



Deccan Education Society's
Fergusson College (Autonomous)
Pune

Learning Outcomes-Based Curriculum

for 3 / 4 years B. Sc. Programme

as per guidelines of

NEP-2020

for

S. Y. B. Sc. (Animation)

With effect from Academic Year

2024-2025

Program Outcomes (POs) for B. Sc. Animation	
PO1	<p>Academic Competence:</p> <ul style="list-style-type: none"> (i) Create competence in the fields of Computer Graphics assets creation, Visual Effects, Gaming and Graphic designing. (ii) Understand the ongoing changing trends and keep them updated with the latest technology. (iii) Produce creative and technical skills in various domains of Animation, Gaming, VFX and multimedia. This will enable them to be employed globally.
PO2	<p>Personal and Professional Competence:</p> <ul style="list-style-type: none"> (i) Use critical thinking skills and problem-solving strategies for overall development of the professional growth in the fields like Animation, VFX, gaming, and graphics. (ii) Carry out industry orientated new technologies and new trends in animation, VFX & graphics. (iii) Create ample opportunities to work effectively to emerge as an acceptable team leader by working on team projects & assignments.
PO3	<p>Research Competence:</p> <ul style="list-style-type: none"> (i) Apply technical knowledge and methodologies from animation softwares in order to conduct research and demonstrate appropriate skill to seek solutions to problems that emerge in various fields of 3d animation & VFX simulations
PO4	<p>Entrepreneurial and Social competence:</p> <ul style="list-style-type: none"> (i) Develop Entrepreneurial capabilities considering animation industry works mainly on freelancing and individual creativity. (ii) Build adequate knowledge, skill, dedication and work ethics required for accomplishment of the assigned task and strengthen social competency skills. (iii) Able to demonstrate their acquired knowledge for the growth of social and ethical values in outdoor activities, such as service learning, internships and field work. (iv) Maintain and develop ethics of Media, Animation & Gaming Industry as these industries plays vital role in today's generations

Program Specific Outcomes (PSOs) for S. Y. B. Sc. Animation	
PSO No.	Program Specific Outcomes (PSOs) Upon completion of this programme the student will be able to
PSO1	Academic competence: <ul style="list-style-type: none"> (i) Create competence in the fields of Computer Graphics assets creation, Visual Effects, Gaming and Graphic designing. (ii) Understand the ongoing changing trends and keep them updated with the latest technology. (iii) Produce creative and technical skills in various domains of Animation, Gaming, VFX and multimedia. This will enable them to be employed globally.
PSO2	Personal and Professional Competence: <ul style="list-style-type: none"> (i) Use critical thinking skills and problem-solving strategies for overall development of the professional growth in the fields like Animation, VFX, gaming, and graphics. (ii) Carry out industry orientated new technologies and new trends in animation, VFX & graphics. (iii) Create ample opportunities to work effectively to emerge as an acceptable team leader by working on team projects & assignments.
PSO3	Research Competence: <ul style="list-style-type: none"> (i) Apply technical knowledge and methodologies from animation softwares in order to conduct research and demonstrate appropriate skill to seek solutions to problems that emerge in various fields of 3d animation & VFX simulations
PSO4	Entrepreneurial and Social competence: <ul style="list-style-type: none"> (i) Develop Entrepreneurial capabilities considering the animation industry works mainly on freelancing and individual creativity. (ii) Build adequate knowledge, skill, dedication and work ethics required for accomplishment of the assigned task and strengthen social competency skills. (iii) Able to demonstrate their acquired knowledge for the growth of social and ethical values in outdoor activities, such as service learning, internships and field work. (iv) Maintain and develop ethics of Media, Animation & Gaming Industry as these industries play a vital role in today's generations.

Fergusson College (Autonomous), Pune
Proposed First Year Curriculum as per NEP 2020

