

MANGALORE UNIVERSITY

Revised Curriculum and Scheme of Examinations

Bachelor of Science-Animation and Visual Effects Degree Programme

Choice Based Credit System(CBCS), 2019-20 onwards

**B.Sc. - ANIMATION AND VISUAL EFFECTS, DEGREE PROGRAMME
PATTERNS AND SCHEMES OF EXAMINATIONS**

**T- Theory and P- Practical
CC- CO-CURRICULAR ,
EC – EXTRA-CURRICULAR**

I / II/III/IV Semesters

	Particulars	No. of Courses L/P	Instruction Hours/ Week	Duration of Exam(hrs)	Marks			Credits
					IA	Exam	Total	
Group 1	6 Animation & Visual Effects Courses	3T	3 x 4	3 x 3	3 x 20	3 x 80	3 x 100	3 x 2
		3P	3x 4	3 x 3	3 x 10	3 x 40	3 x 50	3 x 1
Group 2	One course to be chosen from 4 Electives	1T	1 x 2	1 x 2	1X 10	1 x 40	1 x50	1*1
Group 3	a. Foundation Languages	2L	2 x 4	2 x 3	2 x 20	2 x 80	2 x 100	2 x 2
	b. Elective Foundation	1T	1 x 2	1 x 2	1X 10	1 x 40	1 x50	1*1
Group 4	CC & EC	1T	1 x 2	1 x 2	1X 50	--	1 x50	1*1
							Semester Credit Total	16

V Semester

	Particulars	No. of Courses L/P	Instruction Hours/ Week	Duration of Exam(hrs)	Marks			Credits
					IA	Exam	Total	
Group 1	9 Animation & Visual Effects Courses	6T	6 x 4	6 x 3	6 x 20	6 x 80	6 x 100	6 x 2
		3P	3 x 3	3 x 3	3 x 20	3 x 80	3 x 100	3 x 2
							Semester Credit Total	18

VI Semester

	Particulars	No. of courses T/P	Instruction Hours/ Week	Duration of Exam(hrs)	Marks			Credits
					IA	Exam	Total	
Group I	2 AVE courses	2(T/P)	2(4/6)	2(2/3)	2x20	2x80	2x100	2x2
	Project work	Dissertation	40	-	140	Report: 400 100 Presentation:- 100 & Viva :60	700	14

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Bachelor of Science-Animation & Visual Effects Degree Programme Pattern and Scheme of Examinations

I SEMESTER

Group	Course Code	Course	Instruction Hours/ Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC131	Introduction to Animation	4	3	20	80	100	2
	BSAAVC132	Foundation Art	4	3	20	80	100	2
	BSAAVC133	Introduction to Graphic Design	4	3	20	80	100	2
	BSAAVP134	Raster Graphics Lab	3	3	10	40	50	1
	BSAAVP135	Drawing Fundamentals Lab	3	3	10	40	50	1
	BSAAVP136	Traditional Animation Lab	3	3	10	40	50	1
II	BSAAVCE137 BSAAVCE138 BSAAVCE139 BSAAVCE140	E1: Advanced Raster Art E2: Advanced Compositing E3: CG Pyro-Techniques E4: Stereoscopic-3D	2	2	10	40	50	1
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	1	2	10	40	50	1
IV		EC & CC	1	2	50	-	50	1
		Total	32	30	200	600	800	16

II SEMESTER

Group	Course Code	Course	Instruction Hours/ Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC181	Fundamentals of Animation	4	3	20	80	100	2
	BSAAVC182	Introduction to story and Script Writing	4	3	20	80	100	2
	BSAAVC183	Creating Story Board	4	3	20	80	100	2
	BSAAVP184	2D Animation Lab	3	3	10	40	50	1
	BSAAVP185	Advanced Drawing Lab	3	3	10	40	50	1
	BSAAVP186	Vector Graphics Lab	3	3	10	40	50	1
II	BSAAVCE187 BSAAVCE188 BSAAVCE189 BSAAVCE190	E1 :Introduction to Film Making E2 :Script Researcher E3 : Film Direction E4 : Media Ethics, Law & Culture	2	2	10	40	50	1
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC & CC	2	2	50	-	50	1
		Total	32	30	200	600	800	16

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III SEMESTER

Group	Course Code	Course	Instruction Hours/ Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC231	Acting for Animation	4	3	20	80	100	2
	BSAAVC232	CGI Production	4	3	20	80	100	2
	BSAAVC233	Introduction to Electronic Media	4	3	20	80	100	2
	BSAAVP234	3D modeling Lab	3	3	10	40	50	1
	BSAAVP235	3D Animation Lab	3	3	10	40	50	1
	BSAAVP236	3D Rigging Lab	3	3	10	40	50	1
II	BSAAVCE237	E1 : Introduction to Internet	2	2	10	40	50	1
	BSAAVCE238	E2 : Search Engine Optimization						
	BSAAVCE239	E3 : On Line Content Management Systems						
	BSAAVCE240	E4 : HTML						
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC & CC	2	2	50	-	50	1
		Total	32	30	200	600	800	16

IV SEMESTER

Group	Course Code	Course	Instruction Hours/ Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC281	Introduction to Advertising	4	3	20	80	100	2
	BSAAVC282	Television Production	4	3	20	80	100	2
	BSAAVC283	Film Production	4	3	20	80	100	2
	BSAAVP284	3D dynamics Lab	3	3	10	40	50	1
	BSAAVP285	Video Compositing Lab	3	3	10	40	50	1
	BSAAVP286	Surfacing & Lighting Lab	3	3	10	40	50	1
II	BSAAVOE287	E1 : Introduction to Camera	2	2	10	40	50	1
	BSAAVOE288	E2 : Lighting for Shooting						
	BSAAVOE289	E3 : Photo Journalism						
	BSAAVOE290	E4 : Direction in Cinematography						
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC & CC	2	2	50	-	50	1
		Total	32	30	200	600	800	16

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V SEMESTER

Group	Course Code	Course	Instruction Hours/ Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC331	Digital Composition	4	3	20	80	100	2
	BSAAVC332	Visual Communication	4	3	20	80	100	2
	BSAAVC333	Ad Film Making	4	3	20	80	100	2
	BSAAVC334	Aesthetics of Video Editing	4	3	20	80	100	2
	BSAAVC335	Creative Business Management	4	3	20	80	100	2
	BSAAVC336	Audio Production	4	3	20	80	100	2
	BSAAVP337	Advanced Visual Effects Lab	3	3	20	80	100	2
	BSAAVP338	Advanced Video Editing Lab	3	3	20	80	100	2
BSAAVP339	Audio Design & Audio Compositing Lab	3	3	20	80	100	2	
		Total	33	27	180	720	900	18

VI SEMESTER

Group	Course Code	Course	Instruction Hours/ Week	Duration of exams (Hrs)	Marks			Credits
					IA	Exam	Total	
I	BSAAVC381	Media Ethics and Copyright Law.	4	3	20	80	100	2
	BSAAVC382	Project Management.	4	3	20	80	100	2
	BSAAVC383	Project/ Desertion	28	3 Hrs /Batch	140	Dissertation Report : 460 Demo Reel Presentation : 100	700	14
		Semester Credit Total					900	18
		Grand Total Credit for three year Degree Programme : 100						

Total Marks : 5000

Total Credits: 100

Common scheme of Practical Examination for I Semester to V Semester

The practical examination in the concerned subject specified in the I Semester to VI Semester shall be conducted for 80 marks. There shall be two components – Problem solving and execution and Viva voce components. 80 marks can be distributed as follows. Each Practical paper includes Two Parts- PART A and PART B. One question shall be asked in each part.

