drawings and in Betweens, Master Background, Concept Piece, Character drawing , Story Board.

References:

1. The complete animation course by Chris Patmore -Baron's Educational Series.(New York)
2. Animation Unleashed by Ellen Bessen, Michael Weise Productions,2008(U.S.A)
3. The Animator's Survival Kit by Richard Williams, Arrar Straus & Giroux Pub.(U.S.A)
4. Draw Animation by Paul Hardman.

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(W.e.f. 2016-17 Admitted Batch)

B.Sc. ANIMATION

I Semester Syllabus

Corel Draw and Adobe Illustrator Lab

Corel Draw Lab:

1. Create a Paper add for advertising of any commercial agency.
2. Create a Paper add for advertising of any enterprise.
3. Design a poster.
4. Design a boucher.
5. Design an invitation card.
6. Corporate ID(Visiting Card, Letter Head, Envelop Design)
7. Tracing Images

Adobe Illustrator:

1. Advertisement
2. Poster
3. Boucher
4. Packet Design (Tooth Paste Packet Cover, Soap Cover)
5. Dangers(for item display)
6. Tracing Images

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(W.e.f. 2016-17 Admitted Batch)

B.Sc. ANIMATION

I Semester Syllabus

PROGRAMMING IN C LAB

1. Find out the given number is perfect number or not using c program.
2. Write a C program to check whether the given number is Armstrong or not.
3. Write a C program to find the sum of individual digits of a positive integer.
4. A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence. Write a C program to print the Fibonacci series
5. Write a C program to generate the first n terms of the Fibonacci sequence.
6. Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.
7. Write a C program to find both the largest and smallest number in a list of integers.
8. Write a C program that uses functions to perform the following:
 - a. Addition of Two Matrices
 - b. Multiplication of Two Matrices
9. Write C program that implements searching of given item in a given list
10. Write a C program to sort a given list of integers in ascending order

ADIKAVI NANNAYA UNIVERSITY
CBCS/SEMSTER SYSTEM
COURSE STRCUTRE (W.E.F 2016-17AB)
B.Sc. Animation SEMESTER – II

Sno	Course	Total Marks	Mid Sem Exam*	Sem End Exam	Teaching Hours	Credits
1	First Language English	100	25	75	4	3
2	<i>Foundation course – 3</i> Environmental Sci	50	0	50	2	2
3	<i>Foundation course – 4</i> ICT-1 Art & Drawing	50	0	50	2	2
4	Anatomy Study & Clay Modeling	100	25	75	6	5
5	Object Oriented Programming Using Java	100	25	75	4	3
6	Java Lab	50	0	50	2	2
7	Web Technologies	100	25	75	4	3
8	Web Publishing Lab	50	0	50	2	2
9	Publication Design and Info Graphics Lab	50	0	50	2	2
Total		650	100	550	28	24

Foundation course – Art & Drawing

Unit-I

Drawing on the right side of the brain-L-mode & R-mode-perception of edges-perception of spaces-perception of light and shadows-perception of whole (gestalt)-pure contour drawing-modified contour drawing-Upside down drawing-looking versus seeing

Unit-II

Basics design elements-Point/Dot-Lines-Surfacplanes/shapes-Forms/volume/mass-Pattern/texture-Scale/size-space-light/color/value-Graphical representation of lines-The Relationship Between Line and Line -Graphical representation of primitive shapes- Shapes; Geometric and Organic- stylized versions of organic shapes-Graphical representation of Forms-face, base, edge, prism, pyramid, Pattern design using shapes and forms-Figure ground relationship

Unit-III

Theory of light & shade-Light, grey and dark tones-values scale-Figure ground relationships-chiaroscuro Illusion of creating space-Depth on two dimensional spaces-light source and shadows-two kind of shadows-cast shadow-form shadow-High light-Light middle tones-shadow edge core shadow dark middle tone- reflected light- Light Source, Cast Shadows and the Axis- Light Source, Cast Shadows and the Axis- Daylight and Cast Shadows- Multiple Light Sources or an Undefined Light source

Unit-IV

Color theory-primary & secondary colors- cool and warm colors-Tertiary colors- - color wheel-nine step value scale-Monochromatic scale-Tints tones & shades – color relationship-achromatic monochromatic complimentary colors – split complimentary - analogues colors harmony- color context-color symbolism

Unit-V

Compositional elements-fore ground-middle ground-back ground-proportions-golden rules of composition-object drawing-still life-designing elements-dominance flow & rhythm – balance – visual hierarchy-elements of art

Books Recommended:

Drawing on the right side of the brain - by Betty Edwards

Natural way to draw - by Kimon Nicolaidis



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(w.e.from 2016-17 Admitted Batch)
B.Sc. ANIMATION

I YEAR
II SEMESTER

PAPER IV: ANATOMY STUDY & CLAY MODELLING

Unit 1: Skeleton Structure

Introduction to skeletal structure – basic shapes and forms of Skelton – masses connected to spinal cord- Big Structure of the Spine- Common Structure of the Vertebrae- Motion- lumbar- thoracic- cervical spine- Atlas and Axis-skull-rig cage – torso – pelvis – limbs- hands-Anatomical terminology - basic skeleton structure with shapes and forms-understanding weight and balance in movement-anatomical terminology-Superior - toward the head-Inferior - toward the feet-Anterior - toward the front of the body- Posterior - toward the back of the body-Medial - toward the midline of the body-Lateral - away from the midline of the body- structure to the body-points of attachment for muscles-levers making movement possible-

Unit 2: Bones & Joints

Shapes and Forms of bones and – major bone structures classification of Bones-Flat-scapula-Irregular-talus-ankle bone-vertebrae-Long-ulna-forearm bones-Short-navicular-Sesamoid-patella-Trochanter-bony protuberance by which muscles are attached between the pelvis and the upper part of the thighbone- Form and function-synovial joints-varying shapes-movement-positions body take-limits to stretch the limits-hinge-movement in one axis- flexion and extension- twist the forearm- Pivot- rotation at only one axis- rotates along the long axis- Ligaments complete the ring- radius only to rotate inside of it- pronation and supination- the distal joint of the ulna and radius- twisting motion for pronation and supination- ball & socket- flexion, extension, abduction, adduction, rotation, and circumduction- range of motion- ellipsoid joint- circular motion- slides inside the socket- saddle joint- concave and convex surface- flex, extend, abduct, adduct, circumduct, and very slightly rotate- plane joint- two flat-ish surfaces- glide or rotate

