SAVITRIBAI PHULE PUNE UNIVERSITY

(FORMERLY UNIVERSITY OF PUNE)

THREE YEAR B. SC. ANIMATION DEGREE PROGRAM

(FACULTY OF SCIENCE & TECHNOLOGY)

CHOICE BASED CREDIT SYSTEM SYLLABUS

TO BE IMPLIMENTED FROM ACADEMIC YEAR 2021-2022

TABLE -1 STRUCTURE FOR F Y B SC AMIMATION								
SEMESTER 1								
COURSE CODE	COURSE	TEACHING SCHEME HOURS / WEEK			EXAMINATION SCHEME AND MARKS			CREDIT	
		THEORY	TUTORIAL	PRACTICAL	CE	END-SEM	TOTAL	TH	PR
ANM101	FOUNDATION OF ART	04	--	--	30	70	100	04	--
ANM102	BASICS OF ANIMATION	04	--	--	30	70	100	04	--
ANM103	INTRODUCTION TO DIGITAL GRAPHICS - IMAGE EDITING (VECTOR)	04	--	--	30	70	100	04	--
ANM104	INTRODUCTION TO PROGRAMMING LANGUAGES	04	--	--	30	70	100	04	--
ANM105	FOUNDATION OF ART (SKETCHING) & FLIPBOOK ANIMATION	--	--	03	15	35	50	--	1.5
ANM106	INTRODUCTION TO DIGITAL GRAPHICS - IMAGE EDITING (VECTOR)	--	--	03	15	35	50	--	1.5
ANM107	PROGRAMMING WITH C	--	--	03	15	35	50	--	1.5
ANM108	3D VISUALIZATION (3DS MAX)	--	--	03	15	35	50	--	1.5
						TOTAL CREDITS		16	06
TOTAL		16	--	12	180	420	600	22	

ABBREVIATIONS:

TW: TERM WORK **TH:** THEORY **OR:** ORAL **TUT**: TUTORIAL **PR**: PRACTICAL

TABLE -2
STRUCTURE FOR F Y B SC AMIMATION

SEMESTER 2

COURSE CODE	COURSE	TEACHING SCHEME HOURS / WEEK			EXAMINATION SCHEME AND MARKS			CREDIT	
		THEORY	TUTORIAL	PRACTICAL	CE	END-SEM	TOTAL	TH	PR
ANM201	DIGITAL PHOTOGRAPHY & FILMMAKING FUNDAMENTALS	04	--	--	30	70	100	04	--
ANM202	ELEMENTS OF INFORMATION TECHNOLOGY	04	--	--	30	70	100	04	--
ANM203	INTRODUCTION TO 2D ANIMATION	04	--	--	30	70	100	04	--
ANM204	3D ANIMATION-I (MAYA)	04	--	--	30	70	100	04	--
ANM205	DIGITAL PHOTOGRAPHY & FILMMAKING PRACTICALS	--	--	03	15	35	50	--	1.5
ANM206	IMAGE EDITING	--	--	03	15	35	50	--	1.5
ANM207	2D ANIMATION (ADOBE ANIMATE)	--	--	03	15	35	50	--	1.5
ANM208	3D ANIMATION-I (MAYA)	--	--	03	15	35	50	--	1.5
							TOTAL CREDITS	16	06
TOTAL		16	--	12	180	420	600	22	

ABBREVIATIONS:

TW: TERM WORK   **TH:** THEORY   **OR:** ORAL   **TUT**: TUTORIAL   **PR**: PRACTICAL

TABLE -3
STRUCTURE FOR S Y B SC AMIMATION

SEMESTER 3

COURSE CODE	COURSE	TEACHING SCHEME HOURS / WEEK			EXAMINATION SCHEME AND MARKS			CREDIT	
		THEORY	TUTORIAL	PRACTICAL	CE	END-SEM	TOTAL	TH	PR
ANM301	ANIMATION TECHNIQUE	04	--	--	30	70	100	04	--
ANM302	3D PRODUCTION-II (MAYA)	04	--	--	30	70	100	04	--
ANM303	ANIMATION PRODUCTION PROCESS	04	--	--	30	70	100	04	--
ANM304	WEB TECHNOLOGY WITH HTML & CSS	--	--	03	15	35	50	--	1.5
ANM305	ANIMATION TECHNIQUE	--	--	03	15	35	50	--	1.5
ANM306	3D PRODUCTION-II (MAYA)	--	--	03	15	35	50	--	1.5
ANM307	ANIMATION PRODUCTION PROCESS			03	15	35	50	--	1.5
	ENVIRONMENTAL SCIENCE-I	02	--	--	15	35	50	02	--
	LANGUAGE COMMUNICATION-I	02	--	--	15	35	50	02	--
						TOTAL CREDITS		16	06
TOTAL		**16**	**--**	**12**	**180**	**420**	**600**	**22**	

LANGUAGE COMMUNICATION - I (VALUE EDUCATION)

TABLE -4
STRUCTURE FOR S Y B SC ANIMATION

SEMESTER 4

COURSE CODE	COURSE	TEACHING SCHEME HOURS / WEEK			EXAMINATION SCHEME AND MARKS			CREDIT	
		THEORY	TUTORIAL	PRACTICAL	CE	END-SEM	TOTAL	TH	PR
ANM401	ANIMATION FOR AR AND VR TECHNIQUES	04	--	--	30	70	100	04	--
ANM402	3D SCULPTING TOOLS & TECHNIQUES (Z BRUSH)	04	--	--	30	70	100	04	--
ANM403	GAME DESIGN (BLENDER)	04	--	--	30	70	100	04	--
ANM404	ANIMATION FOR AR AND VR TECHNIQUES	--	--	03	15	35	50	--	1.5
ANM405	3D SCULPTING TOOLS & TECHNIQUES (Z BRUSH)	--	--	03	15	35	50	--	1.5
ANM406	GAME DESIGN (BLENDER)	--	--	03	15	35	50	--	1.5
ANM407	CHARACTER ANIMATION (MAYA/3DMAX/BLENDER)			03	15	35	50	--	1.5
	ENVIRONMENTAL SCIENCE-II	02	--	--	15	35	50	02	--
	LANGUAGE COMMUNICATION-II	02	--	--	15	35	50	02	--
						TOTAL CREDITS		16	06
TOTAL		16	--	12	180	420	600	22	