Department of Animation
Structure for Major / Minor

Semester	Subject TYPE	Paper Code	Paper Title	Credits
III	Major	ANI-200	ANIMATION PRACTICAL – 3	2
		ANI-201	2D CHARACTER ANIMATION	4
	Minor	BVM-215	ANIMATION IN MEDIA	2
		BVM-216	ADVANCE DIGITAL PRODUCTION	2
		BVA-215	GRAPHICS MARETTING	2
		BVA-216	GRAPHIC DESIGN PRACTICAL	2
	OE	ANI-220	STORY TELLING FOR ANIMATION	2
	VSC	ANI-230	PRE-PRODUCTION – 1	2
	SEC	ANI-240	DRAWING FOR ANIMATION	2
	CEP	ANI-245	COMMUNITY ENGAGEMENT PROGRAM	2
Semester	Subject TYPE	Paper Code	Paper Title	Credits
IV	Major	ANI-250	ANIMATION PRACTICAL - 4	2
		ANI-251	INTRODUCTION TO 3D	4
	Minor	BVM-265	ADVENTSISTING & ANIMATION	2
		BVM-266	VIDEO EDITING	2
		BVA-265	UI DESIGN	2
		BVA-266	PRACTICAL IN UI DESIGN	2
	OE	ANI-270	INTRODUCTION TO GAME DESIGN	2
	VSC	ANI-280	PRE-PRODUCTION - 2	2
	SEC	ANI-290	MOTION GRAPHICS	2
	FP	ANI-295	FIELD PROJECT	2

S.Y. B.Sc. Semester III

Title of the Course and Course Code	Animation Practical – 3 (ANI-200) (Major-Practical)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Describe the production pipeline of animation.	
CO2	Discuss the art and style carried in 2D Animation.	
CO3	Determine various animation techniques with basic principles of animation.	
CO4	Apply action analysis and observations to animated drawings.	
CO5	Analyze basic animation movements for characters or objects.	
CO6	Create drawings that represent actions and emotions.	

Unit No.	Title of Unit and Contents	No. of hours
I	Introduction to Digital 2D animation tools	10
II	Front Walk cycle Traditional	5
III	Front Walk cycle Digital	5
IV	Front run cycle Traditional	5
V	Front run cycle digital	5
VI	Quadruped run & walk cycle traditional	8
VII	Quadruped run & walk cycle digital	8
VIII	Animated character turn around - Face - Full Body	4
IX	Basic Character Actions - Head turn - Expressions	4
X	Introduction to dialogue - Phrasing - Sound sync	6

Reference Books	<ol style="list-style-type: none"> 1. The Animator's Survival kit (Richard Williams) 2. Disney Animation: The Illusion of Life 3. Acting for Animators 4. Cartoon Animation 5. Timing for Animation
-----------------	--

S. Y. B. Sc. Semester III

Title of the Course and Course Code	2D CHARACTER ANIMATION (ANI-201) (Major-Theory)	Number of Credits: 04
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Recall principles of animation.	
CO2	Differentiate tools used for 2d animation – Traditional & digital	
CO3	Carry out projects based on 2d Animations.	
CO4	Compare various tools used for digital 2d animation.	
CO5	Consider 12 principals of animation while making the 2d animations.	
CO6	Create 2D characters and environments.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to types of 2d Animation 1. Traditional 2. Digital a. Vector Animation b. Frame by frame digital 2d animation	15
2	Animation techniques 1. Key frame Animation 2. In-between animation 3. Extremes 4. Break downs 3 ways for Animation 1. Straight ahead animation 2. Pose to pose animation 3. Combination of both	15
3	Walk cycles 1. Contact Pose 2. Passing Pose 3. Down Pose 4. Up Pose Types of Walk cycle 1. Human Side / Front 2. Quadruped / animal – Side / Front 3. Run Cycle	15
4	Basic Character Animations 1. Expressions 2. Exposure sheet 3. Dialogue & lip Sync a. Phrasing b. Accent c. Sound sync	15

Learning Resources

1. “Cartoon Animation”, Preston Blair, Walter T. Foster, Apple Press, Limited, Eighth Edition, ISBN 1560100842
2. “History of Animation”: Facts and Figures, Bredson, Philips Cardiff, Pearson Publications,

TITLE: ANIMATION IN MEDIA**Paper CODE: BVM-215 (Minor)****S.Y. B.Sc. Semester IIII**

Title of the Course and Course Code	Animation in Media (BVM-215) Paper CODE: BVM-215 (Minor)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Outline animation in media industry	
CO2	Compare different types of media	
CO3	Examine different media categories for animation uses	
CO4	Explain Internet and social media	
CO5	Review various media platforms	
CO6	Create a report on use of animation in media	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Print Media 1. Newspaper 2. Magazine 3. Posters	6
2	Broadcast Media Television 1. News channels 2. Entertainment Channels 3. Commercials	6
3	Films / Cinema 1. Titles 2. Trailers 3. Special Effects 4. OTT platforms	6
4	Internet 1. Blogs 2. V-logs 3. Podcast 4. Websites	6
5	Social Media 1. Facebook 2. Instagram 3. Other social networking sites	6