Sl. No.	Details			Marks	Total
1.	PART A	i.	Problem Solving Approach and Designing	10	30
		ii.	Virtual Tool Designing	10	
		iii.	Demonstration	10	
2.	PART B	i.	Problem Solving Approach and Designing	10	30
		ii.	Virtual Tool Designing	10	
		iii.	Demonstration	10	
4.	Record				10
5.	Viva –Voce				10
				Total Marks	80

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Preamble:

Media and Entertainment are the most emerging and fast growing industries in India and the whole world is taking notice of the efficiency, skill and talent available in the country in these fields. To aid further growth of these industries, it is extremely important that formal and professional level training programmes and courses are introduced at University and College levels to create highly skilled and trained professionals for this Industry. Animation is an important segment in this Industry and this course is being introduced to train people in the field of animation which is an inherent part of a variety of industries today and find applications in industries even beyond Media and Entertainment.

The data from NASSCOM (Animation & Gaming Report 2007) states that there are approximately 16000 animators in India and majority of these animators are employed gainfully in Mumbai, Chennai, Bangalore, Hyderabad, Pune etc. The lack of skilled people is badly affecting the animation industry. Most studios have projects lined up for the coming years with tight deadlines to keep as most of these projects are from the international market. This situation has forced the industry to look for animation professionals from international markets and many studios are recruiting foreign hands.

The animation business is sidelining the animation education and even after 15 years of existence in India the field is not understood. The existing animation education lacks professional training methodologies which are only available at Higher Education levels and comprises of Private training institutes that are cashing the visible boom in the industry. Some of these establishments can only provide ill trained and insecure artists and technicians which will only compound the problem. A lot needs to be done, at a very fast pace if we have to maintain our competitive edge and deliver content be it films, serials or games. There is a huge market for it as India has yet to discover its appetite for animation, and the world is still hungry for more!

Opportunities and Scopes for professionals and Entrepreneurship in Animation Industries:

Global market : Report on Visual Effects(VFX) Market by Component (Software, Hardware and Services), by Type (Matte Painting, Simulation FX, Compositing, and Others), by Application (Movies, Advertisement and TV Shows): Global Industry Perspective, Comprehensive Analysis, and Forecast, 2017 – 2024” by Zion Market Research. According to the report, global VFX market was valued USD 8,611.79 million in 2017 and is expected to reach around USD 19,985.64 million by 2024, growing at a CAGR (Compound Annual Growth Rating) of approximately 12.78% for the forecast period from 2018 to 2024.

Indian Market: Indian media and entertainment (M&E) industry grew at a CAGR of 11.61 per cent from 2011-2016; and is expected to grow at a CAGR of 13.9 per cent to touch US\$ 37.55 billion by 2021 from US\$ 19.59 billion in 2016. The next 5 years will see digital technologies increase their influence across the industry leading to a sea change in consumer behaviour across all segments. The entertainment industry is projected to be more than US\$ 62.2 billion by 2025. With an intent of ushering in an era of conversational computing, Microsoft has released an artificial intelligence chatbot known as Ruuh for Facebook Messenger. The English speaking chatbot is only available to users in India and is to be used for entertainment purposes

Career / Job Opportunities in Domain Areas:

After completion of the Under Graduate Degree Program students can get job opportunities/placements in the following segments in industry:-

Media and Entertainment , Animation Studios , Post Production Houses (PP) , Broadcast Houses, Game Studios (Game Art), Visual Effects (VFX) for Films and Television, Advertisement Industry , Design Visualization , Architectural /Interior/Landscape Designing , Product Designing/Mechanical Visualization/ Industrial designing 11. Medical Visualization, Set Designing/Exhibition Designing , Apparel/ Fashion Designing , E-learning/CBT Designing, Web Designing , Graphic Design, 3D Modeler , Animator , Material & Lighting Artist , Action Scripting Programmer , Virtual Reality Artist , Rigging Artist , Compositor , Editor and VFX Artist.

Target Industries: Motion Picture Production, Television Broadcast Production Advertising

Medical Animation, Cartoon Animation, Architectural Designs, Interior Designing, Automobile Designing, Fashion Product and accessory Designs , Video Gaming.

Considering the career opportunities and growth in the field of multimedia and animation as justified above, the Computer Science, University of Mangalore proposes to start a Graduation programme of three years viz., Bachelor of Science in Animation and Visual Effects under faculty of science in Computer Science, University of Mangalore.

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	BSAAVP135	Drawing Fundamentals Lab	3	3	10	40	50	1
	BSAAVP136	Traditional Animation Lab	3	3	10	40	50	1
II	BSAAVCE137 BSAAVCE138 BSAAVCE139 BSAAVCE140	E1:Advanced Raster Art E2:Advanced Compositing E3: CG Pyro-Techniques E4: Stereoscopic-3D	2	2	10	40	50	1
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	1	2	10	40	50	1
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		Total	32	30	200	600	800	16

Group I		48 Hours
Course-1	BSAAVC131: Introduction to Animation	
Theory/Week: 4 Hrs		I.A: 20
Credits: 2		Exam: 80

Unit I **12 Hrs**

Animation: Most common uses of animation: Cartoons, simulations, scientific visualization, analysis, understanding, teaching. The Past: Cave Paintings, Egyptian murals, the magic lanterns, flipbooks, History of animation: Victorian parlor toys, Techniques of animation, other animation styles, Analyzing Animated Cartoons and their Evolution: History, Silent era, Feature films, commercial animation,

Unit II **12 Hrs**

Editorial cartoons: History and origin, Computer animation: Its history and animation methods, Computer animation in Film and TV, Limited animation: History and techniques, Motion capture: Advantages and disadvantages, Introduction to Multimedia and Animation, Introduction to Computer graphics and animation,

Unit III **12 Hrs**

Different types of animation: 2D animation, 3D animation, Stop Motion animation, sand animation, pixilation, paint on glass animation, clay animation, puppet animation, object animation, Cut out animation, Time lapse animation, Kinestasis and collage.

Unit IV **12 Hrs**

Studies on the films of: Walt Disney, MGM cartoon studios, Warner Bros Studios, Pixar Studio, Studio ghibli

Reference Books:

1. Dr. Jiang Tan, Aspects of animation, steps to learn animated cartoon, Serials Publications Pvt. Ltd, 2016
2. Richard Williams, Animation Survival Kit revised edition, Faber; Main - Revised edition 2009
3. Kit Laybourne and John Canemaker, The Animation book: A complete guide to animated film making, Three Rivers Press, 1998
4. Charles Solomon, Enchanted Drawings: The history of animation, 1994
5. Bob Thomas, The Art of Animation, 1958

Group I		48 hours
Course-1		
Theory/Week: 4 Hrs	BSAAVC132: Foundation Art	I.A: 20
Credits: 2		Exam: 80

Unit I **12 Hrs**

Points and lines- Types, Direction, Quality, lines and outlines, contours, Lines as value, Shapes, Geometric and Rectilinear, Curvilinear and Biomorphic, Abstract, Positive and negative, Distortion and idealism, Texture- Tactile, Collage, Visual.

Unit II **12 Hrs**

Space- illusion of depth, Shallow and deep, Size cues, Linear Perspective, Types of Perspective, Open and close compositions, Spatial confusion, Time and Motion- Anticipated motion, Repeated figures, Multiple images, Motion Blur, Value- Introduction, Patterns, light and shade, digital shading and lighting.

