DEPARTMENT OF

COMPUTER APPLICATIONS

Scheme and Syllabus

M.Sc. Animation and Multimedia

(Semester I – IV)

Session w.e.f 2021-2023

VISION

"J.C. Bose University of Science and Technology, YMCA Faridabad aspires to be a nationally and internationally acclaimed leader in technical and higher education in all spheres which transforms the life of students through integration of teaching, research and character building.

MISSION

- To contribute to the development of science and technology by synthesizing teaching, research and creative activities.
- To provide an enviable research environment and state-of-the art technological exposure to its scholars.
- To develop human potential to its fullest extent and make them emerge as world class leaders in their professions and enthuse them towards their social responsibilities.

DEPARTMENT OF COMMUNICATION AND MEDIA TECHNOLOGY

VISION

The department aims to make a place at both national and international level by producing high quality ethically rich media professional and professional artist conversant with the state-of-the-art technology with the ability to adapt the upcoming challenges media industry and their applications to cater to the ever changing industrial and societal needs. It endeavours to establish itself as a centre of excellence in teaching and research to produce skilled human resources for sustainable nation's growth and having artistic and technological impact on the people's life.

MISSION

- To provide the future leaders in the area of communication & media and animation through the development of human intellectual potential to its fullest extent.
- To enable the students to acquire globally competence through problem solving skills and exposure to latest developments in area of communication & Media and animation.
- To educate the students about their professional and ethical responsibilities.

ABOUT THE PROGRAM

Animation and Multimedia program has now the strength, vigour and potential to step in as an exciting opportunity in terms of an academic choice and career especially for students with innate creativity and the flair to do something new and unconventional. The department is highly equipped with latest software and audio visual studio, and state of art lab for animation and multimedia course.

This post graduate degree provides a solid foundation in core Graphic and Multimedia, Creative Visualization and animation and visual effects film production skills. Through the academic program, students also develop excellent written and oral communication skills; learn to work as a team and project management.

DEPARTMENT OF COMMUNICATION AND MEDIA TECHNOLOGY

M.SC. IN ANIMATION AND MULTIMEDIA PROGRAMME

PROGRAMME EDUCATION OBJECTIVES

PE01	To solidify foundation of design, animation, visual effects, gaming and problem solving methodology for effective implementation in the area of animation and multimedia.
PE02	To impart advance knowledge about various sub-domains related to the field of animation and multimedia like game design and development.
PE03	To acquaint students about upcoming technologies like augmented reality and virtual reality.
PE04	To inculcate effective communication skills combined with professional & ethical attitude.

PROGRAMME OUTCOMES

PO1	Apply the knowledge of designing, animation, visual effects, gaming to communicate any simple or complex information or message to the society or a particular group of people.
PO2	Visualize creatively to lead any communication, education or entertainment project
PO3	Design solutions for complex visual communicating problems with knowledge and practice of latest software, technology as well as strong academic knowledge of visual art and communication.
PO4	Provide high quality e-learning design and solutions to enhance cognitive skills of children and adult pupils.
PO5	Create audio visual or virtual models for complicated training programs in fields such as medical, defense, engineering, science and research.
PO6	Apply foundation and practical skills to initiate an entrepreneurship which creates number of job opportunities for the society.
PO7	Apply ethical principles and commit to professional ethics and responsibilities and norms of the educational and entertainment practices.

CHOICE BASED CREDIT SYSTEM SCHEME

Program Core Courses (PCC)			
Sr. N.	**Name the Subject**	**No. of Lectures / Tutorial**	**No. of Credits**
1.	ANIMATION ART	4	4
2.	SCRIPT WRITING & STORYBOARDING	4	4
3.	COMMUNICATION AND SOCIAL MEDIA	4	4
4.	INNOVATION AND ENTREPRENEURSHIP	4	4
	Total	**16**	**16**

Skill Enhancement Courses (SEC) :Labs			
Sr. N.	**Name the Subject**	**No. of Lectures / Tutorial**	**No. of Credits**
1.	ANIMATION DRAWING LAB	4	2
2.	VFX AND STEREO ROTO PAINT LAB	4	2
3.	DIGITAL ART LAB	4	2
4.	3D DESIGN & MODELING LAB	6	3
5.	2D ANIMATION LAB	6	3
6.	3D RIGGING AND SKINNING LAB	6	3
7.	VFX COMPOSITING LAB	6	3
8.	3D LIGHTING TEXTUREING AND RENDERING LAB	6	3
9.	MOTION GRAPHICS DESIGN LAB	4	2
	Total	46	23

Discipline Specific Elective (DSE)			
SR. N.	**NAME THE SUBJECT**	**NO. OF CONTACT HOURS (T+L)**	**NO. OF CREDITS**
DSE GROUP	VISUAL EFFECTS + VISUAL EFFECTS LAB	4+22	4+11
	3D ANIMATION+3D ANIMATION LAB	4+22	4+11
	2D ANIMATION+2D ANIMATION LAB	4+22	4+11

Mandatory Audit Course(MAC) (Mandatory to Qualify)			
Sr. No	**Code**	**Name the Subject**	**No. of contact hours**
1.	**AEC-307-V**	German-1	2
2.	**AEC-308-V**	German-2(With German-1 as prerequisite)	2
3.	**AEC-309-V**	French-1	2
4	**AEC-310-V**	French-2(With French-1 as prerequisite)	2
5	**AEC-104-V**	Sanskrit-1	2
6	**AEC-312-V**	Sanskrit-2(With Sanskrit-1 as prerequisite)	2
7	**AEC-303-V**	Personality Development	2
8	**AEC-313-V**	Interview and Group discussion skills	2
9	**AEC-117-V**	Yoga and Meditation	2
10	**AEC-314-V**	Art of living/Living Skills	2
11	**VAC-307-V**	Contribution of NSS towards Nation/role of NSS	2
12	**AEC-316-V**	Physical Education	2

J.C BOSE UNIVERSITY OF SCIENCE AND TECHNOLGY, YMCA, FARIDABAD

SUMMARY OF SCHEME OF STUDIES & EXAMINATION
2 YEARS M.Sc. ANIMATION AND MULTIMEDIA SEMESTER I-IV (2021-23)

Total Credits: 74+ 4 to 6(MOOC)
Total Theory subjects: 5
Total Labs including Seminars, projects and MOOC Course: 14
Industrial Training: In 6th Semester for 6th Months internship

Total Teaching Schedule:

Lectures	Practical	Seminar	Tutorial	Total
23	56	1	-	80

Total Marks:

Sessional	End Term	Total
660	1640	2300

Itemized Break-up

	No.	Hours	Marks	Credits
Theory Subjects	5	23	600	23
Labs	10	56	850	28
Seminar	1	-	50	2
Projects	2	46	250	6
Industrial Training	1	6 months	550	17
MOOCH	1	4	-	4-6
Total			2200	74+4 to 6

M.SC. ANIMATION AND MULTIMEDIA

SEMESTER- I

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAM	INTERNAL ASSESMENT	TOTAL	COURSE TYPE
AMP-101-V	ANIMATION ART	4	4	75	25	100	PCC
AMP-103-V	SCRIPT WRITING & STORYBOARDING	4	4	75	25	100	
AMP-105-V	COMMUNICATION AND SOCIAL MEDIA	4	4	75	25	100	
AMP-107-V	ANIMATION DRAWING LAB	4	2	35	15	50	SEC
AMP-109-V	VFX AND STEREO ROTO PAINT LAB	4	2	35	15	50	
AMP-111-V	DIGITAL ART LAB	4	2	35	15	50	
AMP-113-V	3D DESIGN & MODELING LAB	6	3	70	30	100	
	TOTAL	**30**	**21**	**400**	**150**	**550**	

M.SC. ANIMATION AND MULTIMEDIA

SEMESTER- II

PAPER CODE	COURSE	REQUIR MENT (HOURS)	CREDITS	UNIVERSITY EXAM	INTERNAL ASSESMENT	TOTAL	COURSE TYPE
AMP-102-V	INNOVATION AND ENTREPRENEURSHIP	4	4	75	25	100	PCC
AMP-104-V	2D ANIMATION LAB	6	3	70	30	100	SEC
AMP-106-V	3D RIGGING AND SKINNING LAB	6	3	70	30	100	
AMP-108-V	VFX COMPOSITING LAB	6	3	70	30	100	
AMP-110-V	3D LIGHTING TEXTUREING AND RENDERING LAB	6	3	70	30	100	
AMP-112-V	MOTION GRAPHICS DESIGN LAB	4	2	35	15	50	
MENTIONED ABOVE	AUDIT COURSE	2	-	75	25	100	
	TOTAL	36	19	395	150	550	