LANGUAGE COMMUNICATION - II (PROFESSIONAL COMMUNICATION SKILL)

TABLE -5
STRUCTURE FOR T Y B SC ANIMATION

SEMESTER 5

COURSE CODE	COURSE	TEACHING SCHEME HOURS / WEEK			EXAMINATION SCHEME AND MARKS			CREDIT	
		THEORY	TUTORIAL	PRACTICAL	CE	END-SEM	TOTAL	TH	PR
ANM501	VISUAL EFFECTS (NUKE)	04	--	--	30	70	100	04	--
ANM502	GAME PRODUCTION (UNITY)	04	--	--	30	70	100	04	--
ANM503	UI & UX DESIGN	04	--	--	30	70	100	04	--
ANM504	MOTION GRAPHICS AND COMPOSITING	04	--	--	30	70	100	04	--
ANM505	VISUAL EFFECTS (NUKE)	--	--	03	15	35	50	--	1.5
ANM506	GAME PRODUCTION (UNITY)	--	--	03	15	35	50	--	1.5
ANM507	DIGITAL EDITING (ADOBE PREMIER)	--	--	03	15	35	50	--	1.5
ANM508	MOTION GRAPHICS AND COMPOSITING (ADOBE AFTEREFFECTS)	--	--	03	15	35	50	--	1.5
						TOTAL CREDITS		16	06
TOTAL		16	--	12	180	420	600	22	

TABLE -6
STRUCTURE FOR T Y B SC ANIMATION

SEMESTER 6

COURSE CODE	COURSE	TEACHING SCHEME HOURS / WEEK			EXAMINATION SCHEME AND MARKS			CREDIT	
		THEORY	TUTORIAL	PRACTICAL	CE	END-SEM	TOTAL	TH	PR
ANM601	IPR & CYBER SECURITY	04	--	--	30	70	100	04	--
ANM602	NEW MEDIA	04	--	--	30	70	100	04	--
ANM603	WHITE BOARD AND EXPLAINER VIDEO ANIMATION	04	--	--	30	70	100	04	--
ANM604	BASICS OF MARKETTING, MANAGEMENT & PORTFOLIO DEVELOPMENT	04	--	--	30	70	100	04	--
ANM605	PORTFOLIO DEVELOPMENT	--	--	03	15	35	50	--	1.5
ANM606	PROJECT	--	--	03	15	35	50	--	1.5
ANM607	INTERNSHIP	--	--	03	15	35	50	--	1.5
ANM608	INTERNSHIP	--	--	03	15	35	50	--	1.5
						TOTAL CREDITS		16	06
TOTAL		16	--	12	180	420	600	22	

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F.Y.
Revised syllabus to be implemented from Academic year 2021-2022
Credits: 04 each | Total Lectures 60
Subject: ANM101 Foundation of Art
Semester I

Chapter	Topic Name	Lectures
ANM101 Foundation of Art
Semester I
1	**Skills required for an Animation Artist** 1.1 Introduction to Visual and Creative development of an artist. 1.2 Introduction to Light & shade. 1.3 Introduction to Grayscale pencil shading.	**9**
2	**Introduction to Colors** 2.1 Different types of Methods Additive and Subtractive 2.2 Introduction to Pigment colors 2.3 Introduction to Harmony and Schemes 2.4 Tint, Shade, Value 2.5 Warm Colors 2.6 Cool Colors	**13**
3	**Elements of Visual Design** Ref: https://blog.adobespark.com/2020/10/17/8-basic-design-principles-to-help-you-create-better-graphics/ 3.1 Line 3.2 Color 3.3 Shape 3.4 Value 3.5 Texture 3.6 Space 3.7 Form 3.8 Typeface.	**10**
4	**Principles of design and Gestalt Theory** Ref: http://www.scholarpedia.org/article/Gestalt_principles?__hstc=77520074.36a0ddae8e24bce7 4.1 Unity/Harmony 4.2 Balance 4.3 Scale/proportion 4.4 Dominance/emphasis 4.5 Similarity 4.6 Proximity 4.7 Contrast 4.8 Figure and Ground 4.9 Symmetry 4.10 Order 4.11 Continuation 4.12 Closure	**10**

5	**Introduction to 2D, 3D Design and Typography**	8
	5.1 What is 2D and 3D Design?	
	5.2 Fundamentals of Type	
	5.3 Features of typography: fonts, kerning, weightages, etc.	
6	**Introduction to Human Anatomy**	10
	(Ref: Anatomy and Drawing by Victor Perard)	
	6.1 Heads	
	6.2 Key Lines	
	6.3 Volume Construction	
	6.4 Balance	
	6.5 Muscles	
	6.6 Bones and joints	

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F. Y.
Revised syllabus to be implemented from Academic year 2021-2022
Credits: 04 each | Total Lectures - 60
Subject: ANM102 - Basics of Animation
Semester I