Unit III **12 Hrs**

Color- Characteristics, Color theory- wheels, triangles and trees, color through ages, color interactions, Unity and Harmony- Thematic unity, Gestalt and visual unity, Achieving unity, Balance- Formal and Informal balance, Balance by position and eye direction, Crystallographic Balance.

Unit IV **12 Hrs**

Scale and Proportion- Human scale, Contrast and Confusion, Ideal Proportion, Contrast and emphasis- Contrast, Isolation, Placement, Absence of Focal point, Rhythm- Rhythm and motion, Alternating and Progressive Rhythm, Rhythmic Sensation.

Reference Books:

1. Alan Pipes, Foundation of Art and Design, Thames & Hudson; 2nd Revised edition ,2008
2. Poppy Evans and Mark A Thomas, Exploring the Elements of Design, 2007
3. Gail Greet Hannah, Elements of design: Rowena reed Kostellow and the structure of visual relationships, Princeton Architectural Press, 2002
4. Theo Mandel, The elements of User interface design, 1997
5. Kenneth W. Auvil, Perspective drawing (Paperback), 1996

48 hours

Group I
Course-3
Theory/Week: 4 Hrs
Credits: 2

BSAAVC133: Introduction to Graphic Design

I.A: 20
Exam: 80

Unit I

12 Hrs

Graphic design, graphic designer, group structure and working methods, graphic design today, art or craft, Industrialization, technology, typography, consumerism, Identity and branding, social responsibility, Modernism and post modernism, nostalgia and rhetoric, semiotics, vernacular.

Unit II

12 Hrs

Articulating design, the brief, sources of inspiration, design as problem solving, creative thinking, wit and humor, layers of meaning, development and experimentation, art direction, prototyping, commissioning art, print, direct mail, information design, packaging, screen design, environmental design, self-promotion, portfolios, basic tools, specialist color, file formats, print finishing.

Unit III

12 Hrs

Introduction to corel draw, corel draw basics- workspace, finding and managing creative tools and content. Lines, shapes and objects. Symbols and layers- working with layers, working with symbols, linking and embedding objects. Managing projects, color, fills and transparency, filling objects. Special effects, templates and styles, pages and layout, bitmaps, printing, file formats, customizing and automating.

Unit IV

12 Hrs

Introduction to adobe illustrator, workarea of illustrator, selecting and aligning, creating and editing shapes, transforming objects, drawing with pen and pencil tools, color and painting, working with type, working with layers, working with perspective drawing, blending colors and shapes, working with brushes, applying effects, applying appearance attributes and graphic styles, working with symbols, combining illustrator with other adobe applications that you are studying.

Reference Books:

1. Gavin Ambrose and Paul Harris, Fundamentals of Graphic designing, AVA Publishing, 2008
2. Nick Rawlinson, Ultimate guide to graphic design, Dennis Publishing; 2nd edition, 2010.
3. Leonard Koren and R. Wippo Meckler, Graphic design cookbook, Chronicle Books; 1st Edition edition, 2001.
4. Gary David Bouton, Corel draw X5- the official guide, Correl press, 2011
5. Adobe creative team, Adobe Illustrator CS5 classroom in a book, Adobe Press, 2010

Group-I Practical-1	BSAAVP134: Raster Graphics Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in Raster Graphics	I.A: 20 Exam: 80

List of Practicals

1. Introduction to Photoshop
2. Basic Photo Correction
3. Layer Basics
4. Correcting and enhancing digital photographs
5. Working with mask and Channels
6. Clipping Mask
7. Path and Type
8. Applying Filters
9. Manipulating and image with puppet wrap
10. Content aware
11. Vector art
12. Animation
13. Digital painting
14. Compositing

Reference Books:

1. Adobe creative team , Adobe Photoshop CS6 classroom in a book, Adobe Press; Mac Win Pa edition, 2012
2. Martin Evening, Adobe Photoshop CS3 for photographers: A Professional image editors guide to the creative use of Photoshop for Macintosh and PC, 2007
3. Mark Cotta Vas, The Invisible art: The legends of Movie Matte painting, 2004
4. Don Seegmiller, Digital character Painting using photoshop CS3, 2007
5. Linda Bergkvist; John wallin; Philip Straub; Robert Chang, Digital painting (D'artiste digital artists master class), 2005

Group-I Practical-2	BSAAVP135: Drawing Fundamentals Lab	36 Hrs
Practical/Week: 3 Hrs Credits: 2	Exercises in Drawing Fundamentals	I.A: 20 Exam: 80

List of Practicals

1. Use of Lines and Shapes
2. Usage of Color and Value
3. Usage of Texture
4. Usage of Scale in Composition
5. Applying color Mixing
6. Use of Geometry, measurement and proportion
7. Use of drawing in painting
8. Application of Figure drawing
9. Application of action poses in drawing
10. Application of One point perspective interior
11. Application of One point perspective exterior
12. Application of Two point perspective interior
13. Application of Two point perspective Exterior
14. Application of Three point perspective low angle
15. Application of Three point perspective high angle

Reference Books:

1. Poppy Evans, Mark A. Thomas, Exploring the elements of design, 2007
2. Gail Greet Hannah, Elements of design: Rowena reed Kostellow and the structure of visual relationships, Princeton Architectural Press (2002)
3. Anthony Ryder, The artist' Complete Guide to Figure drawing: A contemporary perspective on the classical tradition, 1999
4. Joseph Sheppard, Realistic Figure Drawing, 1991
5. Curtis Tappenden, Nick Tindam, Paul Thomas, Anitha Taylor, Complete art foundation course, 2006

Group-I Practical-3	BSAAMP136: Traditional Animation Lab	36 Hrs
Practical/Week: 3 Hrs Credits: 2	Exercises in Traditional Animation	I.A: 20 Exam: 80

List of Practicals

1. Application of Modelling with clay
2. Application of clay sculpting
3. Application of layers for expressions and mouths in clay
4. Creation of props and sets
5. Applications of lights for the set
6. Working with camera for the shoot
7. Applying camera for frame to frame shoot
8. Use of color scheme for characters and sets
9. Application of cut out character creation
10. Animation using cut out character
11. Use of software for compositing the frames
12. Application of timing adjustment with frame rate in software
13. Planning timings for frames
14. Use of Monkey jam for capturing
15. Use of Adobe Premiere for compositing into a video

Reference Books:

1. Mary Murphy, Beginner's guide to animation: Everything you need to know to get started, Watson-Guption, 2008.
2. Mark Spess, Mike Brent, And Lionel Orozco, Secrets of clay animation revealed, CreateSpace Independent Publishing Platform; Updated edition, 2000
3. Susannah Shaw, Stop Motion: Craft Skills for Model Animation, Second Edition (Focal Press Visual Effects and Animation) 2nd Edition, 2008
4. Barry J C Purves, Stop Motion Passion, process and performance, Focal Press; 1 edition, 2007
5. Adobe creative team, Adobe premiere CS6 classroom in a book, Adobe, 2012.

I Semester Supportive Subject: Supportive Elective - I

BSAAVCE 137-E1: Advanced Raster Art

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Introduction to Raster: Foreground & background, Changing Foreground and Background colors, using the large color selection Boxes and small color swatches, using the Eyedropper tool to sample Image color, changing the Foreground Color While using a Painting Tool. Using Brushes, Selecting the Brush Shape, drawing a vertical and Horizontal Straight lines with any brush, Drawing connecting Straight Lines (at any angle) with any brush, creating a New Brush, Saving Brushes, Loading Brushes, creating a Custom Brushes, Using the Painting Modes, Fade, Airbrush Options, Pencil Options.