Unit 3: Muscle Structure

Muscles Guide- Muscle Behavior- movement a given muscle is associated-active (contracted) muscle inactive (relaxed) muscle- muscle can only pull-not push- antagonistic pairs- Abdominal- Stomach- Biceps- Front of upper arm- Deltoids- Top of shoulde- Erector Spinae Low back- Gastrocnemius & Soleus- Back of lower leg- Gluteus- Buttocks- Hamstrings- Thigh – back- Latissimus Dorsi & Rhomboids- Back - Lats are the large triangular muscle in the midback-Rhomboids are between the shoulder blades- Obliques- Side of body- Pectoralis- Front of upper chest-Quadriceps- Thigh – front- Trapezius- Large muscle in upper and mid-back- Triceps- Back of upper arm

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Unit 4: Animal Anatomy

Anterior- Caudal- Cranial-Deep further from the surface- Distal-part of the limb furthest from the body- Dorsal-along the back or uppermost surface- Frontal Plane-body plane that divides the animal into dorsal and ventral parts- Lateral-side of an animal- Median-body plane that divides the animal into "equal" right and left halves- Posterior-rear of the animal- Proximal-part of the limb closest to the body- Sagittal-anybody plane that is parallel to the median plane- Superficial closer to the surface- Superficial closer to the surface-Transverse body plane that divides the body into cranial and caudal parts-Ventral along the belly surface-Comminuted Fracture bone shatters into many pieces-Diaphysis body of a long bone- Endosteum thin layer of bone covering; lines medullary cavity-Epiphysis enlarged ends of long bones Fissure Fracture break along the long axis of a bone-Flat bone plate of bone, i.e. scapula--Greenstick Fracture break on one side of a bone, usually due to a bending force-Irregular Bone complex and irregularly shaped bone, i.e. vertebrae-Long Bone bone longer than it is wide, i.e. humerus, radius, and femur

Unit 5: Clay modeling

Process to prepare clay required for models – tools used for clay modeling – modeling using wax – non-hardening plastic clay – polymers – using molds for simple models – adding finishing to clay models

Reference books:

1. Timing for Animation by Harold Whitaker, John Halas (ISBN: 0240517148)
2. The Human Figure in Motion(Hardcover) by Eadweard Muybridge (ISBN: 0486202046)
3. The Animator's Survival Kit: A manual of methods, principles and formulas by Richard Williams(ISNB: 0571212689)

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I YEAR II SEMESTER

PAPER VI: WEB TECHNOLOGIES

UNIT – 1 (WEB DESIGNING)

Designing the Page – Aligning the page – Defining a Site – Creating a Page with Text – Format Text with CSS – Animate Text – Adding Images and Hyper links to the web page – Creating Tables – Working with layers – Frames & Frame Sets – Forms – Rollovers – Publishing the Web site.

UNIT – II (WEB PROGRAMMING)

Introduction HTML – Structure of HTML program – Commonly used HTML tags – Text Formatting – Text Styles – Other Text Effects – Lists – Tables – Frames – Adding Graphics to HTML Document – Cascading Style Sheets – Font Attributes – Color and Background Attributes – Text Attributes – Border Attributes – Margin Attributes – List Attributes.

UNIT – III (WEB DEVELOPMENT)

Introduction to JavaScript – Writing JavaScript into HTML – Data Types – Creating Variables – Incorporating variables in a script – Operators and Expressions in JavaScript – JavaScript Programming Constructs – Functions in JavaScript styles – Managing styles sheets – Dynamic content – Changing HTML content – Adding Document content – Positioning – Absolute position – Relative position – Filters and Transitions.

UNIT – IV (INTERNET CONCEPTS)

Basic Internet concepts – Communicating on the Internet – Overview of TCP/IP and its Services – Web Servers – Web Clients/Browsers.

UNIT – V (WEB HOSTING)

Introduction to Protocols – About FTP – Web Hosting – Hosting through DOS- Hosting through Character Interface & Graphics Interface.

BOOKS RECOMMENDED:

1. DAVID, RHONDA – Web Design with HTML/Flash/Java Script Bible.
2. RON WODASKI – Web Graphics Bible.
3. WEST – Complete Reference.
4. MATHEWS – FrontPage 2002 : The complete reference.

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5. JOHN DUCKETT – Beginning Web Programming
6. BRYAN PFAFFENBERGER, STEVEN SCHAFTER – HTML, XHTML, AND CSS bible.

WEB PUBLISHING LAB

UNIT – I (PHOTOSHOP & FLASH)

1. Designing Web Layouts
2. Designing Web Pages
3. Publishing Flash Intros with Links
4. Publishing the Web site

UNIT – 2 (HTML & FIREWORKS)

1. HTML Page Layouts
2. HTML Page Development
3. Adding Graphics to HTML Document
4. Building Pages through Fireworks
5. Creating 3D Buttons & Rollovers

UNIT – III (DHTML & JAVASCRIPT)

1. Creating Dynamic Styles
2. Managing Style Sheets
3. Positioning
4. Creating Filters & Transitions
5. JavaScript Operators & Expressions

UNIT – IV (DREAMWEAVER)

1. Creating Web Pages and aligning through Dreamweaver

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2. Incorporating Audio & Video Files
3. Database Linking
4. Web Hosting

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I YEAR
II SEMESTER

PAPER V: OBJECT ORIENTED PROGRAMMING USING JAVA

UNIT-1

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING :Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features: **OVERVIEW OF JAVA LANGUAGE:** Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **CONSTANTS, VARIABLES & DATA TYPES:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; **OPERATORS & EXPRESSIONS.**

UNIT-II

DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of if. else statements, the else if ladder, the switch statement, the conditional operator. **LOOPING:** Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.

CLASSES, OBJECTS & METHODS: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;

UNIT-III

INHERITANCE: Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;

ARRAYS, STRINGS AND VECTORS: Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes;

INTERFACES: MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

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UNIT-IV

MULTITHREADED PROGRAMMING: Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.

MANAGING ERRORS AND EXCEPTIONS: Types of errors : Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement,

UNIT-V

APPLET PROGRAMMING: local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state.

PACKAGES: Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package.

MANAGING INPUT/OUTPUT FILES IN JAVA: Introduction, Concept of Streams, Stream classes, Byte Stream Classes, Input Stream Classes, Output Stream Classes, Character Stream classes: Reader stream classes, Writer Stream classes, Using Streams, Reading and writing files.