ANM102 Basics of Animation		
Semester I		
Chapter No.	**Topic Name**	**Lectures**
1	**History of Animation - World** 1.1 American Animation: Disney (Beginning of animation) 1.2 Russian Animation: Soyuz Multifilm 1.3 Other countries animation	3
2	**History of Animation - India** 1.1 Films Division 1.2 Bhimsain, Ram Mohan, Ajit Rao, NID	2
3	**Animation Glossary** 3.1 Terms used in 2D Animation, Key frames, storyboard, In-between, staging, character design, backgrounds, sound breakdown, dope sheet etc. 3.2 Terms used in 3D Animation & VFX - Modelling, Rigging...	6
4	**Types of Animation** 4.1 Traditional Animation 4.2 2D Animation 4.3 3D Animation 4.4 Stop Motion Animation 4.5 Motion Graphics	3
5	**Basic Principles of Animation** 5.1. Explain the Basic Principles 5.2. Explain with Acting	3
6	**Role of Audio in Animation.** 6.1. Background Music. 6.2. Voice over. 6.3 Foley Track.	3
7	**Development of Characters** 7.1. Case Studies of famous animation characters. E.g. Oswald Rabbit, Tom and Jerry, Beauty and the Beast.	3
8	**Use of other art forms in Animation** 8.1 Acting: Expression, Gesture 8.2 Architecture: Lighting, Texture 8.3 Sculpture: 3D Visualization, Posing 8.4 Music: Culture, Expressions	3
9	**Developing Animation Storyboard** 9.1. Shot, Scene, Sequence 9.2. Types of shots and Camera angles	4

10	**Anatomy & Body Language** 10.1. Character Anatomy - E.g. Hunchback, Beast... 10.2. Animal Anatomy - Goofy, Donald duck, Dumbo	4
11	**Developing the characters with computer animation.** 11.1 Character anatomy (Human) - E.g.: Moana, Tinker bell, woody etc... 11.2 Animal anatomy - E.g.: Sid (Ice age), Panda, Dragon….	4
12	**Techniques used in Animation short films** - Discussion about award winning animation short films	3
13	**Software available for digital animation** 13.1 2D Animation - free and paid 13.2 3D Animation - free and paid	4
14	**Hardware for animation** 14.1 2D Animation - Animation table, disc, peg bar, etc. 14.2 Digital animation - Computer, Graphic tables, Render farms, 3D Scanners	2
15	**Appreciation of 6 all-time classic animation films** - Demonstrate the shots, have discussion, explain details of the film	12

Reference Books:

1. The Complete Animation course by Chris Patmore, Barons Educational Series (New York)
2. Anatomy of the Artist – Thompson & Thompson

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F.Y.
Revised syllabus to be implemented from Academic year 2021-2022
Credits: 04 each | Total Lectures 60
SUB: ANM 103 - Introduction to Digital Graphics-Image Editing (Vector)
Semester I

Chapter No.	Topic Name	Number of Lectures
1	**INTRODUCTION** • Interface Introduction to Adobe Illustrator • Panels & Workspaces in Adobe Illustrator • Art boards in Adobe Illustrator • Vector basics / Selection & Direct selection tool • Fill & Stroke effects in Adobe Illustrator • Using Colour / Swatches / Pantone's / Gradients & more • Handy Tips / Things to know for beginners	16
2	**ESSENTIAL PRACTISE** • Creating shape vectors • Grouped vectors & Compounding vector shapes • 10 Drawing with the Pen tool / Brush tool / Pencil tool & more • 11 The Blob brush tool & Eraser tool • 12 Type tools in Adobe Illustrator	12
3	REATE A PROJECT **Setup** • Setting up a document / Placing in a drawing / Sketch • Image trace tool for sketches in Adobe Illustrator	10
4	**Drawing** • Tracing a hand drawn sketch & Converting to vector artwork • Compounding vector shapes & strokes / Pathfinder Tool	10
5	**Colouring & Text** • Colouring a vector drawing in Adobe Illustrator • Adding type to a poster design in Adobe Illustrator	10
6	**Finishing & Exporting** • Exporting ready for print in Adobe Illustrator	02

Reference Book :- The complete beginners guide to Adobe Illustrator.

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F.Y.
Revised syllabus to be implemented from Academic year 2021-2022
Credits: 04 each | Total Lectures 60
SUB: ANM 104 Introduction to Programming Languages
Semester I

Introduction to Programming Languages		
Sr. No.	**Topics**	**Number of Lectures**
01	**1.Introduction to Programming** 1.1 Program and Programming 1.2 Programming Languages - salient features of each 1.3 Types of software's - system s/w & application s/w 1.4 Operating Systems - Windows/Linux/Android/iOS 1.5 Dos commands 1.6 Compiler, Interpreter, Loader and Linker, Editors	03
02	**2.Fundamentals in C** 2.1 History of 'C' 2.2 A Simple C Program 2.3 Program execution phases 2.4 Backslash character constants - Escape sequences 2.5 Character set 2.6 Constants 2.7 Number systems 2.8 Format specifiers 2.9 Identifiers 2.10 Keywords 2.11 Variables 2.12 Data Types 2.13 Declaration of Variable 2.14 Assigning Values to Variables 2.15 Initialization 2.16 Comments 2.17 Const Qualifier 2.18 Basic Structure of a 'C' program	04
03	**3.Operators and Expressions** 3.1 Arithmetic operators 3.2 Increment and decrement operators 3.3 Relational operators 3.4 Logical operators 3.5 The bitwise operators 3.6 The assignment operators 3.7 The conditional operator 3.8 The size of operator 3.9 The comma operator 3.10 Type casting operator 3.11 Other operators	04