TITLE: DIGITAL FILM PRODUCTION**Paper CODE: BVM-216**

Title of the Course and Course Code	DIGITAL FILM PRODUCTION (MINOR) BVM-216	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Recall basics of Camera	
CO2	Explain lighting & cinematography techniques	
CO3	Execute video shoots with lighting setups	
CO4	Compare different cameras with lenses	
CO5	Review post production techniques & stages	
CO6	Compose video footages to create final outputs	

Unit No.	Title of Unit and Contents	No. of hours
I	Film Grammar (revision)	4
II	Journey of a film/ short film from pre to post production a. Concept (Idea) b. Screenplay c. Screen	6
III	Camera Handling for short films / DSLR Videography	10
IV	Process: a. Recce b. Shot breakdown c. Storyboard d. Shooting	8
V	Lighting for Films Colors for films a. Basic color theory b. Color psychology c. Color palette Lighting Techniques a. Low Key b. High Key c. Mood Lighting	8
VI	3 shots / 8 Shots a. Shot Magnification b. Camera Movement	7
VII	a. Talky Films b. Non Talky Films c. Advertisements d. Interviews e. Documentaries	5
VIII	Staging & Blocking	4
IX	Data management	4

	<ul style="list-style-type: none"> a. Backups b. Copies c. Onset data handling 	
X	DOP <ul style="list-style-type: none"> a. Duties b. Responsibilities 	4

Learning Resources:

REFERENCE Books -

1. 5 C's of Cinematography
2. If it is purple, Someone is gonna die (by Patti Bellantoni)
3. How to read a film by James Monaco

REFERENCE Youtube channels -

1. <https://www.youtube.com/@PIXELVILLAGE>
2. <https://www.youtube.com/@theartofphotography>
3. <https://www.youtube.com/@StudioBinder>

TITLE: ANIMATION IN MEDIA**Paper CODE: BVA-215 (Minor)**

S.Y. B.Sc. Semester IIIII		
Title of the Course and Course Code	Graphics Marketing (BVA-215) Paper CODE: BVA-215 (Minor)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Outline graphics in media industry	
CO2	Compare different types of media	
CO3	Examine different media categories for design uses	
CO4	Explain Internet and social media	
CO5	Review various media platforms	
CO6	Create a report on use of animation in media	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Print Media 1. Newspaper 2. Magazine 3. Posters 4. Brochures 5. Banners 6. Pamphlets 7. Billboards 8. Packaging	6
2	Broadcast Media Television 1. News channels 2. Entertainment Channels 3. Sports Channels 4. Commercials 5. Adv campaigns 6.	6
3	Films / Cinema 1. Titles 2. Trailers 3. Special Effects 4. OTT platforms	6
4	Internet 1. Blogs 2. V-logs 3. Podcast	6

	4. Websites	
5	Social Media 1. Facebook 2. Instagram 3. Other social networking sites	6

TITLE: ANIMATION IN MEDIA

Paper CODE: BVA-216 (Minor)

S.Y. B.Sc. Semester IIIII		
Title of the Course and Course Code	GRAPHIC DESIGN PRACTICAL (BVA-216) Paper CODE: BVA-216 (Minor)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Recall theoretical knowledge of print and digital media.	
CO2	Explain various concepts of digital art.	
CO3	Illustrate the usage of various tools for vector graphic software.	
CO4	Identify various points of vector design styles & raster designing	
CO5	Compare Concept Art and Fantasy Art while converting from paper to digital format.	
CO6	Create art related to print media and vector based using digital platforms.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Brainstorming Ideas for Graphics	10
2	Logo Design	5
3	Typography	5
4	Visiting Card Design	4
5	Brochure design	8
6	Cover page design	4
7	Social media handles	2
8	Creatives for social media	6
9	Creatives for local events	8
10	Creatives for college events, fests, programs	8

