THE MAHATMA GANDHI UNIVERSITY

UNDERGRADUATE PROGRAMMES (HONOURS)

SYLLABUS

MGU-UGP (Honours)

(2024 Admission Onwards)

Faculty: Fine Arts

Expert Committee: Animation and Graphic Design

Subject: Sequential Art

Mahatma Gandhi University
Priyadarshini Hills
Kottayam – 686560, Kerala, India

Syllabus Index

Name of the Minor: **Sequential Art**

Semester 1

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours/ week	Hour Distribution /week			
					L	T	P	O
MG1DSCSAT100	Exploring Animation	DSC B	4	5	0	3	2	0

Semester: 2

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours/ week	Hour Distribution /week			
					L	T	P	O
MG2DSCSAT100	Introduction to 2D Animation	DSC B	4	5	0	3	2	0

Semester: 3

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours/ week	Hour Distribution /week			
					L	T	P	O
MG3DSCSAT200	Foundation in 3D Animation	DSC B	4	5	0	3	2	0

Semester: 4

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours/ week	Hour Distribution /week			
					L	T	P	O
MG4DSCSAT200	Basics of 3D Animation	DSC C	4	5	0	3	2	0

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Programme						
Course Name	EXPLORING ANIMATION					
Type of Course	DSC B					
Course Code	MG1DSCSAT100					
Course Level	100 - 199					
Course Summary	This course, Exploring Animation, drives the learners into the fundamentals of animation, where they explore the scope, application, and various career options within the field. This course also examines different animation types, styles, and techniques while analyzing animation movies through film reviews. Learners acquire insights into production pipelines for Cel animation, 2D CGI, Stop Motion, 3D CGI, Experimental animations, and Motion Graphics. They can develop essential skills in acting for animation, understanding the nuances of character acting, and mastering animation basics such as posing, timing, staging, voice acting, facial expressions, and body language. This course also gives hands-on animation practices, including time lapse animations, flip books, and basic stop motion techniques.					
Semester	1	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		0	3	1	0	75
Pre-requisites, if any	Observation skills, patience, an aptitude for acting as well as artistic sense are required.					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Learners will understand animation's scope, applications, and career paths, demonstrating comprehensive knowledge.	U, An, I	PO 1, PO 2, PO 10
2	Students will enhance their animation analysis skills through film reviews, refining their discernment in evaluation.	U, An, I	PO 1, PO 2, PO 10
3	Learners will master animation production pipelines for diverse types, understanding industry workflows thoroughly.	U, An, I	PO 1, PO 2, PO 10
4	Students will distinguish between drama and animation acting, mastering basics to infuse characters with emotion.	U, A, An, E, C, S	PO 1, PO 2, PO 10

5	Students will practice animation techniques, applying theory to produce creative animations in practical exercises.	A, C, S, I	PO 1, PO 2, PO 10
Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)			

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1	**Understanding Animation**			
	1.1	What is Animation? - Scope and application of Animation Career options in animation	5	1
	1.2	Different types, styles and techniques of animation	8	2
	1.3	Animation movie analysis – Film reviews	5	2
2	**Production pipelines of different types of animation**			
	2.1	Production pipelines of Cel animation and 2D CGI animation	8	3
	2.2	Production pipelines of Stop motion and 3D CGI animation	6	3
	2.3	Production pipelines of experimental animations and motion graphics	6	3
3	**Acting for Animators**			
	3.1	Character Acting - Difference between Acting for Drama and Acting for Animation	5	4
	3.2	Basics of Animation Acting - Posing, Timing, Staging - Voice Acting – Facial Expressions - Body Language	7	4
	3.3	Motion Analysis - Studies from movies	5	4
4	**Animation Practice**			
	4.1	Making Time Lapse Animations and Flip Books	8	5
	4.2	Basic Stop Motion Practice – Pixilation, Object Animation, Simple cut-out animation	12	5
5	**Teacher Specific Content**			

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lectures Presentations, Movie Screening and Practical sessions- Traditional classroom-style lectures to cover theoretical aspects. Demonstration classes and practical sessions to explain complex concepts.