M.SC. ANIMATION AND MULTIMEDIA

SEMESTER- III

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAM	INTERNAL ASSESMENT	TOTAL	COURSE TYPE
AMP-201-V	DSE	4	4	75	25	100	PCC
AMP-203-V	DSE LAB	10	5	100	50	150	SEC
AMP-205-V	Minor Project	12	6	175	75	250	
	GENERAL ELECTIVE	3	3	75	25	100	
	TOTAL	**29**	**18**	**450**	**150**	**600**	

PAPER CODE	DS Elective DS Elective Lab
AMP-211-V AMP-221-V	VISUAL EFFECTS VISUAL EFFECTS LAB
AMP-213-V AMP-223-V	3D ANIMATION 3D ANIMATION LAB
AMP-215-V AMP-225-V	2D ANIMATION 2D ANIMATION LAB

M.SC. ANIMATION AND MULTIMEDIA

SEMESTER- IV

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAM	INTERNAL ASSESMENT	TOTAL	COURSE TYPE
AMP-202-V	GRADUATION PROJECT	34	17	375	175	550	
AMP-204-V	SEMINAR	-	2	-	50	50	
	TOTAL	**34**	**17**	**400**	**200**	**600**	

Major Project: Procedure for Annual Examination and continuous Assessment of:

(A) Internal Assessment

1. **Project Evaluation** **50 Marks**
2. **Project Seminar** **50 Marks**
3. **Project Viva** **75 Marks**

(B) University Assessment Mark

1. **Assessment by Institute Faculty** **100 Marks**
2. **Assessment by Industrial Guide** **200 Marks**
3. **Conduct Marks** **75 Marks**

Total **550 Marks**

One MOOCH subject to be qualified in any semester of M.Sc. Animation and Multimedia

Paper Code	Course	Course Requirements (Hrs)	Credits	University Exams	Internal Assessments	Total	Course Type
--------	MOOCH*	4	4 to 6				

***the MOOC subject can be qualified during the duration of the Program (First to Four semester) through Swayam platform (UGC).**

SEMESTER - I

M.SC. ANIMATION & MULTIMEDIA 1st SEMESTER
SUBJECT CODE: AMP-101-V
SUBJECT NAME: ANIMTION ART

NO OD CREDIT: 4			**SESSIONAL: 25**
L	**T**	**P**	**THEORY EXAM: 75**
4	**0**	**0**	**TOTAL: 100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. Understand the History of Traditional Animation TO know history of animation and motion picture
2. Learning Step by step procedure for Traditional Animation
3. To know about principal of animation.
4. Understand fundamentals of timing for Animation
5. To acquire knowledge about pose to pose drawing for animation.

Unit –I- Introduction to Traditional animation, Early attempts and Development of Animation in various countries: Mainstream Animation in the United States, Independent Animation in the United States, Canadian Animation, European Animation, Japanese Animation, Animation in Other Asian Countries, Southeast Asian Animation, Animation in Australia and New Zealand, Animation in India, Animation in Iran, and African Animation.

Unit-II- Step By Step Procedure for Traditional Animation: Script, Storyboard, Soundtrack, Track Breakdown, Designs, Animatic (Leica Reel), Layouts, Dope Sheets and Production Folders, Pencil Tests, Pose Tests, Clean-Up, Ink and Paint, Backgrounds, Checking, Final Shoot/Composite, Final Edit and Dub, and The Tools of the Trade.

Unit-III- Principles of Animation: Squash and stretch, Anticipation, Staging, Straight ahead action and pose to pose, Follow through and overlapping action, Slow in and slow out, Arc, Secondary action, Timing, Exaggeration, Solid drawing, and Appeal.

Unit-IV- Weight and Weighted Movement, Flexibility and Fluid Joint Movement, Generic Walks, Keys, Passing Position, In-betweens, Walk Cycles, Personality Walks and Timing, Runs and Run Cycles, Personality Runs and Timing, Silhouetting, Storyboarding & Animatics.

Unit-V- Animating Expressions & Dialogue, Lip Sync, Acting & Emotion, Laughter, Takes, Eyes and Expressions, Sound Track Recording and Editing. Understanding traditional trends in animation making in terms of content, Styling, Techniques and applications, Studying animation films through film viewing, Appreciation, criticism, Theoretical writings, Essays, Research studies, and Mini Project.

Course Outcomes

1. Students will be able to learn complete information on early attempts of animation, equipments, development, animation studios, and projects.
2. Students will be able to learn complete animation film production.
3. Students will be able to learn and implementation of Animation Principles
4. Students will be able to learn Create visually effective drawings for animation with acquire knowledge of drawing techniques.
5. Students will be able to learn Implementation of the gesture drawings and other drawing techniques to create realistic human action, gestures and moods.

Reference

1. The ILLUSION OF LIFE: DISNEY ANIMATION (Hardcover) by Frank Thomas
2. The Animator's Survival Kit: A Manual of Methods, Principles, and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators (Paperback) by Richard Williams
3. Chuck Amuck: The Life and Time of an Animated Cartoonist (Paperback) by Chuck Jones
4. Drawn to Life: 20 Golden Years of Disney Master Classes, Volume 1: The Walt Stanchfield Lectures (Paperback) by Walt Stanchfield
5. The Art of Up (Hardcover) by Tim Hauser

M.SC. ANIMATION & MULTIMEDIA 1st SEMESTER
SUBJECT CODE: AMP-103-V
SUBJECT NAME: SCRIPT WRITING & STORYBOARDING

NO OD CREDIT: 4			**SESSIONAL: 25**
L	**T**	**P**	**THEORY EXAM: 75**
4	**0**	**0**	**TOTAL: 100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. Students Understand Visual Narration.
2. Students Learn about Story Structure, Script, and Screenplay.
3. Students Learn about camera and design principles and their use in storyboarding.
4. Students understand the different approaches of writing for different medium.
5. Student Learn about the basic elements and principles of visual Art and Design

Unit –I- Role and Responsibilities of Storyboarding Artist, career options and applications in the industry – Role of storyboard artist, skills required, career options, use and different approaches of storyboarding in the industry. Intro to visual narration, Comics, Screenplay – Visual Narrative, sequential drawing, comics and graphic novels, screenplay basics

Unit-II- Writing for different medium – writing for radio, newspaper & journals, T.V. & films, writing for Animation, Program Proposal & Treatment. Story structure, script structure, handling the 3act play system – Structure of a story, elements of story, script and screenplay, understanding the 3 Act structure & different approaches.

Unit-III- Application of art principles–Understanding Balance, Proportion, Contrast, Rhythm, Movement, etc. Composition – scene planning & staging, tools and techniques, Field division, Perspective and camera angles, Picture composition.

Unit-IV- Theory of action and gesture – Understanding movement and action, capturing quick gestures in drawing, importance of gesture drawing. Description and visual development, tools for storyboarding – How to describe and develop a shot visually, storyboard elements and guidelines.

Unit-V- Elements of the Continuity Style – Transitions, Cuts, Editing styles Pacing – Story beats, thinking for a camera, speeding up and slowing down a scene.

Course Outcomes

1. Students will be able to know Knowledge of Visual Narration.
2. Students will be able to learn Know about Story Structure, Script, and Screenplay.
3. Students will be able to write for different medium
4. Students will be able to know of camera, composition ,design principles, Storyboard a script/screenplay
5. Students will be able to Implement the acquire knowledge of the elements and the principles of design to create art composition.

Reference

1. The Art of Layout and Storyboarding (Author: Mark Byrne)
2. Shot by shot (Author : Steven D Katz)
3. Animation Script to Screen (Author: Shamus Culhane)

M.SC. ANIMATION & MULTIMEDIA 1ST SEMESTER
SUBJECT CODE: AMP-105-V
SUBJECT NAME: COMMUNICATION AND SICIAL MEDIA

NO OD CREDIT: 4			**SESSIONAL: 25**
L	**T**	**P**	**THEORY EXAM: 75**
4	**0**	**0**	**TOTAL: 100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To analyze and demonstrate writing and speaking processes through invention, organization, drafting, revision, editing, and presentation.
2. To understand the importance of specifying audience and purpose and to select appropriate communication choices.
3. To interpret and appropriately apply modes of expression, i.e., descriptive, expositive, Narrative, scientific, and self-expressive, in written, visual, and oral communication.
4. To understand the social media platforms and their importance.
5. To analyze the audience for social media campaign.

Unit –I- Introduction to Communication: Importance and Objectives of communication, Process of communication, Barriers to effective communication, Techniques of effective communication. Forms of communication (Written, Oral, audiovisual communication).

Unit-II- Audience Formation and Experience, Audience as public, Audience as Market, Media Effect and Audience Media Content and Audience: Freedom and gate-keeping, Content production cultural production, Standardization and Genres Issues: Bias, Representation, Commercialization, and Media Convergence.

Unit-III- Other Communication: Formal and Informal communication, Non- verbal communication (Body language, Gestures, Postures, Facial expressions). Techniques to effective listening, methods and styles of reading. Group Discussions, Extempore, Principles of effective speech and presentations, Role playing.