Reference Books:

1. E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill Company.
2. John R. Hubbard, Programming with Java, Second Edition, Schaum's outline Series, TATA McGraw-Hill Company.
3. Deitel &Deitel. Java TM: How to Program, PHI (2007)
4. Java Programming: From Problem Analysis to Program Design- D.S Mallik
5. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press (2008)

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JAVA LAB

1. Write a program to perform various String Operations
2. Write a program on class and object in java
3. Write a program to illustrate Function Overloading & Function Overriding methods in Java
4. Write a program to illustrate the implementation of abstract class
5. Write a program to implement Exception handling
6. Write a program to create packages in Java
7. Write a program on interface in java
8. Write a program to Create Multiple Threads in Java
9. Write a program to Write Applets to draw the various polygons
10. Write a program which illustrates the implementation of multiple Inheritance using interfaces in Java
11. Write a program to assign priorities to threads in java

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SEMESTER - III

Sno	Course	Total Marks	Mid Sem Exam*	Sem End Exam	Teaching Hours	Credits
1	First Language English	100	25	75	4	3
2	<i>Foundation course – 4B</i> ICT – 2 Character Designing	50	0	50	2	2
3	<i>Foundation course -2B</i> Communication & Soft Skills -2	50	0	50	2	2
4	Introduction to 3D	100	25	75	4	3
5	Introduction to 3D Lab	50	0	50	2	2
6	2D Animation	100	25	75	4	3
7	2D Animation Lab	50	0	50	2	2
8	Audio and Video Editing	100	25	75	6	5
9	Audio and Video Editing Lab	50	0	50	2	2
Total		650	100	550	28	24

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III Semester Syllabus

Introduction to 3D

Unit - I (3D Modeling)

Introduction to 3D - Spline Modeling - Working with Modifiers (extrude, Bevel) -Compound Objects - Lofting - Object Modeling - Standard and Extended Primitives - Surface Modeling - Introduction to Character Modeling - Working with NURBS Curves- Working with NURBS Surfaces - Modeling using Patches - Modeling high Resolution Models for film Industry using Polygons - Applying Mesh Smooth -Modifier - Applying Materials.

Unit - II (Interiors Designing)

Introduction to Designing - Understanding Blue Print - Understanding working with Measurement Controllers - Creating Interiors and Furniture - Applying Materials and Maps - Cameras - Assigning Controllers - Walkthroughs - Working with Environmental Effects.

Unit - III (Animation and Rendering)

Introduction - Animating using time line - Materials - Auto Key - Set Key - key Animation - Dope Sheet - Curve Editor - Advanced Animations using Track View - Working with Controllers for Animation - Rendering a Scene - Max Render Engine - Anti - Aliasing - Virtual Frame - Buffer - Video Post Rendering - Rendering for Animations.

Unit - IV (Character Studio)

Introduction - Layers - Freedom Animation - Human Anatomy - Modeling Biped as per the Character - Assigning Character to a Biped - Behavior Files - Motion Capture - Applying Physique.


Unit - V (Rigging)

Introduction - Bones - Inverse Kinematics - Bone Parameters - Restricting the access of the bone - Assigning a Model to bones - Rigging Methodologies -Controlling the Character.

BOOKS RECOMMENDED :

1. KELLY L. MURDOCK- 3DS Max 6 Bible.
2. PETER RATNER-3D Human Modeling and Animation.
3. DAVID KALWICK-How to do everything with 3DS Max 6.
4. SHAM TIKKOO- 3DS Max for Animators, interior decorators and Architects.
- 5.FOX- 3DS Max 6 Animation: CG Film making from concepts to completion.

Introduction to 3D Lab

Unit  - I (Modeling & Animations)



1. Creating a model & Animating
2. Creating a polygon model
3. Creating a subdivision model
4. Modeling Props

Unit – II (Interiors Designing)

1. Creating a Landscape
2. Creating House hold objects
3. Creating Walk throughs

Unit – III (Character Animations)

1. Animating a Character
2. Applying Physique

2D Animation

Unit - I (Building Blocks)

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Introduction to 2D Animations - Make a Flash Movie - Time Line - Set Up - Input Text
Animate Text - Testing Movie - Movie Properties - Designing Templates - Stage



Concepts - Use of Grid, Rulers & Guides - Tool Panel - Open & Close Panels

- About Library.

Unit - II (Flash Movie Graphics)

Making simple Graphics - Drawing Concepts - About Fill and stroke colors - Brushes

- Text Designing - Manipulate Graphics & Text - Adding Images to Flash Movie -Working with Video & Sound - Usage of Symbols.

Unit - III (Motion)

Animation Concepts - Types of Animations - About key frames - Incorporation of Motion Tweening - Shape Tweening- Buttons & Movie Clips - Adding Sound & Movie Clips to the button.

Unit - IV (Interactivity)

Adding Behaviors to a Movie - Flash Action Script - Communicate with Symbol Instances - Creating a target Movie Clip - Action Script to Create Simple Interactivity - Navigating the Timeline with ActionScript.

Unit - V (Movie Publishing)

Publishing Flash Movie - Flash Components - Optimizing Movie - Building Preloaded - Exporting a Flash Movie - Audio- Editing Applications.


BOOKS RECOMMENDED

1. Flash MX 2004 - A Beginner's Guide - Bonnie Blake, Doug Sahlin
2. ROBERT REINHARDT, JOEY LOTT-Flash MX 2004 Action Script Bible.
3. ROBERTREINHARDT, SNOWDOWD-Flash MX 2004 Bible.
4. DOUG SAHLIN - Flash MX virtual classroom training kit.
5. FERNANDEZ- Macromedia Flash Animation and Cartooning.

2D Animation Lab

Unit - I (Flash)

1. Logo Animations
2. 2D Animations
3. Intro Animations
4. CBT'S

Unit -  II (Flash Action Script)



1. Electronic Presentations
2. Application Development
3. Interactive Gaming
4. Video & Audio Controlling

Audio & Video Editing

Unit - I (Sound & Video)

Introduction - MIDI - Digital Audio Basics - Sampling - Pitch - Timbre - Voice -Patch - MIDI Systems - Audio Equalizers - Mono & Stereo - Recording -Surround Sound Systems -

Unit - II (Video Conversions)

DTS - Voice-overs - Encoders & Decoders – Audio Monitoring -Video Conversions - PAL/NTSC - .Different File Formats.

Unit - III (Sound Editing)

Working with Audio Files - Recording & Playback - Processing Functions - Editing Concepts - Audio Tools - Producing for Multimedia and the Web - MIDI - Echo Effects - Pitch Effects - Graphic Dynamics - Chorus - Reverberation - Exporting File Formats.



Unit - IV (Video Editing)

Introduction to Video - Transmissions - Video Standards - Linear & Non - Linear Editing - About Digital Video Editing - Adding Transitions - Editing Techniques - Title Designing - Superimposing - Adding Motion - Applying Video & Audio Effects.

Unit - V (Morphing)

Introduction - Warping Techniques - Morphing Techniques - Image warping and morphing - Video morphing - Converting paths to shapes - Animating images along the path - Changing lighting in the images - Exporting techniques.

BOOKS RECOMMENDED

1. P.FISHER: Instant Sound forge.
2. BAKER - Adobe Premiere Pro Bible.
3. ADELE DROBLAS AND SETH GREENBERG- Adobe Premiere 6.5 Bible.