	3.12 Precedence and order of evaluation	
04	**4.Control statements** 4.1 Conditional Control Statements 4.2 if 4.3 if-else 4.4 nested if-else 4.5 else-if ladder 4.6 Multiple Branching Control Statement 4.7 switch-case 4.8 Loop Control Statements 4.9 while 4.10 do-while 4.11 for 4.12 Nested Loops 4.13 Jump Control statements 4.14 break 4.15 continue 4.16 goto 4.17 exit 4.18 return	05
05	**5.Function** –What is function? –Why function? –Advantages of using functions –Function Prototype –Defining a function –Calling a function –Return statement –Types of functions –Recursion –Nested functions –main () function –Library Function –Local and global variables Creating own header files	05
06	**6.Pointer** –Def of Pointer –Declaration of Pointer Variables –Assigning Address to Pointer	02
07	**7.Variables** –De-referencing Pointer Variables –Pointer Arithmetic –Pointer comparisons –De-reference and increment pointer –pointer to const data –Void pointer or Generic Pointer –Null pointer	06
08	**8.Pointer and Function** –Parameter Passing Techniques – call by value, call by address –Using Pointers as Arguments –Function Returning value –Returning More than one value from A	05

09	**9.Function** –Functions Returning Address –Function Returning Pointers	04
10	**10.Argument to other function** –Functions with variable number of arguments	02
11	**11.Array** –One dimensional arrays –Declaration of 1D arrays –Initialization of 1D arrays –Accessing element of 1D arrays –Reading and displaying elements –Two dimensional arrays - matrix operations –Declaration of 2D arrays –Initialization of 2D arrays –Accessing element of 2D arrays –Reading and displaying elements	06
12	**12.Pointer and Array** –Pointer and one dimensional arrays –Subscripting pointer variables –Pointer to an array	03

13	**13.Array and Function**
	–1D array and function
	        –Passing individual array elements to
	        a function
	        –passing whole 1d array to a function
	–2D array and function
	        –Passing individual array elements to
	        a function
	        –passing whole 2d array to a function
	        –using arrays of function pointer
		04

14	**14.Strings** –strings versus character arrays –Initializing strings –Reading string –Displaying string –The %s format specifier –The gets() and puts() functions –string handling functions –string pointers	05
15	**15.Command line arguments** –what is command prompt? –why command line? –What are command line arguments?	02

Reference books:

1. Let us C By Yashwant Kanitkar

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F. Y.
Revised syllabus to be implemented from Academic year 2021-2022

Semester 1: Practical - ANM 105- Lab I
[FOUNDATION OF ART (SKETCHING) & FLIPBOOK ANIMATION]

Based on Subjects : 1. Foundation of Art (ANM 101) and
2. Basics of Animation (ANM 102)

The list suggested for practical are not to be implemented using EQUAL timeframes (like 1 hr/2 hrs etc), but can be implemented using variable timeframes. The objective is to match the overall time mentioned (in brackets) in front of each domain.

Sketching (15 hrs)

1. Assignment for Drawing Basic Shapes (Two and Three Dimensional)
2. Drawing and Developing five objects using Basic shapes. (e.g. Car, Cup and Saucer)
3. Practicing Technique of Pencil Shading.
4. Making 10 point Grayscale using two of the Shading techniques.
5. Types of Colors (Primary, Secondary, Tertiary), demonstration and assignment
6. Sketching Eyes, Ear, Nose and lips.
7. Sketching Hand and Feet.
8. Sketching Human Face.
9. Foreshortening of hand and legs.
10. Assignment for Muscle Drawing.
11. Drawing Basic Human figure (Male, Female, and Child)

Flipbook (15 hrs)

1. Drawing different mannequin poses.
2. Sequential drawing for figures (E.g - Walking, Running, Jumping)
3. Sequential drawing for objects (E.g - Grain Sack, Cube with tail.)
4. Making a Flipbook for a "Ball with Tail" and colouring it
5. Making a Flipbook for "Growing Flower" or any other subject (of your choice) and colouring it

---

Semester 1: Practical - ANM 106- Lab II

Based on Subjects : INTRODUCTION TO DIGITAL GRAPHICS - IMAGE EDITING (VECTOR)

Adobe Illustrator is the industry-standard vector graphics software used by millions to create logos, illustrations, packaging, and more.

(30 hrs)

Practical List
1. Shapes Composition
2. Create tattoo Designs
3. Create own text A to Z
4. Logo Design
5. Branding Visiting Card, Letter head, Envelop Design
6. Brochure Design
7. Advertise Design
8. Product modeling illustration
9. Car Modeling
10. Character Design

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F. Y.
Revised syllabus to be implemented from Academic year 2021-2022

Semester 1: Practical - ANM 107- Lab III

Based on Subjects : Introduction to Programming Languages (Programming with C)

C and C Sharp Practical's:-   30 Hrs

1. Write a Program which take an input marks obtain in 4 subject and print marks obtain in 4
    a. Subject and percentage (in float) also print student is pass or fail (student is fail if he/she Obtain less than 35 marks in any of four papers).
2. Write a C program find the Area and Perimeter and Square and Rectangle.

3. Write a C program find the find max, Among 3 integer numbers. And also print square of the maximum number.
4. Write a C program to check whether the number is prime or not (Write a function to check number is prime).

5. Write a C program to print GCD of two integers (Write a function to find GCD).
6. Write a C program to print addition of Array elements.
    a. (Number of array element will be 5 and take the array element from user)

7. Write a C program to find an element in array.
    a. (Number of array element will be 5 and take the array element from user)
8. Write a C program to calculate n! Factorial.

9. Write a C program to read two strings and explain string library function.
    a. 1)strlen()
    b. 2)strcyp()
    c. 3)strcat()
    d. 4) strcmp()
10. Write a C program to which contain function to obtain first 25 number of a Fibonacci series.
11. Write a C program using switch case which perform math's operation (+, -, *, /, %).
12. Write a program to Create a Animated Welcome Screen using C#.
13. Write a program to Create a Calculator using C# application to add, subtract, divide, multiply the numbers.
14. Write a program to send html Email from C#.
15. Write a program to Create Web Browser in C#.
16. Write a C# Sharp program to extract the Date property and display the DateTime value in the formatted output.