Unit-IV- Introduction to social media platforms: Facebook, Twitter, Pinterest, Google+, and more. Social media Policies and Guidelines. Analyzing social media content, Importance of social media.

Unit-V- Understand social media like You Tube, Quality of Con tent, You Tube Video Lists. YouTube Analytics, You Tube Advertiser. Wikis: Wiki Defined, Feature, Possible Uses, Advantages, Wiki Community Guideline, Wiki Examples, Wiki Software. Pinterest: How to Join Terminology, How to Pin Repin and Upload Pinterest Adds, Tools In Alerts, Rich Pin, Create social media campaign, importance of hashtags, viral posts.

Course Outcomes

1. Students will be able to apply communication strategies and principles to prepareeffective communication for domestic and international situations.
2. Students will be able to utilize analytical and problem-solving skills appropriate to communication.
3. Students will be able to participate in team activities that lead to the development of collaborative work skills.
4. Students will able to use the social media platforms.
5. Students will able to create social media campaign.

Reference

1. Communication Skills, Sanjay Kumar &PushpLata, Oxford University Press
2. - 500 Social Media Marketing Tips: Essential Advice, Hints and Strategy for Business by Andrew Macarthy, 2017 (Amazon.com)

M.SC. ANIMATION & MULTIMEDIA 1ST SEMESTER
SUBJECT CODE: AMP-107-V
SUBJECT NAME: ANIMATION DRAWING LAB

NO OD CREDIT: 2 **SESSIONAL: 15**
L T P **THEORY EXAM: 35**
0 0 4 **TOTAL: 50**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To understand drawing techniques for animation with the help of mannequins.
2. To acquire knowledge of using the live model for sketching.
3. To encourage students to practice free hand drawing with animation related techniques.
4. To encourage students to practice draws from memory and practice indoor and outdoor sketching.
5. To understand the visual elements and use them appropriately in their design also in different context.

S. No.	PRACTICAL
I.	Elements of Visual Art: - Line - Color - Shape - Texture - Space – Form.
II.	Principles of Visual Art: Unity, balance, rhythm, contrast, dominance, pattern and movement.
III.	Color Theory: Color wheel& Value, color schemes, Psychological aspect of color.
IV.	Indoor Sketching
V.	Outdoor Sketching
VI.	Gesture drawing, human anatomy (e.g.: Hands, legs, arms, different characters).
VII.	Perspective Drawing, perspective applied to figures
VIII.	Different pencil shading technique, sketching of natural and man-made objects and environment.
IX.	Geometrical Drawing.
X.	Detailed Model Sheet

Course Outcomes

1. Students will be able to create human action figures with enhanced drawing skills.
2. Students will be able to create visually effective drawings for animation with acquire knowledge of drawingtechniques.
3. Students will be able to implement the knowledge of gesture drawings and other drawing techniques to createrealistic human action, gestures and moods.
4. Students will be able to implement knowledge of indoor and outdoor drawing to enhance observations skills.
5. Students will be able to explore the aesthetical aspects of color.

Reference

1. Drawing on the Right Side of the Brain by Betty Edwards
2. Figure study by Aditya Chari
3. Perspective drawing by Joseph D'Amelio
4. Bridgman lectures, Villpu lectures (CD)
5. Drawing & Anatomy by Victor Perard
6. Drawing Animals by Victor Perard
7. Animal Anatomy for Artists, The Elements of Form by Eliot Goldfinger

M.SC. ANIMATION & MULTIMEDIA 1ST SEMESTER
SUBJECT CODE: AMP-109-V
SUBJECT NAME: VFX AND STEREO ROTO PAINT LAB

NO OD CREDIT: 2 **SESSIONAL: 15**

L	T	P	THEORY EXAM: 35
0	0	4	TOTAL: 50

Course Objectives

1. To understand the workflow of rotoscope.
2. To acquire knowledge of different rotoschoing techniques.
3. To understand the complex rotoscoping techniques.
4. To understand the export the rotoscope for visual effects.
5. To understand the different types of rotoscoping.

S. No.	PRACTICAL
I.	Rotoscope Workflow
II.	Techniques of Rotoscoping
III.	VFX Rotoscoping
IV.	Streo Rotoscoping
V.	Roto Shape Movement
VI.	Creating Clean plate(Remove object from the plate)
VII.	Paint Projection
VIII.	Hair and fur Rotoscoping
IX.	Complex rotoscoping (dancing and fast moving objects)
X.	Export techniques of rotoscope

Course Outcomes

1. Students able to know workflow of rotoscope.
2. Students able to learn different rotoscoping techniques.
3. Students able to implement the knowledge of rotoscoping for advance visual effects.
4. Students able to export rotoscope.
5. Students able to know about the concept of rotoscope.

Reference

1. Industrial Light & Magic: The Art of Innovation
2. Acting for Animators: 4th Edition
3. Illuminated Pixels: The Why, What, and How of Digital Lighting
4. The Art and Science of Digital Compositing

M.SC. ANIMATION & MULTIMEDIA 1ST SEMESTER
SUBJECT CODE: AMP-111-V
SUBJECT NAME: DIGITAL ART LAB

NO OD CREDIT: 2

L	T	P
0	0	4

SESSIONAL: 15
THEORY EXAM: 35
TOTAL: 50

Course Objectives

1. Introduction to Graphic Designing software.
2. To understands the principles and methods of designing process.
3. Create illustrations for print media and Digital media.
4. To understands the campaign planning and implementation.
5. To understand the visual elements and use them appropriately in their design also in different context.

S. No.	PRACTICAL
I.	Introduction to Digital designing software, Workspace, tools basic interface.
II.	Logo Designing
III.	Visiting card
IV.	Book designing
V.	Brochure Designing
VI.	Packaging Designing
VII.	Web layouts
VIII.	Social Media Posts for different platforms
IX.	Digital Background
X.	Character design

Course Outcomes

1. Students able to understand the graphic designing software
2. Students able to know the principles and methods of designing process.
3. Students able to create illustrations for print media and Digital media.
4. Students able to make social media creative's for different platforms
5. Students able to explore the aesthetical aspects of color.

M.SC. ANIMATION & MULTIMEDIA 1ST SEMESTER
SUBJECT CODE: AMP-113-V
SUBJECT NAME: 3D DESIGN & MODELING LAB

NO OD CREDIT: 3 **SESSIONAL: 30**
L T P **THEORY EXAM: 70**
0 0 6 **TOTAL: 100**

Course Objectives

1. To know about 3d modeling in 3D software.
2. To analyze the different types of 3d modeling.
3. To use and crate 3D models for different purpose.
4. To create the 3d model according to blueprint.
5. To understand the Interior Modeling & Exterior modeling.

S.NO.	PRACTICAL
I.	Introduction to 3D software and interfaces – polygon model , nurbs model
II.	3D modeling, tools and techniques.
III.	Inorganic model (car, army truck etc)
IV.	Props Modeling (Knife, drum, gun etc)
V.	Low poly /High poly Modeling techniques
VI.	Organic Model (Female model with hair)
VII.	Organic Model (male model with hair)
VIII.	Interior Modeling
IX.	Exterior modeling
X.	Model tree in high details

Course Outcomes

1. Students will able to know about user interface of 3D software.
2. Students will able to create designing Assets, Props.
3. Students will be able to create Interior Exterior and Environment Design.
4. Students will start designing character model for production.
5. Students will be able to understand different styles and treatment of content in 3d model creation.

SEMESTER-II

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-102-V
SUBJECT NAME: INNOVATION AND ENTREPRENEURSHIP

NO OD CREDIT: 4 **SESSIONAL: 25**

L	T	P	THEORY EXAM: 75
4	0	0	TOTAL: 100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. Understand the Entrepreneurial Opportunities.
2. Learning Step by step procedure for Traditional Animation.
3. To know about Crafting business models and Lean Start-ups.
4. Understand Organizing Business and Entrepreneurial Finance.
5. To work according to organizational structures

Unit –I- Introduction to Entrepreneurship: Entrepreneurs; entrepreneurial personality and intentions characteristics, traits and behavioral; entrepreneurial challenges. Government Initiatives.

Unit-II- Entrepreneurial Opportunities: Opportunities. Discovery/ creation, Pattern identification and recognition for venture creation: prototype and exemplar model, reverse engineering.

Unit-III- Entrepreneurial Process and Decision Making: Entrepreneurial ecosystem, Ideation, development and exploitation of opportunities; Negotiation, decision making process and approaches, Effectuation and Causation.

Unit-IV- Crafting business models and Lean Start-ups: Introduction to business models; Creating value propositions-conventional industry logic, value innovation logic; customer focused innovation; building and analyzing business models; Business model canvas, Introduction to lean startups, Business Pitching.

Unit-V- Organizing Business and Entrepreneurial Finance: Forms of business organizations; organizational structures; Evolution of Organization, sources and selection of venture finance options and its managerial implications. Policy Initiatives and focus; role of institutions in promoting entrepreneurship.