Audio & Video Editing Lab

Unit - I (Sound Forge)

1. Tuning Sounds
2. Sound Mixing for Promos
3. Creating Jingles
4. Dubbing
5. Sound Editing & Compositing

Unit - II (Adobe Premiere)

1. Video Clipping
2. Video Transitions
3. Video Mixing
4. Video & Audio Mixing
5. Sound Editing & Compositing

6


Character Design

Unit - I (Anatomy)

Introduction - Basic human figure proportioning (male, female & child) - Cartoon character construction - Comic human figure proportions - Comic related character skeleton system - Dynamic figure Drawing - Forms and structures

Unit - II (Character Design)

Introduction - Facial expression (Human & animals) - Comparisons - Comic character - Realistic character - Different angles (Male, Female and child) - Body angles and postures - Body angles with camera point of view in cylinders and cubes - Proportions as per age - Character designing / cartoon character designing - PDP In-house.

Unit - III (Principles of Animation)

Introduction - Basic Animation Principles - Concepts of 12 animation Principles & their importance - Key Drawing and Assistance Animation - In-betweens and cleanups - Timing and spacing of animation - Line of Acting - Path of action - Slow in/slow out - Anticipation - Arc - Stretch and squash - Follow through and overlapping action - Wave action - Appeal.

Unit - IV (Personality Development for Animators)

Introduction - Story telling - Creative writing - Narrative story telling - Dialogue - Point of view - Character development - Plot setting - Variations and alternative genres - Artistic medium - Visualize and dramatist - Criticism & Value of revision.



Unit - V (2D Character Animation)

Introduction - Key Animation/ straight ahead Animation - Character Action -Volume and weight - Acting and attitude - Run, Jump, walk, push and pull Inbetweening techniques - Cleanup techniques - Time grid - registration - Trace back - Breakdown drawings - Line quality - Line consistency - Facial expression -Mouth chart - Lip sync - Eye expression - Eye blink - Water - Dust - Fire - Smoke - Rain - Explosion.

BOOKS RECOMMENDED_:

- Cartoon Animation by Preston Blair (ISBN:1560100842)
- The Illusion of Life: Disney Animation. by Ollie Johnston (Author),Frank Thomas (Author) (ISBN:0786860707)
- The Animator's Survival Kit: A Manual of Methods, Principles, and Formulas by Richard Williams (ISBN:0571212689)
- The work book of animation by Tony White (ISBN:0823002292) VTiming for Animation by Harold Whitaker, John Halas (ISBN:0240517148)
- The Human Figure in Motion (Hardcover) by Eadweard Muybridge (ISBN :0486202046)

MK
Mousty

INTRODUCTION TO 3D
MODEL QUESTION PAPER

Time: 3 hours

Max. Marks: 75

Answer any five questions:

5 x 5 = 25

1. What is 3D Animation?
2. What is lofting?
3. Write about surface modeling.
4. Write about blue print.
5. What is virtual frame?
6. Write about layers.
7. What is rigging?
8. How to apply physique?

II Answer ALL questions:

5 x 10 = 50

9. a) Explain how to work with modifiers.

(or)

b) Explain about character modeling.

10. a) Explain how to create interiors and furniture.

(or)

b) Explain the working with environmental effects.

11. a) Explain advanced animations using track view.

(or)

b) Describe video post rendering.

12. a) Explain Human Anatomy.

(or)

b) Write about motion capture.

13. a) Explain inverse kinematics.

(or)

b) Write about rigging methodologies.



2D ANIMATION
MODEL QUESTION PAPER

Time: 3 hours

Max. Marks: 75

I Answer any five questions:

5 x 5 = 25

- 1) What is time line?
- 2) Write about 2D Animation.
- 3) Write about fill and stroke colors.
- 4) Explain about brushes.
- 5) Write about shape tweening.
- 6) What is flash action script?
- 7) What are editing applications?
- 8) Write about movie clip.

II Answer all questions

5 x 10 = 50

- 9) a) How to make a flash movie?
(or)
b) Explain about designing templates.
- 10) a) Explain drawing concepts.
(or)
b) Explain how to add images to flash movie.
- 11) a) Explain the types of animation.
(or)
b) Explain incorporation of motion tweening.
- 12) a) Explain the steps to create a target movie clip.
(or)
b) How to add behaviors to a movie?
- 13) a) Explain the steps to publish flash movie.
(or)
b) Explain about flash components.

MK
Shrestha

AUDIO & VIDEO EDITING

MODEL QUESTION PAPER

Time: 3 hours

Max. Marks: 75

I Answer any five questions

5 x 5 = 25

1. What I MIDI?
2. Write about audio equalizers.
3. Write about voice overs.
4. Write about recording and playback.
5. What is reverberation?
6. Write about transmissions.
7. Write about title designing.
8. Explain about warping techniques.

II Answer ALL questions

5 x 10 = 50

9. a) Explain about MIDI systems.
OR
b) Explain the process of recording.
10. a) Explain about Encoders & Decoders.
OR
b) Write about video conversions.
11. a) Explain how to work with audio files.
OR
b) Explain various Audio tools.
12. a) Explain about linear and non-linear editing.
OR
b) How to apply video & audio effects?
13. a) Explain various Morphing Techniques.
OR
b) Explain image warping and morphing.



CHARACTER DESIGN

MODEL QUESTION PAPER

Time: 2 hours

Max. Marks: 50

Answer ALL questions

5 x 10 = 50

1. a) Describe basic human figure proportion.
OR
b) Describe Comic human figure proportions.
2. a) Draw different body angles and postures.
OR
b) Explain character designing.
3. a) Explain the basic animation principles.
OR
b) Explain about In betweens and cleanups.
4. a) What is creative writing?
OR
b) Explain the development of character.
5. a) Describe push and pull In-between techniques.
OR
b) Describe breakdown and line quality.

MK
Mentley

Adikavi Nannaya University
B.Sc Animation Under CBCS with effect from 2016-17 Admitted Batch

SEMESTER – IV

Sno	Course	Total Marks	Mid Sem Exam*	Sem End Exam	Teaching Hours	Credits
1	Foundation Course Analytical Skills	50	0	50	2	2
2	Foundation Course LE (Leadership Education)	50	0	50	2	2
3	Business of Media & Ethics	100	25	75	6	5
4	Digital Film Making Theory	50	0	50	2	2
5	Digital Film Making Lab	100	25	75	4	3
6	Compositing – I	50	0	50	2	2
7	Compositing - I Lab	100	25	75	4	3
8	Introduction to 3D – II	50	0	50	2	2
9	Introduction to 3D – II Lab	100	25	75	4	3
Total		650	100	550	28	24

SEMESTER – IV

BUSINESS of MEDIA & ETHICS (Theory)

Unit -I: Project Management, stow analysis -costing and estimation -introduction to agile game development, Getting into Game -Requirements to be analyzed before getting into the project - Risk analysis before starting the project -Development Strategies -Team Work -Process Management -Release and Planning -Documentation with a sample Documentation