UNIT II

12 Hrs

Perspective art, Traditional designs, 2D Character Designing, Photo Collage, Matt Painting, Digital painting, 2D Animation basics, Gif Animation.

Reference Books:

1. Scott Petrovic - Digital Painting with KRITA 2.9: Learn All of the Tools to Create Your Next Masterpiece - 26 October 2015
2. Andrew Faulkner and Conrad Chavez - Adobe Photoshop CC Classroom in a Book, 2018 Release by Pearson - 15 June 2018

I Semester Supportive Subject: Elective - II

BSAAVCE 138-E2: Advanced Compositing

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Introduction to advanced 2D animation compositing and Ink paint techniques. Creating color models as per the model sheets. Creating color pallets as required paint and ink fields. Understand the dope sheets / X- sheets in production level. Arranging and adjusting the layers as per X- sheet. Advanced panning of camera and background, multiple cameras for showing depth in-between background, over lay and character layers. Introduction to compositing special effects into a scene using 3d graphics and 3d special effects in 2d layers. Concepts for Broadcast animation for logos, channel IDs and montages. Multi-Layer Compositing, Special Effects, Superimposition and Titling. Exporting various file format outputs as per the end user requirements.

UNIT II

12 Hrs

Video stabilization , Chroma Keying & Matte, 2D Camera Tracking, 4. 3D Camera Tracking, 3D Camera Tracking and Alignment, 6. Motion Graphics-Planning and Asset preparation, Motion graphics- Final Animation, Rotoscopy-Biped, Rotoscopy- Quadruped.

Green Screen shooting, Miniature set Extension.

Reference Books:

1. Jon Gress - Visual Effects and Compositing - 20 October 2014

I Semester Supportive Subject III**BSAAVCE139-E3: CG Pyro-Techniques**

Hours/Week : 2

IA Marks

:

10

Exam Hours : 2

Exam

Marks : 40

UNIT I**12 Hrs**

Introduction to Dynamics, and Dyna motive solver, Particles, Emitters, Fields: Air, Drag, Gravity, Newton, Turbulence, Vortex, Volume, Particle collisions, Particle cache, Goals, Soft bodies, Springs, Rigid bodies, Constraints, Effect: Fire, Smoke, Fireworks, Lightning, Shatter, Curve flow, Surface flow, Rendering particles and effects, Maya Paint Effects, baking simulations, Render types. Fluid Effects Introduction to Fluids, Fluid field interaction, Fluid attributes, , Creating a non-dynamic 3d fluid effects, Creating dynamic 3D effect, Creating fire and smoke using Fluid dynamics, creating an ocean. Introduction to nParticles and Nucleus solver, Nucleus node, Nucleus forces, Nucleus plane, Nucleus attributes, nParticles interaction, nConstraints, nCloth: simulations, nCloth dynamics properties, Working with nConstraints, Tearing cloth, Dynamic Property maps, Simulating cloth on moving character, and Particle caching, nConstraints, Creating Smoke simulations in nParticles, Creating liquid simulations in nParticles, Introduction to nHair, Creating Basic hair style, Creating a dynamic curve simulations.

UNIT II**12 Hrs**

3d Disintegration/Shattering effects, Smoke Simulation and Rendering, Creating Ocean and waves, Creating Fire Blast Simulation-Configuring Container and emitter properties, Exercises: Creating Fire Blast Simulation-Creating Debris, Exercises: Creating Rain and fog.

Reference Books:

1. Michael McKinley - Maya Studio Projects: Game Environments and Props - 20 April 2010
2. Jason van Gumster - Blender For Dummies - 18 February 2009

APPENDIX-I

I Semester Supportive Course Elective-IV**BSAAVCE 140-E4: Stereoscopic-3D**

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I**12 Hrs**

Introduction to Stereoscopic 3D, Basic principles of binocular vision, the history and development of stereoscopic methods and systems, and the various available methods for creating and displaying stereoscopic images, Depth cues, spatial awareness, accommodation/convergence, parallax, Terms, definitions, etymology, Anaglyphic imaging.

Techniques and practices of stereoscopic 3D, exploring the aesthetic, conceptual and technical issues involved in the design and production of 3D images, animations, and immersive experiences, Wheat stone, Brewster, Holmes stereoscopes. Side-by-side vs. super imposed formats, Hardware, technologies and techniques for content creation and playback, perceptual, aesthetic and cognitive issues.

UNIT II**12 Hrs**

Introduction to single-camera stereoscopic photography. Camera and image registration. Parallel vs. toed-in photography, Methods for digital stereoscopic drawing and collage, Scale and size, redundancy and contradiction. The stereowindow, Limits, anomalies & defects (vertical parallax, ghosting). Stereo blindness, Techniques: Stereoscopic shadows: principles & methods. Crossed vs uncrossed configurations. Polarized and anaglyph projection. Front vs. rear projection. The Pulfrich phenomenon.

3D Disintegration/Shattering effects, Smoke Simulation and Rendering, Creating Ocean and waves, Creating Fire Blast Simulation-Configuring Container and emitter properties, Exercises: Creating Fire Blast Simulation-Creating Debris, Exercises: Creating Rain and fog.

Reference Books:

1. Celine Tricart - 3D Filmmaking: Techniques and Best Practices for Stereoscopic Filmmakers, Focal Press 2016

MANGALORE UNIVERSITY

Bachelor of Science-Animation & Visual Effects Degree Programme Pattern and Scheme of Examinations

II SEMESTER

Group	Course Code	Course	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC181	Fundamentals of Animation	4	3	20	80	100	2
	BSAAVC182	Introduction to story and Script Writing	4	3	20	80	100	2
	BSAAVC183	Creating Story Board	4	3	20	80	100	2
	BSAAVP184	2D Animation Lab	3	3	10	40	50	1
	BSAAVP185	Advanced Drawing Lab	3	3	10	40	50	1
	BSAAVP186	Vector Graphics Lab	3	3	10	40	50	1
II	BSAAVCE187 BSAAVCE188 BSAAVCE189 BSAAVCE190	E1 :Introduction to Film Making E2 :Script Researcher E3 : Film Direction E4 : Media Ethics, Law & Culture	2	2	10	40	50	1
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC & CC	2	2	50	-	50	1
		Total	32	30	200	600	800	16

Group I		
Course-4	BSAAVC 181: Fundamentals of Animation	48 hours
Theory/Week: 4 Hrs		I.A: 20
Credits: 2		Exam: 80

Unit I **12 Hrs**

Animation, Principles of Animation: Squash and stretch, anticipation, staging, straight ahead and pose to pose, follow through and overlapping action, slow in and slow out, arc, secondary action, timing, exaggeration, solid drawing, appeal.

Unit II **12 Hrs**

Pre production process: Idea- finding idea, photos and drawings, research, evaluating your ideas. Story: differences in story structure, creating a story, story theme, premise and outline. Storyboard: storyboard for writers and television story editor. Animatics, Design and art direction, Story reels, Animation timing, X sheet, Title, Voice recording: session preparation, rehearsal.

Unit III **12 Hrs**

Character development: Model sheet. Composition and drawing. Traditional 2D production-workbook, editorial, Layout, animation, scene planning and scanning, Scene planning checklist, blue sketch and clean up layout, clean up animation, visual effects, BG painting, animation checking, Ink and paint, final checking, compositing/ film output.