Course Outcomes

1. Students will be able to comprehend the role of bounded rationality, framing, causation and effectuation in entrepreneurial decision making, Equipments, development, animation studios, and projects.
2. Students will be able to demonstrate an ability to design a business model canvas.
3. Students will be able to evaluate the various sources of raising finance for startup ventures
4. Students will be able to Understand the fundamentals of developing and presenting business pitching to potential investors.
5. Students will be able to learn role of institutions in promoting entrepreneurship

Reference

1. Kachru, Upendra, India Land of a Billion Entrepreneurs, Pearson
2. Bagchi, Subroto, (2008), Go Kiss the World: Life Lessons for the Young Professional, Portfolio Penguin
3. Bagchi, Subroto, (2012). MBA At 16: a Teenager's Guide to Business, Penguin Books
4. Bansal, Rashmi, Stay Hungry Stay Foolish, CIIE, IIM Ahmedabad
5. Bansal, Rashmi, (2013). Follow Every Rainbow, Westland.
6. Mitra, Sramana (2008), Entrepreneur Journeys (Volume 1), Booksurge Publishing
7. Abrams, R. (2006). Six-week Start-up, Prentice-Hall of India.
8. Verstraete, T. and Laffitte, E.J. (2011). a Business Model of Entrepreneurship,Edward Elgar Publishing.
9. Johnson, Steven (2011). Where Good Ideas comes from, Penguin Books Limited.
10. Gabor, Michael E. (2013), Awakening the Entrepreneur Within, Primento.
11. Guillebeau, Chris (2012), The $100 startup: Fire your Boss, Do what you love andwork better to live more, Pan Macmillan
12. Kelley, Tom (2011), The ten faces of innovation, Currency Doubleday
13. Prasad, Rohit (2013), Start-up sutra: what the angels won't tell you about businessand life, Hachette India.

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-104-V
SUBJECT NAME: 2D ANIMATION LAB

NO OD CREDIT: 3 **SESSIONAL: 30**

L	T	P	THEORY EXAM: 70
0	0	6	TOTAL: 100

Course Objectives

1. To understand the user interface, various panels and tools of 2d animation software.
2. To understand digital drawing tool and techniques.
3. To learn about animation principles practically.
4. To explore the possibilities of 2d animation.
5. To create animation from a script

S.NO.	PRACTICAL
I.	Introduction of 2d animation software, Basic interface of the software and tools,
II.	Drawing concept , Basic of digital sketching, study animatics.
III.	Understanding the animation principles, Overlapping and Follow Through with example
IV.	Exaggeration and Anticipation animation principles
V.	Arcs and Solid Drawing animation principles with drawing
VI.	Understanding the animation principles, Timing and Staging with example
VII.	Understanding the animation principles, Squash and Stretch with example
VIII.	Understanding the animation principles, Straight ahead and Pose to pose with example
IX.	Understanding the animation principles, Slow in Slow out with example
X.	Create 2d animation film project

Course Outcomes

1. Students will able to know the 2d animation software.
2. Students will able to draw digital drawing tool.
3. Students will able to use animation principles in 2d animation.
4. Students will able to create 2d animation video
5. Students will able to work on given script

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-106-V
SUBJECT NAME: 3D RIGGING AND SKINNING LAB

NO OD CREDIT: 3 **SESSIONAL: 70**
L T P **THEORY EXAM: 30**
0 0 6 **TOTAL: 100**

Course Objectives

1. To create the rigging and skinning.
2. To create the different types rigging like mechanical and character rigging.
3. To understand the basic principles of animation.
4. To learn rigging in 3d character.
5. To create Animal rigging in 3D

S.NO.	PRACTICAL
I.	Rig construction fundamentals, basic workflow of 3D RIGGING AND SKINNING
II.	Bones and IK and FK
III.	Skin weight painting
IV.	Constraints
V.	Create a control rig for your character, Control curves and objects
VI.	Custom attributes
VII.	Driven keys, Expressions
VIII.	Create human rig in details with all controller
IX.	Create mechanical rig details with all controller
X.	Quadruped Character rig details with all controller

Course Outcomes

1. Student will learn tools and technique of rigging.
2. Student will able to understand types of skinning.
3. Students analyze the importance of rigging, skinning for animating a object or character.
4. Students will able to apply tools to create effective rigging and skinning tool in any 3d character.
5. Student will learn quadruped rigging

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER

SUBJECT CODE: AMP-108-V

SUBJECT NAME: VFX COMPOSITING LAB

NO OD CREDIT: 3 | **SESSIONAL: 30**

L	T	P	THEORY EXAM: 70
0	0	6	TOTAL: 100

Course Objectives

1. To understand the role of visual effects artist in industry.
2. To learn the different types masking, techniques.
3. To learn the different types camera tracking techniques..
4. To learn the color correction.
5. To learn how to composite.

S.NO.	PRACTICAL
I.	Introduction to visual effects, role of a visual effects artist and his/her work profile, the basics of visual effects artists work with creative departments to develop backgrounds, colors, lighting, environments, and props for films, animated pieces and more. they use animation, illustration, drawing, and design skills to create visuals that convey ideas about how they envision the look in the final outcome. Basic workflow of vfx compositng
II.	Masking and mattes, masking, scene be polished by adding some effects, modify a layer's alpha channel, about matte, mattes generation and approach.
III.	color correction, colour scheme, work with colours, the build-in effects for colour correction, colour mapping, colour problems and to resolve it.
IV.	tracking and stabilizing, motion tacking, the different ways to execute motion tracking. the various applications that can be used for motion tracking.
V.	keying and wire removal, chrome key and matte key, use a keyed layer, wire removal work, to conduct a chrome shoot, to add light wrap to keyed footage
VI.	manipulate the classic footages
VII.	3d camera tracking, to fly a camera around in after effects and land on frame video, the difference between rotation and orientation, camera stabilizing.
VIII.	set extension
IX.	COLOR CORRECTION, colour scheme, work with colours, The build-in effects for colour correction, colour mapping, colour problems and to resolve it
X.	put together a realistic composite, how to animate characters into real-world scenes

Course Outcomes

1. Students will able to know the role of visual effects artist in industry.
2. Students will able to create the different types masking, techniques.
3. Students will able to use the different types camera tracking techniques..
4. Students will able to apply the color correction of any footage.
5. Students will able to animate characters into real-world scenes.

Reference

1. ADOBE AFTER EFFECTS CC CLASSROOM IN A BOOK BY ADOBE CREATIVE TEAM
2. THE AFTER EFFECTS ILLUSIONIST BY CHAD PERKINS
3. CREATING MOTION GRAPHICS WITH AFTER EFFECTS BY TRISH & CHRIS MEYER

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-110-V
SUBJECT NAME: 3D LIGHTING TEXTURING AND RENDERING LAB

NO OD CREDIT: 3 **SESSIONAL: 30**
L T P **THEORY EXAM: 70**
0 0 6 **TOTAL: 100**

Course Objectives

1. To understand the basic concept of lighting in 3d space.
2. To understand the material and shaders
3. To analyze the lighting in different scenes
4. To create render pass for post production process.
5. To create walkthrough for interior and exterior

S.NO.	PRACTICAL
1.	UV Unwrapping, different types of unwrapping techniques.
2.	Diffuse ,normal ,bump and displacement map
3.	Understand the basic concept of shader and texture, Apply different types of shader and texture on 3d scene.
4.	Basics of workflow of 3d Lighting (3 point lighting)
5.	Understand the different types render engines and different types of lights in 3d software.
6.	Camera setup for lighting, different types of camera
7.	Add 3d point lighting in 3d space to Lighting a scene.
8.	Add different types of render passes (beauty, RGB, Shadow, reflection refraction etc.)
9.	Create a walkthrough in Day light
10.	Create a walkthrough in Night light

Course Outcomes

1. Student will analyze the lighting of different scene.
2. Student will learn about material and shader for different objects.
3. Student will create a Day light or Night light scenes.
4. Student will be able to Render a complete scene for 3d film production
5. Student will create walkthrough of 3D environment.

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-112-V
SUBJECT NAME: MOTION GRAPHICS DESIGN LAB

NO OD CREDIT: 2 **SESSIONAL: 35**

L	T	P	THEORY EXAM: 15
0	0	4	TOTAL: 50

Course Objectives

1. To create the graphics animation
2. To analyze the different types of shape, text and logo animation.
3. To use and create video by using shape and text animation.
4. To visualize the animation according to the concept.
5. To learn the concept of explainer video.