Unit - II: Business model, Publisher, Developer, platform holder, retailer, Consumer, Business terminology, Publishing platforms, Stake holders, Packaging and deployment, Game testing , Process and procedure, game bug test report, Building level icon design, banner design, deployment method ,Introduction to Android market, Introduction to Apple App store , Introduction to steam, Introduction to Xbox live, market place - Pipeline to deploy games on Android - Pipeline to deploy games on Apple device - PC distribution

Unit - III: Visual Effects, Use of miniatures in early films ,Use of makeup, Rear projections, Pyrotechnics and matte paintings, before the CGI era, Stereoscopic 3D, Realistic puppets, and stop motion photography, Split screen technology, Space vision 3D, Stereovision 3D, Motion controlled camera, CGI Effects, Digital compositing, Animatronics, Motion capture, High speed cameras

Unit - IV: Early Attempts for Animation, Early attempts to imitate and reproduce, motion -Cave paintings -Persistence of vision & Phi phenomenon -Early animation devices -Initial attempts to make animation -Photography -Motion picture Birth of Animation: Experimental Animations Drawn, Stop motion) all over the world -Pioneer animators -Major animation studios Animation Techniques and Advancements: Animation techniques(Time lapse, stop- motion, Cut-out, Silhouette, Cel) -Technical advancements (Layer, Cel, Peg bar, Combining live action with cartoon characters, Synchronized sound, Technicolor process, Multi-plane camera etc.)

Unit- V: Mass Media Relevance and significance. Purpose and functions of mass Media –Mass Media Individuals and Society – connecting to “Reality” through Media – Media and Society, Normative theory, : Media Language – Media as Art Experiences – De-Mystifying the media – Media and Consumerism – The philosophy commercialism – Media and De-humanization –Media and moral Permissiveness – Media and Imperialism – Cultural Erosion and Mental Colonization – Media Control – Alternative Media.

Reference:

Level Up! The Guide to Great Video Game Design by Scott Rogers

<http://www.eventmanagerblog.com/drive-more-attendees-to-exhibition-booths/>

DIGITAL FILM MAKING (Theory)

Unit – I: Introduction to Digital film making, Early history of film, what is a movie, how do we analyze it, form and narrative, Mise-En-Scene and design, Acting and Performance, Different genres in cinema, Documentary non-fiction, various categories PSA's, Documentaries, Commercials,

Unit –II: Role of the cinematographer, Screen clips & short film, Composition & Framing, Frame size terminology, Lens Choice, Exposure/F-Stop/Shutter/ISO Depth of field Camera operating *Hands-on introduction to camera

Unit –III: Cinematography and photography,. Camera quiz, Video terms, Shot list, continuity, angling the camera, point of view, camera techniques, lighting, framing the shot, the elements of composition, video camera basics

Unit –IV: Cinematographic properties – Basic shot terminology: Close up, Mid shot, Long shot, Big close up, Mid-long shot, Extreme long shot, Point of view (POV) shot, Over-the-Shoulder(OTS) shot, high angle and low angle shot, top angle shot.

Unit –V: Introduction to the concept of Imaginary line (180); matching of action, direction of the movement and look. Reverse angle. Operations and movements-Pan, tilt, trolley, dolly, crane, steady – cam. Different film Formats (16 min, 35 mm, 70 mm) and aspect ratios. The bridge between films, phand art. Introduction to Photography, History of camera, Types of camera, Principal of photography, Parts of still camera: aperture, shutter speed, lens, filters and flash, Camera films

Reference

1. Block, Bruce. The Visual Story: Creating the Visual Structure of Film, TV and Digital Media, 2nd. Ed. Focal Press, 2008.
2. The Digital Filmmaking Handbook, 2nd edition. U Ben Long and Sonja Schenk (June 2002)
3. Film Directing Shot by Shot: Visualizing from Concept to Screen U Stephen D. Katz (1991)
4. Final Cut Express 2: Digital Video Editing for Everyone. U Diana Weynand (2004)
5. Writing for Television and Radio 6th edition. U Robert L. Hilliard (1997)

DIGITAL FILM MAKING (Lab)

Project# 1: Camera: Operation, Composition, Movement,

Project# 2: Preparation of script: Fiction (or) non-fiction (or) Comedy (or) Horror (or) Drama

Project#3: Shooting of the script in video.

Project#4: Different camera movements: pan, tilt, track, and trolley

Project#5: Difference of track in/out, zoom in/out

Project#6: Shooting a short silent short film

Project#7: Shoot 5 Indoor shot with the camera angles

Project#8: Shoot 5 outdoor shot with the camera angles

Project#9: Shooting a short film with mix genres(Drama,horror,action,animation,thriller, etc.,)

Project#10: Take letter photography (smile,happy,photo,sad, etc.,)

Project#11: Take photography of sunrises and sunsets

Project#12: Perspective, texture and DOF

Project#13: Landscape with night

Project#14: Basic Photo Composition (Including: Rule of 3rds, Leading Lines, Framing Subjects)

Project#15: Basic Techniques of Lighting (Including: Front, Side, Back, Defused, etc.)

Project#16: Tell better stories through good composition

Project#17: Blur the background

Project#18: Photograph fast action

Project#19: Understand basic camera buttons

Project#20: Edit and organize photos

COMPOSITING – I (Theory)

Unit -I: Concepts for Broadcast animation for logos, channel IDs and montages, Multi-layer compositing, Special effects, Super imposition and titling, Exporting various file formats outputs as per the end user requirements

Unit -II : Introduction to batch render & work group, Adding cameras & lights to a simple scene to make a complex compositing, Adding 2D back ground and elements into a 3D character layers, Creating object, material IDs for further adding special effects. Effects for digital video 2D layers and 3D layers for more effective outputs. Adding particle effects into a scene.

Unit -III : Introduction to color character and keying, "Editing the real time video with CG based scene and merging both of them to create a final output, Exporting various file format output as per the end user requirements.

Unit - IV: Introduction to the batch rendering and work groups, Introduction to the concepts of editing in terms of compositing, adding special effects in built in compositing software. To make a simple shot into a perfect output.

Unit -V: Chrome keying, Luma key, blue screen, Key frame text & layer animation & 3D particles, Effects etc. Color correction, Introduction to 3D compositing concepts i.e. Layers and masking, Rotoscoping, Rig removal, Morphing.