S. Y. B. Sc. Semester III

Title of the Course and Course Code	Story Telling for Animation (ANI-220) Paper CODE: BVA-216 (OE)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Define creative writing skills for Animated films.	
CO2	Explain Basic literary concepts.	
CO3	Apply writing theory for animation writing.	
CO4	Analyse reader Response, Theory Editing & Proofreading. Review Sources of	
CO5	Creativity from given books.	
CO6	Write a creative plot for creating animated films.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Finding ideas <ol style="list-style-type: none"> 1. Observation 2. Photos & drawings 3. Research 4. Brainstorm 5. People places & surrounding 	6
2	Character development <ol style="list-style-type: none"> 1. Age 2. Physical 3. Emotional 4. Social 5. Creative & Artistic 6. Moral, ethical & spiritual 	4
3	Character Profile <ol style="list-style-type: none"> 1. Name 2. Sex 3. Age 4. Appearance 5. Personality 6. Surrounding & Culture 7. Back story 	6
4	Target audience <ol style="list-style-type: none"> 1. Demographics 2. Geographic 3. Psychographic 4. Behavioral 	4
5	Story Theme	4
6	Script elements <ol style="list-style-type: none"> 1. Premise 2. Outline 	4

	3. Script 4. Dialogue	
7	Copy right & Legal aspects	2

Reference:

1. How to write for Animation by: Jeffrey Scott
2. Writing for Animation & Development from script development to pitch by Jean Ann write

S. Y. B. Sc. Semester III

Title of the Course and Course Code	Pre-Production - 1 (ANI-230) (VSC)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Outline pre-production process for animated films.	
CO2	Discuss the storyboarding techniques and animatics.	
CO3	Demonstrate details of character designing.	
CO4	Compare various characters aspects in detail.	
CO5	Review Story-Boards for animation.	
CO6	Create concept art for animated film and a Character design from real life.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Story Building 1. Concept creation 2. Character development 3. R&D	5
2	Visual story telling 1. Intro to Illustrations 2. Intro to Concept Art	5
3	Story boarding 1. Camera angles 2. Camera movements 3. Types of shots 4. Types of cuts 5. Scene building 6. Acting for Animation 7. Composition 8. Camera dynamics 9. Animatics	20
4	Introduction to digital painting & Illustration 1. Basic Color theory 2. Values 3. Lighting 4. Character illustration	15
5	Basic Visual development 1. Introduction to prop design 2. Introduction to location design	15

Learning Recourses:

1. Storyboard Design Course by Giuseppe Cristiano ---- Barron's
2. How to write for Animation – Jeffery Scott- The Overlook Press Woodstock and New york
3. The Art of layout and storyboarding – Mark T. Byrn

Title of the Course and Course Code	Drawing for Animation (ANI-240) (SEC)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Recall the basics of drawing and material handling.	
CO2	Illustrate the importance of elements of designs	
CO3	Demonstrate the usage of positive and negative space in a design composition.	
CO4	Identify, analyze color theory and color harmony in drawing and sketching.	
CO5	Review different type of art forms.	
CO6	Create backgrounds and compositions with the help of color theory and color harmony.	

Unit No.	Title of Unit and Contents	No. of hours
I	Advance human anatomy 1. Portrait a. Pencil shading b. Charcoal c. Color 2. Realistic figure drawing a. Pencil shading b. Charcoal c. Color 3. Animal Drawing	20
II	1. Mannequin poses 2. Action poses 3. Time sketch 4. Live drawing from models	12
III	Color theory (Traditional) 1. Values 2. Different Painting mediums a. Pencil shading b. Charcoal c. Oil pastel d. Poster color e. Acrylic / Water color f. Canvas & hand made paper 3. Manmade drawing & painting 4. Nature drawing & painting 5. Face 6. Basic lighting & rendering	16
IV	Figure drawing for animation 1. Line of action 2. Gesture drawing 3. Force drawing 4. Time poses	12

Learning Resources:

1. Figure drawing made easy
2. Figure drawing for all its worth: Andrew lummis
3. Drawing the head & hands: Andrew lummis
4. Figures in action: Andrew lummis
5. Force: Dynamic live drawing for animators

Semester IV

S. Y. B. Sc. Semester IV

Title of the Course and Course Code	ANIMATION PRACTICAL – 4 (ANI-250)(MAJOR)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Recall 3d Animation techniques and concepts.	
CO2	Illustrate tools used for 3d modelling & texturing.	
CO3	Demonstrate different types of modelling.	
CO4	Compare modelling topologies.	
CO5	Review different types of shaders and materials.	
CO6	Design various textured 3d models & get final renders.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Interior Modelling and Texturing – Hall / Kitchen	4
2	Character Modelling and texturing – Human body	4
3	Exterior Modeling and texturing - A bridge over River / Tower of Pisa	6
4	Props Modeling and texturing – Sword/ Gun	6
5	Car Modelling and texturing	6
6	Rigg inorganic model – Lamp / Car	4
7	Rigg spline movement: Wires, Tornados, reptiles etc	10
8	Rigg a Human Character with all joint controllers	10
9	Create a complete final scene with a. Original Character b. Texture c. Rigged d. Pose e. Interior or exterior scene f. Appropriate light setup	10