S.NO.	PRACTICAL
I.	ADOBE AFTER EFFECTS. A basic introduction to the software. The software mostly used for. The key factors of software.
II.	SET UP A PROJECT IN AFTER EFFECTS. After effects interface, work area, timeline, the importance of various transition effects, set up a project and to import/ export files, edit parameters, menus and tools in after effects.
III.	VIDEO EDITING AND AFTER EFFECTS. add special effects to the videos, difference between After Effects and Premier, audio editing work in after effects.
IV.	The various properties of layers, The different options in hiding and un-hiding layers. The different options in editing the parameters.
V.	ANIMATION AND KEY FRAMES. Title animation, create and edit text, text controls, other style features that can be used to enhance the characters types of texts available in After Effects, the differences between text layers and other layers.
VI.	TIME CONTROL IN AFTER EFFECTS. time stretching, time remapping, Strobe,animate the value of Frame rate slider, apply the Time Difference effectto locate colour difference, Time Displacement.
VII.	Character animation in after effects
VIII.	To create transitions
IX.	To crate effects using shape layer
X.	Create explainer video

Course Outcomes

1. Student will able to learn motion graphics.
2. Student will have knowledge of different animation styles and content of motion graphics.
3. Student will able to analyze the importance of motion graphics for films and videos.
4. Student will able to apply to create effective motion graphics for films and videos.
5. Student will able to learn how to create motion graphic from script.

Reference

1. ADOBE AFTER EFFECTS CC CLASSROOM IN A BOOK BY ADOBE CREATIVE TEAM
2. THE AFTER EFFECTS ILLUSIONIST BY CHAD PERKINS
3. CREATING MOTION GRAPHICS WITH AFTER EFFECTS BY TRISH & CHRIS MEYER

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
CODE: AEC-307-V
SUBJECT NAME: GERMAN- I

NO OF CREDITS: 0

L	P
2	0

SESSIONAL:	**25**
THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

Unit-I	Introduction Basic Greetings in German
Unit-II	Counting 1-100 Basic questions in GermanIntroduce
Unit-III	yourself Personal Pronouns Verb conjugations (regular
Unit-IV	verbs)Articles- der, die, das Vocabulary (classroom objects with
Unit-V	articles)Days, months, seasons + im/am Time (formal & informal)Counting 1000+
Unit-VI	Verb Conjugations (Irregular verbs)Separable Verbs

Reference Books:

1. Netzwerk A1 by Paul Rusch
2. Studio d A1 by Funk, Kuhn, D

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
CODE: AEC-308-V
SUBJECT NAME: GERMAN- II

NO OF CREDITS: 0

	SESSIONAL: 25
L P	**THEORY EXAM: 75**
2 0	**TOTAL: 100**
	Duration Exam: 3 hours

Unit-I	Hobbies
	Professions
Unit-II	Family
	Possesive pronouns and articles
Unit-III	Nominative and Accusative case
	Definite and indefinite articles in German
Unit-IV	Articles- der, die, das
	Vocabulary (classroom objects with articles)
Unit-V	Modal Verbs
	Imperative
Unit-VI	W-questions
	Introduction

2. Studio d A1 by Funk, Kuhn, Demme

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER

CODE: AEC-309-V

SUBJECT NAME: FRENCH I

NO OF CREDITS: 0

L	P
2	0

SESSIONAL:	**25**
THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

Each lesson is divided into three parts which consist of Dialogue, Vocabulary and Grammar.

Description du materiel

Unit I: **OBJECTIFS COMMUNICATIFS**

- S'initiera'laculturefrancaise
- De'crirelinepersonne
- Direlanationalite'
- Parler des saisons
- Localizer des objects
- Demander l donner des goûts et des préférences

Unit II: **GRAMMAIRE/VOCABULAIRE**

- Les verbes en(er)
- Les pronoms sujels
- Les articles definis
- Le corpshumain
- Les verbesen(ir)
- Lesarticlesinde'finis
- La negation
- Les verbes en (ger)
- Lefe'minimetlepluriel
- Les expressions avec faire
- Les (nombres) (1-100)
- Les prepositions
- L'interrogations
- Les verbs en (re) et irreguliers
- Les repas francais
- Les adjectifs possessifs
- De'crireuneville

References:

1. APPRENONS LE FRANCAIS Methode de Francais by Mahitha Ranjit , Monica Singh

2. LE NOUVEAU SANS FRONTIERES Methode de Francais by Philippe Domonique, Jacky Girardet

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER

CODE: AEC-310-V

SUBJECT NAME: FRENCH II

NO OF CREDITS: 0

L	**P**
2	**0**

SESSIONAL:	**25**
THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

Each lesson is divided into three parts which consist of Dialogue, Vocabulary and Grammar.

Description du materiel

Unit-I: **OBJECTIFS COMMUNICATIFS**

- S'initiera'laculturefrancaise
- Salut
- Parler dela quantite
- Decrire une personne
- Parler de la famille
- Decrire la journee
- Direl'heure
- Parler des saisons
- Interroger sur/ Parler de la Sante

Unit-II: **GRAMMAIRE/ VOCABULAIRE**

- Les verbes en(er, ir, re)
- La negation
- Les articles
- Les adverbes de quantite
- Le feminin et le pluriel des noms et des adjectifs
- La position des adjectifs
- L'infinitifapresunautreverbe
- Les membres de la famille
- Les verbes pronominaux
- Les nombres cardinaux et ordinaux
- Les saisons, les jours de la semaine et les mois de l'annee

- Troisformesd'interrogation
- L'interrogationnegativeet(si)
- Les expressions avec (avoir)
- Les animaux
- Les couleurs

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
CODE: AEC-104-V
SUBJECT NAME: SANSKRIT- I

NO OF CREDITS: 0

SESSIONAL:	**25**
THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

L	**P**
2	**0**

Duration of Exam: 3 hrs.

ईक ाIT ई-*1:* ससकत वभ रर , वर-ववचछद, स ः शबद- न�ग, ◌ लरग, नन सकलरग,सवन भ, ◌म -नद.

ईक ई-*2:* सख्म - १ स ५०, ध त�न- र�क य एव र�क य (अस, न ठ , गभ), अव्मम नरयचम.

ईक ाIT ई-*3:* ध त�न- र�क य (अस, न ठ, क), पर क न भ, सलबजम क न भ, न ष्मम क न भ, ईशवनदन (कवरअर).

ईक ई-*4:* क यक एव उन नद ववबलतत नरयचम, ◌त्मम -तभन,तत्व .

ईक ई-*5:* शब्द ◌न- फ रक, क ः , नद , सववत , पर, व , ध त◌न- रो◌क य(अस, न ठ , गभ), सभम रखन.

ईक ाIT ई-*6:* सभ स –तत न◌ष, अन ठत गदम श, अशदधध-श ोधन, व तम-यचन .

◌कत फ*:*

1. द न भणक र, न सयस्वत ह उस ◌ . लर., इ ड म .
2. भणक र सस्कत वम कयर, सयस्वत ह उस ◌ . लर., ि ड म

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER

CODE: AEC-312-V

SUBJECT NAME: SANSKRIT- II

NO OF CREDITS: 0

		SESSIONAL: 25
L	**P**	**THEORY EXAM: 75**
2	**0**	**TOTAL: 100**
		Duration Exam: 3 hours

ईक ई-*1:* सस्कत वभ र , वर-ववन्म स एव सम ोजन, एक-दवव-अनक, स्वय सलन्ध(द घ सलन्ध, गस्सलन्ध, वदधध सलन्ध, मर सलन्ध, न्नव न्नसलन्ध).

ईक ITT ई-*2:* समतत य न , सखम - १ स ४ (त न लरग ो), शबद न्न क्ष -- अक यनत न्न ग, अक य न्त लरग, अक य न्त नन्नसकलरग.

ईक ITT ई-*3:* न्नम म एवभ ववन्नमम , स ठहक ठदन क न भ, सखम - ५० स १००, ईशवन्दन (कवरअर).

ईक ई-*4:* न्नम - मन्न, तव मत, सभम रखन, सभ स- कभध यम.

ईक ई-*5:* ध त न्न कयर, व्यजनसधध- भोऽनस्व य सधध, अनस्व य सधध, छत्वभ सधध,जश्तत्वभ सधध, श्तचत्वभसधध, त्वभ सधध.

ईक ITT ई-*6:* अन्न ठत गदम श, अशदधध-श ोधन,व त र न्न, व तम-यचन , व चमन्नरयवतन.

कत फ*:*

1. द न्न भणक र, न्म सयस्वत ह उस . लर., इ ड म .
2. भणक र सस्कत वम कयर, सयस्वत ह उस लर., इ्डम

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER

CODE: AEC-303-V

SUBJECT NAME: PERSONALITY DEVELOPMENT

NO OF CREDITS: 0

L	P
2	0

SESSIONAL:	**25**
THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

1. To learn to achieve the highest goal happily
2. To become a person with stable mind, pleasing personality and determination
3. To awaken wisdom in students

Unit-I: Neetisatakam-Holistic development of personality (wisdom) Verses- 19,20,21,22

Verses- 29,31,32 (pride& heroism)

Verses- 26,28,63,65 (virtue)

Verses- 52,53,59 (dont's)

Verses- 71,73,75,78 (do's)

Unit-II: Approach to day to day work and duties.

