

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

COURSE CURRICULUM

FOR

BACHELORS IN ANIMATION & MULTIMEDIA TECHNOLOGY

(BAMT)

FIRST SEMESTER

Sr. No.	Paper	Paper Code	L	T	P	Marks		Maximum Marks	Credits
						Int.	Ext.		
1	Basic Computer Skills	AMT-101	2	1	0	40	60	100	3
2	Principles of Animation	AMT-102	2	1	0	40	60	100	3
3	Design and Communication Process	AMT-103	2	0	0	40	60	100	2
4	Basic Computer Skills Lab	AMT-104	1	0	4	60	40	100	3
5	Principles of Animation Lab	AMT-105	1	0	4	60	40	100	3
6	Design and Communication Process Lab	AMT-106	1	0	4	60	40	100	3
7	Experimental Animation Lab	AMT-107	1	0	4	60	40	100	3
8	Basic Art Lab	AMT-108	0	0	4	60	40	100	2
	TOTAL		10	2	20	420	380	800	

SEMESTER - I

Internal: 40 Marks
External: 60 Marks

AMT-101

Basic Computer Skills

L-3 T-2 P-0

OBJECTIVE - The main objective of the subject is to impart the knowledge about the basic computing concepts and ability to use common software applications .

1) Introduction of Computers (10%)

- Basic introduction of computer,
- Types of computer,
- Characteristics , Applications, components of computer.

2) Block diagram of Computer (30%)

- Diagram of computer and detailed significance of each part control unit, storage unit, main memory.

3) Basic input/output devices (30%)

- Study of input/output devices: keyboard, hard disk, floppy disk, CD-ROM, DVD, mouse, printers: Daisy wheel, dot-matrix, impact and non-impact printers, scanners.

4) Software and types of software (20%)

- Definition of software and types of software: application software, system software.

5) Application of Computers (10%)

- Defence, Industry, Management, sports, commerce , internet.
- Role of Computers in Animation Industry.

Text Book:-

- 1) **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)**

SEMESTER - I

Internal: 40 Marks
External: 60 Marks

AMT-102

Principles of Animation

L-3 T-2 P- 0

OBJECTIVE - The main objective of this subject is to impart strong knowledge about the fundamental principles of animation in addition to an invaluable appreciation for observational techniques & the art of planning .

1. What is Animation:- (05%)

Its definition, early examples of Animation.

2. History of Animation:- (10%)

Stop Motion Photo Animation,Zoetrope,Thaumatrope,Cel and Paper Animation,early Disney's Cel Animation Processes.

3. Types of Animation:- (10%)

Cel Animation, Stop Motion Animation, Computer Animation, 2-D Animation, 3-D Animation.

4. Skills for an Animation Artist:- (20%)

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.

5. Basic Principles of Animation:- (30%)

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.

6. Various Terms:- (25%)

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.

Text book:-

1. 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)

SEMESTER - I

Internal: 40 Marks
External: 60 Marks

AMT-103

Design & Communication Process

L-3 T-0 P- 0

OBJECTIVE : To develop intellectual awareness and curiosity to acquire the knowledge necessary to sustain effective work in visual communication design.

- 1) **Basic Principles of composition:-** (40%)
 - **Introduction**
 - a) What is composition
 - b) Why learn these principles
 - c) Fulfilling the purpose
 - **The Subject**
 - a) Selection and study
 - b) Drawing steps
 - **Three Principles**
 - a) Unity
 - b) Balance
 - c) Center of interest
 - **Achieving Emphasis**
 - a) Light and shade
 - b) Details
 - c) contrasts
- 2) **Six Visual elements:-** (20%)

Color , Line , Shape, Value & Tone, Texture, Volume.
- 3) **Balance: -** (10%)

Asymmetrical balance, informal balance, radial balance.
- 4) **Complementary relations between art & Design:-** (20%)
 - a) Cognitive - Instrumental
 - b) Abstraction of the concrete - concretization of the abstract
 - c) Artist as notator - Designer as tool maker
 - d) Inductive , classificatory -deductive
- 5) **Pictorial principles:-** (10%)
 - a) Contrast
 - b) Harmony
 - c) Emphasis
 - d) Movement
 - e) Proportion
 - f) Pattern
 - g) Variety
 - h) Rhythm
 - i) Repetition

Text books:-

- 1) Design and Communication: A Foundation Course By Peter Gowers ,Blackie, 1988 pub.(UK)

Reference book:-

- 1) Design for communication: conceptual graphic design basics By Elizabeth Resnick ,John Wiley & Sons pub.(India)

SEMESTER - I

Internal: 60 Marks
External: 40 Marks

AMT-104

Lab on Basic Computer Skills

L-1 T-0 P- 6

OBJECTIVE - The main objective of the subject is to impart practical knowledge about the basic computing concepts and ability to perform the fundamental operating system functions.

1. **Practice on MS-Word** (30%)
 - a) Making and formatting Documents.
 - b) Inserting Pictures.
 - c) Using spell check.
 - d) Mail merge.
 - e) Formatting Text.
 - f) Using additional features.
2. **Practice on Ms-Excel:-** (25%)
 - a) Manipulating cells, rows and columns.
 - b) Create a new blank spreadsheet.
 - c) Preview and print spreadsheet.
 - d) Preparing Data Sheets.
3. **Practice on Ms-Power Point** (30%)
 - a) Making Slides.
 - b) Display the presentations in different views: slide show, normal and outline.
 - c) Set up the presentations with manual delivery.
4. **Practice on internet** (15%)
 - a) Mailing.
 - b) Attaching file in mail.
 - c) Searching and printing mail.

Text Book:-

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

References books:-

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

SEMESTER - I

Internal: 60 Marks
External: 40 Marks

AMT-105

Principles of Animation Lab

L-3 T-2 P-0

OBJECTIVE - By studying this subject the students will discover the fundamental principles of animation & to exploit these fundamental principles to create convincing character motion.