Learning Recourses:

1. Autodesk Maya 2019 Basics Guide
2. Digital Lighting and Rendering (Voices That Matter) 3rd Edition- By Jeremy Brin
3. Digital Modeling ([digital]) 1st Edition- By William Vaughan
4. Advanced Maya Texturing and Lighting

S. Y. B. Sc. Semester IV

Title of the Course and Course Code	Introduction to 3D (ANI-251)(MAJOR)	Number of Credits: 04
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Recall 3d Animation techniques and concepts.	
CO2	Illustrate tools used for 3d modelling & texturing.	
CO3	Demonstrate different types of modelling.	
CO4	Compare modelling topologies.	
CO5	Review different types of shaders and materials.	
CO6	Design various textured 3d models & get final renders.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Intro to 3d and Basic Interface Common used Tools Common used Operations Interior Modelling – Hall/Bedroom Character Modelling	15
2	Materials and Hyper shade Types of mapping Making Complex materials	10
3	Animating Camera Paint Effects Lighting setup and type of lights 3 Point light system Animating Lights	6
4	Rendering Concept and setup Arnold Render System Making an Interior with character (Basic pose) and rendering with Arnold	6
5	Introduction to rigg Understanding Rigging in 3d software Rig inorganic models like lamp, cranes etc Spline rigg: Wires, reptiles etc	8
6	Making Human Body ready for Rig Putting Joints and Renaming Putting IK Handles and Pole Vectors Inverse Foot with Set Driven keys Spine Control	8
7	Fist controller with Set Driven key Neck and Head controller Eyes Controller Master Controller Types of Bind-Soft & Rigid Binding the character Paint Weights	7

Learning Resources:

1. Rig it Right! Maya Animation Rigging Concepts, 2nd edition- By Tina O'Hailey
2. Animation Methods: Rigging Made Easy: Rig Your First 3D Character

S. Y. B. Sc. Semester IV

Title of the Course and Course Code	Advertising & Animation (BMV-265) (Minor)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Describe Origin and History of Advertising. State types of advertising.	
CO2	Classify different types of media for advertising.	
CO3	Examine Creative Ads, Structure, Emerging Areas of Growth, Shifting Patterns of Consumption.	
CO4	Detect client related issues. Explain key factors associated with business and brand development.	
CO5	Appraise relationship between brand management and audience psychology	
CO6	Write a copy for an advertisement with specific target audience.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to advertising	15
2	Types of media for advertising	10
3	Target Audience 6. Geographic 7. Demographic 8. Psychographics 9. Behavioral	6
4	Copy Rights 1. Text 2. Content 3. Audio Visual	6
5	Production Design for the advertisements	8
6	Elements of Production Design 1. Pre-production 2. Production 3. Post production	8
7	Advertisement genres & their impacts	7
8	1. Making an adv campaigns 2. Transmedia campaigns for any product	
	Brand: 1. Personality 2. Image 3. Portrayal	
	1. Writing 2. Set dressing 3. Shooting 4. Editing	

Learning Resources:

1. Basics of Advertising Copywriting by Rob Bowdery.

S. Y. B. Sc. Semester IV

Title of the Course and Course Code	VIDEO EDITING (BVM-266) (Minor - Practical)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Define terminology and concepts of Digital editing.	
CO2	Classify principles of video production.	
CO3	Apply compression schemes for various output.	
CO4	Analyze Film sequences from editing point of view.	
CO5	Compare various cuts used for video editing.	
CO6	Produce Digital editing examples within the limits of premiere- pro.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to Digital Editing <ol style="list-style-type: none"> a. Introduction to digital editing b. History and Evolution of Editing c. Principal of Video Editing d. Liner & Nonlinear Editing 	15
2	Introduction to Editing Software (Premier Pro CC) <ol style="list-style-type: none"> a. Digital Video Editing Terminology and Basic Concepts Measuring video time b. Measuring frame size and resolution c. Video data compression d. Capturing video e. Components of a video editing timeline f. Output devices and video delivery technology g. transitions, filters, sub clips 	10
3	Aesthetics of Editing <ol style="list-style-type: none"> a. Aesthetics of Editing b. Editing c. Continuity match d. Match cut e. Pace and Rhythm 	6
4	Fiction Video Editing: Basic Editing Techniques <ol style="list-style-type: none"> a. Capturing, Trimming b. Assembling c. Output d. Transitions e. Incorporating transitions into the editing process f. Recognizing various standard transitions 	6
5	Editing Styles <ol style="list-style-type: none"> a. Documentary Editing Style b. Role of Sound in Video Editing c. Sound Editing d. Working with Multi Layers 	8
6	Dramatic Sequence, Action Sequence, Advanced Editing Techniques Titles and still graphics, Creating titles for video	8