Unit IV **12 Hrs**

Comic books: History and evolution, genres and categories, Script for comics, create your own comic. Traditional animation, Digital animation, CGI animation, CGI animated humans, Live Action, 2D animation: Use of light boards for animation, use of peg bars for registration, Use of keyframes in animation, in-betweens, working on details with line strokes for smooth flow of animation.

Reference Books:

1. Jean Ann Wright, Animation Writing and Development: From Script Development to Pitch, 2005
2. Christy Marx, Writing for animation, comics and games, 2006
3. Catherine Winder and Zahra Dowlatabadi, Producing animation, Routledge; 2nd edition, 2011.
4. Richard Williams, Animation Survival Kit revised edition, Faber; Main - Revised edition 2009
5. Preston Blair, Cartoon animation, Walter Foster Publishing, 1994.

Group I		48 hours
Course-5		
Theory/Week: 4 Hrs	BSAAVC 182: Introduction to Story and Script Writing	I.A: 20
Credits: 2		Exam: 80

Unit I **12 Hrs**

Introduction to Basics of Story creation: What Is a Short Story? Finding a Story to Write, A Short Story's Basic Ingredients, Sitting Down to Write. Choosing a Protagonist, choosing a Point of View, Bringing Your Characters to Life, Tip Sheet: Three- Dimensional Characters, Character's Bio Chart, Giving Your Characters a Voice, Tip Sheet: Dialogue. How Conflict Works in a Short Story, The Protagonist's Predicament, Bad Guys, Hurricanes, and Fatal Flaws, Conflict Equals Suspense.

Unit II **12 Hrs**

Scriptwriting terminology: Action, Angle, BG close up, Exterior, fade in fade out, Pan, Parenthetical, POV, Scene Heading, Slug line, SFX, Sotto voce, track with, Voice over, Character name, Cast List, Dialogue, Script Length, Action Description, Extension, Dual-Column Dialogue, Act numbers, Scene Numbers, short lines, dialogue paragraphs, Character Arc.

Unit III **12 Hrs**

Creating Your Own Show, Writing a TV Proposal, Drama and Comedy, Documentary and Reality, Formatting and Presentation, One hour Drama, Procedural, Serialized, Half-hour Comedy or Sitcom, Single-Camera Format, Multi- Camera Format, Limited Series or Miniseries.

Unit IV **12 Hrs**

Scriptwriting for both short film: Dialogue, Parenthetical, Extension, Shot Transition, Dual-Column Dialogue, Act numbers, Scene Numbers, Cast List, short lines, dialogue paragraphs, Script Styles & Types, Script Length Scene Heading Action Description, Character Name, Dialogue, Parenthetical, Extension, Transition, Shots. Scriptwriting for feature film: Dialogue split by Action, Emphasis in Action, Abbreviations, Short Lines, Dialogue Paragraphs, Montage & Series of Shots, Supers - Titles, Signs, etc, Phone Calls and Intercuts Two people talking at the same time..

Reference Books:

1. Lester E, Visual Communications: Images with Messages. Thomson Learning, 2000
2. Schildgen T, Pocket Guide to color with digital applications. Thomsom Learning, 1998.
3. Philip Hayward, Picture this: Media Representation of Visual Arts and artists. University of Luton Press, 1998
4. Palmer, Frederic: Visual Elements of Art and Design, Longman press, 1989,
5. Porter, Tom and Goodman, Sue: Manual of Graphic Technique 2: For Graphic Designers, and Artists, Astragal Books. London, 1992.
6. Palmer. F: Visual Awareness, Batsford, 1972

Group I		48 hours
Course-6		
Theory/Week: 4 Hrs	BSAAVC 183: Creating Story Board	I.A: 20
Credits: 2		Exam: 80

Unit I **12 Hrs**

Story, Linear and non-linear storytelling, Ideas, Photos and Drawings, Research, Evaluating your ideas, Story Structure, Creating the story, Story theme, Script Writing, narration, Techniques and methods of Narration.

Unit II **12 Hrs**

Introduction to Storyboard, Types of Storyboard, Storyboard in Pre- Production, Benefits of Production, Artist and the Storyboard, Components and Principles of Storyboard, Drawing Thumbnail Storyboard, Sketching Perspective, Adding reality with Perspective, Final Storyboard art and theme, Storyboard Coloring.

Unit III **12 Hrs**

Action in Storyboard, Light Sources and Depth of Field, The shot it's dynamic and its function in Storyboard, Animatics, Presentation Board vs. Production Boards, Live Action boards, Animation board, Comps, Previz Styles.

Unit IV **12 Hrs**

Directing Shots, Working with directors, Screen direction, Staging and composition, References and Research, Illustrated camera techniques, Numbering, Contrast and Mood, Special Effects, Conceptual illustration,

Reference Books:

1. John hart, The Art of the Storyboard: A Filmmaker's Introduction, Second Edition, Focal Press; 2007.
2. Mark Simon, Storyboards: Motion in Art, Third Edition Focal Press, 2006.
3. Mark T Byrne, The Art of Layout and Storyboard, 1999
4. Jean Ann Wright, Animation Writing and Development: From Script Development to Pitch,2005.
5. Nancy Beiman, Prepare to Board! Creating Story and Characters for Animated Features and Shorts, Focal press, 2013.

Group-I Practical-4	BSAAVP 184: 2D Animation Lab	48 Hours
Practical/Week: 6 Hrs Credits: 2	Exercises in 2D Animation	I.A: 20 Exam: 80

List of Practicals

1. Use of Key Frames in animation
2. Achieving flow with the use of In betweens
3. Usage of Code design for the in-between
4. Application of X Sheet
5. Application of adding up extra details and poses
6. Application of Timing through in-betweens
7. Application Pencil test for animation check
8. Editing of Animation after pencil test
9. Scanning at right resolution
10. Importing scanned images into the software through layers
11. Checking timing in software to achieve smooth animation
12. Application of clean up for smooth lines and flow
13. Applying consistency though adding missing detail
14. Working on details with line Strokes for smooth flow
15. Cross checking gaps between the lines in clean ups

Reference:

1. Richard Williams, Animation Survival Kit revised edition, Faber; Main - Revised edition, ACM Digital press, 2009
2. Sergi Camara, All About Techniques in Drawing for Animation Production, B.E.S. Publishing, 2006.

Group-I Practical-5	BSAAVP 185 : Advanced Drawing Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in Advanced Drawing	I.A: 20 Exam: 80

List of Practicals

1. Gesture drawings
2. Line of action
3. Life sketching
4. Outdoor studies for sketching
5. Static poses
6. Action poses
7. Using strokes and shading techniques
8. Constructions of cartoon face
9. Construction of human face
10. Construction of cartoon character
11. Construction of Female anatomy
12. Construction of male anatomy
13. Creating model sheet of character
14. Creating Layout
15. Creating comic strips

*Note: Practical is related to the concepts covered in Theory Story Boarding.