1. **Using Animator's Drawing Tools:-** (05%)
 - The Animation Table(light box), Field charts, Line Testing Camera, Peg bar, Punching Machine.
2. **Rapid Sketching and Drawing:-** (25%)
 - Drawing for Animation, Exercises and Warm ups on Pegging Sheet,
 - Quick studies from real life, sequential movement drawing,
 - caricaturing the action, thumbnails drawing for motion,
 - The body language, Redefining Drawings.
3. **Developing a Animation Character:-** (30%)
 - Incorporating various moods and shades of a character
 - various gestures and facial expressions of the character
4. **Anatomy and Body Language :-** (40%)
 - front, side and back view of the character,
 - Anatomy and Body Language of the character,
 - Caricaturing the character.

Text book:-

1. **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 Pub.2008(U.S.A)**
2. **The Animator's Survival Kit by Richard Williams , Arrar Straus & Giroux Pub.(U.S.A)**

SEMESTER - I

Internal:60 Marks
External: 40 Marks

AMT-106

Lab on Design & Communication Process

L-1 T-0 P- 6

OBJECTIVE : To acquire and apply skills relevant to visual communication practice through project based learning in individual and teamwork situations.

1. **Compositing a 2-D Design:-** (10%)

Using Different Geometrical shapes

2. **Color Combination:-** (10%)

- Making Color Wheel
- Making composition with Colors .

3. **Floral Designs:-** (10%)

Different patterns of design , making special occasion designs.

4. **Rule of third:-** (05%)

clicking frames using golden rule or rule of thirds.

5. **Package designing:-** (15%)

- Designing packages for different objects/instruments (hand bags , pen, eatables, mobile phones)

6. **Introduction to Adobe Photoshop :-** (25%)

Graphics in Design and Communications.

Tools :cutting tools , mixing pictures, making composition with pictures , making small compositions .

7. **Introduction to Corel Draw :-** (25%)

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:-

- 1) Design for communication: conceptual graphic design basics By Elizabeth Resnick ,John Wiley & Sons Pub(India).

SEMESTER - I

Internal: 60 Marks
External: 40 Marks

AMT-107

Experimental Animation Lab

L-1 T-0 P- 8

OBJECTIVE :- The objective of the subject is to create vibrant and enthusiastic environment wherein students are guided through a multitude of experimental animation techniques to develop more diverse animation skills.

1. Flip Books :- (10%)

Capture a series of images using your camera's continuous mode. Design your Flipbook , Printing the flipbook ,Lay out the Flipbook pages, Arrange the pictures, Holding the end of the stack.

2. Clay Animation:- (30%)

Designing Characters with Wax and Oil Based Clay

3. Stop Motion Animation :- (30%)

using characters in stop motion animation.

4. Set Designing:- (10%)

Experimental Work with different mediums like sand,stones,grass, hard board, pen and Ink , water colors, poster colours,dry brush etc.

5. Cut Out Animation: (10%)

Making Cut Outs and capturing the images.

6. Role of Puppets in Animation:- (10%)

Text book:-

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

Reference:-

1. The Encyclopedia of Animation Techniques, Richard Taylor, 1996 (India)
2. Experimental Animation : An Illustrated Anthology by Robert Russet and Cecile Starr Pub.- Van Nostrand Reinhold Compa Pub.1976 (U.S.A)

SEMESTER - I

Internal: 60 Marks
External: 40 Marks

AMT-108

Lab on Basic Art

L-1 T-0 P- 6

OBJECTIVE - The main objective of the subject is to impart the knowledge about the basic elements of the Art , Drawing including line,volume,space, texture and colour .

1.**Visual and creative development of an Artist-(05%)** Demonstration and lectures on required skills for an artist, difference between seeing and observing .

2.**Drawing and Skechting:-** (10%)

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.

3. **Various Mediums :-** (05%)

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.

4.**Still Life:-** (30%)

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 relationship between line, mass, value and texture; emphasis on variety of visual experiences.

4. **Anatomy Study:-** (20%)

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

5.**Memory Drawing and Outdoor Sketching:-** (30%)

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.

Text book:-

1. Basic Drawing Techniques by Richard Box Pub: Winsor & Newton, (U.S.A)

Reference books:-

1. Still Life by Sanjay Shelar, Jyotsana Prakashan(India).Pub.

2.Drawing and Anatomy by Victor Perard , Kingsport Press Pub(U.K).

Bachelor of Animation & Multimedia Technology (BAMT)

Scheme of Courses

Second Semester

Sr. No.	Paper	Paper Code	L	T	P	Marks		Maximum Marks	Credits
						Int.	Ext.		
1	Communication Skills	AMT-201	3	1	0	40	60	100	4
2	Color Theory & Image Graphics Lab	AMT-202	1	0	4	60	40	100	3
3	2-D Animation Lab	AMT-203	1	0	4	60	40	100	3
4	3-D Animation Lab	AMT-204	1	0	4	60	40	100	3
5	Cell Animation -1 Lab	AMT-205	1	0	6	60	40	100	4
6	Computer Programming Lab	AMT-206	1	0	3	40	60	100	3
	TOTAL		8	1	21	320	280	600	

NOTE: After the 2nd Semester the students will undergo 4 weeks compulsory (in-house) Training.

SEMESTER-2

Internal: 40 Marks

External: 60 Marks

AMT-201

Communication Skills

L-3 T-1 P-0

OBJECTIVE - The objective of this subject is to stimulate intellectual exercise and to develop communication skills (Written as well as Oral) and to improve student's communication skills both in social and professional contexts.

1) Introduction (10%)

- A) What is Communication?
- B) Components of communication .
- C) Barrier in communication.