<table>
<tr><td rowspan="2">Assessment Types</td><td>MODE OF ASSESSMENT</td></tr>
<tr><td>A. Continuous Comprehensive Assessment (CCA) - 30 Marks
<table>
<tr><th>CCA Components</th></tr>
<tr><td>Animation General Knowledge</td></tr>
<tr><td>Production Pipeline</td></tr>
<tr><td>Stop Motion animation</td></tr>
</table>
B. Semester End Semester Evaluation (ESE) - 70 Marks

Project evaluation and Viva-Voce based evaluation.
<table>
<tr><th>ESE Components</th><th>Marks Distribution</th></tr>
<tr><td>Final Animated Film</td><td>40</td></tr>
<tr><td>Process Book</td><td>10</td></tr>
<tr><td>Viva-Voce</td><td>20</td></tr>
<tr><td>Total</td><td>70</td></tr>
</table>
Please refer to the appendix for more details.</td></tr>
</table>

References

1. Wells, P. (2013). *Understanding Animation*. Routledge.
2. Beck, J. (2005). *The Animated Movie Guide*. Chicago Review Press.
3. Thomas, F., & Johnston, O. (1995). The illusion of life: Disney animation.
4. Lasseter, J., & Daly, S. (1995). Toy story: The Art and Making of the Animated Film.
5. Furniss, M. (1998). *Art In Motion: Animation Aesthetics*. Indiana university press.
6. Williams, R. (2012). *The Animator's Survival Kit: A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators*. Macmillan.
7. White, T. (2013). *How to Make Animated Films: Tony White's Masterclass Course on the Traditional Principles of Animation*. Taylor & Francis.
8. Hooks, E. (2017). *Acting for Animators*. Taylor & Francis.

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Programme						
Course Name	INTRODUCTION TO 2D ANIMATION					
Type of Course	DSC B					
Course Code	MG2DSCSAT100					
Course Level	**100 - 199**					
Course Summary	This animation course provides a comprehensive exploration of the fundamental tools, concepts, and principles in Cel Animation. Learners will gain proficiency in utilizing animation tools, including animation desks, digital tablets, and traditional drawing materials, while also mastering the application of key animation concepts such as key frames, breakdowns, and in-betweens. The course emphasizes the importance of animation reference documents like model sheets and exposure sheets, guiding learners in effective planning and organization. Through practical experimentation, learners will apply the 12 Basic Principles of animation, developing a nuanced understanding of the principles. Furthermore, the curriculum covers animation testing and compositing techniques, utilizing tools like line testers and scanners, to provide learners with a well-rounded skill set in both the creative and technical aspects of Cel Animation.					
Semester	2	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		0	3	1	0	75
Pre-requisites, if any	An aptitude in drawing, observation skills, patience and artistic sense are essential. Apart from this, learners should have studied courses like: Fundamental Drawing Techniques, Exploring Animation etc. in the previous semester.					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Learners will be equipped to use animation tools and various mediums to create aesthetically pleasing animations.	U, A, E, C	PO 1, PO 2, PO 10

2	Learners will learn and apply key animation concepts to produce coherent and visually engaging animations.	U, A, E, C	PO 1, PO 2, PO 10
3	Learners will proficiently utilize animation reference documents to plan and organize the animation creation process.	U, A, E, C	PO 1, PO 2, PO 10
4	Students learn animation testing, compositing techniques, and relevant software for animation production.	U, A, E, C	PO 1, PO 2, PO10
5	Students will apply 12 basic animation principles, showcasing comprehension of fundamental animation concepts.	U, A, E, C, S	PO 1, PO 2, PO10
Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)			

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1	**Basic Tools of Cel Animation**			
	1.1	Animation Desk – (Light Box, Animation Disc, Peg-bar, Digital Tablet etc.)	4	1
	1.2	Animation Drawing Medium - (Paper, Cel, Puncher, Pencils, Colours, Brushes, Erasers etc.)	3	1
	1.3	Animation Reference Documents - (Model Sheets, Layouts, Storyboards, Field Charts, Exposure Sheets etc.)	5	3
	1.4	Animation Testing and Compositing - (Line Tester, Moviola, Planning Board, Scanners, Pencil Checking Software's, Rostrum Camera, Multiplane Camera, etc.)	4	4
2	**Basic Concepts of Cel Animation**			
	2.1	Concepts of: - Key Frames, Extremes – Breakdowns - In-Betweens - Clean-up - Line/Pencil Tests etc.	7	2
	2.2	Concepts of: - Timing Ladder - Numbering of Animation Drawings – Flipping and Rolling Key Drawings - Line of Action - Path of Action – Maintaining Volume	7	2