Reference

1. The Art and Science of Digital Compositing Book by Ron Brinkmann
2. Compositing Visual Effects: Essentials for the Aspiring Artist Book by Steve Wright
3. Digital Compositing in Depth! Book by Doug Kelly
4. Adobe After Effects CS6 Classroom in a Book by Adobe Creative Team (Author)

COMPOSITING – I (Lab)

- Project#1:** Rotoscopy
- Project#2:** Crowd duplication
- Project#3:** Color correction
- Project#4:** Keying. Green/blue screen shooting and compositing
- Project#5:** Tracking and stabilizing.
- Project#6:** Applying various effects.
- Project#7:** Wire and rig removals
- Project#8:** Day to Night convert
- Project#9:** Title animation using with the write on effects
- Project#10:** Info-graphic using with the effects

INTRODUCTION to 3D - II

Unit - I : Introduction to the interface of Maya, Menu bar, Tool bar, hot box, The channel box, Using the shelf, hot keys, Hot keys, manipulating a view. Creating objects: Simple primitives, Cameras. Selecting objects, types of selection, Single selection, adding and subtracting selection. Edit menu selection options, Marquee selection, Lasso selection, hyper shade, Relationship editor, hyper graph and outliner. Duplicating objects, Pivot points, Introduction to snapping, Layer Editors, Introduction to Maya Shaders, Introduction to Polygon modeling,

Unit -II: NURBS modeling, Modeling Props and sets (Locations), Modeling a high poly model, Technical issues related to managing high poly model. Modeling the character using templates & view port references, optimizing the final model, refining the mesh, basic posture, testing the model, Difference between hi-poly & low-poly characters.

Unit - III: Introduction to basic material types & Procedurals. Study of concepts: Opacity, Smoothness, Specularity and color, working with Maya Surface Nodes, Working with Transparency, Reflection & Refraction, Bump & Displacement Maps. Introduction to unwrapping, Unwrapping the maps for various 3d characters. Working with 2D and 3D, Texture, Introduction to the mapping and advanced texturing techniques, Shadow maps, ray traced shadows. Creating photo real environments and textures, Basics of Utilities. Introduction to CG

Unit - IV : Lighting, Working with Maya Lights 1-Point, Direct, Spot, Working with Maya Lights 2-Ambient, Area and Volume, Direct Illumination-Creating and Illuminating a Stage Show, Three Point Lighting and Exterior Lighting, Cast shadows, decay rate, Previewing lighting and shadows creating depth map Shadow, creating ray traced

Unit -V: Concept of lighting system and shadows, Creating area light shadows, setting area light visibility, Creating soft shadows with spot lights, Indirect lighting: Setting illumination for interiors, Tuning global illumination, Global illumination photons Rendering a still, rendering an AVI, Rendering an image sequence. Render layers: introduction, creating, splitting a scene into render layers, Applying render layer presets, setting overrides, creating render layer composites, Render Passes: Introduction, compare render passes and render layers, Render quality: anti aliasing, setting colour profiles, diagnosing ray tracing, adjust motion blur.

Reference:

1. 3D Automotive Modeling: An Insider's Guide to 3D Car ...Book by Andrew Gahan
2. Character Development in Blender 2.5 Book by Jonathan Williamson
3. Digital Modeling Book by William Vaughan
4. 3D Modeling and Printing with Tinkercad: Create and Print ... Book by James Floyd Kelly
5. Beginning Blender: Open Source 3D Modeling, Animation, ... Book by Lance Flavell
6. Integrating 3D Modeling, Photogrammetry and ... Book by David Halbstein and Shaun Foster
7. Advanced Maya Texturing and Lighting Book by Lee Lanier

INTRODUCTION to 3D – II (Lab)

Project#1: Model some objects such as chairs, tables, fruits, utensils, instruments, tools, cars,bike,etc)

Project#2: Model male and female characters.

Project#3: Model some animals, birds, fishes and worms.

Project#4: Unwrap the models of objects and characters using various projection maps.

Project#5: Apply texture on various objects and characters.

Project#6: Create a natural outdoor or indoor scene.

Project#7: Create Opacity, Smoothness, Secularity, and color maps, Transparency, Reflection

Project#8: Refraction, and Bump & Displacement Maps

Project#9: Apply basic material and shader types & Procedurals textures.

Project#10: Render a frame and video of indoor and outdoor scenes.

Project#11: Render a photorealistic output of an interior scene.

Project#12: Render a natural scene show different time by varying lighting.

Project#13: Advance lighting using mental ray render.

Project#14: Animate day and night scene of a street with the help of lighting.

SEMESTER – V

Sno	Course	Total Marks	Mid Sem Exam*	Sem End Exam	Teaching Hours	Credits
1	Foundation Course Subject Seminar	50	0	50	2	2
2	Industry Orientation	50	0	50	3	2
3	Game Design Theory	50	0	50	2	2
3	Game Design Lab	100	25	75	4	4
4	Compositing-II	50	0	50	3	2
5	Compositing-II Lab	100	25	75	4	3
6	Advanced 3D	50	0	50	2	2
7	Advanced 3D- Lab	100	25	75	4	3
8	Mini Project	100	25	75	4	4
Total		650	100	550	28	24

SEMESTER – V

INDUSTRY ORIENTAION

Unit – I: Management: concept and scope, Principles of management, Theories of management

□ Finance management, New trends in management Media Management: concept, need and scope, Operations and structure of news media companies, Media business and new technology, New trends in media business, Legal issues in media business Nature and Scope of Marketing Research in relation to:- , Graphic designing, Animation Industry (TV advt Film and animated film) ,Challenge in Business Market, Market surveys, planning Significance of Research, Marketing Research Process,

Unit – II: Fundamentals concepts Research Designs, objectives & hypothesis Data Collection Market, Geomorphic Distribution-Segments, Introduction to media management: basic management principles, Managerial skills in visual media production, and promotion; Market for visual media products; market analysis and meeting the demand. Online marketing, mob sourcing.

Unit - III: Media production planning: production objectives/goals; Mobilizing human resources – production crew and cast, contracts and call sheets; Acquiring/hiring equipment and properties; Booking studio floor and time, mounting sets, Out-door shoot planning – location search, suitability of locations; Seeking permission from legal and official bodies; Production schedules; logistics management; time management.

Unit -IV: Film festivals & Film marketing. Financial management in visual media production; Budgeting basics, Budgeting for preproduction, production, Post production activities; Mobilizing financial resources; cost cutting measures. Cash flow. Marketing of various rights.

Unit –V: Visual media laws: The Cinematograph Act 1952 and later amendments, Cable TV network Regulation Act; Broadcasting codes in India (Doordarshan); Cinematography Certification Rules 1983; Copyright laws; Limits of fair use; Video piracy; Cyber crime and cyber laws; Current copyright debates over such issues as file sharing, the on-line video, and remix culture.

Reference:

1. Media Production by Amanda Willett
2. Administrative Theories and Management Thought Paperback – 2013 by Sapru R.K
(Author)
3. Human Resource Management Paperback – 1 Jan 2010 by B.B. Mahapatro (Author)

GAME DESIGN (Theory)

Unit -I: Game industry and technology Global game industry ,Indian game industry, Production pipelines, software used ,formats, Documentations, Platforms, Business, Xbox live, steam, PSN network, app store.

