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: T.Y.
Revised syllabus to be implemented from Academic year 2023-2024
Credits: 04 each | Total Lectures 60
Subject: ANM501 VISUAL EFFECTS (NUKE)
Semester V

Course 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.

Course Outcome (CO)

The student will able to:

1. Get knowledge about Publicity Designing, promotion of Projects/Products which plays an important role in the success of the Project.
2. Get knowledge about the Film Criticism /developing reviews.
3. Learn about Matte Creation and Manipulation
4. Understand Nodes and the Node Graphs

Chapter	Topic Name	Lectures
UNIT 1	● Introduction to Digital Compositing ● Historical Perspective ● Terminology. The Digital Representation of Visual Information. Image Generation ● Image Input Devices ● Digital Image File Formats ● Basic Image Manipulation ● Colour Manipulations ● Geometric Transformation. Basics of Compositing ● the Matte Image ● Multisource Operators ● Masks ● Compositing with Pre-multiplied Images.	15
UNIT II	● Matte Creation and Manipulation ● Procedural Matte Extraction ● Matting Techniques ● Image Tracking and Stabilization ● Tracking and Element Into a Plate ● Manual Manipulation of Tracking curves ● Stabilizing a Plate ● Tracking Multiple Points ● Interface Interaction ● The Nuke Window	20

UNIT III	● Understanding Nodes and the Node Graphs ● the Properties Panel ● Other Controls On All Properties Panels. ● Indicators on Nodes ● Viewer Nodes and Viewer Pane ● Timeline Controls ● Key frame Indication ● The Curve Editor Pane ● Displaying a Channel Set.	10
UNIT IV	● Display Gain and Gamma ● Viewer Composite Display Modes 26 ● Region of Interest (ROI) ● Customizing Your Layout Image Viewing and Analysis.	03

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Credits: 04 each | Total Lectures 60
Subject: ANM 502 Game Production (Unity)
Semester V

UNIT No	Topic	Lectures
Chapter 1:	**Getting started with 3D** **Coordinates** Local space versus World space Vectors Cameras Polygons, edges, vertices, and meshes Materials, textures, and shaders Rigid Body physics Collision detection **Essential Unity concepts** The Unity way Assets Scenes Game Objects Components Scripts Prefabs **The interface** The Scene window and Hierarchy The Inspector The Project window The Game window	02
Chapter 2:	**Environments** External modellers Resources Your first Unity project **Using the terrain editor** Terrain menu features Importing and exporting heightmaps Set Heightmap resolution Creating the lightmap Mass Place Trees Flatten Heightmap Refresh Tree and Detail Prototypes The terrain toolset Terrain Script Raise Height Paint height	06

	Smooth height Paint Texture Place Trees Paint Details Terrain Settings Sun, Sea, Sand—creating the island Take Me Home! Introducing models Importing the model package Common settings for models Setting up the outpost model	
Chapter 3:	**Player Characters** **Working with the Inspector** Tags Layers Prefabs and the Inspector **Deconstructing the First-Person Controller object** Parent-child issues First Person Controller objects Object 1: First Person Controller (parent) Object 2: Graphics Object 3: Main Camera **Scripting basics** Commands Variables Functions If else statements Globals and dot syntax Comments Further reading **The FPSWalker script** Launching the script Deconstructing the script	04
Chapter 4:	**Interactions** Exploring collisions **Ray casting** The frame miss Predictive collision detection **Adding the outpost** Positioning Scaling Colliders and tagging the door Disabling automatic animation **Opening the outpost** Approach 1—Collision detection Creating new assets Scripting for character collision detection Attaching the script	04

	Approach 2—Ray casting Disabling collision detection—using comments Resetting the door collider Adding the ray	
Chapter 5:	**Prefabs, Collection, and HUD** **Creating the battery prefab** Download, import, and place Tagging the battery Scale, collider, and rotation Enlarging the battery Adding a trigger collider Creating a rotation effect Saving as a prefab **Scattering batteries** **Displaying the battery GUI** Creating the GUI Texture object Positioning the GUI Texture Scripting for GUI change **Battery collection with triggers** **Restricting outpost access** Restricting access Utilizing Get Component () Hints for the player Battery GUI hint GUI Text hint Using fonts	04
Chapter 6:	**Instantiation and Rigid Bodies** **Introducing instantiation** In concept In code Passing in an object Position and rotation **Introducing rigid bodies** Forces The Rigid body component **Making the minigame** Creating the coconut prefab Creating the textured coconut Adding physics Saving as a prefab Creating the Launcher object Scripting coconut throws Checking for player input Playing feedback sound Instantiating the coconut Naming instances Assigning velocity Safeguarding collisions Script and variable assignment Instantiate restriction and object tidying	05