Learning Resources:

Premiere Pro CS6 Digital Classroom. Author: Jerron Smith, AGI Creative Team.

S. Y. B. Sc. Semester IV

Title of the Course and Course Code	UI Design (BVA-265) (Minor - Theory)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Define principles of UI Design in order to design with intention	
CO2	Explain the MVC (model-view-controller) design pattern and its importance to sound user interface software design and implementation	
CO3	Apply a user centered design process (design strategy development that provides solutions to meet business and user goals) in the creation of basic to complex software applications	
CO4	Explain about unsatisfactory user interface design and how the observed problems could have been avoided by following sound user interface design principles	
CO5	Compare between usability and user experience	
CO6	Design and develop user interfaces optimized for a range of devices and platforms	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Design Principles <ol style="list-style-type: none"> a. Usability - Dimensions of Usability b. Learnability - Learning Approaches, Interaction Styles, Conceptual Models c. Efficiency - Chunking, Pointing and Steering, Shortcuts Heuristic Evaluation 	15
2	Design Techniques <ol style="list-style-type: none"> a. User Centered Design - Iterative design, Needfinding, Brainstorming Safety - Human Error, Error Prevention, Error Messages b. Prototyping - Prototype fidelity, Kinds of prototypes c. User Testing - Kinds of User Tests, Ethics, Formative Evaluation d. Graphic Design - Simplicity, Contrast & Visual Variables e. More Safety - User Control and Freedom, Undo 	10
3	Implementation techniques <ol style="list-style-type: none"> a. UI Software Architecture - View Tree and the Listener Pattern, b. Model - View, GUI, Implementation Approaches c. Input - Input Events, Event Dispatch and Propagation, State Machines d. Output - Output Representations, Drawing, Strokes, Pixel, Animation Principles, Animation Implementation, Debugging Output e. Layout - Debugging Output, White Space, Alignment and Grids f. Color - Human Vision, Color Models, Design Guidelines g. Typography - Readability, Font, Spacing, Typeface, Font Selection 	5

Books -

1. Wilbent O. Galitz, "The Essential Guide to User Interface Design", John Wiley & Sons, 2007
2. Ben Sheiderman, "Design The User Interface", Pearson Education, 1998
3. Alan Cooper, "The Essential Of User Interface Design", Wiley - Dream Tech Ltd., 2002
4. Everett N. McKay, "UI is Communication: How to Design Intuitive, User Centered

Interfaces by Focusing on Effective Communication 1st Edition”, 2013
 5. Jenifer Tidwell, “Designing Interfaces”, O’Reilly Publication, 2005

Web References:

1. <https://userbrain.net>
2. <http://www.tutorials.com>

E-Resources:

1. <http://web.mit.edu/6.813/www/sp17/>
2. <https://course.ccs.neu.edu/cs5500sp17/09-UX.pdf>

S. Y. B. Sc. Semester IV		
Title of the Course and Course Code	Practical in UI Design (BVA-266) (Minor - Practical)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Define principles of UI Design in order to design with intention	
CO2	Explain the MVC (model-view-controller) design pattern and its importance to sound user interface software design and implementation	
CO3	Apply a user centered design process (design strategy development that provides solutions to meet business and user goals) in the creation of basic to complex software applications	
CO4	Explain about unsatisfactory user interface design and how the observed problems could have been avoided by following sound user interface design principles	
CO5	Compare between usability and user experience	
CO6	Design and develop user interfaces optimized for a range of devices and platforms	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Creating New Files & Designing on a Grid <ul style="list-style-type: none"> • Creating a new file • Setting up frames (other apps call these artboards) • Adding text • Creating colored backgrounds for text columns Importing & Cropping Photos <ul style="list-style-type: none"> • Importing & cropping photos • Rounding corners Vector Graphics, Colors, Shadows, & More <ul style="list-style-type: none"> • Importing & modifying vector graphics • Aligning & distributing layers • Layer opacity vs. fill opacity • Reusing colors (color styles) • Adding a drop shadow Text Styles <ul style="list-style-type: none"> • Opening Sketch files in Figma • Handling missing fonts • Creating, editing, & organizing text styles 	20
2	Components (Reusable Elements) <ul style="list-style-type: none"> • Creating & editing components • Course Syllabus Figma Bootcamp 1 • Overriding content in one instance vs. globally updating all components 	20