Shrimad BhagwadGeeta : Chapter 2-Verses 41, 47,48,
Chapter 3-Verses 13, 21, 27, 35,

Chapter 6-Verses 5,13,17, 23, 35,
Chapter 18-Verses 45, 46, 48.

Unit-III: Statements of basic knowledge.

Shrimad Bhagwad Geeta: Chapter2-Verses 56, 62, 68

Chapter 12 -Verses 13, 14, 15, 16,17, 18

Personality of Role model. Shrimad Bhagwad Geeta:
Chapter2-Verses 17, Chapter 3-Verses 36,37,42,
Chapter 4-Verses 18, 38,39

Chapter18 – Verses 37,38,63

References:

1. "Srimad Bhagavad Gita" by Swami SwarupanandaAdvaita Ashram (Publication Department), Kolkata

2. Bhartrihari's Three Satakam (Niti-sringar-vairagya) by P.Gopinath,

3. Rashtriya Sanskrit Sansthanam, New Delhi.

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER

CODE: AEC-313-V

SUBJECT NAME: INTERVIEW AND GROUP DISSCUSSION SKILLS NO OF

CREDITS: 0

L	P
2	0

SESSIONAL:	**25**
THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

Quality of Content

- Comprehension of core idea
- Real life examples
- Data generation
- Reasoning

Vision /Goal Orientation

- Driving towards issue resolution
- Intelligent use of others' content

Personality

- Attitude
- Leadership
- Influencing ability
- Rapport building
- Participation
- Team

Confidence

- Motivation
- Activeness
- Energy
- Sense of humour

Communication

- Articulation
- Fluency
- Listening
- Body language
- Eye Contact

Types Of G.D

- Factual Topics
- Controversial Topics
- Abstract Topics

Interview Skills

- Common Interview Questions
- What Employers Want
- Attitude and Effort
- Body Language
- Research
- The Mock Interview
- Phone Interviews
- Behavioral Interviews
- Closing the Interview
- Thank You Notes

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
CODE: AEC-117-V
SUBJECT NAME: YOGA AND MEDITATION

NO OF CREDITS: 0

L	P
2	0

SESSIONAL: 25
THEORY EXAM: 75
TOTAL: 100
Duration Exam: 3 hours

Unit-I: Introduction to yoga and its different levels, food habits, Sanskar of a yogi, Patanjali Yogsutra, its importance in life, benefits and history of yoga.

***Unit*-II:** Meditation and its relation with yoga, mind relaxation, development of morality and ethics, prayer and its meaning, its importance in life, benefits and history of meditation.

***Unit*-III:** Pranayam and its introduction, types of pranayam, breathing exercises, preliminary preparation before pranayam, its importance and benefits in life.

***Unit*-IV:** Practice of different types of Pranayam: Anulom-Vilom, Kapalbhati, Nadi Shodhan, Agni Sar, Bhastrika, Bharamari etc.

Unit-V: Mantra and their importance, introduction to some chanting mantras, practicing some of mantras Gayatri Mantra, Namokar Jaap etc.

***Unit*-VI:** Aasan and their types, benefits of different aasans, practicing of different aasans: Padamaasan, surya-namaskar, tadaasan, navaasan, gomukh aasan, bhujang aasan etc.

Reference Books:

1. Patanjali Yogsutra
2. Yog Manjari

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
CODE: AEC-314-V
SUBJECT NAME: ART OF LIVING

NO OF CREDITS: 0

L	P
2	0

SESSIONAL: 25
THEORY EXAM: 75
TOTAL: 100
Duration Exam: 3 hours

Pre-requisites:

1. Getting up early in the morning, bathing, and meditation before sunrise
2. Following of five **Yamas** and five N**iyamas**
3. Avoiding 7 great sins
4. Some control over food (avoiding wine etc.)
5. Knowledge of Sanskritam

Unit-I: **IMPORTANCE** Solution to present day problems: terrorism, pollution, personal, family, social, health, mental etc.; attainment of physical comforts, security, good governance, healthy environment etc.; bliss (ananda) of Yoga, getting rid of all miseries forever (Moksha); Why Vedic way? Vedas the oldest scriptures, word of the creator, fountain head of all religions; virtuous actions/Dharma, Pure ("Shudha") Manusmriti; practical example – Valmiki Ramayanam (pure); evidences from Veda, Manusmriti (pure), Valmiki Ramayanam (pure), NASA findings etc.

Unit-II: ***VEDIC ROUTINE DAILY*** Brahma yajnya : Sandhyā- vandanam - Place, time, duration, dress, posture, achamanam, pranayama, japa, benefit, evidences, reading of veda/sāstra; Deva-yajnya: place, time, material; Balivaisvadeva yajnya; daily livelihood / or as per āshrama requirement; "Yamas" – Ahinsa, satya, asteya, brahmacharya, aparigraha; "Niyamas" – shaucha, santosha, tapah, swadhyaya, ishwara pranidhanam; significance and impact on personal and social life.

Unit-III: GENERAL MANNERS Respecting the elders (specially the parents and the teacher), not to throw excreta or other impure things into water or fire, avoiding anger with an angry person etc.

Unit-IV: **VEDIC LIFE ROTINE** Four ashramas – brahmacharya, grihastha, vanaprastha, sanyāsa, duties in each.

Unit-V: **SANSKARAS:** 16 sanskāras (from conception till death) for the betterment of physical (sthūla sariram)and mental health (Sūkshma Sariram), institution of marriage – virginity, age difference, sincerity towards each other etc.

Unit-VI: **Great sins ("Mahā Pātaka") and "Prāyaschittam":** Seven great sins – abortion, adultery, drinking wine, livelihood on interest, speaking lie after lie in the court of virtuous men, stealing gold, killing a scholarly person.

Unit-VII: **Self Realization**: The greatest achievement, becoming immortal (Moksha), ashtanga yoga.

Unit-VIII: **Vedic Science and Technology**: Proper town planning as per the Vedic texts to meet the above objectives (good governance), some fundamentals from Vedic science to understand the Vedic art of living.

Unit-IX: **Tips from Ayurveda for good health**: Drinking water after getting up from bed, very light dinner, fresh warm food, cow's products etc.

Reference books:

1. Rigveda- Sakal sakha, Yajurveda- Madhyandin Sakha
2. Satapatha Brahmanam
3. Manusmriti ("Shudha")
4. Valmiki Ramayanam ("Shudha")
5. Samarangana Sutra Dhara
6. Vaiseshika Darsanam, Yoga Darsanam
7. Susrut Sanhita

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
CODE: VAC-307-V
SUBJECT NAME: ROLE OF NSS IN NATION BUILDING

NO OF CREDITS: 0

L	P
2	0

SESSIONAL:	**25**
THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

Unit-I: **Understanding youth**

- Definition, profile of youth, categories ofyouth
- Issues, challenges and opportunities for youth
- Youth as an agent of social change
- National youth Policy

Unit-II: **Importance and Role of Youth Leadership**

- Meaning and types of leadership
- Qualities of good leaders; traits of leadership
- Importance and role of youth leadership
- Youth-focused and Youth-led organizations

Unit-III: **Life Competencies**

- Definition and Importance of life competencies
- Communication –process, types & barriers
- Motivation – Concept & Cycle
- Problem Solving and Decision Making

***Unit-IV*:** **Social Harmony and National Integration**

- Indian history and culture
- Role of youth in peace-building and conflict resolution
- Role of youth in Nation building
- Youth development programmes at the National Lever, State Level and voluntary sector

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
CODE: AEC-316-V
SUBJECT NAME: PHYSICAL EDUCATION

NO OF CREDITS: 0 **SESSIONAL: 25**

L	**P**	**THEORY EXAM:**	**75**
2	**0**	**TOTAL:**	**100**
		Duration Exam: 3 hours	

Unit-I: **Concept of Physical Education:** Meaning and definition of Physical Education, its aim and objectives Need and importance of Physical Education, Misconceptions about Physical Education & its relevance in Inter Disciplinary Context

Unit-II: **Career Aspects in Physical Education:** Career Options in Physical Education, Avenues for Career Preparation, Motivation & Self Assessment for careerchoices

***Unit*-III: Physiological Aspects of Physical Education:** Warming up - General & Specific & its Physiological basis, Effects of Exercise on Muscular & Digestive systems, Effects of Exercise on Respiratory & Circulatory systems

***Unit*-IV: Psychological Aspects of Physical Education:** Definition & role of Sports Psychology, Motivation and Achievements in Sports, Adolescent Problems & its Management.