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F. Y.
Revised syllabus to be implemented from Academic year 2021-2022

Semester 1: Practical - ANM108- Lab IV

Based on Subjects : 3D Visualization (3Ds MAX)

Practical : 3D Visualization ANM108
30 HRS 1. Basic Modeling concept: Furniture Door windows Gate, Household Appliances Modeling Concept and Primitives and Modifier Explain Editable Polygon and its parameters. Introduction of Spline Modeling Import & Export File Management Project Setting Introduction Material Editor Introduction to Render Settings and Renderers 2. Create an Interior scene: Living, Kitchen and Bedroom 3. Texture the Interior scene with Various Arnold Shaders 4 Render the Interior scenes with Arnold Render setup use   different types of Arnold Lights 5. Create a 3D Concept car with Car interior, Wheels and front, rear Lights 6. Texture the Car with Car Paint in Arnold Shaders and other Arnold presets as per requirement 7. Render the scene with Image based lighting using HDRI in Arnold, use proper lights for Head Light and Tail light, use volumetric light and fog effect to render a night scene 8. Create an Exterior scene for Architectural Visualization using proper plans, built a 4-storey building draw floor plans Extrude walls using splines, create proper environment, Use vegetations, Compound walls and gates, fencing, Put Alpha Images of Vehicles and humans if required 9. Texture all the models in Exterior scene using Arnold Shaders included Glass, Metal, Plastic, Rubber, Mirror and other qualities, UV unwrap as per requirement, 10 Render output in Image and Video Format: I)Render a Perspective view for Exterior scene using various Arnold Lights e.g., Sky Dome HDRI, Photometric light, Mesh Light and others as per requirement II)Create an Architectural Walkthrough in Video Format **Student Should Present Journal of Architectural Visualization at the end of the Semester.**

Savitribai Phule Pune University, Pune

Course Name: B. Sc. Animation Class: F. Y.

Revised syllabus to be implemented from Academic year 2021-2022

Credits: 04

SUBJECT: ANM201 - Digital Photography & Filmmaking Fundamentals

Semester II

Chapter	Topic Name	Lectures
	ANM201 Digital Photography & Filmmaking Fundamentals	
	Semester II	
1	**Evolution of Photography** 1.1. Definition of Photography 1.2. Origin of Camera World 1.3. Urge of Invention of Photography	03
2	**Digital Photography** 2.1. Basics of Digital Photography 2.2. Camera Equipment 2.3. Various Camera and Lenses 2.4. Camera Settings 2.7. Creative Photography (Angles in Photography)	10
3	**Basics Of Lighting** 3.1 What are major sources of lights? 3.2 Types of Lights in Photography. (Main / Key Light, Fill Light, Cut Light/Kick Light, Background Light). 3.3 Flash Operating Modes	08
4	**Composition** 4.1 What is composition in Photography? Its significance. 4.2 Types of Composition: Symmetrical, Radial, Diagonal, Letter Box, Tall Crop, Rule of third, Overlapping, Frame in Frame, Geometrical Shapes & Forms.	08
5	**Analytical Thinking and Study** 5.1.Finding Right Mind-set 5.2. Framing the Unexpected 5.3. Photographing People 5.4. Developing Photographic Voice 5.5. Field Activity or Assignment	05

	Filmmaking Fundamentals	
6	**Development** Before a film can get started, it needs to go through the "development" phase. This phase includes the creation, writing, organizing and planning of a film project. The budget must be set, cast goes through auditions, the location is decided, and multiple scripts are written. Many times, writers and directors create storyboards to entice producers to finance the film.	**03**
7	**Pre-Production** Once a film or digital media has gotten out of development, it's not quite time to start filming. Although that day is getting ever-closer, there first needs to be a pre-production phase. While cameras are not yet rolling, pre-production can be just as intense as the filming itself.	**05**
8	**Production** At long last, the film is ready roll. Production is the quickest, and sometimes the shortest portion of filmmaking and digital media production. How long it takes to film depends on variables like the number of locations, the length of the film, and if any key members, such as leads, are off set for any portion of the filming.	**04**
9	**Cinematography Lightening Technique, Sound** 9.1. Introduction to Video Camera 9.2. Camera and its Function 9.3. Camera Angles and Shots 9.4. Composition 9.5 Video Lights, Lightening Techniques 9.6 Sound	**08**
10	**Post-Production** If someone saw a rough cut of a special effects-heavy blockbuster with no post-production additions, they would not be all that excited. The audience would be confused about why it looks so weird, without music or effects. Post-production is when the footage is edited, visual effects are added, music is composed, and titles are finalized.	**03**
11	**Distribution** With so many different mediums, such as movie theatres, television, home video, digital media and streaming, there are various distribution possibilities. What kind of distribution a film gets can depend on its quality and the pull of the filmmaker or studio?	**03**

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F.Y.
Revised syllabus to be implemented from Academic year 2021-2022
Credits: 04 each | Total Lectures 60
SUB: ANM 202 Elements of Information Technology
Semester II