	2.3	Concepts of: - Soundtrack - Track Breakdown - Animation Methods: - Straight Ahead, Pose to Pose, Combination of Both etc.	5	2
3	**Experiments with the 12 Basic Principles of Animation 1**			
	3.1	Squash and Stretch, Anticipation, Staging, Straight Ahead and Pose to Pose Animation, Follow Through and Overlapping Action, Slow Out and Slow In	20	5
4	**Experiments with the 12 Basic Principles of Animation 2**			
	4.1	Arcs, Secondary Action, Timing, Exaggeration, Solid Drawing, Appeal.	20	5
5	**Teacher Specific Content**			

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lectures Presentations and Practical sessions- Traditional classroom-style lectures to cover theoretical aspects. Demonstration classes and practical sessions to explain complex concepts.

Assessment Types

MODE OF ASSESSMENT

Continuous Comprehensive Assessment (CCA) - 30 Marks

CCA Components
Principles of Animation
Lab assignments
Pencil test evaluation

End Semester Evaluation (ESE) - 70 Marks

Project evaluation and Viva-Voce based evaluation.

ESE Components	Marks Distribution
Evaluation of Class Room works/ Project	50
Viva-Voce	20
Total	**70**

Please refer to the appendix for more details

References

1. Johnston, O., & Thomas, F. (1981). *The illusion of life: Disney animation* (p. 576). New York: Disney Editions.
2. Williams, R. (2012). *The animator's survival kit: a manual of methods, principles and formulas for classical, computer, games, stop motion and internet animators*. Macmillan.
3. Blair, P. (2020). *Cartoon Animation with Preston Blair, Revised Edition: Learn techniques for drawing and animating cartoon characters*. Walter Foster Publishing.
4. Whitaker, H., & Halas, J. (2013). *Timing for animation*. Routledge.
5. White, T. (2013). *How to Make Animated Films: Tony White's Masterclass Course on the Traditional Principles of Animation*. Taylor & Francis.
6. White, T. (2012). *Animation from pencils to pixels: Classical techniques for the digital animator*. CRC Press.
7. White, T. (1986). *Animator's Workbook: Step-by-step Techniques of Drawn Animation.* Phaidon Press Ltd.

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Programme						
Course Name	FOUNDATION IN 3D ANIMATION					
Type of Course	DSC B					
Course Code	MG3DSCSAT200					
Course Level	200-299					
Course Summary	This course is meant to provide a comprehensive overview of the fundamental principles, tools, and applications within the realm of three-dimensional design. Learners will emerge with a well- rounded skill set, capable of navigating the complexities of 3D Modeling, texturing, lighting and rendering. The ability to analyse and tackle intricate projects involving exterior and interior environments positions graduates as proficient 3D artists prepared for diverse challenges in the professional realm. The emphasis on ongoing practice and exploration underscores the commitment to fostering a learning environment where participants can continually refine their skills, staying abreast of advancement in the dynamic field of 3D production.					
Semester	3	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		0	3	1	0	75
Pre-requisites, if any	Proficiency in basic computer skill, familiarity with foundational concepts in computer graphics, basic familiarity with 3D modelling software's, Awareness of common file formats.					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Mastering 3D production requires understanding its aspects and continuous practice with software tools.	U	PO1
2	Develop proficiency in basic and advanced 3D modeling techniques for diverse visual asset creation.	U, C, An	PO1, PO2, PO10
3	Master complex texturing and lighting techniques for 3D props to enhance visual presentations effectively.	A, An, E	PO1, PO2,