Reference Books:

1. Tom bancoft, Glen Keeane, Creating characters with personality: For Film, TV, Animation, Video games and graphic novels, Watson-Guptill; 1st edition,2006.
2. Robert Hale, Terence coyle, Robert Beverly hale, Anatomy Lessons from the Great Masters, Watson-Guptill; Reprint edition,2000.
3. Dr. Paul Richer, Artistic Anatomy: The Great French Classic on Artistic Anatomy, Watson-Guptill; Reprint, Anniversary edition,1986.
4. John hart, The Art of the Storyboard: A Filmmaker's Introduction, Second Edition, Focal Press,2007.
5. Mark T Byrne, The Art of Layout and Storyboard, 1999

Group-I Practical-6	BSAAVP 186: Vector Graphics Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in Vector Graphics	I.A: 20 Exam: 80

Intro to Vector: Understanding paths, views, selection tools, fills and strokes, setting up preferences and color settings, Creating basic geometric shapes with the Shape tools, Using a grid and smart guides to aid symmetrical drawing, Using the Bezier Pen, Direct Selection tool, and Convert tool efficiently, Applying and editing color gradients to filled regions, Creating and using swatches, tints, gradients, and patterns on filled regions.

List of Practicals:

1. Creating Symbols, Icons
2. Tracing a Character.
3. Designing a character
4. Designing a BG
5. Designing a Storyboard
6. Creating a Broacher
7. Creating a Banner
8. Creating a Web UI
9. Creating an APP UI
10. Creating a Game UI
11. Package Designing
12. Logo Designing

Reference Books:

Steven Withrow, Vector Graphics and Illustration: A Master Class in Digital Image-making, Rotovision publisher, 2008

II Semester Expanded Course Elective-I

BSAAVCE 187-E1: Introduction to Film Making

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Film as a medium & Language Characteristics – Film and other forms of art - Film Perception: Levels of Understanding – Film and Psycho-analysis –Reception – Film Appreciation—Aesthetics – Abstraction: Subtlety – Signs: Denotation and Connotation—Paradigmatic and Syntagmatic – Film Semiotics: Signifier, Signified, and Signification. Film Forms & Film Syntax Narrative and Non-narrative – Film Genre – Film and Realism: Neo Realism, Symbolic Simulation, Expressionism, Impressionism and Surrealism – Film and Post Modernism – Structuralism – Deconstruction. - Mise en scene — Planes of Perception; Color; Line; Form.

UNIT II

12 Hrs

World Cinema & Indian Cinema The Lumiere Brothers, George Melies –Early Film Pioneer, Introduction to Indian Cinema – Early Filmmakers with reference to Dadasahib Phalke, Shantaram , Bimol Roy, Nataraj Mudaliar, K. Subramaniam. – The Parallel Cinema – modern Era- Bharathiaraja, Maniranthnam, Shyam Benegal. **Exercises:** Watch Apu Trilogy- write a review , Watch Oscar winning shot films and films- Write review , 3. Study the works of John Milese, and Sergei Eisenstein.

Reference Books:

1. Sidney Lumet - Making Movies - A.A. Knopf publisher, 1996

II Semester Expanded Course Elective-II

BSAAVCE 188-E2 :Script Researcher

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

- Introduction to Writing Short Story- Novel- Play & Screenplay – Transitions of action: Motive- Intention- Goal- Conflict – The undisturbed story- the disturbance- the struggle- the adjustment- Adaptation of novel and drama for TV & Film – Audience participation – Suspense- Surprise. Information Gathering The Source of information – Combination- Co-ordination- Duplication- Plot & sub-plots- Narrative structure- Theme- Ideas- Complex Structure of a story- Conflicts- Developing climax- Synopsis writing- Exposition – Point of view

UNIT II

12 Hrs

Characterization Biography of a character – External & internal aspects of a character- Orchestration and unit of opposite – Dialectical approach – Understandability- Probability- Identification – Art of Confrontation.

Exercises: Script Reading, Creating a Short story, Writing Action, Writing Dialogue, Creating Connectivity in Scene and Sequence

Reference Book:

1. Syd Field - Screenplay: The Foundations of Screenwriting, Random House Publishing Group, 2007

II Semester Expanded Course Elective-III

BSAAVCE 189-E3 : Film Direction

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Role of the Film Director How we read and understand an image — Director's Responsibility, Moral, artistic, Technical and financial — interlocking roles of various technicians and artistes in the making of a film. Film as the Director's medium of expression — Their contribution to the art of film. Director & Script Idea, Theme, Outline — Deep structure of the story, Treatment, Writer's script— Shooting script— Developing the idea through brooding — Scenes & sequences —A simple sequence in terms of long, medium, & close shots. B.Sc. Film & Television Production 2015-16 onwards – CPP/COP Page 8 of 25

UNIT II

12 Hrs

Director & Camera Choice of lenses and their effects — Depth of fields and its importance — camera movements — Pan, tilt, dolly in dolly out, Tracking shots, Crane shots — Subject movement. — Connotative memory of the shot - Camera angles. Director & Editing Constructive editing of Eisenstein and relational Editing of V.I. Pudovkin — Overlap and matching of action cut-in and cut away - Types of continuity cuts- Match cut and cut away - Imaginary line principle. Director & Actor - Comparison between Film and Theatre — Director and the Actor—Professional Actors — Amateur actors — Non-actors. Contribution of actors — Handling of actors by the directors - Role of assistant directors and apprentice.

Reference Books:

1. Don Livingston, Film and the Director, Textbook Publishers, 2003
2. Ernst Lindgren, Art of Film, Read Books, 2011
3. James Monaco, How to read a Film Oxford University press, 2009
4. Michael Rogier, Directing, Film Techniques and Aesthetics, Focal press, 2013.

II Semester Expanded Course Elective-IV

BSAAVCE 190-E4 : Media Ethics, Law & Culture

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Indian Contract Act, 1872 Essentials of valid contract discharge of contract, remedies for breach of contract. Contracts of Indemnity, Guarantee, Bailment, Pledge and Agency. The Negotiable Instruments Act 1881 Essentials of a Negotiable instruments, Kindsof Negotiable Instrument Holder and Holder in Due Course, Negotiation byendorsements, crossing of a cheque and Dishonour of a cheque.

UNIT II

12 Hrs

Media Law, Copyright and Intellectual Property IPR & copyright laws, Copyright Agreements : Short-Term vs. Long-Term Agreements, Media Law and Infringements : Case Studies, Menace of piracy and remedies to counter piracy, Statutory and non -statutory bodies formed to fight piracy . Role and importance of Business Ethics and Values in Business Definition of Business, Ethics Impact on Business Policy and Business Strategy - Role of CEO - Impact on the Business Culture. Vendors, Government, & Social Audit CSR- Definition and Importance, examples of various initiatives taken by various business groups like TATAs, Infosys, Birla and others | Difference between Cause Related Marketing (CRM) and CSR Case Studies| Role of bodies like Competition Commission of India.

Reference Books:

1. Maheshwari, S.N. and S.K. Maheshwari, A Manual of Business Law, 2nd Edition, Himalaya Publishing House, 2004.
2. Kuchhal M.C.,_ Modern Indian Company Law, ,Shree Mahavir Book Depot, 2004.
3. Kuchhal, M. C.Business Law,-Vikas Publishing House, New Delhi, 2004.

MANGALORE UNIVERSITY

Bachelor of Science- Animation & Visual Effects Degree Programme Pattern and Scheme of Examinations

III SEMESTER

Group	Course Code	Course	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC231	Acting for Animation	4	3	20	80	100	2
	BSAAVC232	CGI Production	4	3	20	80	100	2
	BSAAVC233	Introduction to Electronic Media	4	3	20	80	100	2
	BSAAVP234	3D Modeling Lab	3	3	10	40	50	1
	BSAAVP235	3D Animation Lab	3	3	10	40	50	1
	BSAAVP236	3D Rigging Lab	3	3	10	40	50	1
II	BSAAVCE237	E1 : Introduction to Internet	2	2	10	40	50	1
	BSAAVCE238	E2 : Search Engine Optimization						
	BSAAVCE239	E3 : On Line Content Management Systems						
	BSAAVCE240	E4 : HTML						
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC & CC	2	2	50	-	50	1
		Total	32	30	200	600	800	16

BSAAVC 231: Acting for Animation

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Introduction to acting, History of action, how acting relates to animators, Acting techniques, history and development of mime and pantomimes, history and development of dramas, Commedia dell' arte- acting commedia, the characters, relating commedia characters to animation.