2) Kinds of communication (10%)

- A) Communication at Work Place (Office)
- B) Importance and benefits of effective communication
- C) Components & Process of communication

3) Better Public Speaking & Presentation (10%)

- A) The 7 Cs of Effective communication

4) Various Skills (20%)

- A) Writing Skills
- B) Reading Skills
- C) Speaking Skills
- D) Listening Skills
- E) Planning and Writing Documents

5) Written Communication (30%)

- A) Business letters
- B) Repor' writing Kinds of Reports(Long & Short Reports)
- C) Process of preparing effective business messages
- D) Resume and Cover Letter to Resume
- E) Grammar. Style. Punctuation

6) Oral Communication (20%)

- A)Oral Speaking at Public Places
- B) Strategies for Improving Oral Presentation
- C) Job Application Process
- D) Job Interviews
- E) Practice in Actual Communication

Text book:-

I.Communication skills by Leena Sen Pub.- Prentice Hall of India

Reference bouk:-

2.The 7 Powers of Question:secrets to successful communication in life and at work by Dorothy leads . Pub. Perigee TradefNew York)

SEMESTER-2

Internal: 60 Marks
External: 40 Marks

AMT-202

Color Theory & Image Graphics Lab

L-0 T-0 P-6

OBJECTIVE - This course aims to provide the practical knowledge about color relationships, composition, and color mixture. Students will study the effects of color on the development of design as well as the psychology of color and its power to deliver effective marketing messages.

1. Color Palettes(10%):

- A) Mixing of primary, secondary and tertiary colors, tints, tones and shades
- B) Color Wheel

2. Color Schemes(20%):

- A) Complementary, split complementary, analogous, warm and cool
- B) Working in series.
- C) Paintings of the same scene.

3. Color in Practice(20%):

- A) Color in advertising and graphic design
- B) Colors used in Logos, Print Ads, Layouts

4. Application of Color in Print Media(10%):

A) RGB COLORS and CMYK COLORS

- A. Hue
- B. Value
- C. intensity / Chroma / Saturation
- D. Spectrum

5) Image Designing(30%):

A) Expression of Graphic Designing Skills through different suitable Software for producing Digital Design.

B) Manipulating Images by using Contrast, Brightness, Hue, Saturation, Channel mixer etc.

Text book:-

1, Color Theory (Watson-Guptil's Artist library) by Jose Parammon Pub.-Watson
Guptil.(USA)

Reference book:-

2. Type and Image: The Language of Graphic Design by Philip B. Meggs(U.S.A)

SEMESTER-2

Internal: 60 Marks

External: 40 Marks

AMT-203

2-D Animation Lab

L-0 T-0 P-6

OBJECTIVE • The main objective of the subject is to impart the practical knowledge about the Digital 2D-Animation and softwares like Macromedia Flash etc.

1. Introduction
 - a) Logging onto server
 - b) Basic Macintosh skills
 - c) Working in Flash
 - d) Drawing with Flash 2.

Basic Animation(10%)

- a) Working in the timeline
 - b) How to animate, frame by frame or using tweens
3. Working with symbols(10%)
 - a) Shape tween
 - b) Staggering animation effect
 4. Animation Review(10%)
 - a) Break it apart and distribute
 - b) Introduction to Motion Guide
 5. Motion Guide Paths(20%)
 - a) Mask layers
 - b) Button Intro
 - c) Intro to Scripting
 6. Setting up scenes for first project(20%)
 - a) Button:- and action scripting for project
 - b) How to effectively plan an animation project.

Anticipation - Secondary Motion(20%)

- a) Walk Cycle
- b) Run Cycle
- c) Morphing Layers

Text book-

1. Foundation of 2D Cartoon Animation Tim Jones Pub.-Friends of ED.(USA)

Reference books

2. How to create 2D Animation in Adobe Flash CS4: The art of Design and Animation by Chris Georgenes, Focal press, PAP/Cdition(U.S.A)

SEMESTER-2

Internal: 60 Marks
External: 40 Marks

AMT-204

Introduction to 3-D Lab

L-0 T-0 P-6

OBJECTIVE - The main objective of this subject is to study the importance of 3-Dimensional images in Creation of Animation movies and its various aspects.

1. Introduction to 3D- Animation Process (10%)

- a) Understanding 3D-Images
- b) Process of 3D-Animation
- c) Uses in Animation

2. Introduction to Autodesk 3DS-MAX (25%)

- a) Interface of Autodesk 3DS-MAX.
- b) Understanding material editor & Render Globals
- c) Unwrapping polygon objects
- d) Working with edit poly & Edit Mesh
- e) Animation options - Timeline & Timeslider. f) Introduction to lights and shaders
- g) Applications of materials on objects.

3. Introduction to Autodesk Maya (25%)

- a) Interface of Autodesk Maya
- b) Basic tools of Modeling
- c) Basic of UV Texture Editor
- d) Working With Outliner & Hypershade Window
- e) Basic Skills of Lighting
- f) Creating Props with Basic Shapes
- g) Understanding Polygon, NURBS. Subdiv. Modeling

4. Exercises of Autodesk 3DS-MAX & MAYA (40%)

- a) Creating wall by using box parameters
- b) Creating some architectural features like arcs & front elevation by cloning
- c) Modeling a interior using by default geometrical 3d objects
- d) Creating and editing material by using all concepts of mapping
- e) Making light basic light rigs for interior and exterior lighting f)
- Making basic shaders like wood, metal, plastic etc.

Text book:-

1.3D Graphics & Animation by Mark Giambruno New Riders Publishing USA.

Reference book:-

2.3DSMax Bible by Kelly L. Murdock Publisher. Wiley U.K.

SEMESTER-2

Internal: 60 Marks

External: 40 Marks

AMT-205

Cel Animation-1 Lab

L-0 T-0 P-6

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about the Classical/Cel Animation processes and techniques such Storyboarding, composing Layouts. Backgrounds and various principles of 2D- Animation.

1. Using Col Animation Equipment (05%)

- a) Light Box Peg Bar. Punching Sheets, Fixing sheets etc.
- b) Line Testing Camera.
- c) Various drawing pencils, sketch pens/inks etc.

2. Cleaning -Up Exercises (05%)

- a) Drawing/sketching of Animation Drawings from live actions.
- b) Cleaning -Up the Animation Drawings .
- c) Inking colouring of Clean-Up Drawings.

3. Making a Story Board , layout, Model Sheet and Master Background (30%)

- a) What is Story Board.
- b) Use and Importance of Story Board in Film Making.
- c) Making Story Boards for Small Animation Sequences
- d) Composing a Layout / Frame .
- e) Making a Model Sheet and Master Background.

4. Principle of Stretch and Squash (30%)

- a) Drawing Key Frames and Inbetweens for Stretch and Squash Action.
- b) Principle of Timing to be kept in mind.