	Activating coconut throw Removing coconuts Adding the coconut shy platform Import settings Placement Coconut detection script Script assignment Making more targets Winning the game Variable setup Checking for a win Script assignment Incrementing and decrementing targets Finishing touches Adding the crosshair Informing the player	
Chapter 7:	**Particle Systems** **What is a particle system?** Particle emitter Particle Animator Particle Renderer In summary **Making the task** Asset download Adding the log pile Creating the fire particle systems Making fire Making smoke Adding audio to the fire Lighting the fire Adding the matches Creating the Matches GUI Collecting the matches Setting fire Testing and confirming	04
Chapter 8:	**Menu Design** **Interfaces and menus** Making the main menu Creating the scene Cancelling mip mapping Adding titling **Creating the menu—approach 1** Adding the play button GUI Texture button script Assigning public member variables Adding the instructions button Adding the quit button Using debug commands to check scripts **Creating the menu—approach 2** Disabling Game Objects	04

	Writing an OnGUI() script for a simple menu Fixed versus layout Public member variables The OnGUI() function Flexible positioning for GUIs Adding UnityGUI buttons Opening scenes with custom functions GUI skin settings Decision time	
Chapter 9:	**Finishing Touches** **Volcano!** Positioning the particle system Downloading assets Making the smoke material Particle system settings Ellipsoid Particle Emitter settings Particle Animator settings Adding audio to the volcano Volcano testing **Coconut trails** Editing the Prefab Trail Renderer component Updating the prefab **Performance tweaks** Camera Clip Planes and fog Ambient lighting **Instructions scene** Adding screen text Text Animation using Linear Interpolation (Lerp) Menu return **Island level fade-in** Unity GUI texture rendering **Game win notification**	04
Chapter 10:	**Building and Sharing** **Build Settings** Web Player Player Settings Web Player Streamed OS X Dashboard Widget OS X/Windows Standalone **Building the game** Adapting for web build Texture compression and debug stripping Building standalone Indie versus Pro Building for the Web Adapting web player builds **Quality Settings** **Player Input settings**	04

Chapter 11:	**Testing and Further Study** Testing and finalizing Public testing Frame rate feedback Boosting performance	04
Reference Books	Unity Game Development essentials (Terry Norton) Learning C# by Developing Games with Unity 3D Beginner's Guide (Will Goldstone)	

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Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2022-2023
Credits: 04 each | Total Lectures 60
Subject: ANM503 UI & UX DESIGN
Semester V

Course objective

To introduce students to various phases in Interface Design process and expected deliverables. This course helps students to understand theories, principles and practice of user interface and user experience design for digital platforms.

Course Outcome:

1.Differentiate the tools and techniques involved in creating UI.
2.Identify and apply suitable methods to create UI from UX.
3Justify design patterns and their applicability skill set.
4.Understand relation between interaction design and users expectations.
5.Ability to convert user needs into designs.

Chapter No.	Topic Name	Number of Lectures
01	**Introduction to UI (All hand sketch)** ● Basic introduction about UI. ● Analyzing existing UI. ● Understanding and differentiation of IOS, Android and windows platforms.	4
02	**Understanding current scenario and problem analysis with UI (All hand sketch)** ● Understanding the design principles (clear focus on application, minimum complexity, prioritize content) ● Work structure &flow and hierarchy. ● Layouts, fronts, composition, color, propositions. ● Contrast window and Tagline differences.	5
03	**Understanding Design Principles** ● Mental Model, Metaphors, Explicit and Implies Actions. ● Direct Manipulation, User Control, Consistency. ● Aesthetic Integrity.	5
04	**Introduction to iPhone / IOS guides** ● Formatting content, Touch Controls, Hit Targets. ● Text Size, Contrast, Spacing, High Resolution, Distortion. ● Organization, Alignment. ● Deference, Clarity, Use Depth to Communicate	5
	Introduction to OS X guides	5