	<ul style="list-style-type: none"> • Detaching from a component Turning a Design into a Clickable Prototype <ul style="list-style-type: none"> • Linking between frames (artboards) • Previewing the prototype • Creating an overlay • Fixing the position of elements so they don't scroll Exporting Assets for Web: SVG, JPEG, & PNG <ul style="list-style-type: none"> • Exporting individual assets • Exporting frames (artboards) Sharing Figma Files: Commenting, Testing, Developers, etc. <ul style="list-style-type: none"> • Sharing a Figma file • Sharing a Prototype • Commenting on shared files • Viewing a prototype for user testing • Specs for developers 	
3	Auto Layout: Introduction <ul style="list-style-type: none"> • Using Tidy Up for Even Spacing • Using Auto Layout • Alignment Constraints • Spacing, Rearranging, & Adding Items with Auto Layout Auto Layout: Deeper Dive <ul style="list-style-type: none"> • Nesting Auto Layouts • Auto Layout Gap Spacing & Padding • Auto Layout Sizing & Constraints • Negative Spacing & Stacking Order • Absolute Positioning Elements Linking Up/Down a Page, Scrollable Areas, & Hyperlinks <ul style="list-style-type: none"> • Making Links that Scroll Up/Down a Page • Making the Navbar Fixed to the Screen • Adjusting the Position & Speed of the Scroll • Creating a Scrollable Area Within a Page • Adding Hyperlinks Intro to Smart Animate <ul style="list-style-type: none"> • The Basics of Smart Animate • Different Kinds of Easing 	20

Books -

1. Wilbent O. Galitz, "The Essential Guide to User Interface Design", John Wiley & Sons, 2007
5. Ben Sheiderman, "Design The User Interface", Pearson Education, 1998
6. Alan Cooper, "The Essential Of User Interface Design", Wiley - Dream Tech Ltd., 2002
7. Everett N. McKay, "UI is Communication: How to Design Intuitive, User Centered Interfaces by Focusing on Effective Communication 1st Edition", 2013
5. Jenifer Tidwell, "Designing Interfaces", O'Reilly Publication, 2005

Web References:

1. <https://userbrain.net>
2. <http://www.tutorials.com>

E-Resources:

1. <http://web.mit.edu/6.813/www/sp17/>
2. <https://course.ccs.neu.edu/cs5500sp17/09-UX.pdf>

S. Y. B. Sc. Semester IV

Title of the Course and Course Code	Introduction to Game Design (ANI-270) (OE)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Describe gaming industry and its pipeline	
CO2	Explain different structures in gaming industry	
CO3	Carry out Production & post production of the game project.	
CO4	Compare different game art styles	
CO5	Review Production & post production of games	
CO6	Build a detailed concept for board game or computer game	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to gaming Industry	2
2	<ul style="list-style-type: none"> a. Introduction to Gaming b. Introduction of games c. Classification of games d. Game Development Process e. Structure and functioning of gaming company f. A simple Game Design Document (GDD) for a Game. 	10
3	Brainstorming for game ideas	4
4	Board games and concepts	4
5	<ul style="list-style-type: none"> a. Pre-production of Gaming b. Pre-production - concept and idea c. Concept Art Creation d. Storyboard e. Script Writing for Game Production 	10

Reference Books:

The Art of Game Design: A Book of Lenses - Jesse Schell. Publisher: CRC Press (12th September 2008).
ISBN-10: 0123694965 ISBN-13: 978-0123694966.