Unit -II: Principles of Game Design Elements of games, Aesthetics, Game play Mechanics, Story, Technology, Theme, Principles of game design, Pacing, Game flow

Unit -III: Critical study How to generate Ideas for games, Iterations, Pilot study based on the context, Visual Presentations, High Concept Document

Unit -IV: UI Design Virtual interface, Physical interface, Design based on deployment, Flowcharts

Unit -V: Interactive story telling Methods of interactive storytelling, Advantages and disadvantages, Three act structure, Hero's journey,

References:

1. Art of game design by jessy shell
2. Theory of fun Raph Koster

GAME DESIGN (Lab)

Project#1: Game Design Document

Specifications, over view, Game play and mechanics, In Game objects, Game Flow, In game item mechanics, Level design and Environment, Asset list, Peripheral features.

Project#2: Physical Game Creation

Create a game based on give theme and physical constraints, Exhibit the game and take feedback from target audience

COMPOSITING - II (Theory)

Unit –I: Introduction to Nuke User Interface, menu bar, tool bar, pane, tab, viewer, node graph, curve editor, properties bin, progress bars, script editor, UI Customization, split pane, moving tabs & floating bins, preferences, save & restore custom UI layouts & reset to manufacturer default layouts, Organization of Tools in Nuke, tool groups / node types / node indicators, multiple views & multiple viewers, viewer-only controls, play controls, Basic Compositing Workflow in Nuke, auto-save, Project Settings, Read & Write nodes – Nuke file name variables, file formats, color space in Nuke, color space LUT & viewer LUT, Reformat, adding / deleting / connecting / finding nodes, Merge, Properties Bin & Control Panel controls Multi-channel Workflow, reading & writing multi-channel EXR, working with multi-channel images, separating & combining channels, hard cache, Where to Find Supporting Resources for Nuke?, from The Foundry other online resources, Transforming, control overlay vs. control panel, key framing, Curve Editor, Crop.

Unit –II: Warping & Morphing, Color Manipulation, Color Correct / Grade / Hue Correct / Histogram, matching grade, Keying, luminance key / chroma key / difference key, Primatte, Keylight, image based keyer – IBK, color spill treatment, Rotoscoping, Roto Paint tools & controls, rotoscoping with Roto Paint, Tracking, 1&4 point tracking / off screen tracking, tracking data modification, application of tracking data beyond stabilization, corner-pinning, Precomp, Motion Blur,

Unit –III: Gizmo, making a Gizmo, exporting & using a Gizmo, 3D Workspace, 2D vs 3D compositing, card / obj / camera / light / scene, basic 3D compositing setup, Scanline Render, basic setup for camera projection Displace Geo & its applications, Stereoscopic (multi-view) Compositing, Project Setting for stereo projects, reading & writing stereo images, stereo workflow, disparity map, common problems with stereo footages, Ocular demo – plug-ins for solving the problems of stereo footages, Lens Distortion , 3 methods to perform lens distortion analysis, applications of the result from lens distortion analysis, 3D Camera Tracker, operations & applications, built-in lens distortion analysis tool

Unit –IV: Planar tracking - the lynchpin to mocha. Fast mask creation, inserts and even 3D camera tracking are impossible without solid tracking data. Tougher tracks, Stabilization, Skin retouch , Camera Tracking Roto tips & tricks in mocha, 3D camera solve, Removing lens flare, Techniques for removal and background patching.

Unit- V: The user interface, project overview, shot overview, 3d perspective and orthographic view, Useful Keys, Menus, tracking menu, camera menu, Import footage, Tracking Parameters, Color key, Clean Auto Feature Tracks, Survey Data, Camera Parameters, Solver Controls, Lens distortion, Depth Map, Importing footage, Footage format, footage properties, camera parameters, Auto feature tracking, Tracking length graph(Track-L), Tracking Error Graph(Track – E), Editing feature track F- Curves, creating masks, tracking masks, image masks, solving camera motion, constraints, survey data

Reference

1. Nuke 101: Professional Compositing and Visual Effects Book by Ron Ganbar
2. The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures by Susan Zwerman (Editor), Jeffrey A. Okun (Editor)
3. Digital Compositing with Nuke by Lee Lanier (Author)
4. The Art and Science of Digital Compositing: Techniques for Visual Effects, Animation and Motion Graphics (The Morgan Kaufmann Series in Computer Graphics) by Ron Brinkmann (Author)

COMPOSITING – II (Lab)

Project#1: Working with nodes

Project#2: Working with Rotoscopy

Project#3: Motion Tracking

Project#4: 2D Match moving

Project#5: Digital Matte Painting VFX

Project#6: 2D Compositing in live-action Short

Project#7: 3D Camera Solver roto software

Project#8: Roto the human character

Project#9: Planar Tracking and stabilizing

Project#10: Hair Rotoscoping in Roto software

Project#11: Stereo roto in Roto software

Project#12: Tracking and roto tracking software

Project#13: Remove object in compositing software

Project#14: Multipass compositing in compositing software

Advanced 3D (Theory)

Unit - I: Introduction to bone system/Joints and IK handles, Creating bone system and maintaining naming conventions, Skinning types, import and export of skin weights, IK and FK basics, IK and FK switch, Introduction to Deformers, Introduction to constraints and implementation to rig. Maintaining proper hierarchy, grouping and creating controls, rigging the characters, Use of deformers in rigging process.

Unit –II: Brief about animation principles, Animation tools in 3D, "Applying classical 2D animation techniques i.e; Stretch squash for 3D character". Creating the illusion of weight, Overview of Maya's playback controls, and Exploring Maya's animation preferences. Details about graph editor, Bouncing Ball Exercise, Body language. Animating object along a motion path, Utilizing the tracks-editor to blend animation clips. Controlling attributes with set driven keys, Animating with constraints,

Unit –III: Previewing animations in real-time with play blasts, Introduction to scene animation and key framing, dope sheet. Animal walk& run cycles, snakes and birds. Biped Character walk cycles, Biped Character run cycles, pushing and pulling objects. Facial animation and lip-sync. Nonlinear Animation with trax editor. Working with character sets and clips. character interactions.

Unit –IV: Rendering Overview, What is rendering, How Maya renders Shader Networks, Shading Groups, Materials, Lights, Maya architecture, Nodes and Attributes, Hyper Graph,IPR (Interactive Photo realistic Rendering),V-Ray techniques, Mental ray Techniques,

Unit –V: Introduction to nCloth, Use of mesh as nCloth, Optimizing geometry for nCloth, Setting nCloth collisions and constraints, ncloth and external dynamic forces. Various ncloth simulations, ncloth caches creating and editing, nCloth caches attributes Optimizing ncloth, n-Cloth examples Introduction to Hair, Hair styling, Painting and setting positions for hair follicles, Assigning hair system, Making collisions and use of constraints. Introduction to Fur system in maya, assigning fur, defining various fur attributes like fur maps, reversing normals etc. Shadow and render settings of fur. Introduction to nParticles and particles in maya, different kind of emitters, particles attribute, collision of particles with other objects, various fields, particle shapes and dynamic, particle instance, particle collision event editor, effects. Soft and rigid bodies, active and passive rigid bodies, dynamic attributes of soft and rigid bodies, pin constraint,hinge constraint, spring constraint, paint soft body weight tool.