5. Principle of Exaggeration (30%)

- a) Drawing Key Frames and Inbetweens for Exaggeration action of an Animated Character
- b) Principle of Timing to be kept in mind.

Text book:-

1. I.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)
3. Animation : The Whole Story by Howard Beckerman. Allworth Press: Revised edition (September 1. 2003)(New York).

SEMESTER-2

Internal: 40 Marks

External: 60 Marks

AMT-206

COMPUTER PROGRAMMING

L-3 T-1 P-0

Programming Paradigms and Programming Languages: Background of Programming Languages. Programming Tools Program Structure .Syntax and Semantics . (10%)

Data Representation: Number Systems. Conversion of number from one number system to another, data types(Life and Scope) (15%)

Control Statements: Decision making statements(all variants of if and Switch),Conditional Control Statements(break, continue, goto) and Loop Statement(for,while,do-while) (20%)

Logic Building and Algorithms: Need of Problem Solving by various Program design tools like Flowchart .Algorithms and Pseudocodes. (5%)

- Internet Operation: www.Intemet.Interanet. Domain Name System(DNS), URL, Client-Server Architecture,Protocols (15%)

Data Structure: Introduction to various Data Structures used in various Programming Languages like Arrays.Stack,Queues,Linked Lists. (20%)

- Overview of Networking: Various types of Network Topologies.LAN,MAN,WAN.Broadcasting/Multicasting.IP Addresses (15%)

Text Books:

1. R.S. Salaria "Computer Concepts and Programming in C".Salaria Publishing House,Jalandhar/Now Delhi.
- 2.Seymour Lipschuts,"Data structures",Tata McGraw-Hill Publishing Company Limited,Delhi.
3. Behrouz A. Frouzan,"Data Communication and Networking",Tata McGraw-Hill Publishing Company Limited ,Delhi.

Refrence Books:

1. Sumita Arora,"Fundamentals of Computer programming",Dhanpat Rai Publications.
2. P.K. sinha,"Computer Fundamentals",BPB publications,Delhi.

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THIRD SEMESTER

Sr.No	Subject	Subject Code	L	T	P	Marks		Maximum Marks	credits
						Int.	Ext.		
1	Web Designing Technologies	AMT-301	3	0	0	40	60	100	3
2	Animation - Modeling Lab	AMT-302	1	0	6	60	40	100	4
3	Fundamentals of Pre-Production	AMT-303	3	0	0	40	60	100	3
4	Digital Film Making Lab	AMT-304	1	0	6	60	40	100	4
5	Print & Advertising Graphic Design Lab	AMT-305	1	0	4	60	40	100	3
6	Character Animation - 1 Lab	AMT-306	1	0	4	60	40	100	3
	TOTAL		10	0	20	320	280	600	

SEMESTER - III

Internal: 40 Marks
External: 60 Marks

AMT- 301

Web Designing Technologies

L-3 T-0 P-0

OBJECTIVE - The main objective of the subject is to impart the basic understanding of the methods and techniques of developing a web site.

1) Introduction to the Internet (5%)

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

2) Introduction to HTML (5%)

HTML tags, HTML Editor.

3) Tags, Attributes, Lists and Tables (15%)

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

4) Links and Images (15%)

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

5) Cascading Style Sheets (5%)

Style sheet design, using internal and external style sheets

6) Creating a Basic Web Page (20%)

Creating web pages using basic HTML Tags.

7) Typography (10%)

Composition, Font selection

8) Text rollovers (10%)

Text rollover techniques and applications

9) Web related functions of Photoshop (15%)

Tools, Functions, Shortcut keys, Layers Images. Placing, Resizing, Resolution, Optimizing, Color(RGB), Web Safe Colours. Slicing the page, Saving & naming

Text Book:

- Mastering HTML 4 - Deborah ray ,Pub.- Sybex Inc.

References:

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

SEMESTER - III

Internal: 60 Marks
External: 40 Marks

AMT- 302

Animation - Modeling Lab

L-1 T-0 P- 6

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about 3D Modeling using Maya.

1) Introduction to Nurbs Modeling (10%)

- a. Nurbs Modeling overview & its use.
- b. Nurbs components.

2) Nurbs Curves(10%)

- a. Types of Curves.
- b. Curve creation.
- c. Curve Editing.
- d. Applications of Curves .

3) Nurbs Surfaces(30%)

- a. Nurbs primitives.
- b. Surface creation.
- c. Revolve, Extrude, Loft, Boundary, Birail.
- d. Applications of Surfaces.

4) Introduction to Polygon Modeling(10%)

- a. Polygon Modeling overview & Usefulness
- b. Polygon primitives & components, topology, edge flow

5) Polygon Tools(40%)

- a. Mesh tools.
- b. Edit Mesh tools.
- c. Tools Applications .

Practicals /Submissions

- Props
 - Inorganic objects
 - Character accessories
- Vehicle Model
 - Car Modeling
 - Bike Modeling
 - War Vehicle

- Character Model
 - Cartoon Character Body Modeling
 - Cartoon Character Face Modeling
 - Hyper Realistic Body
 - Quadraped Modeling

References:

- 1) Mastering Maya 2009 by Eric Allen, and Anthony Honn ,Pub.-SYBEX
- 2) Edge loop Character Modeling For 3D Professionals Only by Kelly Murdock,
Pub.- Wiley

SEMESTER - III

Internal: 60 Marks
External: 40 Marks

AMT- 303

Fundamentals of Pre-Production

L-3 T-0 P-0

OBJECTIVE - The main objective of the subject is to impart the knowledge of animation pre-production pipeline & workflow.

1) Introduction to Pre-production (5%):

- The basics of Pre Production.
- Importance of pre Production in creating a Project.

2) Concept, Story writing (20%)

- Developing a Concept for Animation.
- Essentials Elements of a story: Start, Middle and Ending of a story

3) Screenplay (10%)

- Definition and Elements of Screenplay.
- Creating a Screenplay.

4) Character development (20%)

- Physical Attributes.
- Visual appearance.
- Nature.
- Characteristics.
- Model Sheet.

