

**Deccan Education Society's
FERGUSSON COLLEGE (AUTONOMOUS),
PUNE**

**Syllabus
for**

S. Y. B. Sc. (Animation)

[Pattern 2019]

*(B.Sc. Animation Semester-III and
Semester-IV)*

From Academic Year

2020-21

Deccan Education Society's
Fergusson College (Autonomous), Pune

S.Y.B.Sc. Animation (Pattern 2019)

From academic year 2020-21

Particulars	Name of Paper	Paper Code	Title of Paper	No. of Credits
S.Y. B.Sc. Semester III	Theory Paper - 1	ANI2301	Technical English-I	3
	Theory Paper - 2	ANI2302	Production Process	3
	Theory Paper - 3	ANI2303	3d Modeling, Texturing and Rendering	3
	Practical Paper - 1	ANI2304	Animation Practical -I	4
	Practical Paper – 2	ANI2305	Animation Practical –II	4
	Practical Paper - 3	ANI2306	Animation Practical –III	4
S.Y. B.Sc. Semester IV	Theory Paper - 1	ANI2401	Technical English - II	3
	Theory Paper - 2	ANI2402	3D Rigging and Animation	3
	Theory Paper - 3	ANI2403	Composting and motion Graphics	3
	Practical Paper - 1	ANI2404	Animation Practical –IV	4
	Practical Paper – 2	ANI2405	Animation Practical –V	4
	Practical Paper - 3	ANI2406	Animation Practical –VI	4

Course Outcomes (COs)		
S.Y. B.Sc. Semester III		
Title of the Course and Course Code	TECHNICAL ENGLISH I (ANI2301)	Number of Credits : 03
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	State importance of language in communication & journey of language.	
CO2	Explain varied forms of applied formal writing.	
CO3	Illustrate proofreading skills to eliminate linguistic barriers.	
CO4	Compare written communication as an important form of communication.	
CO5	Evaluate common errors in English language.	
CO6	Prepare to interact with formal correspondence.	

Unit. No.	Title of Unit and Contents	No. of Lectures
I	Grammar Subject-Verb and Pronoun-Antecedent (Referent) Agreement, Punctuation: Apostrophe, Colon, Comma, Dash, Ellipses, Exclamation Point, Hyphen, Parenthesis, Period, Question Mark, Quotation Marks and Semi-colon, Use of Articles, Use of Active and Passive Voice, Proofreading Methods	12
II	Defining Technical Writing Technical Writing Definition, Technical Writing Scenario, Teamwork, 21st Century Business Management Philosophies Six Sigma, Total Quality Management, Human Performance Improvement Writing Process Prewriting, Writing, Rewriting Overview of Audience Recognition: High-Tech, Low-Tech, Lay, Multiple Audience, Sexist and Biased Language	12
III	Business Correspondence Memorandum: Purpose, Criteria, Format, Emails: Purpose, Audience Recognition, Criteria, Format, Letters: Letter Components, Letter Format Full Block, Modified Block, Simplified Block Criteria for different types of letter: Letter of Inquiry, Good-News, Bad-News, Complaint, Adjustment Letters, Sales Letters	12
IV	Job Writing Resume Writing: Components, Format of a Resume, Modern Resume, Cover Letter, ASCII Resume, Cover Letter, Email Cover Letter	12

Reference Book:

- *Technical Writing: Process and Product – Sharon J Gerson and Steven M Gerson*

Title of the Course and Course Code		
	PRODUCTION PROCESS (ANI2302)	Number of Credits : 03
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.	

Unit. No.	Title of Unit and Contents	No. of Lectures
I	Pre-Production Concept and Story, Concept Design, Difference between concept & Story, Building one from the other, Storytelling	6
II	Research Period/Location, Historic / Scientific facts, Society, Costumes Props	5
III	Character Design Anthropomorphism, Personality, Shape Languages, Character Bible and Design, Different types of Character, Male, female and children, Character Biography, Character Construction and Proportion	8
IV	Character Model Sheets Turn- around, Expression Chart, Extreme poses, Proportion Chart	6
V	BG Design Color Keys, Color moods, Location, Plan, Establishing BG, Key Location, Props Design	8
VI	Story-Board for animation Aspect Ratio, Camera Angle, Camera Movement, Camera Shot Rule of Composition	12