05	• Basic designing OS X, App styles and Anatomy. • Starting and Stopping, Modality. • Interoperability, Feedback and Assistance, Interaction and input. • Animation, Branding, Color and Typography. • Icons and Graphics, Terminology and Wording. • Integrating with OS X.	
06	**Introduction to Android guides** • Design metaphor • Material designing, Creative vision • Animation, style, Layout. • Components, Patterns, Usability	4
07	**Introduction to Windows guides** • Controls, Messages, Visuals. • Commands, Interaction, Experiences. • Text, Windows, Environments	4
08	**Create an Existing Website For Desktop with UI Guides. (Paper sketch and wireframe) On given below Topics.** • Travel • Banking • Entertainments • Education • Government • Corporate	8
09	**Create an Existing Website For Mobile Computing with UI Guides. (Paper sketch and wireframe) On given below Topics.** • Travel • Banking • Entertainment • Education • Government • Corporate	8
10	**Choosing Area and Creating Own Website For Desktop with UI Guides (Choose any Three from given below).** • Travel • Entertainment • Education • Corporate	5

Text Book(s)

Donald A.Norman, The design of everyday things, Currency Doubleday press, 2015

Reference Books

hneiderman, Ben, and Catherine Plaisant , "Designing the User Interface: Strategies for Effective Human-Computer Interaction",4th ed.Addison Wesley, 2014.

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2022-2023
Credits: 04 each | Total Lectures 60
Subject: ANM504 MOTION GRAPHICS AND COMPOSITING
Semester V

Objective: -

- To expose the students to the compositing and visual effects so that they understand the use of compositing software in the world of animation.
- To instill human values and develop the character of the students as responsible citizens of the world.
- To develop the ability to appreciate ideas and think critically.
- To enhance employability of the students by developing their audio editing skills.
- To revise and reinforce structures already learnt in the previous stages of learning.

Outcomes: -

- Develop compositing skills of the students in the field of animation.
- Encourage the students to VFX world.
- Develop student's imagination and visualization that will help them in animation industry.
- Create awareness about learning styles and college resources, encourage the adoption of study skills, and increase competence in the use of technology so that learners may more effectively achieve academic goals.
- Build cross-cultural understanding and confidence in using 3d environment through collaboration with classmates, increased participation in college activities, and increased interaction within the college and the larger community in order to complete class assignments such as surveys, reports and presentations.

Chapter No.	**Topic Name**	**Number of Lectures**
01	Introduction to Adobe After Effects, Interface, Customization, creating composition, working with layers, 3d layer.	02
02	Basic animation, tool bar, render settings, various exporting formats, frame rate.	02
03	Using effects, croma removal, compositing, key light and other keyers, assignment.	06
04	Applying effects, Effect controls, use of few effects, particles and their use.	05
05	Wire removal, Rotoscopy, using masks.	06

06	Tracking, one point tracking, two-point tracking, camera tracking, assignment.	06
07	Camera and camera controls, lights, using camera and lights.	03
08	Titleing, creating credits, motion graphics, creating motion graphics, project.	10

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2023-2024
Credits: 1.5 each | Total Lectures 35
Subject: ANM505 VISUAL EFFECTS (NUKE)
Semester V

The list suggested for practical are not to be implemented using EQUAL timeframes (like 03 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.

Nuke is a digital visual effects, motion graphics, and compositing application developed by Adobe Systems and used in the post-production process of film making, video games and television production. Among other things, Nuke s can be used for keying, tracking, compositing, and animation.

Practical List **(30 Hrs)**

1. Working with nodes
2. Working with Chrome Keying
3. Working on Rotoscoping
4. Human Rotoscoping
5. Animal Rotoscoping
6. Object adding or removing with the Paint
7. Day to night converting + Color Correction
8. 2D Compositing in live-action short
9. 3D Compositing in live-action short
10. Working with Hair Rotoscoping
11. Tracking and Stabilizing
12. Crowd duplication with particle

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Revised syllabus to be implemented from Academic year 2023-2024
Credits: 1.5 each | Total Lectures 35
Subject: ANM 506 Game Production (Unity)
Semester V- Lab II