Unit II

12 Hrs

Method acting, Techniques of method acting: Stanislavski Technique- his life in art, Moscow art theatre, Michael Chekhov' technique- using his works in animation, Stella Adler' Technique, Meisner' Technique, Lee Stranberg' technique.

Unit III

12 Hrs

Seven essential acting concepts, The audience – suspending disbelief and animation, stage actors versus animators, theatrical reality versus regular reality. The Character – personality animation, character analysis, primal analysis. The Scene – negotiation, rehearsal, emotion and empathy, adrenaline moments, heroes and villains.

Unit IV

12 Hrs

Movement, power centers, gesture, Laban movement theory, space, effort. Facial Expression, Speech, active listening, The camera, actors leading camera. Techniques for acting- simplify actions, avoid ambivalence, reality and scene partner, Reference, Rotoscoping, Mocap, Character Rhythm, symbolism and foreshadowing, use of mirrors. The Form- comedy, farce, caricature.

*Classroom Activity: Exercises in each technique.

Reference Books:

1. John Kundert Gibbs and Kristin Kundert Gibbs, Action! Acting lessons for CG Animators, Wiley Publications, 2009
2. Ed Hooks, Acting for animators: A complete guide to performance animation, of congress cataloging.in publication data, 2003
3. Cathy Hasse, Acting for Film, Allworth Press, 2003
4. Sonia Moore, The Stanislavski system: The Professional training of an actor Penguin Books; Revised, Reprint edition,1984.
5. Richard Brestoff, The Great acting Teachers and their methods, Smith & Kraus; 1st edition, 1996.

BSAAVC 232: CGI Production

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I**12 Hrs**

Conventional Animation, General Computer Animation, 3D Production Pipeline, Animation Languages, Physically Based Modeling, Introduction to various 3D modelling, orthographic and perspective view, Poly editing techniques-Extruding, Bridging, Adding polygon to mesh, Split polygon faces, edge loops, Mirror copying a mesh, Creasing and hardening edges on mesh, Sculpt a polygon mesh Poly Normal, Edge & bevel, Separating & combining geometry, NURBS, sub-D.

Unit II**12 Hrs**

Using 2D reference sketches to model, Image Planes, Sculpting, Retoplogy and poly modelling workflow, Polygon primitives, Modelling in shaded mode, Model symmetry, Drawing a polygon, Quads, Tris and nGons, Low Poly/High Poly modelling, Exporting the models from scene to scene for facilitating faster production flow.

Unit III**12 Hrs**

Key Framing, Flocking and Emergent Behavior, Autonomous Behavior, Articulated Figure Animation, Character Animation, Facial Animation, Motion Capture, Introduction to texturing, Unfolding/Unwrapping UV mesh, Smoothing and relaxing a mesh interactively, Fixing problem areas, Applying textures, Introduction to Maya Hypershade, Texturing, Materials, Normal mapping, Baking maps. Bachelor in Animation Film Making.

Unit IV**12 Hrs**

Dynamics of Animation, Plants and Trees, Water, Fluids, Gases, Particles and Natural Phenomenon, Motion Blur, 3D Lighting, Setting Your Light Parameters, Simulating Light And Color In 3D, Designing 3D Lighting, 3D rendering and environment effect: Rendering Tools, Choosing Your Render Settings, Network Rendering, Robotics for animation, post production and compositing Understanding Video Post, Choosing Image Filters, Editing Video Clips, Compositing Video Clips, VFX, Graphics Hardware.

Reference Books:

1. Catmull, E., "The Problems Of Computer-Assisted Animation," SIGGRAPH'78, Pp. 348-353.
2. Leonard Maltin, "Of Mice And Magic - A History Of American Animated Cartoons," Penguin Books, New York, 1987. • The Illusion Of Life: Disney Animation By Frank Thomas, Ollie Johnston
3. Isbn: 8131502546, Introduction To 3d Graphics & Animation Using
4. Mayaw/Cd, Adam Watkins, International Thomson Computer Pres, 2007.
5. Isbn: 0764123998, Complete Animation Course, Chris Patmore, Barrons
6. Educational Series Inc, 2003.
7. Adam Watkins : Maya A Professional Guide, Published By Dreamtech, First Edition- 2003.
8. Danish Derakhshevi : Introducing Maya 8 3D For Beginners 2006 Wiley Publishing Inc.

BSAAVC 233: Introduction to Electronic Media

Hours/Week : 4
Exam Hours : 3

IA Marks : 20
Exam Marks : 80

Unit I **12 Hrs**

Growth and development of radio - Radio during second world war; Evolution and growth of radio in India - Radio since 1947, Commercial radio, organizational structure of radio, Present status of radio in India, impact and reach of radio.

Unit II **12 Hrs**

Private radio channels in India. : Community radio, satellite radio. Major radio networks in India. Television in India: SITE, Organizational structure of Doordarshan, Emergence of cable and satellite channels, news and entertainment networks, National and regional channels.

Unit III **12 Hrs**

History and development of film in India: silent era, talkies. Documentary, Short films, parallel cinema, commercial films, Current trends in Indian films.

Unit IV **12 Hrs**

New Media: Evolution of internet, Computer revolution in India. Social media mobile communication.

Reference Books:

1. Arvind Singhal and Everett M. Rogers, India's Communication Revolution - Sage Pub. 2007
2. Keval J. Kumar, Mass Communication in India Jaico, Jaico publisher, 2012.
3. P.C. Chatterjee, Broadcasting in India, Sage Pub. New Delhi, 1987
4. Marshal McLuhan, Understanding media, MIT press, 1994
5. Seema Hasan, Mass Communication: Principles And Concepts, 2 Edition, 2013
6. Shamci A.N., Electronic Media, Anmol Publication, Anmol Publications Pvt. Ltd., 2006
7. Arora, Sushil, Encyclopedia of Indian Cinema, Anmol Publication, 2014
8. Maria Bakard, Internet society - the internet in everyday life, Sage publication, 2005.