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. Byrne

Title of the Course and Course Code	3d Modeling, Texturing and Rendering (ANI2303)	Number of Credits : 03
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
I	Intro to 3d and Basic Interface Common used Tools Common used Operations	8
II	Interior Modeling – Hall/Bedroom Character Modeling	8
III	Materials and Hyper shade Types of mapping Making Complex materials	9
IV	Animating Camera Paint Effects Lighting setup and type of lights 3 Point light system Animating Lights	10
V	Rendering Concept and setup Arnold Render System Making an Interior with character (Basic pose) and rendering with Arnold.	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

Title of the Course and Course Code	Animation Practical I (ANI2304)	Number of Credits : 04
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.	

List of Practicals (Compulsory 10 + 2 Activity)

Sr. No.	Title
1	Concept Art
2	Concept Art
3	Character Design Male
4	Character Design Female
5	Character Design Children
6	Layout Design
7	Layout Design
8	Color Key
9	Storyboard
10	Animatics

Animation Practical II (ANI2305)		
Title of the Course and Course Code	Animation Practical II (ANI2305)	Number of Credits : 04
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 print media.	
CO3	Illustrate the usage of various tools for graphic software.	
CO4	Identify various points of switching from digital platforms to print media.	
CO5	Compare Concept Art and Fantasy Art while converting from paper to digital format to print art.	
CO6	Create content required for print media.	

Sr. No.	Title
1	Visiting Card Design
2	Page Design
3	Poster Design
4	Birthday Card Design
5	Greeting Card Design
6	Greeting Card Design
7	Magazine Cover Design
8	Magazine Design
9	Calendar Design
10	Newspaper Page Design

S.Y. B.Sc. Semester IV		
Title of the Course and Course Code	Animation Practical III(ANI2306)	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	Discuss tools used for 3d basics.	
CO3	Demonstrate different types of modelling.	
CO4	Compare modelling topologies.	
CO5	Consider types of shaders and materials.	
CO6	Design various textured 3d models to get final renders.	

List of Practicals (Compulsory 10 + 2 Activity)

Sr. No.	Title
1	Interior Modeling and Texturing – Hall / Kitchen
2	Character Modeling and texturing – Human body
3	Exterior Modeling and texturing - A bridge over River / Tower of Pisa
4	Props Modeling and texturing – Sword/ Gun
5	Props Modeling and texturing – Sword/ Gun
6	Animal Modeling and texturing
7	Car Modeling and texturing
8	Car Modeling and texturing
9	Making Hair / Fur for Animals
10	Show reel of the above Topics

S.Y. B.Sc. Semester IV		
Title of the Course and Course Code	Technical English II (ANI2401)	Number of Credits : 03
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	State importance of language in communication & journey of language.	
CO2	Explain varied forms of applied formal writing.	
CO3	Illustrate proofreading skills to eliminate linguistic barriers.	
CO4	Compare written communication as an important form of communication.	
CO5	Evaluate common errors in English language.	
CO6	Prepare to interact with formal correspondence.	

Unit. No.	Title of Unit and Contents	No. of Lectures
I	Fliers, Brochure and Newsletters Criteria for writing fliers, Sample Flier, Criteria for writing brochure	12

	Cubing and general format of brochure, Sample Brochure, Criteria for writing Newsletter, Report Writing, Sample Newsletter	
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II	Technical Description, Instruction and User Manual Writing Instruction, Criteria for writing short instruction, Criteria for writing a User Manual, General Format of short instruction and user manual	12
III	Creative Writing Outline, Read for inspiration Preparation of Draft, Blog Writing: Lay-Audience Writing, Purpose, Importance of Title and Introductory Paragraph, Body and Closing Paragraph	12
IV	Oral Communication Verbal and Non-Verbal Communication, Telephone and Voice Mail Etiquette, Formal and Informal Oral Presentations, Types of Oral Presentation, Preparation of Visual Aid – Keynote Presentation	12

Learning Resources:

1. *Technical Writing: Process and Product – Sharon J Gerson and Steven M Gerson*
2. *Creative Writing Handbook - A Beginner's Manual by Anjana Neira Dev and Others, Published by Pearson, Delhi, 2009.*

3D Rigging And Animation (ANI2402)		
Title of the Course and Course Code	3D Rigging And Animation (ANI2402)	Number of Credits : 03
Course Outcomes (COS) On completion of the course, the students will be able to:		
CO1	Recall 3d Animation techniques.	
CO2	Discuss advanced 3d animation terms.	
CO3	Compare different Rig setups & types of simulations.	
CO4	Analyze terms of physics which are incorporated in 3d simulations.	
CO5	Determine suitable results for the simulations and rig models.	
CO6	Assemble rigs for 3d models to create character animations.	