Based on ANM 502 **30 HRS**

Sr No	Practical
1	Model Texture & Render Game Assets: Weapon Swords 4 nos.
2	Model Texture & Render Game Assets: Horror Masks 4 no.s
3	Model Texture & Render a Game Vehicle: Bike/ Motorcycle
4	Model Texture & Render a Game Vehicle: Truck
5	Create Game Scene: An Army Base camp
6	Create Game Scene: Mafia/Gangster Village
7	Create Game Scene: A Haunted Village
8	Create Develop a Sandbox Game
9	Create Develop a Puzzle Game
10	Create Develop a 2D/3D Space war or shooter Game (Any Direction)

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2023-2024
Credits: 1.5 each | Total Lectures 35
Subject: ANM507 Digital Editing (Adobe Premier)
Semester V

30 HRS

Chapter No.	**Topic Name**
01	Introduction to Video Editing and Premier interface
02	How to use Tool palette
03	How to edit
04	How to create Presentation with video or images
05	How to use text tool and how to create titles.
06	How to use Audio Transitions
07	How to use Video Transitions
08	How to use Audio Effects
09	How to use Adobe Audition with Premier
10	How to use Video Effects
11	Masking and croma removal, use of pen tool
12	Rendering

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2023-2024
Credits: 1.5 each | Total Lectures 35
Subject: ANM508 DIGITAL EDITING (ADOBE PREMIER)
Semester V

Practical List **(30 Hrs)**

1. Create a trailer of an existing movie. See to it that is different than the original trailer of the movie.
2. Create a music video using any MPs3 song and video footage belonging to another movie or video. Create meaningful content.
3. Create a meaningful video using an MP3 song and suitable images (Use transitions, effects etc.)
4. Synchronize and animate the lyrics of any song within the limits of premiere pro (using transitions, video effects and title options)
5. Draw a storyboard of your own story. Create an animatic video using premiere pro
6. Take any movie. Recognize and submit the individual clips of following examples: **Jump cut** **Hard cut** **Match cut** **Cutting on action** **Cut away**
7. Take 5 minutes footage of any film and change the texture/feel of the movie color correction techniques. (use different effects for different scenes)
8. Shoot your own 1-minute film with a proper script. (edit on premiere pro, add titles and credits as well)
9. Create hard subtitles for 1 minute footage of any film.
10. Create an informative video of 5 minutes using videos, images text etc. on any topic.

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Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2022-2023
Credits: 04 each | Total Lectures 60
Subject: ANM601 IPR & CYBER SECURITY
Semester VI

Course Objectives:

1. Animation is a creative field, and every day new ideas innovations, practices can come up. The students while entering the industry must be fully aware about how to protect their work and also what would be the consequences if things are done in a wrong way, which Intellectual Property Rights provides them with. It gives them an idea about what they should do and what not to do.
2. The second part of this subject, Cyber Security tries to provide the students fundamental knowledge about information security to take on a career in this challenging and ever changing IT world, where data or information which we create/process/store/transmit is at a risk always.
3. Both the topics help to create awareness and teach the students about what to protect and how to protect information/systems and our rights.

UNIT No	Topic	Lectures
Unit 1:	**Introduction to Intellectual Property Rights** 1. Introduction to IPR 2. Need of Intellectual Property Protection 3. Introduction to Patents & Copyright 4. History of IPR 5. Trade and Investment	05
Unit 2:	**Introduction to Copyright, Software and Internet** 1. Introduction 2. Copyright as a Stimulus To Creation 3. Copyright And Access 4. Copyright and Computer Software	05
Unit 3:	**The Patent System** 1. Introduction 2. Scope of Patentability 3. Patentability Standards 4. Exceptions to Patent Rights 5. Patenting in India 6. Process of Patenting in India	06
Unit 4:	**Basic Security Concepts**	14

	1. Overview of Networking Concepts 1. Basics of Communication Systems 2. Transmission Media 3. ISO/OSI and TCP/IP Protocol Stacks 4. Local Area Networks 5. Wide Area Networks 6. Internetworking 7. Packet Formats 8. Wireless Networks 9. Internet 2. **Basics of Information Security** 1. Information Security Overview 2. Information Security Services 3. Types of Attacks 4. Goals for Security 5. E-commerce Security 6. Computer Forensics 7. Security Engineering 3. **Steganography** 1. Introduction to Steganography 2. Steganography types, Image Steganography. **4. Watermarking** 1. Introduction to watermarking 2. Watermarking types 3. Digital watermarking 4. Applications. 5. **Security Threats and vulnerabilities** 1. Overview of Security threats 2. Hacking Techniques 3. Password Cracking 4. Insecure Network connections 5. Malicious Code 6. Programming Bugs 7. Cybercrime and Cyber terrorism 8. Information Warfare and Surveillance **6. Basics of Cryptography** 1. Introduction to Cryptography 2. Symmetric key Cryptography 3. Asymmetric key Cryptography 4. Mechanisms of cryptography 5. Message Authentication and Hash functions 6. Digital Signatures 7. Public Key infrastructure 8. Applications of Cryptography	
Unit 5:	**Security Management**	14