5) Props & Environment development (10%)

- Props & Environment illustration.
- Blueprint.

6) Storyboarding (20%)

- Process of creating storyboard.

- Importance of storyboard in Film making.

7) Visual references (10%)

- Types of visual references.

8) Dubbing, Songs (5%)

- Process of Dubbing of Dialogues , Voiceovers, songs etc.

Practicals/Submissions:

1. Concept for a Short Animation Movie.
2. Screenplay for a Short Animation Movie.
3. Story Board using Storyboarding Software.
4. Small Project (minimum 5 minutes) of Dubbing/Song/Dialogue Recording.

Text Book:

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

References:

- Animation writing & development - Jean Wright, Pub.-Focal Press.
- Animator's Survival kit - Richard Williams, Pub.-Faber and Faber.
- The Illusion of life - Frank Thomas, Pub.- Disney Editions.

SEMESTER - III

Internal: 60 Marks
External: 40 Marks

AMT-304

Digital Film Making Lab

L-1 T-0 P-6

OBJECTIVE - The main objective of the subject is to impart practical knowledge about non-linear editing and how it can be used for film & television editing & post-production.

1) **Digital Camera Functioning (5%):**

Types of Digital Cameras, Working of a Digital Camera.

2) **Shooting a Clip/Footage (10%):**

Outdoor, Indoor, Landscapes, live action.

3) **Softwares used in Editing (10%) :**

Fundamentals of non-linear & digital Audio/Video editing

4) **Role of an Editor in Film making (15%):**

Do's and don'ts of Editing, working on an Editing Table, Project setting, Clips management, Timeline Settings & Controls, Tools.

5) **Audio Track Editing (20%):**

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

6) **Editing the Footage (40%):**

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 .

Practicals/Submissions

- Small Footage (Short Film) (5-10minutes)
- Minimum 30 Sec well edited Television Commercial
- Clips with A/V Sync & transitions.

References books:-

- 1) Editing Digital Video : The Complete Creative and Technical Guide by Robert Goodman (McGraw-Hill), Pub.- McGraw-Hill/TAB Electronics.
- 2) Adobe premiere pro Bible by Adele Droblas, Pub.-Wiley.

SEMESTER - III

Internal: 60 Marks
External: 40 Marks

AMT-305

Print & Advertising Graphic Design Lab

L-1 T-0 P- 4

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about Print & Advertising Graphic design & its applications.

1) The creative brief Fundamentals (10%):

Understanding Design Principles: Concept Formation, Format, Design, Layout, Graphics.

2) Designing of Office Stationery (20%):

Visiting Cards, Letter Heads, calendars.

3) Print Media (30%) :

Types: 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.

4) Poster Designing (20%):

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

5) Brochure / Pamphlet/Leaflet Designing (20%):

Designing Brochures for an Advertising Agency, Educational Institutions, Animation Company.

Practicals/Submissions (Softwares to be used Photoshop , Adobe Illustrator, Corel Draw)

- a. **Office Stationery:** Visiting Card, Letter Head, Calendar for an Animation Studio/Office.
- b. **Magazine Advertisement :** Full Page Ad, Teaser Ad for an Animation Movie.
- c. **Poster Design :** Poster for an Animation Movie.
- d. **Brochure :** 3- Panel Brochure for Animation Institution/Studio.

Reference books:

- Advertising by Design: Creating Visual Communications with Graphic Impact by Robin Landa, Publisher- Wiley .
- Creative Advertising by Mario Pricken, Publisher-Thames and Hudson.

SEMESTER - III

Internal: 60 Marks
External: 40 Marks

AMT- 306

Character Animation 1 Lab

L-1 T-0 P- 4

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about animation in Maya.

1) Introduction to Animation in Maya (5%)

- Maya's usefulness for animation and its advantages
- Animation related interface of Maya and animation preferences

2) Tools used for Animation in Maya (10%)

- Keyframing, playback and playblast.
- Introduction to Tangents.
- Graph editor, Dope sheet.

3) Planning Animation & Different methods of blocking (10%)

- Straight-ahead approach.
- Pose-to-pose approach.
- Staging.

4) Timing, Spacing, Overlapping, Slow in, Slow out, Inbetweening (10%)

- How to adjust, increase and decrease timing & spacing.
- Understanding & application of overlapping.
- Tangent editing.

5) Weight & Balance (10%)

- Importance of weight & balance in animation.
- Applications of weight & balance.

6) Applying principles of animation (15%)

- Applying animation principles to object like bouncing ball.

7) Character Jump Animation (20%)

- Pre-production
- Execution

8) Character walk cycle animation (20%)

- Pre-production
- Execution

Practicals/Assignments:-

- 1) Bouncing Ball (With Stretch and Squash and proper timing).
- 2) Character Jump Animation.
- 3) Character walk cycle animation (Simple and Attitude walk).

Reference:-

- 1) Animator's Survival kit - Richard Williams, Pub.-Focal Press.
- 2) Timing for Animation - Harold Whitaker, Pub.-Focal Press.
- 3) Cartoon Animation - Preston Blair, Pub.-Walter Foster.
- 4) Animation : The Mechanics of Motion - Chris Webster, Pub.-Focal Press

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR
COURSE CURRICULUM
FOR
BACHELORS IN ANIMATION & MULTIMEDIA TECHNOLOGY
(BAMT)

FOURTH SEMESTER

Sr.No	Subject	Subject Code	L	T	P	Marks		Maximum Marks	Credits
						Int.	Ext.		
1	Essentials of Execution & PostProduction	AMT-401	3	0	0	40	60	100	3
2	Virtual Set Designing Lab	AMT-402	1	0	6	60	40	100	4
3	Camera & Lighting Techniques Lab	AMT-403	1	0	6	60	40	100	4
4	Texturing & Shading Lab	AMT-404	1	0	4	60	40	100	3
5	History of Motion Picture Industry	AMT-405	3	0	0	40	60	100	3
6	Animation - Rigging Lab	AMT-406	1	0	4	60	40	100	3
	TOTAL		10	0	20	320	280	600	

SEMESTER - IV

Internal: 40 Marks

External: 60 Marks

AMT- 401 Essentials of Execution & Post-Production

L-3 T-0 P-0

OBJECTIVE - The main objective of the subject is to impart the knowledge about Animation execution, workflow & post-production

1) Modeling (10%)

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

2) Texturing (10%)

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

3) Lighting (10%)

- Sources of light: Natural and artificial Lights.
- Types of lights in Maya.
- Types of Shadows in Maya. **4)**

Rigging (10%)

- Joints.
- Inverse Kinematics, Forward Kinematics.
- Types of Skinning.