			PO5, PO10
4	Assess and critique intricate projects encompassing modeling, lighting, and rendering indoor and outdoor environments.	A, An, E, C, S	PO1, PO2, PO5, PO10
Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)			

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	**Introduction to 3D software**			
	1.1	Overview of 3D: Uses, Pipelines, Software, and formats.	3	1
	1.2	Introduction to 3D Software: Workspace Organization & Basic Skills	3	1
	1.3	Elements and processes in 3D production - “Asset Management."	2	1
2	**A Comprehensive Guide to Primitives, Tools and Advanced techniques**			
	2.1	Geometry basics: NURBS, Polygons	2	1
	2.2	Geometry Tool Proficiency	1	1
	2.3	NURBS Modeling Essentials	3	1,2
	2.4	Polygonal Model Refinement	6	1,2
	2.5	Inorganic Asset Modeling	7	2,3,4
	2.6	Shader & Material Mastery	4	2,3
	2.7	Advanced Texturing Techniques	3	2,3
	2.8	Bump Mapping Techniques	5	2
3	**UV Mapping & Lighting Techniques**			
	3.1	UV Mapping Fundamentals	3	2,3
	3.2	Dynamic lighting Techniques	7	2,3,4
	3.3	Effective 3D Model Presentation	5	3,4
4	**Elevating 3D Exterior and Interior Design**			
	4.1	Exterior Environment Modeling & Lighting	8	3,4

	4.2	Interior Scene Design	8	3,4
	4.3	Render Optimization Essentials	5	4
5	**Teacher Specific Content**			

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** **Module 1** - **Academic lectures**: Learners can create an engaging and effective learning environment that seamlessly integrates theoretical knowledge with hand-on application. This structured mode of transaction promotes active learning and prepares students for practical challenges in their respective fields. **Module 2** - **Instructional Presentations:** Conduct a comprehensive demonstration of the practical task, emphasizing key techniques, methodologies and safety protocols. Accompany the demonstration with a step-by-step explanation, ensuring students grasp the intricacies of the task. **Module 3** - **Resource Accessibility:** Ensure learners have access to resources including lecture notes, reference materials, and online tutorials for further review and reinforcement. **Module 4** - **Practical Exercises:** Clearly articulate the assignment objectives, outlining the practical skills or concepts that students are expected to apply. Relate the assignment to real-world application to underscore its relevance. **Module 5** - **Hands- on Workshops:** Learners can create an environment that fosters active learning, collaboration, and the practical application of skills. This approach aims to enhance student engagement and proficiency in the subject matter.
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA) - 30 Marks** **CCA Components** Assignments Examinations x 2

B. End-Semester Evaluation (ESE) - 70 Marks

Practical examination

ESE Components	Marks Distribution
Modelling	30
Texturing	10
Lighting	10
Final Output	20
Total	**70**

Please refer to the appendix for more details.

References

1. Murdock, K. L. (2023). *Autodesk Maya 2024 basics guide* (1st ed.). SDC Publications.
2. Murdock, K. L. (2023). *Autodesk 3ds Max 2024 basics guide* (1st ed.). SDC Publications.
3. Venâncio, V. M. (2023). *Blender 3D asset creation for the metaverse: Unlock endless possibilities with 3D object creation, including metaverse characters and avatar models*. Packt Publishing.
4. Cusson, R., & Cardoso, J. (2007). *Realistic architectural visualization with 3ds Max and mental ray* (1st ed.). Focal Press.
5. Avgerakis, G. (2003). *Digital animation bible* (1st ed.). McGraw-Hill Education TAB.

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Programme					
Course Name	BASICS OF 3D ANIMATION				
Type of Course	DSC C				
Course Code	MG4DSCSAT200				
Course Level	**200-299**				
Course Summary	This course is meant to provide a comprehensive overview of the fundamental principles, tools, and applications within the realm of three-dimensional design. Learners will emerge with a well- rounded skill set, capable of navigating the complexities of 3D Modeling, texturing, lighting and rendering. The ability to analyse and tackle intricate projects involving exterior and interior environments positions graduates as proficient 3D artists prepared for diverse challenges in the professional realm. The emphasis on ongoing practice and exploration underscores the commitment to fostering a learning environment where participants can continually refine their skills, staying abreast of advancement in the dynamic field of 3D production.				
Semester	4	Credits		4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others
		0	3	1	0
Pre-requisites, if any	Proficiency in basic computer skill, familiarity with foundational concepts in computer graphics, basic familiarity with 3D modelling software's, Awareness of common file formats.				