Elements of Information Technology		
Sr. No.	Topics	Number of Lectures
01	**1. KNOWING COMPUTER** 1.0 Introduction 1.1 Objectives 1.2 What is Computer? 1.2.1 Basic Applications of Computer 1.3 Components of Computer System 1.3.1 Central Processing Unit 1.3.2 Keyboard, mouse and VDU 1.3.3 Other Input devices 1.3.4 Other Output devices 1.3.5 Computer Memory 1.4 Concept of Hardware and Software 1.4.1 Hardware 1.4.2 Software 1.4.2.1 Application Software 1.4.2.2 Systems software 1.5 Concept of computing, data and information 1.6 Applications of IECT 1.6.1 e-governance 1.6.2 Entertainment 1.7 Bringing computer to life 1.7.1 Connecting keyboard, mouse, monitor and printer to CPU 1.7.2 Checking power supply	10
02	**2. OPERATING COMPUTER USING GUI BASED OPERATING SYSTEM** 2.0 Introduction 2.1 Objectives 2.2 Basics of Operating System 2.2.1 Operating system 2.2.2 Basics of popular operating system (LINUX, WINDOWS) 2.3 The User Interface 2.3.1 Task Bar 2.3.2 Icons 2.3.3 Menu 2.3.4 Running an Application 2.4 Operating System Simple Setting 2.4.1 Changing System Date And Time 2.4.2 Changing Display Properties 2.4.3 To Add Or Remove A Windows Component 2.4.4 Changing Mouse Properties 2.4.5 Adding and removing Printers 2.5 File and Directory Management 2.5.1 Creating and renaming of files and directories 2.6 Common utilities	05

03	**3. UNDERSTANDING WORD PROCESSING** 3.0 Introduction 3.1 Objectives 3.2 Word Processing Basics 3.2.1 Opening Word Processing Package 3.2.2 Menu Bar 3.2.3 Using The Help 3.2.4 Using The Icons Below Menu Bar 3.3 Opening and closing Documents 3.3.1 Opening Documents 3.3.2 Save and Save as 3.3.3 Page Setup 3.3.4 Print Preview 3.3.5 Printing of Documents 3.4 Text Creation and manipulation 3.4.1 Document Creation 3.4.2 Editing Text 3.4.3 Text Selection 3.4.4 Cut, Copy and Paste 3.4.5 Spell check 3.4.6 Thesaurus 3.5 Formatting the Text 3.5.1 Font and Size selection 3.5.2 Alignment of Text 3.5.3 Paragraph Indenting 3.5.4 Bullets and Numbering 3.5.5 Changing case 3.6 Table Manipulation 3.6.1 Draw Table 3.6.2 Changing cell width and height 3.6.3 Alignment of Text in cell 3.6.4 Delete / Insertion of row and column 3.6.5 Border and shading	**10**
04	**4. USING SPREAD SHEET** 4.0 Introduction 4.1 Objectives 4.2 Elements of Electronic Spread Sheet 4.2.1 Opening of Spread Sheet 4.2.2 Addressing of Cells 4.2.3 Printing of Spread Sheet 4.2.4 Saving Workbooks 4.3 Manipulation of Cells 4.3.1 Entering Text, Numbers and Dates 4.3.2 Creating Text, Number and Date Series 4.3.3 Editing Worksheet Data 4.3.4 Inserting and Deleting Rows, Column 4.3.5 Changing Cell Height and Width 4.4 Formulas and Function 4.4.1 Using Formulas 4.4.2 Function	**05**

| 05 | **5. INTRODUCTION TO INTERNET, WWW AND WEB BROWSERS**
5.0 Introduction
5.1 Objectives
5.2 Basic of Computer Networks
5.2.1 Local Area Network (LAN)
5.2.2 Wide Area Network (WAN)
5.3 Internet
5.3.1 Concept of Internet
5.3.2 Applications of Internet
5.3.3 Connecting to the Internet
5.3.4 Troubleshooting
5.4 World Wide Web (WWW)
5.5 Web Browsing Software's
5.5.1 Popular Web Browsing Software's
5.6 Search Engines
5.6.1 Popular Search Engines / Search for content
5.6.2 Accessing Web Browser
5.6.3 Using Favourites Folder
5.6.4 Downloading Web Pages
5.6.5 Printing Web Pages
5.7 Understanding URL
5.8 Surfing the web
5.8.1 Using e-governance website | **10** |
| 06 | **6. COMMUNICATIONS AND COLLABORATION**
6.0 Introduction
6.1 Objectives
6.2 Basics of E-mail
6.2.1 What is an Electronic Mail
6.2.2 Email Addressing
6.3 Using E-mails
6.3.1 Opening Email account
6.3.2 Mailbox: Inbox and Outbox
6.3.3 Creating and Sending a new E-mail
6.3.4 Replying to an E-mail message
6.3.5 Forwarding an E-mail message
6.3.6 Sorting and Searching emails
6.4 Document collaboration
6.5 Instant Messaging and Collaboration
6.5.1 Using Instant messaging
6.5.2 Instant messaging providers
6.5.3 Netiquettes | **10** |

07	**7. MAKING SMALL PRESENTATIONS** 7.0 Introduction 7.1 Objectives 7.2 Basics 7.2.1 Using PowerPoint 7.2.2 Opening A PowerPoint Presentation 7.2.3 Saving A Presentation 7.3 Creation of Presentation 7.3.1 Creating a Presentation Using a Template 7.3.2 Creating a Blank Presentation 7.3.3 Entering and Editing Text 7.3.4 Inserting And Deleting Slides in a Presentation 7.4 Preparation of Slides 7.4.1 Inserting Word Table or An Excel Worksheet 7.4.2 Adding Clip Art Pictures 7.4.3 Inserting Other Objects 7.4.4 Resizing and Scaling an Object 7.5 Presentation of Slides 7.5.1 Viewing A Presentation 7.5.2 Choosing a Set Up for Presentation 7.5.3 Printing Slides And Handouts 7.6 Slide Show 7.6.1 Running a Slide Show 7.6.2 Transition and Slide Timings 7.6.3 Automating a Slide Show	10