Reference:

1. Character Emotion in 2D and 3D Animation Book by Les Pardew
2. Introducing Character Animation with Blender Book by Tony Mullen
3. Mastering 3D Animation Book by Peter Ratner
4. The Art of 3D Computer Animation and Effects Book by Isaac Victor Kerlow
5. 3D Animation Essentials Book by Andy Beane
6. Animation Methods - Rigging Made Easy: Rig Your First 3D ...

7. 3D game animation for dummies Book by Kelly Murdock

ADVANCED 3D (Lab)

Project#1 Create rigs for all models.

Project#2 Make an animation of a character walking in street he pick up some object and throw it.

Project#3 Make various expressions of models and use them for blend shapes.

Project#4 Make different kinds of biped walk (Happy, Sad, Attitude and Tiptop)

Project#5 Mechanical rig, Vehicle rig

Project#6 Rigging various props

Project#7 Create run, jump, skid animations. Stair up and stair down.

Project#8 Make animations of coin drop, ball bounce, path animation,

Project#9 Render a frame and video of indoor and outdoor scenes.

Project#10 Render a photorealistic output of an interior scene.

Project#11 Render a natural scene show different time by varying lighting.

Project#12 Advance lighting using mental ray render.

Project#13 Animate day and night scene of a street with the help of lighting.

Fundamentals of Dynamics

Project#14 Create a hair system on male or female model

Project#15 Apply fur on a dog or cat model

Project#16 Create a scene with waterfall or fountain

Project#17 Apply active/passive soft and rigid bodies.

Project#18 Create a scene of camp fire followed by rainfall/snowfall

Project#19 Create an animation of a non living object.

MINI PROJECT

Students should create an animation not less than three minutes excluding titles using any of the following methods for their animation project,

- Full 2D Animation
- Full 3D Animation
- Full Stop-motion Animation
- 2D Animation + 3D Animation
- 3D Animation + Stop-motion Animation
- 2D Animation + Stop-motion Animation
- 2D Animation + Visual Effects
- 3D Animation + Visual Effects
- Stop-motion Animation + Visual Effects
- 2D Animation + 3D Animation + Visual Effects
- 3D Animation + Stop-motion Animation + Visual Effects
- 2D Animation + Stop-motion Animation + Visual Effects
- Live Action + Animation

Topography digital wall paper, any product/service concept art work, any social awareness concept advertisement, Caricatures and cartoons according present political scenario

Project should be worked out through various production stages after the final approval by the supervising faculty.

Students have to complete the final project within the given time period. Student should keep all the important paper works (script, storyboard and character designs) along with them. Viva Voce is part of the examination.

SEMESTER – VI

Sno	Course	Total Marks	Mid Sem Exam*	Sem End Exam	Teaching Hours	Credits
1	Case Study (Animation / VFX/ Game)	50	0	50	4	3
2	Internship	100	0	100	4	3
3	Internship Document	100	0	100	4	3
4	Project / Portfolio	200	0	200	8	8
5	Exhibition / Show Case	200	0	200	8	7
Total		650	0	650	28	24

SEMESTER – VI

**CASE STUDY
(ANIMATION / VFX/ GAME)**

1. What Is A Case Study
2. Different Types of Case Studies
3. Planning A Case Study
4. Researching A Case Study
5. Strengths and Weaknesses of Case Studies
6. Writing A Case Study
7. Case Studies in Marketing
8. Using Case Studies in Medicine and other Fields
9. Case Studies In The Workplace
10. Case Studies In Education
11. Case Studies in Animation/VFX/Game
12. Summarizing Case Studies

Students have to present seminar on any Animation/VFX/Game. The title of the film will be approved by the College. Students will have to submit the case study of Film to the concerned teacher at least two weeks prior to the Seminar .The seminar & case study report will be evaluated by the Committee of two teachers nominated by the Director of the College.

INTERNSHIP & INTERNSHIP DOCUMENTATION

- To acquire practical industry based experience. Internship is on the job training to assimilate the professionalism in a career. Internships offer students a period of practical experience in the industry relating to their field of study.
- The students will have to undergo an Internship at an animation studio or a post-production visual effect studio as per the field of specialization of the candidate for a month either at the end of the fifth semester or the beginning of the sixth semester.
- The students would prepare individual reports after the Internship and the same should be attested by the organization under which the student did the internship. The students' comprehensive report will be submitted to the HOD for evaluation. A faculty member will monitor the students during the internship.
- The internships would have a credit of 1 with 100 marks and the marks would be submitted to the university at the end of the six semester.

PROJECT / PORTFOLIO

(DEMO REEL PRESENTATION)

- Preparing for an interview -Research the organization, Compare your skills and qualifications to the job requirements, Prepare responses, Plan what to wear, Plan what to bring, Pay attention to nonverbal communication, Follow up. How to write a successful Media CV?
- What is a demo reel? Tips to create a successful demo reel -Keep it short, Make it specific, Choose a style -Collage or samples, Put your best work first, Your work only, Slate it - Include contact details at the start or the end of the demo reel, Showcase your involvement, Highlight impressive clients, Emphasis technical ability -Before and after shots of their work, Be mindful of aspect ratios, Say “No” to copyrighted music, Cut to the beat, Don’t repeat footage, Quality control, Online all the time, DVDs for delivery, Label with contact info, Active and accessible, Show your personality, Ask a critic
- Discuss the importance of self-promotion. Getting visibility -YouTube, Vimeo, Face book, Blogs, Web page, Business cards, Job portals etc.

Reference

1. Interview: How to Master Interviews and Stand Out Among Your Peers: Stefan Anderson
2. Success in Interview: Anand Ganguly

EXHIBITION

Aim:

- To explore the creativity of the students to exhibit their talents in exhibition to the college, placement companies and public to get self confidence in the students.
- Self analysis of their talents given remarks of the visitors and development creativity in their creative career.
- Participating in exhibition and getting participation certificate getting more rewards in media placements companies.

Category of exhibitions:

- 1) Print Media:
 - Social Awareness concept artworks exhibition
 - Digital artwork illustrations exhibition
 - Digital Artwork & Drawing artworks
 - Typography exhibition
 - Clay modeling, sculpture & Craft works
 - Digital art Photography exhibition
- 2) Short Film and One Minute Short Film Exhibition
- 3) VFX and Special Effects.

Methodology:

Students has to come different ideas and it leads to Creative Professionals in the media and learn latest trends in media.