	1. Security Management Practices 1. Overview of Security Management 2. Information Classification Process 3. Security Policy 4. Risk Management 5. Security Procedures and Guidelines 6. Business Continuity Planning(BCP), Disaster Recovery Planning. **2. Security Laws and Standards** 1. Security Assurance 2. Security Laws 3. International Standards 4. Security Audit 5. OCTAVE approach 6. Introduction to SSE-CMM 7. IT Act 2000 – Key Provisions **3. Access Control and Intrusion Detection** 1. Overview of Identification and Authorization 2. Intrusion Detection Systems and Intrusion Prevention Systems **4. Server Management and Firewalls** 1. Introduction and Overview of Firewalls 2. Types of Firewalls 3. DMZ and firewall features **5. Security for VPN** 1. VPN Security 2. Security in Multimedia Networks **6. System and Application Security** 1. Desktop Security 2. OS security 3. mobile security 4. email security 5. Web Security: web authentication 6. SSL and SET	
Unit 6:	**Cases of Security Systems** 1. Cases of Security Systems in e-Banking 2. Cases of Security Systems in e-Commerce 3. Cases of Security Systems in e-business 4. Cases of Security Systems in ICT devices in Business	04
Reference Books	1. **Book-1** Laws Relating to Intellectual Property by Dr. B.L Wadehra, Fourth Edition, Universal Law Publishing Co. 2. **Book-2** Cyber Security : Understanding Cyber Crimes ,	

	Computer Forensics and Legal Perspectives by Sunit Belpure and Nina Godbole,Wiley India Pvt. Ltd 3. **Book-3** Information Systems Security: Security Management , Metrics , Framework and Best Practices by Nina Godbole,Wiley India Pvt. Ltd **Additional References-** 1. Introduction to Computer Security, Matt Bishop , Pearson Education 2. Information Security : Principals and Practices, Pearson Education 3. Intellectual Property Rights by M.M.Karki, Atlantic Publication (2009) 4. Intellectual Property Rights in India: General Issues and Implications by Prankrishna Pal, Regal Publications 5. Intellectual Property Issues and Cyberspace, The Indian Perspective, by Rohas Nagpal, Published 2009, Asian School of cyber laws	
Important Links	1. https://en.wikipedia.org/wiki/Watermark 2. https://www.cl.cam.ac.uk/teaching/0910/R08/work/essay-ma485-watermarking.pdf 3. http://www.ijaiem.org/volume3issue2/IJAIEM-2014-02-27-062.pdf 4. https://en.wikipedia.org/wiki/Steganography	

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2022-2023
Credits: 04 each | Total Lectures 60
Subject: ANM602 NEW MEDIA
Semester VI

Course Objectives:

1. Introduce the notion of globalization and understand how it impacts multilingual and multicultural communication in new media
2. Introduce the purpose, nature and language specific to a variety of new media communication in different corporate and professional environment.
3. Examine the intersection of new media and professional communication practice to enhance the success of corporate and professional communication and the quality of human life.

UNIT No	Topic	Lectures
Unit 1:	**Introduction to Internet** Spread of Internet: What is internet?, Salient features and advantage over traditional media; History and spread of internet in India, reach and problem of access; Internet and Knowledge Society; Convergence and Multi-media: Print, radio, TV, internet and mobile	10
Unit 2:	**Online Journalism** What is online journalism? : Earlier websites of newspapers, E-books and E-publishing Introduction to content management system Hyper-textuality, Multi-mediality and interactivity Use of various online tools to manage text, links, photos, maps, audio, video, etc. Status of online journalism today	10
Unit 3:	**New Media I** Digital storytelling: Tools of multimedia journalists; Learn to report, write and produce in a manner that is appropriate for online media Feature writing for online media: Story idea, development and news updates Podcast and Webcast	14