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Understanding aspects of 3D production and continuous practice are essential for mastering software tools.	U	PO1
2	Develop skills in foundational, inorganic, and advanced techniques for creating detailed, visually compelling 3D assets.	U, C, An	PO1, PO2, PO10

3	Master complex texturing for 3D props and master lighting and camera setups for better visuals.	A, An, E	PO1, PO2, PO5, PO10
4	Assess intricate projects managing exterior and interior scenes, considering lighting, modeling, and rendering intricacies.	A, An, E, C, S	PO1, PO2, PO5, PO10
Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)			

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	**Introduction to 3D software**			
	1.1	Overview of 3D: Uses, Pipelines, Software, and formats.	3	1
	1.2	Introduction to 3D Software: Workspace Organization & Basic Skills	3	1
	1.3	Elements and processes in 3D production - "Asset Management."	2	1
2	**A Comprehensive Guide to Primitives, Tools and Advanced techniques**			
	2.1	Geometry basics: NURBS, Polygons	2	1
	2.2	Geometry Tool Proficiency	1	1
	2.3	NURBS Modeling Essentials	3	1,2
	2.4	Polygonal Model Refinement	6	1,2
	2.5	Inorganic Asset Modeling	7	2,3,4
	2.6	Shader & Material Mastery	4	2,3
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	3.1	UV Mapping Fundamentals	3	2,3
	3.2	Dynamic lighting Techniques	7	2,3,4
	3.3	Effective 3D Model Presentation	5	3,4
	Elevating 3D Exterior and Interior Design			

4	4.1	Exterior Environment Modeling & Lighting	8	3,4
	4.2	Interior Scene Design	8	3,4
	4.3	Render Optimization Essentials	5	4
5	**Teacher Specific Content**			

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** **Module1**- **Academic lectures**: Learners can create an engaging and effective learning environment that seamlessly integrates theoretical knowledge with hand-on application. This structured mode of transaction promotes active learning and prepares students for practical challenges in their respective fields. **Module2** – **Instructional Presentations:** Conduct a comprehensive demonstration of the practical task, emphasizing key techniques, methodologies and safety protocols. Accompany the demonstration with a step-by-step explanation, ensuring students grasp the intricacies of the task.
	Module3 – **Resource Accessibility:** Ensure learners have access to resources including lecture notes, reference materials, and online tutorials for further review and reinforcement. **Module4** – **Practical Exercises:** Clearly articulate the assignment objectives, outlining the practical skills or concepts that students are expected to apply. Relate the assignment to real-world application to underscore its relevance. **Module5**- **Hands- on Workshops:** Learners can create an environment that fosters active learning, collaboration, and the practical application of skills. This approach aims to enhance student engagement and proficiency in the subject matter.
Assessment Types	**MODE OF ASSESSMENT** **Continuous Comprehensive Assessment (CCA) - 30 Marks**

CCA Components
Assignments
Examinations x 2

	End Semester Evaluation (ESE) - 70 Marks Practical examination Please refer to the Appendix for more details.

ESE Components	Marks Distribution
Modeling	30
Texturing	10
Lighting	10
Final Output	20
Total	**70**

References

1. Murdock, K. L. (2023). *Autodesk Maya 2024 basics guide* (1st ed.). SDC Publications.
2. Murdock, K. L. (2023). *Autodesk 3ds Max 2024 basics guide* (1st ed.). SDC Publications.
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4. Cusson, R., & Cardoso, J. (2007). *Realistic architectural visualization with 3ds Max and mental ray* (1st ed.). Focal Press.
5. Gahan, A. (2010). *3D automotive modeling: An insider's guide to 3D car modeling and design for games and film* (1st ed.). Routledge.
6. Avgerakis, G. (2003). *Digital animation bible* (1st ed.). McGraw-Hill Education TAB