5) Animation (10%)

- Types of Animation. **6)**

Rendering (5%)

- Process.
- Types of Renderer. **7)**

Data Management (5%)

- How to manage 3D Assets

8) Compositing (10%)

- Process
- Tools used

9) Visual Effects (10%)

- Process

- Tools used

10) Music & Dubbing (5%)

- Process
- Tools used

11) Editing (10%)

- Process
- Tools used

12) Output (5%)

- Types of Output format.

Textbooks:

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

References:

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

AMT-402

Virtual Set Designing lab

L-1 T-0 P-6

OBJECTIVE - This course aims to equip students with fundamental knowledge in the creation of Photo Realistic 3D assets. The module also focuses on texture acquisition/creation, digital lighting, Rendering Techniques such as Ray tracing, Global Illumination and Caustics. Students will be required to apply what they have learnt to their 3D scenes.

1) Introduction to 3DS Max & Interface (20%):

Modeling, texturing, advanced lighting, animation.

2) Basics of AutoCAD (20%):

- 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

3) Introduction to Adobe After Effects (10%):

- Introduction to the After Effects interface
- Effects
- Parenting
- Masking
- 3D
- Lights and Cameras
- Expressions
- Painting
- Motion tracking

4) Lighting (25%):

- Applying Lights in an Interior and creating shadows.
- Creating Lights in Cones.
- Bed Lights, Falls Lights, Table Lamps.

5) Rendering (25%):

- Concepts of Rendering.
- Scan Line Rendered.

Practical's/Submissions

1. Textures and layouts for 3D production.
2. Object modeling.

3. Virtual set.
4. Credit sequences (for films and animation).
5. 3D Animated Logo.
6. Architectural walkthroughs.

Reference books:-

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

SEMESTER - IV

Internal: 60 Marks

External: 40 Marks

AMT- 403

Camera & Lighting Techniques Lab

L-1 T-0 P- 6

OBJECTIVE - The main objective of the subject is to impart the knowledge to illuminate the scene to produce a good quality as well as a pleasing picture with good camera sense.

- 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.

Submissions:

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

Reference:

- 1) Maya Texturing & Lighting - Lee Lanier, Pub.-Sybex.

SEMESTER - IV

Internal: 60 Marks
External: 40 Marks

AMT-404

Texturing & Shading lab

L-1 T-0 P-4

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about Texturing & Shading in Maya.

Texturing (50%):

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

Shading (50%):

- 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

Practical's/Submissions

1) Textured & Shaded Interior.

2) Textured character.

3) Textured Props.

Reference books:-

1) Digital Lighting & Rendering - Jeremy Birn, Pub. - New Riders Press.

2) Maya Texturing & Lighting - Lee Lanier, Pub.-Sybex.

SEMESTER - IV

Internal: 40 Marks

External: 60 Marks

AMT-405

History of Motion Picture Industry

L-3 T-0 P-0

OBJECTIVE - The main objective of the subject is to impart the knowledge about growth and development Motion picture industry.

- 1) Evolution of Cinema - the early days. **(10%)**
- 2) Emergence of the narrative cinema and American, German, French and Russian Cinema in the era of silent motion pictures. **(10%)**
- 3) Advent of sound and color in motion picture, cinemas of the world in post salient motion picture era. **(20%)**
- 4) Evolution of cinema in India and the current status. **(20%)**
- 5) Cinematograph Act 1952: Introduction and its role in Motion pictures Business. **(10%)**
- 6) Significant Indian Films (Synopsis, Producer, Director, Actors. **(10%)**
- 7) Evolution of Film Indian Animation Film Industry and its Growth. **(10%)**
- 8) Present scenario of Indian Film Industry. **(10%)**

Text books:-

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

Reference books:-

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

SEMESTER - IV

Internal: 60 Marks
External: 40 Marks

AMT-406

Animation - Rigging Lab

L-1 T-0 P-4

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about organic & inorganic rigging in Maya.

- 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, Pruning small weights, Normalizing Weights.
- 7) Creating and Editing Flexors.
- 8) Lattice, Sculpt, joint Cluster, Painting Cluster weights.
- 9) Rigging the controls.
- 10) Joints and hierarchies, Concept of Skeleton.
- 11) Connecting Joint, Removing Joint, Inserting Joint, Re-rooting Joint, Mirror Joint, Orientation of joints, Joint limits & damping.
- 12) Set preferred angle, Assuming preferred angle.
- 13) IK handle tool, IK Solvers, IK Spline, IK controls, IK handle
- 14) End effectors.
- 15) Using locators.
- 16) Stickiness.
- 17) Switching between IK/FK.
- 18) Adding the controls and attributes.
- 19) Grouping and Parenting.
- 20) Rigging a arm and hand, Advanced rig.

Practical's/Submissions

- Basic Biped with:

- Leg Setup
- Arm Setup
- Spine Setup
- Head Setup.
- Basic Vehicle Rig.

References 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.