Unit 4:	**New Media II [10]** Open source journalism: Responding to the audience, Annotative reporting Citizen Journalists Problem of verification, accuracy and fairness Use of blogs, tweets, etc. for story generation and development Protecting copyright Exploring Cyberspace:	10
	Internal Assessment Individual Blog: News stories, features, opinion pieces, pictures and video; Group weblog: Working on different themes and issues and posting it on a team's blog; Contribution to a Group or Community on any of the Social Network Sites; Bring out a web edition of the experimental journal	04
Reference Books	1. Nath, Shyam. Assessing the State of Web Journalism. Authors Press, New Delhi, 2002 2. Chakravarthy, Jagdish. Net, Media and the Mass Communication. Authors press, New Delhi, 2004 3. Bhargava, Gopal. Mass Media and Information Revolution. Isha Books, New Delhi, 2004 4. Menon, Narayana. The Communication Revolution. National Book Trust. 5. Pavlik J.V. Media in the Digital Age. Columbia University Press. 6. Newspaper and magazine articles about New Media.	

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2022-2023
Credits: 04 each | Total Lectures 60
Subject: ANM603 WHITE BOARD AND EXPLAINER VIDEO ANIMATION
Semester VI

UNIT No	Topic	Lectures
Unit 1:	**VideoScribe Course Introduction** What is Video Scribe? Overview of the Project Screen. Customizing the Default Settings. Creating a New Project. Brief overview of the Tools and Saving the Project.	10
Unit 2:	**Whiteboard Animation Basics** Changing the Default Drawing Hand. Canvas Color and Texture. Adding the First Image and Adjusting it. Image Properties. Adding Text. More Text Properties and Exporting Your Video.	10
Unit 3:	**Camera Settings, Transitions and Timeline Edits** Camera Settings. More Camera Settings and Creating a New Scene Timeline and Relocating Copied Elements. Drawing Elements without Hand Leaving the Screen.	14
Unit 4:	**Charts, Graphs, Colors and More Effects** Charts and their types. Importing Charts from Microsoft Excel etc. The Erase Effect. Problem with the Erase Effect and its Solution. Using HEX Codes to Generate any Color. Graphic Enhancements and Filter Effects. GIF Files in VideoScribe. Making tour own GIF files and Importing to VideoScribe. Recoding Voice Over. Closing Remarks.	10

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2022-2023
Credits: 04 each | Total Lectures 60
Subject: ANM604 BASICS OF MARKETTING, MANAGEMENT & PORTFOLIO DEVELOPMENTANIMATION
Semester VI

Course Objectives :

1. To define key concepts & terminology related to marketing management and portfolio development.
2. To analyse & evaluate market opportunities & threats and make informed marketing decisions.
3. To apply marketing principles to create effective brand management strategies.
4. To utilize market research techniques & data analysis to identify consumer behaviour & trends.
5. To construct and manage investment portfolios by understanding risk and return analysis to achieve financial goals.

Course Outcomes :

1. Identify and apply the core principles of marketing
2. Develop effective brand management strategies
3. Analyse market opportunities and formulate competitive strategies
4. Apply integrated marketing communication techniques
5. Create and manage investment portfolios

UNIT No	Topic	Lectures
Unit 1:	**Introduction to Marketing Management** Understanding the Marketing Concept and its Evolution / Marketing Mix (4Ps): Product, Price, Place, Promotion / The Marketing Environment: Micro and Macro Factors / Consumer Behaviour and Market Segmentation , Targeting, and Positioning / Market Research: Methods & Importance	08
Unit 2:	**Branding and Brand Management** The Importance of Branding and Brand Equity / Brand Positioning and Differentiation / Brand Development Strategies / Building and Sustaining a Strong Brand / Brand Equity and Brand Loyalty	08
Unit 3:	**Marketing Communication and Promotion** Integrated Marketing Communication (IMC) /	08

	Advertising, Public Relations, and Sales Promotion Digital Marketing and Social Media Strategies / Measuring the Effectiveness of Marketing / Communication	
Unit 4:	**Market Analysis and Competitive Strategy** Conducting Market Analysis: SWOT, PESTEL, and Porter's Five Forces / Identifying Market Opportunities and Threats / Competitive Strategy: Differentiation, Cost Leadership, and Focus / Sustainable Competitive Advantage	08
Unit 5:	**Portfolio Development and Management** Introduction to Investment Portfolios / Risk and Return Analysis / Diversification and Asset Allocation / Portfolio Performance Evaluation	08
Reference Books	1. "Building Strong Brands" by David A. Aaker. 2. "Marketing Analytics: Data-Driven Techniques with Microsoft Excel" by Wayne L. Winston. 3. "Security Analysis" by Benjamin Graham and David L. Dodd.	