Reference Books:-

1. Introduction to Information Technology by Sanjay Saxena, Vikas Publishing House
2. "Fundamentals of Information Technology" by Deepak Bharihoke
3. 3."Computer Fundamentals and Information Technology" by S S Shrivastava

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F.Y.
Revised syllabus to be implemented from Academic year 2021-2022
Credits: 04 each | Total Lectures 60
Subject: ANM203 - INTRODUCTION TO 2D ANIMATION
Semester II

ANM203 - INTRODUCTION TO 2D ANIMATION		
Semester II		
Chapter	**Topic Name**	**Lectures**
1	**Introduction to the Adobe Animate interface** 1.1. Tool Panel 1.2. Managing windows and Panel 1.3. Creating custom workspace Layouts 1.4. Setting stage dimensions 1.5. Working with panels 1.6. Editing frames and layers 1.7. Layers & Views.	7
2	**Introduction to drawing and drawing tools in Adobe Animate** 2.1. Geometric Shape Tools 2.2. Drawing Tools 2.3. Using Fill and Stroke Controls	6
3	**Shaping Objects – Overview of shapes, Drawing & Modifying Shapes** 3.1. Designing and Aligning Elements 3.2. Simplifying snapping setting 3.3. Design Panels 3.4. Selection with Objects 3.5. Working & Editing Objects 3.6. Transforming Objects	6
4	**Animation -Principles , Frame by frame animation, tweening, masks** 4.1. Basic Method of 2D Animation 4.2. Frame by Frame Animation 4.3. Using Tweens for Animation 4.4.Using Mask for Animation	8

5	**Bitmap Images & Sounds**	6
	5.1. Defining Vectors and Bitmaps	
	5.2. Identifying sound File Import and Export Format	
	5.3. Editing Audio in Animate	
6	**Building a Movie- Symbol, Libraries, Structure & Exporting Movie**	8
	6.1. Understanding the Document Library.	
	6.2. Editing Symbols.	
	6.3. Modifying Instance Properties.	
	6.4.Learning Libraries	
	6.5.Exporting Movie	
7	**Introduction to Adobe Character Animator**	8
	7.1Tools	
	7.2Layout	
	7.3. Difference Between Keyframes and Performance Capture	
8	**Recording and editing performances**	6
	8.1. Recording and Editing	
	8.2. Handles, sticks, and pins	
	8.3. Rigging a full body/character	
	8.4.Workflow with layered AI and PSD files	
9	**Animating by Character Animator**	5
	9.1.Adding triggers and behaviours	
	9.2.Cycle layers and frame by frame	
	9.3.Physics and Gravity	
	9.4.Exporting	

Reference Books

1. Adobe Animate Classroom in a Book- Russell Chun
2. Timing for Animation - Harold Whitaker
3. A Reader In Animation Studies-- Jayne Pilling

Links:

1. https://en.wikipedia.org/?title=2D_Animation&redirect=nohttp://www.colormatters.com/color-and-design/basic-color-theory
2. https://en.wikipedia.org/wiki/Computer_animationhttp://www.usability.gov/what-and-why/visual-design.html
3. https://en.wikipedia.org/wiki/Character_animation

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F.Y.
Revised syllabus to be implemented from Academic year 2021-2022
Credits: 04 each | Total Lectures 60
Subject: ANM204 – 3D Animation – I (Autodesk MAYA)
Semester II

	3D Animation – I (Autodesk MAYA)	
Sr. No.	Topics	Number of Lectures
01	**1 Interface of Maya** 1.1 Maya Viewport and Menu bar 1.2 Maya Shelfs, Command panel, 1.3 Maya Attribute editor, Channel Box/ Layer editor 1.4 Workspace, Outliner, Animation Timeline, Tool editor 1.5 Hypershade, Render settings	**05**
02	**2 Inorganic Modeling** 2.1 Understanding Polygon Geometry Polygon Vertices, Polygon Edges, Polygon Faces, Working with Smooth Polygons 2.2 Modeling with Polygons, Using Booleans, Cleaning Topology Creating Your Own Polygons, Multi-Cut Tool, Combining and Merging Geometry, Bridge Polygon, Mirror Cut 2.3 Architectural Modeling Interior/ Exterior 2.4 Lofting Surfaces, Attaching Surfaces 2.5 Vehicle (CAR) Modeling using patch or edge extrusion method	**15**
03	**3 Character Modeling** 3.1 Model a Cartoon character using Box Modeling or Patch modelling method 3.2 Image plane setup 3.3 Human Face blocking and Modeling 3.4 Torso Blocking and Modeling 3.5 Hand and Foot Blocking and Modeling	**12**
04	**4 Hypershade in Maya** 4.1 Interface of Hypershade in maya 4.2 Various types of Shaders in Maya 4.3 Node Network parameters 4.4 Bump Maps, Normal Maps, Creating Normal Maps, Applying Normal Maps 4.5 UV Coordinates 4.6 Apply Texture on Cartoon Character	**08**
05	**5 Maya Lighting and Rendering** 5.1 Introduction Maya Standard Light and Renderer 5.2 Use of different types of lights in Maya 5.3 Three Point light 5.4 Maya Light Environment, effects and exposure controls, 5.6 Maya standard render setup 5.7 Maya basic Render output setting to save Render Image	**10**
06	**6 Maya Deformers and Facial Expressions** 6.1 Working with Deformers, 6.2 Shrink Wrapping Geometry 6.3 Using Textures to Deform Objects 6.4 Animating Facial Expressions Happy Sad Anger shocked 6.5 Vowels A E I O U using Blend Shapes, 6.6 Lip-sync with dialogue	**10**