***Unit*-V:** **Health Concepts of Physical Education**: Role of Physical Education Programme on Community Health Promotion(Individual, Family & Society), Effects of Alcohol, Tobacco and Drugs on Sports Performance, Obesity, Causes & Preventive Measures and Role of diet on Performance

***Unit*-VI: About Games**: History of the Game/Sport, Latest General Rules of the Game/Sport, Measurement of Play Fields and Specifications of Related Sports Equipments, Important Tournaments and Venues, Sports Personalities

***Unit* VII: Skill Development**: Fundamental Skills of the Game/Sport, Specific Exercises of Warm-up and Conditioning, Related Sports Terminologies, Sports Awards, Common Sports Injuries & its Prevention

SEMESTER-III

M.SC. ANIMATION & MULTIMEDIA 1ST SEMESTER
SUBJECT CODE: AMP-211-V
SUBJECT NAME: VISUAL EFFECTS (ELECTIVE)

NO OD CREDIT: 4			**SESSIONAL: 25**
L	**T**	**P**	**THEORY EXAM: 75**
4	**0**	**0**	**TOTAL: 100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To Understand the concept of visual effects and compositing
2. To know about diffident types of composting
3. To know about blending modes and lighting.
4. To learn concepts about CGI composting with live action.
5. To know about motion tracking for films

Unit –I- introduction to compositing concepts, stereo compositing,the use of multi-pass cgi compositing, 3d compositing making the good composite.

Unit-II- about mattes,luma key mattes, understanding chroma key mattes, difference mattes, bump mattes, keyers, color difference mattes, adobe after effects matte. To refine mattes, matte monitor, understanding garbage mattes, filtering the matte, adjusting the matte size. About despill,despil operation,despil artifacts, the despill algorithms and to refine them.

Unit-III- understanding the concept of the composite. the compositing operations,the processed foreground method, to use add-mix composite, refining the compsite and stereo compositing. Cgi compositing work, difference between premultiply and unpremultply, multipass cgi compositing work, hdri images, the importance of 3d compositing, match moving camera projection, set extension, 3d backgrounds.

Unit-IV- to use blend operations,the image blending operations,the different blending modes. Using color correction. Understanding the colours of nature. Behaviour of light, to match the light space. Different camera effects, to match the focus, depth of field,lens flare veilling glare and grain.

Unit-V- animation and compositing, geometric transformations,motion tracking using warps and morphs. about gamma,what are the effects of gamma changes on images, the three gammas of a display system,to create the dim surround effect, the gamma of video or of a film, compositing a video, ,highdefinition video? about telecine, to work with a video, to work with a video in a film job,to work with film in a video job working with cgi in a video job. compositing a film. the different formats of a film, the term film scanners, film recorders, digital intermediate. the difference between log and linear, understanding the dynamic range in the real world. the behaviour of film,how to represent film data in log format, to digitalize the film, about bit depth and banding.

Course Outcomes

1. Students will be able to learn vfx and composting
2. Students will be able to know different types of compositing.
3. Students will be able to learn and implementation of blending models and lighting in compositing
4. Students will be able to apply CGI to live action footage.
5. Students will be able to learn warps and morphs for motion tracking

Reference

1. Industrial Light & Magic: creating the impossible, The Art of Innovation(Author: Pamela Glintenkamp)
2. Acting for Animators: 4th Edition(Author: Ed Hooks)
3. Illuminated Pixels: The Why, What, and How of Digital Lighting(Author: Virginia Wissler)
4. The Art and Science of Digital Compositing techniques of visual effects ,Animation and motion graphics (The morgan kaufman series in computer graphics) (Author: Ron Brinkmann)

M.SC. ANIMATION & MULTIMEDIA 1ST SEMESTER
SUBJECT CODE: AMP-213-V
SUBJECT NAME: 3D ANIMATION (ELECTIVE)

NO OD CREDIT: 4			**SESSIONAL: 25**
L	**T**	**P**	**THEORY EXAM: 75**
4	**0**	**0**	**TOTAL: 100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To create the Props/object Animation.
2. To understand the basic principles of animation.
3. To create the different types Character Animation.
4. To change the character expression.
5. To create character rigging for animation

Unit –I- Advanced Modeling: Editable poly, Symmetry modifier, Lathe modifier, Merge, Quad polygon, Settings \dialog, NURMS, Editing Using Multiple Viewports, Adding Detail to the Model, Tessellate, Deformation, Using Modifiers to Add Detail to 3D Objects, Merging Files While Retaining a Connection..

Unit-II- Using advanced techniques: Assigning Constraints on the Motion Panel, Applying an Ease Curve to Control Animation, Multiplier curves, Link constraint, Inverse kinematics, Solver, Applying Multiplier Curves, and Switching Hierarchical Parents..

Unit-III- Animation, multimedia & virtual reality: Fundamental key frame animation, repeating animation over time, Hierarchical linking, Key frame, Parameters Out of- Range, Setting Animation Keys, Animating the Rotation of the Dummy Object, Creating a continuously Looping Animation.

Unit-IV- Principles of Animation: Squash and stretch, Anticipation, Staging, Straight ahead action and pose to pose, Follow through and overlapping action, Slow in and slow out, Arc, Secondary action, Timing, Exaggeration, Solid drawing, and Appeal..

Unit-V- Advanced Animation Character Animation - Walk cycle, Run cycle, Jumping, Timing, movement, mood, camera and lighting; Animation using weights, Character Rigging: Skeletons, Skinning and Constraints for controls; Forward Kinematics and Inverse Kinematics, Deformers.

Course Outcomes

1. Student will learn types of Animation.
2. Student will understand Advance Principle of Animation.
3. Student will start animating character according to script.
4. Student will be learn facial expression behavior
5. Student wil learn rigging, skinning and basic principles of animation

Reference

1. Timing for Animation, Focal Press, Oxford,2002(Author: Harold Whitaker and John Halas)
2. Cartoon Animation with preston blair,Walter, Foster Publishing Inc., CA, 1995 (Author: Preston Blair)
3. Dark Alchemy, The Films of Jan Svankmajer, GreenwoodPress, 1995(Author: Peter Hames)
4. Disney's Aladdin – The Making of an Animated Film Hyperion, NY,1992(Author: John Culhane)

M.SC. ANIMATION & MULTIMEDIA 1ST SEMESTER
SUBJECT CODE: AMP-215-V
SUBJECT NAME: 2D ANIMATION (ELECTIVE)

NO OD CREDIT: 4			**SESSIONAL: 25**
L	**T**	**P**	**THEORY EXAM: 75**
4	**0**	**0**	**TOTAL: 100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To Understand the workflow of 2d animation
2. Learning Step by step procedure for 2d Animation
3. To know about principle of animation.
4. To know advance knowledge of 2d Animation
5. To work on animation by frame by frame.

Unit –I- CREATING VECTOR SHAPES (PRE-PRODUCTION)Introducing 2d animation software interface of using tools, Stage, Symbols, Scene, Color swatches, Library, Transformation, Object properties, Bitmap, Ruler, Grid, Guide, Snapping. Teaching how to create basic vector shapes using drawing tools, intersecting shapes within a single layer, Creating Complex Shapes with Intersecting Lines. Creating complex shapes using the combination of tools and techniques.

Unit-II- CHARACTER CREATION FOR ANIMATION (PRODUCTION) In this unit, students will be gaining various knowledge and important aspects that go into the creation of characters for animation. Students will be exploring the importance and roles of shape which forms the characters personality; these influence students to create characters in various artistic styles. This knowledge will give them to becoming a professional character designer

Unit-III- TIMELINE AND LAYER CONCEPTS (PRODUCTION) In this unit, student will explore the Timeline and its uses. Understanding of how the timeline organizes and controls a document's content in layers and frames. It also provides the knowledge in components of the Timeline like Layers, Frames (Key frames, In-betweens) and the play head. Students will explore through Timeline where the animation occurs in a document, including frame by frame animation, tweened animation and motion path.

Unit-IV- PRINCIPLES ANDANIMATION TECHNIQUES (PRODUCTION) In this Unit, Student will explore 12 principles of animation and how to move an animation on the specific platform.

Unit-V- AUDIO-VIDEO (POST-PRODUCTION) This is the stage where we unlock the secrets and techniques involved in compositing the foreground, background (characters, text, props, objects and elements) and syncing the audio to give weightage for the content/script in much more interesting way.

Course Outcomes

1. Students will be able to learn workflow of 22d animation.
2. Students will be able to learn complete 2d animation film production.
3. Students will be able to learn and implementation of Animation Principles
4. Students will be able to create 2d animation film.
5. Student will able to use principles of animation.

Reference

1. The ILLUSION OF LIFE: DISNEY ANIMATION (Disney Editions Deluxe) (Author: Frank Thomas)
2. The Animator's Survival Kit: A Manual of Methods, Principles, and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators (Paperback) by Richard Williams
3. Chuck Amuck: The Life and Time of an Animated Cartoonist (Paperback) by Chuck Jones
4. Drawn to Life: 20 Golden Years of Disney Master Classes, Volume 1: The Walt Stanchfield Lectures (Paperback) by Walt Stanchfield
5. The Art of Up (Hardcover) by Tim Hauser

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-221-V
SUBJECT NAME: VISUAL EFFECTS LAB (ELECTIVE)

NO OD CREDIT: 5 **SESSIONAL: 50**
L T P **THEORY EXAM: 100**
0 0 10 **TOTAL: 150**

Course Objectives

1. To understand the node based composting software.
2. To know the different types of nodes for compositing.
3. To know particle system and fluids dynamic system.
4. To learn advance Techniques to create effects and compositing.
5. To know about basic knowledge of visual effects and compositing.