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2023-2024
Credits: 1.5 each | Total Lectures 35
Subject: ANM605 SHOWREEL
Semester VI

30 HRS

Animation Show-reel Guideline

Necessity of Animation Showreel.

Employers want to know more than if you took an animation course or two. They want to see your work and style, your understanding of the craft, and to see if it melds with their vision for the project or the animation style of their studio.

A Showreel or demo reel is a compilation of your best or most relevant animation work—like a video version of a portfolio. It *shows* potential employers your skills rather than just *telling* them. Depending on your experience, you may consider having one generic demo reel and a few others to highlight other areas of expertise or animation styles.

Your demo reel can be uploaded to your website, YouTube or other social media, or a file-sharing platform so you can easily share links with prospective employers and collaborators (and your mentors for feedback and advice).

Animation Show-reel Guideline
• Showreel are no more than 3-5 minutes long (3 minutes is ideal) • Include a title card at the beginning and end (with your contact information) • Show only your best work which were done by you in all academic years • Show your best-of-the-best work first (to grab their attention) best sequence is must • If you use music, ensure it doesn't distract from your work • Use original animation voice-over and audio if possible • Present each piece individually, not in a collage style • Provide context for each piece of work to highlight your involvement, and include credits where applicable • No repetition of Footage. • Proper transition should be added. • show reel should contain credit line at the end.

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2023-2024
Credits: 1.5 each | Total Lectures 35
Subject: ANM606 SHOWREEL
Semester VI

30 HRS

Animation Project Guideline
1. Individual or Two Students in One group for group project. Follw the Production pipeline of Animation. 2. Pre-Production work should include i.e. story, script, story board, concept art, character bible, props design & background design Etc. Hard copy of pre-production should be submitted before starting actual production work in Sem III. 3. There should be an Originality in Concept & Content. 4. Duration of project will be minimum 2 minutes. 5. Project should be a core Animation (2D/3D or Game Design/Development) project including VFX & Compositing with Audio Effect. 6. Project may not contain unnecessary violence, obscenity, nudity or racially disparaging material. 7. All the characters, Assets and backgrounds should be their own. 8 VFX used from core softwares like Max, Maya, Blender (Bifrost, Particle, system, Dynamics) will be a plus point. 9. Project may not contain trademarks, logos or trade dress owned by others without their permission; or any commercial content that promotes any product or service. 10. Project should not promote smoking or drinking habits in any forms. 11. Project may not content copyrighted material owned by others including photographs, sculptures, paintings and other works of arts or images published on internet. 12. project should not promote any political activity.

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2023-2024
Credits: 1.5 each | Total Lectures 35
Subject: ANM607 INTERNSHIP
Semester VI

30 HRS

Norms of internship are as follows:
It should be done before the end of Sem. VI in one of the following types of organisations for minimum 180 hours (30 days @ six hours a day). Organisations: Animation Studio, Graphic Designing Company, Production House, newspaper (print or internet edition), web news portal, TV news channel, weekly magazine, advertising agency. After the internship students have to submit a detailed report describing work done, and what was learnt. They have to attach proofs of work done, and evaluation report duly signed by relevant authority in the respective organisation.

Savitribai Phule Pune University, Pune
Course Name: B. Sc. Animation Class: T.Y.
Revised syllabus to be implemented from Academic year 2023-2024
Credits: 1.5 each | Total Lectures 35
Subject: ANM608 INTERNSHIP
Semester VI

30 HRS

Norms of internship are as follows:
It should be done before the end of Sem. VI in one of the following types of organisations for minimum 180 hours (30 days @ six hours a day). Organisations: Animation Studio, Graphic Designing Company, Production House, newspaper (print or internet edition), web news portal, TV news channel, weekly magazine, advertising agency. After the internship students have to submit a detailed report describing work done, and what was learnt. They have to attach proofs of work done, and evaluation report duly signed by relevant authority in the respective organisation.