S. Y. B. Sc. Semester IV

Title of the Course and Course Code	Pre-production - 2 (ANI-280) (VSC)	Number of Credits: 02
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Outline pre-production process for animated films.	
CO2	Discuss the storyboarding techniques and animatics.	
CO3	Demonstrate details of character designing.	
CO4	Compare various characters aspects in detail.	
CO5	Review Story-Boards for animation.	
CO6	Create concept art for animated film and a Character design from real life.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Feature film <ol style="list-style-type: none"> 1. Character 2. Prop Design <ol style="list-style-type: none"> a. Objects b. Vehicles c. Weapons 3. Asset 4. Location <ol style="list-style-type: none"> a. Layouts b. Background c. Isometric location 	15
2	Game <ol style="list-style-type: none"> 1. Character 2. Prop Design <ol style="list-style-type: none"> a. Objects b. Vehicles c. Weapons 3. Asset 4. Location <ol style="list-style-type: none"> a. Layouts b. Background c. Isometric location 	15
3	TV Series / Cartoons <ol style="list-style-type: none"> 1. Character 2. Prop Design <ol style="list-style-type: none"> a. Objects b. Vehicles c. Weapons 3. Asset 4. Location <ol style="list-style-type: none"> a. Layouts b. Background c. Isometric location 	15
4	Color scripting & Color keys <ol style="list-style-type: none"> 1. Thumbnail painting 	15

	2. Different lighting conditions / moods / colors 3. Setting up a Color Pallet & Theme	
--	---	--

Reference Books:

The Art of Game Design: A Book of Lenses - Jesse Schell. Publisher: CRC Press (12th September 2008).
ISBN-10: 0123694965 ISBN-13: 978-0123694966.

S. Y. B. Sc. Semester IV

Title of the Course and Course Code	Motion Graphics (ANI-290) (SEC)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Recall history & utility of motion graphics.	
CO2	Compare various tools of motion graphics	
CO3	Execute various compositing techniques.	
CO4	Identify appropriate tools required for motion graphics specific projects.	
CO5	Determine motion graphics examples based on target audience	
CO6	Create motion graphic videos.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	<ul style="list-style-type: none"> a. What is Motion graphics and its history? b. Motion Graphics in Film & Television c. Different tools available for Motion Graphics d. What is Composition, Composition Settings and its principles 	5
2	<ul style="list-style-type: none"> a. Introduction to layers & its types b. Importing, Exporting and Nesting c. Text animation d. Stroke Animation e. Adding subtitles and Credits f. Creating Titles Using animation & Text presets 	10
3	Shape Animation <ul style="list-style-type: none"> a. Difference between mask & shape b. All types of shapes c. Animate option under shape <ul style="list-style-type: none"> 1. Trim Path 2. Repeater 3. Colors and options 4. Offset Animation 	15
4	<ul style="list-style-type: none"> a. Tracking <ul style="list-style-type: none"> 1. One point 2. Two point 3. 4 point 4. Camera tracking 5. Stabilization b. Color Correction & Color Grading c. 3d Projection d. Rotoscopying/ Masking e. Chroma Keying 	15
5	Introduction to expressions <ul style="list-style-type: none"> 1. Wiggle 2. Loop out / in 3. Time etc 	10
6	Puppet Tool	5

Learning Resources:

1. The Art and Science of Digital Compositing: Techniques for Visual Effects. By Ron Brinkmann
2. After Effects for Designers: Graphic and Interactive Design in Motion
3. Creating Motion Graphics with After Effects: Essential and Advanced Techniques - By Chris Meyer, Trish Meyer

S. Y. B. Sc. Semester IV		
Title of the Course and Course Code	Field Project (ANI-295) (FP)	Number of Credits: 02
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Describe the different skills, attitude and knowledge to understand the professionalism in the design industry to build & design an art exhibition	
CO2	Discuss various aspects & culture of the Industry in view to maintain quality standards.	
CO3	Implement the confidence, presentation skills and logical thinking while working on art exhibition	
CO4	Differentiate between the academics and professional work culture in timely delivery of final execution.	
CO5	Compare and contrast various art work to work for the exhibition	
CO6	Combine the techniques to enhance oneself as a thorough animation professional	

Unit No.	Title of Unit and Contents	No. of Lectures
1	<p>Guidelines for Animation Field Project</p> <p style="text-align: center;">Art Exhibition for Animation</p> <ol style="list-style-type: none"> 1. Theme based exhibition in an art gallery 2. Group Activity combined for all students 3. Create following types of art works for the exhibition <ol style="list-style-type: none"> a. Paintings b. Sketches c. Photography d. 3d structures e. Wire structures f. Structures using various types of materials g. Art from waste h. Software based artworks 	30