S.NO.	PRACTICAL
I.	Getting started with node base composting softwarethe different components of the graphic user interface understanding, the use of nodes, the viewer, framecycler.
II.	Keying, introducing keying nodes.to use huekeyer,image based keyer,the role of keylight in animation, combining keyer nodes using the tree.
III.	Compositing high-resolution stereo images. Use the project settings panel how to set up a high-resolution Stereo script, compositing a stereo project, to render and view stereo trees
IV.	The node based 3d engine, to setup 3d scene moving images with a 3d scene, reconcile 3d, to transform 3d data into 2d data
V.	The importance of camera tracking in compositing.to calculate reflection movement using camera tracking, 3d tracking work in node based software, loading a pregenerated camera tracker node. To aligning the scenes, to create the reflection.
VI.	Camera projection, building a camera projection scene. To tweak the geometry, to animate the camera, tweaking the texture, using a spherical transform to replace sky. Compositing outside the scanline render node
VII.	Customizing node based software with gizmos.the safety areas, to build the gizmo's tree, to create a user knobs, to scripte with a little tcl, to test the gizmo', tree- wrapping in groups, manipulating the software script in a text editor. To turn a group into a gizmo, to use the viewer input process
VIII.	Customizing nuke with python. the basics of python scripting, to create a button with python, To add a hot key,to make customization stick with menu

IX.	Tour the interface with a basic composite. To work with process trees, to create a simple process tree, to merge images, inserting and manipulating nodes in the tree. To changing properties and render them, the merge node, creating animation with keyframes.
X.	Compositing cgi with bigger node trees. Working with channels. To work with contact sheets, using the bounding box to speed up processing. To use linking properties with expressions, slapping things together and working on foreground over background.
XI.	Compositing cgi with bigger node trees. To build the beauty pass, the shufflecopy node, manipulating passes and adding other cgi images. To place cgi over live background, to use the mask input
XII.	Color correction and composition. Understanding nuke's approach to color. How to manipulate color, how to build blocks? Using an i/o graph to visualize color operations. To create curves with color lookup, matching color with the grade node.
XIII.	Understanding rotopaint and compositing. Introducing rotopaint's interface. The term curve editor? What issplit-screening and, to twin it with roto, to combine paint, to use roto in animation, the use the dope sheet.
XIV.	Introduction to particles. To create particle, to make particle collide with cloth surface, to use particle, to simulate liquids, to emit particles using a texture, to emit particles using wind, to add shade to the particles, to use hardware rendering to create flame effects, particles and fields, the rendering particles work in mental ray.
XV.	Dynamics effects. To create cloth objects, creating cloth and particles interactions. Rigid body dynamics, particles instancing ,to create flying debris using particles instancing,animating instances using particles Expression, to create smoke trails,maya dynamics and effects. An overview of dynamics and maya nucleus. The difference between rigid Dynamics and soft dynamics bodies.
XVI.	Maya fluids. To use fluid containers, to create a reaction, rendering fluid container, to create fluid and particle interactions, to create an ocean.
XVII.	Create visual effects short film as a project

Course Outcomes

1. Student will able to learn node based composting.
2. Student will have knowledge of different nodes for compositing.
3. Student will able to create particle effects and fluids dynamics.
4. Student will able to apply to create effective effects and compositing for films and videos.
5. Student will able to learn visual effects compositing and motion graphics

Reference

1. MAYA VISUAL EFFECTS THE INNOVATOR'S GUIDE: AUTODESK OFFICIAL PRESS, 2 EDITION BY ERIC KELLER

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-223-V
SUBJECT NAME: 3D ANIMATION LAB (ELECTIVE)

NO OD CREDIT: 5
L T P
0 0 10

SESSIONAL: 50
THEORY EXAM: 100
TOTAL: 150

Course Objectives

1. To know about basic fundamentals of 3D animation in 3d characters
2. To understand workflow of 3d animation
3. To knowledge of various 3d animation tools
4. To know advance 3d animation techniques
5. To understand the 3d Animation according to storyboard

S.NO.	PRACTICAL
I.	Workflow of 3d Animation
II.	Animation blocking pose to pose
III.	Graph editor
IV.	Character animation
V.	Camera setup
VI.	Robotic character animation
VII.	Animation according to storyboard
VIII.	Lip synchronization
IX.	Mechanical animation
X.	Render passes of 3d animation film.
XI.	Compose all the render passes
XII.	Final Editing with audio
XIII.	Create animation short film as a project

Course Outcomes

1. Student will able to know workflow of 3d animation
2. Student will have knowledge of different 3d animation tools
3. Student will able to create 3d animation for films and videos
4. Student will able to create 3d animation short film
5. Student will able to apply to create effective Lip synchronization

Reference

1. Animation Writing & Development (Author: Jean Ann Wright)
2. Animation Script to Screen (Author: Shamus Culhane)
3. Characters and View Point By Orson Scott Card
4. Illusion of Life By Ollie Johnston & Frank Thomas
5. Figure drawing without a model- by Ron Tiner
6. Creating Animated Cartoons with Character: A Guide to Developing and Producing Your Own Series for TV, the Web, and Short Film By Joy Murray

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-225-V
SUBJECT NAME: 2D ANIMATION LAB (ELECTIVE)

NO OD CREDIT: 5 **SESSIONAL: 50**

L	T	P	THEORY EXAM: 100
0	0	10	TOTAL: 150

Course Objectives

1. Understand the Fundamentals of story development.
2. To earning the process of character creation in written and visual form.
3. To learn various tool and techniques for 2d animation
4. To learn advance 2d animation
5. To work on animation by frame by frame.

S.NO.	PRACTICAL
I.	Develop a story
II.	Written description of characters, important design principles, Color theory etc. Character Studies from animated movies, Character studies from real life, Character studies from liveaction movies, Character studies from Computer Games.
III.	The process of character creation: How to get a good gesture, exaggerate from life
IV.	apply a shape language to your characters, how to get good line quality, how to proportioneffects your character design,
V.	to use perspective to draw believable characters, how to draw your character in action,
VI.	To give your character emotion and expressions.
VII.	Study of Human Skeleton, Musculature, Shape, Proportion, Character Construction, Heads,Hands, Feet, Gesture, Acting, Drapery, Body Types, Reference, Prop Design, Analysis, Comparative chart, Model Sheet, Expression Sheet, Pose Sheet, Color chart Noodling and Polished Render.
VIII.	Create details storyboard/ model sheet
IX.	Create digital background according to scene
X.	Indoor background and outdoor background
XI.	Walk cycle
XII.	Background panning
XIII.	Lip Sync and facial expression animation
XIV.	Mood walk cycle
XV.	Create 2d animation short film as project

Course Outcomes

1. Student will able to develop a story.
2. Student will able to create the character
3. Student will able to work with different 2d animation tools.
4. Student will able to create 2d animation film.
5. Student will able to use principles of animation.

Reference

1. Animation Writing and Development: From Script Development to Pitch (Focal Press Visual Effects And Animation) (Author: Jean Ann Wright)
2. Animation Script to Screen (Author: Shamus Culhane)
3. Elements of Fiction Writing - Characters & Viewpoint: Proven advice and timeless techniques for creating compelling characters by an award-winning author(Author: Orson Scott Card)
4. The ILLUSION OF LIFE: DISNEY ANIMATION (Disney Editions Deluxe) (Author: Frank Thomas)

M.SC. ANIMATION & MULTIMEDIA 2nd SEMESTER
SUBJECT CODE: AMP-205-V
SUBJECT NAME: Minor Project

NO OD CREDIT: 6			**SESSIONAL: 75**
L	**T**	**P**	**THEORY EXAM: 175**
0	**0**	**12**	**TOTAL: 250**

Minor projects submission guideline

1. Project title
2. Duration of the project
3. Project leader and list of team member
4. Contact details of the main team
5. Summary of project
6. Introduction
7. The research and approaches
8. Final submission
9. Outcomes / findings / evaluation
10. Conclusion
11. Acknowledgements

SEMESTER-IV

M.SC. ANIMATION & MULTIMEDIA 4th SEMESTER
SUBJECT CODE: AMP-202-V
SUBJECT NAME: GRADUATION PROJECT

Graduation projects submission guideline

1. Project title
2. Duration of the project
3. Project leader and list of team member
4. Contact details of the main team
5. Summary of project
6. Introduction
7. The research and approaches
8. Final submission
9. Outcomes / findings / evaluation
10. Conclusion
11. Acknowledgements

Note: The students will undergo training in different media house or production house or studios or corporate sectors for six months.