Practical : Digital Photography & Filmmaking Fundamentals

Based on **Digital Photography**   **15 HRS**

1. Outdoor portrait with reflector
2. Effects of aperture (DOF)
3. Effects of shutter speed: Fast shutter, Slow shutter, Panning
4. Group photo: Formal, Informal
5. Silhouette
6. Architectural photography
7. Perspective: Linear, Arial
8. Pattern: Natural, Artificial
9. Photographs of Fruits, Earthenware, Flowers, Crockery, Metal ware, Glassware, Food, and Jewellery etc.
10. Lighting for Rough & Smooth Texture
11. Lighting for form & shape
12. Silhouette
13. Portrait
14. High key
15. Low key

Based on **Filmmaking Fundamentals**   **15 HRS**

1. Write a Synopsis of a Script
2. Make a Screenplay
3. Make a master chart with shooting schedule
4. Photo Stories
5. 5 Shots assignment
6. Shoot Two Person Conversation with flashback
7. Shoot a Documentary. Duration not more than 5 minute.
(For this assignment, students will be producing a short documentary about a topic of their choosing. The subject can be something academic, about a hobby or passion of yours or a person. You will research the topic, shoot original footage and conduct interviews about the topic.)

8. Make Three-Act Structure Short Film. Duration : Not more than 7 minutes.
(This assignment requires you to script, storyboard, shoot and edit a short film that follows the three-act narrative arc. You don't have to hit every point, but it becomes a fun challenge to show the basic elements of the hero's journey from beginning to end.)

9. Make a Biography. Duration: 4.00 to 9.00 Minutes.
(Students will produce a biographical piece about another student. For this project, you will need to interview a student and get to know them. Learn about their life up to this point, and find a story to tell about them. Interview them and their family members. Your subject may be a classmate in this class or a friend who is not a part of this class.)
(Suggestions for filming and editing: Pick a student that has a story worth sharing. |Interview their family members and friends. | Utilize family movies or photos from their childhood.)

10. Write a Film Review of any Full Length Film with all aspects (Pre-Production, Production & Post-Production).

Student Should Present Journal of Basics of Photography at the end of the Semester.

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F. Y.
Revised syllabus to be implemented from Academic year 2021-2022
Semester II : Practical – ANM 206 – Lab II
Based on : Introduction to Digital Graphics (Adobe Photoshop)

Adobe Photoshop® is the industry standard software for image editing. It is both very powerful and very complex. As you learn to master its complexity, you will discover that Photoshop is a magical program that should come with a warning label:

Our students use Photoshop to:
 • Adjust scanned or digital camera images for better screen display or printing. Photoshop lets you easily change the file format of graphical images to use as email attachments, on Web pages, or in printed documents such as brochures and newsletters.
• Edit photographs, especially those taken with a digital camera or digitized with a scanner. Photoshop becomes an electronic darkroom.
On the left, you can see the original digital photograph of the Golden Gate Bridge, taken by Lorene Romero. The right side shows the same photograph with a quick Photoshop edit.
• Restore old and/or damaged photographs. The original 1921 photo, on the left, was scanned into Photoshop, restored, and colorized. You will learn to do this before the course is over.
• Modify images or start from scratch to create original artwork.
Photoshop becomes an electronic playroom both for painting with pixels as well as for working with scalable objects like lines, shapes, and text. This cat face artwork was done by Nicholas Ogg.

(30 hrs)

Practical List
1. Adding and removing elements from background
2. Create any product. (Biscuit Cover, Chock let Cover, Cream Cover, Kurkure Cover, lays Cover, etc.)
3. Converting black and white photo to Color
4. Removing scratches and restoring old photos
5. Coloring Cartoon/Comic Character
6. Coloring Comic Page/Pages
7. Photo Manipulation
8. Create Typographical Text
9. Create any 3D Modeling with Adobe Photoshop
10. Digital Painting
11. Matt Painting

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F. Y.
Revised syllabus to be implemented from Academic year 2021-2022
Semester II : Practical – ANM 207 – Lab III
Based on Subject: Introduction to 2D Animation

The list suggested for practical are not to be implemented using EQUAL timeframes (like 1 hr /2 hrs etc), but can be implemented using variable timeframes. The objective is to match the overall time mentioned (in brackets) in front of each domain.

Adobe Animate CC

1. Bouncing Ball using Animation Principal
2. Character Walkcycle (Basic and Advance)
3. Car Animation.
4. Animating Rocket using Symbols and Animation principle.
5. Creating a Webpage

Adobe Character Animator

1. Create a Motion Capture using lip sync
2. Creating a Illustrator Puppet
3. Creating Walkcycle using Adobe Character Animator.
4. Character Rigging
5. Studying Editing and Recording

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: F. Y.
Revised syllabus to be implemented from Academic year 2021-2022
Semester II : Practical – ANM 208 – Lab IV
Based on Subject: 3D Animation-I (Autodesk MAYA)

The list suggested for practical's are not to be implemented using EQUAL timeframes (like 1 hr/2 hrs etc), but can be implemented using variable timeframes. The objective is to match the overall time mentioned (in brackets) in front of each domain.

<div style="border:1px solid">

30 HRS

1. Create Basic 3D Model Chair, Table, couch

2. Create a 3D House using proper plan and references

3. Model Exterior of 4 Storey Building with proper floor plan and environment

4. Model 3D Car using reference Images

5. Render the Exterior Scene using standard lights and render settings

6. Create a Background scene including river water and vegetation

7. Create a 3D Village scene and render with environment and effects,
   Image based lighting

8. Create a 3D Cartoon Character with proper drapery
   and Texture: any game model

9 Render a Turn Table of given Cartoon character

10 Create Facial Expressions using Blend shapes: Vowels and Expressions

Student Should Present Journal of Maya Practical at the end of the Semester.

</div>