Unit. No.	Title of Unit and Contents	No. of Lectures
I	Basics of Principles of Animation Bouncing Ball-Setting Keys and Graph Editor Making Human Body ready for Rig Putting Joints and Renaming Putting IK Handles and Pole Vectors Inverse Foot with Set Driven keys Spine Control	12
II	Fist controller with Set Driven key Neck and Head controller Eyes Controller Master Controller Types of Bind-Soft & Rigid Binding the character Paint Weights	12

III	Type of Blend Shapes Making Phonetics A, E, I, O, U, M, F Finalizing and Cleaning the Rig	10
IV	Walk cycle Run Cycle Dialogue between characters Fight Scene with Two Characters Animating Camera and render Sequence	11

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 in Maya Animation Methods - By David Rodriguez
3. Stop Staring: Facial Modeling and Animation Done Right - By Jason Osipa

Compositing And Motion Graphics (ANI2403)		
Title of the Course and Course Code	Compositing And Motion Graphics (ANI2403)	Number of Credits : 03
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
I	What is Motion graphics and its history? Motion Graphics in Film & Television Different tools available for Motion Graphics What is Composition, Composition Settings and its principles	12
II	Introduction to layers & its types Importing, Exporting and Nesting Text animation Stroke Animation Rotoscopying/ Masking Chroma Keying	12
III	Wire Removal Tracking Color Correction & Color Grading 3d Projection	12
IV	Adding subtitles and Credits Creating Titles Using animation & Text presets	11

	Introduction to expressions	
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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

ANIMATION PRACTICAL IV (ANI2404)		
Title of the Course and Course Code	ANIMATION PRACTICAL IV (ANI2404)	Number of Credits: 04
Course Outcomes (COs)		
On completion of the course, the students will be able to:		
CO1	Recall character Animation principles.	
CO2	Compare advanced tools used for character animation.	
CO3	Examine 3d animation techniques.	
CO4	Detect errors in key animations.	
CO5	Test various character animation movements.	
CO6	Compose different character animations.	

List of practical's (Compulsory 10 + 2 Activity)

Sr. No.	Title
1	Bounce ball
2	Ball animation with tail
3	Walk cycle
4	Run Cycle
5	Acting for animation
6	Dialogue between two characters
7	Fight Scene Between two Characters
8	Animal walk cycle- Dog / cheetah
9	Bird Flying Animation
10	Make showreel of above topics

Animation Practical V (ANI2405)		
Title of the Course and Course Code	Animation Practical V (ANI2405)	Number of Credits : 04
Course Outcomes (COs) On completion of the course, the students will be able to:		
CO1	Recall rigging & simulation techniques.	
CO2	Discuss advanced 3d animation terms.	
CO3	Compare different Rig setups & types of simulations.	
CO4	Analyze terms of physics which are incorporated in 3d simulations.	
CO5	Determine suitable results for the simulations and rig models.	
CO6	Assemble rigs for 3d models to create character animations.	

List of Practicals (Compulsory 10 + 2 Activity)

Sr. No.	Title
1	Pendulum rig
2	Camera Rig
3	Car Rig
4	Human Rig Male
5	Human Rig Female
6	Cartoon Rig
7	Blend Shapes
8	Animal Rig
9	Bird Rig
10	Make showreel of above topics

Title of the Course and Course Code	Animation Practical VI (ANI2406)	Number of Credits : 04
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.	

List of practicals (Compulsory 10 + 2 Activity)

Sr. No.	Title
1	Making Subtitles
2	Making Creative titles
3	Making Creative titles
4	Making neon sign boards
5	Stroke effect animation
6	Chroma Removal from scene
7	Chroma Removal from scene
8	Wire removal from scene
9	Changing name plate
10	Make showreel of above topics