BAMT

FIFTH SEMESTER

Sr. No	Subject	Subject Code	L	T	P	Marks		Maximum Marks	Credits
						Int.	Ext.		
1	Fundamentals of Aesthetics	AMT-501	3	0	0	40	60	100	3
2	Television Graphics & Animation Lab	AMT-502	1	0	6	60	40	100	4
3	Media Theory	AMT-503	3	0	0	40	60	100	3
4	Acting and Directing for Animation Lab	AMT-504	0	0	4	60	40	100	2
5	Digital Compositing Lab	AMT-505	1	0	6	60	40	100	4
6	Project-I	AMT-506	0	0	6	60	40	100	6
	TOTAL		8	0	22	320	280	600	

SIXTH SEMESTER

Sr. No	Subject	Subject Code	L	T	P	Marks		Maximum Marks	Credits
						Int.	Ext.		
1	Publicity Designing & Media Laws	AMT-601	3	0	0	40	60	100	3
2	Special Effects in Feature Films Lab	AMT-602	1	0	4	60	40	100	3
3	Introduction to Game Designing Lab	AMT-603	1	0	4	60	40	100	3
4	Animation Dynamics Lab	AMT-604	1	0	4	60	40	100	3
5	Project - II	AMT-605	0	0	12	100	100	200	12
	TOTAL		6	0	24	320	280	600	

Note : For Project -II (AMT-605) the students will have choice between the following:

- A. Short Animation Movie (2-D /3-D).
- B. Special Effects (VFX) Short Movie.
- C. Advertising Campaign (Short Ad Film / Print Media Campaign spread over a period time from pre-launch stage to brand building)
- D. Promotional Material (Promotional film, Brochure, Hanging, Posters)

SEMESTER - 5

Internal: 40 Marks
External: 60 Marks

AMT- 501

Fundamentals of Aesthetics

L-3 T-0 P-0

OBJECTIVE - The main objective of the subject is to impart the knowledge about complete and theoretical studies of Aesthetics.

1. **Defining Aesthetics(5%)**: What is Aesthetics, Aesthetic Experience, Plato, Aristotle.

2. **History of Indian Aesthetics (20%)**: Five Schools, Bharatmuni, Natyashashtra,

3. **Nine types of Rasa (20%)**: The principle study of Rasa like: Love, Joy, Wonder, Peace, Anger, courage, Fear, Sadness, Disgust.

4. **Six types of Bhavas (20%)**: The principle study of Bhavas like: Unruffled feeling, Comrade feeling, Servent-Master attitude, Mother Child feeling, Loved-Beloved feeling, Oneness with God.

5. **Applied Media Aesthetics (20%)**: What is Applied Media Aesthetics, Fundamental Elements of Applied Media Aesthetics, difference between Applied Media Aesthetics and Traditional Aesthetics.

References:

1. Indigenous Aesthetics: Native Art, Media, and Identity by Steven Leuthold (University of Texas Press), **Publisher-** University of Texas Press.

2. Art Beauty and Creativity: Indian and Western Aesthetics by Shyamala Gupta, **Publisher** D K Print World.

Semester- 5

**Internal: 60 Marks
External: 40 Marks**

AMT- 502

Television Graphics & Animation Lab.

L-1 T-0 P-6

OBJECTIVE - The main objective of the subject is to impart the knowledge about television Graphics & Animation.

Unit 1: Designing Graphics for Television (20%) :

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

Unit 2: Lighting for Computer Graphics (CG) (20%) :

- Using lights & shadows on 3-d Environment. □
- Glow Effects, Fog Effects, Volume Effects. □ Video Post.

Unit 3: Animating Graphics (25%):

- Basics of Television Graphic Animation. □
- Animating Logos, Titles.
- Camera Animation.
- Creating Fire Effects, Explosions.

Unit 4: Rendering of Graphic (20%)

- Mental Ray Techniques.
- Layer Based Rendering.
- Global Illumination, Final Gather, Caustics.

Unit 5: Compositing(15%)

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

Submissions:

- A short Clip Advertising/News Logo (Motion Graphics).

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

Reference:

1. 3-D Movie Making : Stereoscopic Digital Cinema (By:Bernard Mendiburu)
Publisher: Focal Press
2. 3-D Filmmakers: Conversations with Creators of Stereo(By: Ray Zone)
Publisher: The Scarecrow Press

SEMESTER - 5

Internal: 40 Marks
External: 60 Marks

AMT-503

Media Theory

L-3 T-0 P-0

OBJECTIVE - The main objective of the subject is to impart the knowledge about Media and various Media Theories.

1. General Introduction (10%):

- ☐ Film and TV.
- ☐ Theory of Production & Consumption of Media Content.

2. Theories of Spectatorship (10%).

3. Feminism and Film Theory (10%).

4. Reception Theory (10%).

5. Film Genres (10%).

6. Advertisements (10%).

7. Film Criticism (10%).

8. Film Theory (10%).

9. Media and Cultural Theory(10%).

10. Video - Everyday uses of Video, Video Art and Digital Video Transformation of Consumer to User(10%).

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.

SEMESTER - 5

Internal: 60 Marks
External: 40 Marks

AMT-504

Acting & Directing for Animation Lab

L-0 T-0 P-4

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about acting and directing for Animation Films.

1) Essential of Acting Concepts (25%)

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.

2) Facial expressions & Lip synchronization (50%)

- ☐ 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.

3) Directing Animation (25%)

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

Submissions

- ☐ Animation with dialogue & expressions(minimum one minute).

References books:

- ☐ Acting for Animators - Ed Hooks **Publisher:** Heinemann Drama; Revised edition ☐
- The artist's complete guide to facial expressions - Gary Gaigin
Publisher: Watson-Guption
- ☐ Stop staring : Facial modeling & animation done right - Jason Osipa
Publisher: Sybex

SEMESTER - 5

Internal: 60 Marks
External: 40 Marks

AMT-505

Digital Compositing Lab

L-1 T-0 P-6

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about Digital compositing & post-production of various media.

1) Digital Compositing (10%)

- ☐ What is Compositing?
- ☐ Fundamentals of Digital Compositing. ☐
- Capturing through Fire wire.
- ☐ Various File Formats or video extensions.

2) Introduction to Adobe After Effects (10%)

- _ 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.

3) Project Setting, Timeline, Layers (10%)

- ☐ 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.

4) Key framing, Transitions (10%)

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

5) Video Effects & Motion (20%)

- ☐ Color correction in video.
- ☐ Creating virtual animated backgrounds.
- ☐ Visual Effects Using Various Plug-in.
- ☐ Text animation in Adobe After Effects.
- ☐ Virtual cameras, lights.
- ☐ Learning the uses of particles, & dynamics.
- ☐ Different types of effect making like fire, dust, etc.

6) Audio Effects (10%):

- ☐ Sound Recording & Editing.
- ☐ Audio capturing & Synchronization.
- ☐ Controlling Pitch and tempo.

- ☐ Merging with the scenes.
- ☐ Encoding.

7) Chroma Keying (20%):

- ☐ 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.

8) Output (10%)

- ☐ 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.

Submissions

- ☐ 30 sec composited project.
- ☐ Clips with video & audio effects.
- ☐ Clips with chroma keying application.

References:

- ☐ Adobe After Effects Documentation.
- ☐ Digital compositing for film & video by Steve Wright
Publisher: Focal Press
- ☐ Professional digital compositing by Lee Lanier.
Publisher: Sybex; Pap/Dvdr O edition
- ☐ Adobe after effect visual effects & compositing by Mark Christiansen
Publisher: Adobe Press

SEMESTER - 5

Internal: 60 Marks
External: 40 Marks

AMT-506

Project-I

L-0 T-0 P-6

OBJECTIVE - The main objective of the subject is to make a short animation film by students as their Individual Show reel.

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

- a. Motion Graphics.**
- b. 3-D Animation.**
- c. Digital Compositing.**

SEMESTER - 6

Internal: 40 Marks
External: 60 Marks

AMT-601

Publicity Designing and Media Laws

L-3 T-0 P-0

OBJECTIVE - The main objective of the subject is to impart the knowledge about Publicity Designing, promotion of Projects/Products which plays an important role in the success of the Project. The other part of the subject is to impart knowledge about the Film Criticism /developing reviews.

1. Various Mediums of Publicity (50%):

- ☐ Print Media - Newspapers, Magazines, Brochures, Posters, Leaflets, Pamphlets, Dangers, 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(50%)

- ☐ Indian print Media in the context of Globalization. ☐
- Copyright Act - Recent Indian Laws.
- ☐ Contempt of Court- Civil and Criminal Contempt. ☐
- Defamation.

References Books:-

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

SEMESTER - 6

Internal: 60 Marks
External: 40 Marks

AMT-602

Special Effects in Feature Films Lab

L-1 T-0 P-4

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about how to make special effects for feature films.

Essential concepts of Special effects (10%): 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 (10%) : Overview of story boarding of effects, planning and managing the test shot and research about techniques.

Paint, Retouch & Wire removal (20%): 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 (20%): 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 (20%): 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 (20%): The study of combining computer generated character or an object with live camera footage.

Submissions

- ☐ Clips with Special effects (minimum 01 minute)

References books:

- ☐ Special effects : The History & Techniques - Richard Rickitt
Publisher: Watson-Guption
- ☐ Adobe after effects CS4 Visual effects & compositing studio techniques - Mark Christiansen. **Publisher:** Adobe Press
- ☐ Maya Visual effects : The innovator's guide - Eric Keller **Publisher:** Sybex ☐
- Maya Documentation
- ☐ After Effect Documentation

SEMESTER - 6

Internal: 60 Marks
External: 40 Marks

AMT- 603

Introduction to Game Designing Lab

L-1 T-0 P- 4

OBJECTIVE - The main objective of the subject is to impart the knowledge about 3-D Game Art Designing.

1) Game Art designing fundamentals (5%):

Basic concept of game designing, Character sketching, concept of character developing.

2) Game character & Environment design (10%):

Modeling a base mesh in Maya, concept of topology, Environment devolving.

3) Introduction to Zbrush (10%):

User Interface, over view of tools, shortcuts, Import & Export of mesh

4) Detailing the base mesh into Zbrush(15%):

Tools and Technique for detailing the mesh

5) Normal Maps (5%):

Overview of Normal maps, import & Export of normal maps

6) Z-brush - Maya Integration (5%):

Overview of z-brush and Maya integration

7) Texturing (10%):

Process of texturing for game, UWW mapping , Texture making (using Photoshop)

8) Baking maps(10%):

Overview of Baking maps , process for baking maps

9) Light Baking (10%):

Overview of Light Baking, process for baking Lights

10) Scene Optimization (5%):

Overview of scene optimization, process for optimization

11) File Import Export (5%):

The concept of file importing and Exporting

Submissions

- ☐ Low poly Game Character
- ☐ Environment of Exterior
- ☐ Environment of Interior

References books:-

- ☐ Game Design: Principles, Practice, and Techniques - The Ultimate Guide for the Aspiring Game Designer - Jim Thompson **Publisher:** Wiley

- Creating Game Art for 3D Engines - Brad Strong **Publisher:** Charles River Media
- Max Documentation
- Creating the Art of the Game - Matthew Omernick **Publisher:** New Riders Games □
- Introducing Zbrush - Eric Keller **Publisher:** Sybex
- ZBrush Digital Sculpting Human Anatomy - Scott Spencer **Publisher :** Sybex

SEMESTER - 6

Internal: 60 Marks
External: 40 Marks

AMT-604

Animation Dynamics Lab

L-1 T-0 P-4

OBJECTIVE - The main objective of the subject is to impart the practical knowledge about dynamics & physics simulation in Maya.

Introduction to Dynamics (10%): The Overview of Fur menus, hair, Ocean locators and wakes, nParticles, Ultimate Fluid.

Hair & Fur (30%): 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 by one in the fur and hair description.

Cloth (30%): 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 nParticles (10%): 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 (10%): 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 (10%): Popular highlights include toon rendering, mesh brush, optimizing scene, light based effects, control curves based effects, secondary animation, custom brushes.

Submissions:-

- ☐ Character Hair.
- ☐ Waving Flag.
- ☐ Character Cloth.

References books:-

- ☐ Maya Documentation
- ☐ Maya Studio Projects: Dynamics - Todd Palamar **Publisher:** Sybex

SEMESTER - 6

Internal: 100 Marks
External: 100 Marks

AMT-605

Project - II

L-0 T-0 P- 12

OBJECTIVE - The main objective of the subject is to make a short animation film by students as their Project Show reel so that the student can be easily assimilated in the Industry .The students can choose the area of Specialization keeping in view their interest.

For Specialization Project/ Show reel (AMT-605) the students will have choice between the following Specializations :

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

Note: The students shall work partly in the college and partly in the concerned Industry .