Group-I Practical-7	BSAAMP 234: 3D Modelling Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in 3D Modelling	I.A: 20 Exam: 80

List of Practicals

1. Introduction and Interface to Maya
2. NURBS Modeling- Learning NURBS tool
3. NURBS Prop Modeling
4. NURBS Organic modeling
5. Learning Subdivision Tool
6. Modeling using Subdivision
7. Learning Polygon tools
8. Creating interior Modeling
9. Creating Exterior Modeling
10. Polygon Prop Modeling
11. Polygon Organic Modeling
12. Creating Female Anatomy
13. Creating Male Anatomy
14. Advanced Animal Modeling
15. Advanced Creature Modeling

Reference Books:

1. Dariush Derakhshani, Introducing Maya 2017, Sybex, 2016.
2. Kenny Cooper, Jim Lammers, Advanced Maya: Character modelling, Trinity Animation, Inc. 2003.
3. Chris Maraffi, Maya Character Creations: Modeling and animation controls, New Riders; 1 edition, 2003.
4. Autodesk Maya Press, Erick Miller, Paul Thuriot (Author), Jeff Unay (Author), Maya Hyper-Realistic Creature creating: A hands on introduction to key tools and techniques in Autodesk Maya, 2008

Group-I Practical-8	BSAAMP 235: 3D Animation Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in 3D Animation	I.A: 20 Exam: 80

Hours/Week : 4
Exam Hours : 3

IA Marks : 20
Exam Marks : 80

List of Practicals

1. Keyframe Animation
2. The Graph Editor
3. Use of Pre-infinity and Post-infinity
4. Use of Dope Sheet
5. Motion Path animation
6. Use of Trax editor
7. Use of Animation Layers
8. Create Poses for Animation
9. Walk Cycle animation (Two and Four Legged)
10. Run Cycle animation (Two and Four Legged)
11. Facial Animation
12. Character Animation
13. Self-Enactment for animation
14. Lip Synchronization
15. Blend Shapes

Reference Books:

1. Dariush Derakhshani, Introducing Maya 2017, Sybex, 2016.
2. Alias/Wavefront, Learning Maya- Character rigging and animation, 2002
3. Carlo Sansonetti, Character rigging: The puppet Rig Maya Rigging Techniques, 2007
4. Richard Williams, Animation Survival Kit revised edition, Faber; Main - Revised edition 2009.

Group-I Practical-9	BSAAVP 236: 3D Rigging	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in 3D Rigging	I.A: 20 Exam: 80

List of Practicals

1. Simple Parenting and Grouping
2. Use of Constraints
3. Deformers
4. Use of Set Driven Key
5. Creating Blendshapes
6. Designing of joints for biped characters
7. Concept of IK and FK
8. Use of Constraints to connect the joints with controllers
9. Facial rigging
10. Application of Global control
11. Rigging Quadruped Character
12. Prop and mechanical rigging
13. Function of skinning
14. Paint weight
15. Finalizing rigging with the use of component editor.

Reference Books:

1. Dariush Derakhshani, Introducing Maya 2017, Sybex, 2016.
2. Alias/Wavefront, Learning Maya- Character rigging and animation, 2002
3. Carlo Sansonetti, Character rigging: The puppet Rig Maya Rigging Techniques, 2007
4. George Maestri, Digital Character Animation, New Riders Publishing; BK & CD-ROM edition, 1996.

III Semester Skill Development Course Elective-I

BSAAVCE 237-E1 : Introduction to Internet

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Fundamentals of Web: Internet, WWW, Web Browsers, and Web Servers, URLs, MIME, HTTP, Security, The Web Programmers Toolbox. XHTML: Origins and evolution of HTML and XHTML, Basic syntax, Standard XHTML document structure, Basic text markup, Images, Hypertext Links, Lists, Tables.

UNIT II

12 Hrs

HTML and XHTML: Forms, Frames in HTML and XHTML, Syntactic differences between HTML and XHTML. CSS: Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The Box model, Background images, The and <div> tags, Conflict resolution.

Reference Books:

1. Laura Lemay and Rafe Colburn- Mastering HTML, CSS & Javascript Web Publishing,2016

III Semester Skill Development Course Elective-II

BSAAVCE 238-E2 : Search Engine Optimisation

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Internet and Search Engine Basics, Internet Marketing, Importance of Internet Marketing, Types of Internet Marketing Methods, Importance of Search Engines, SEO is an Art or Science, How the search engine works? , Understanding the SERP, Using Search Operators, Google Search Engine Architecture, Search Engine Algorithms, Google Algorithm Updates, Page Rank Technology, Panda Update and its Importance, Latest Updates about SEO Algorithms, Google Web Masters Tools.

UNIT II

12 Hrs

Introduction to Keyword Research, Business Analysis, Types of Keywords, Keyword Research Methodology, Keywords Analysis Tools, Competition Analysis, Preparing a Keyword List for Project, Localized Keywords Research

Reference Books:

1. Michael David - WordPress Search Engine Optimization, PACKT publisher, 2nd edition, 2015.

III Semester Skill Development Course Elective-III

BSAAVCE 239-E3 : Online Content Management System

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Introduction to Blogging, First Steps With WordPress, WordPress Semantics - Learning the Jargon, New To WordPress - Where to Start, Using Images, Wrapping Text Around Images, Comments in WordPress, Finding WordPress Help, Post Formats, Linking to Posts, Pages, and Categories, Using Smilies, Links Manager, WordPress Feeds, Customizing Feeds, How to Use Gravatars in WordPress, Writing Code in Your Posts, Using Password Protection.

UNIT II

12 Hrs

Developing a Colour Scheme, Designing Headers, CSS Horizontal Menus, Dynamic Menu Highlighting, Good Navigation Links, Next and Previous Links, Styling for Print, Designing Your Post Meta Data Section, Separating Categories in your Post Meta Data Section, Customizing the Read More, Formatting Date and Time, Styling Lists with CSS, Designing Headings, Playing With Fonts, Using Images, Fun Character Entities, Comprehensive list of design articles, Adding a Favicon.

Reference Books:

1. Michael David - WordPress Search Engine Optimization – PACKT publisher, 2015

III Semester Skill Development Course Elective-IV

BSAAVCE 240-E4 : HTML

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

WEB DESIGN: Web design, Web design Process, Designing for others, site types and architectures, Navigation Theory and practice, Linkage: Text, Buttons, Icons and Graphics, Search and design, site maps, Indexes, and navigational and use aids.

UNIT II

12 Hrs

WEB PAGE DESIGNING – HTML generator, HTML document tag, links and examples, Manipulating Header, Footer, Colors, comments, alignment, Paragraph, Tab images and Pictures. Style sheets: Order and unordered lists, nested list, Tables formatting and editing features, defining different styles in-line internal, external style sheets, linking of sheets in HTML Documents. FRAMES AND FORMS: Definition of Frames, Framesets, Nested lists, Action, Method, enctype, Attributes of forms, drop down lists and example.

Reference books

1. Laura Lemay and Rafe Colburn - Mastering HTML, CSS & Javascript Web Publishing – BPB publisher, 2016

MANGALORE UNIVERSITY

Bachelor of Science- Animation & Visual Effects Degree Programme Pattern and Scheme of Examinations

IV SEMESTER

Group	Course Code	Course	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC281	Introduction to Advertising	4	3	20	80	100	2
	BSAAVC282	Television Production	4	3	20	80	100	2
	BSAAVC283	Film Production	4	3	20	80	100	2
	BSAAVP284	3D dynamics Lab	3	3	10	40	50	1
	BSAAVP285	Video Compositing Lab	3	3	10	40	50	1
	BSAAVP286	Surfacing & Lighting Lab	3	3	10	40	50	1
II	BSAAVOE287	E1 : Introduction to Camera	2	2	10	40	50	1
	BSAAVOE288	E2 : Lighting for Shooting						
	BSAAVOE289	E3 : Photo Journalism						
	BSAAVOE280	E4 : Direction in Cinematography						
III		Foundation Language-I	4	3	20	80	100	2
		Foundation Language-II	4	3	20	80	100	2
		Elective Foundation	2	2	10	40	50	1
IV		EC & CC	2	2	50	-	50	1
		Total	32	30	200	600	800	16

BSAAVC 281: Introduction to Advertising

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Advertising- Definition, concept, evolution of advertising, Types and Functions of Advertising, Advertising and Society, Economic effects of advertising. ASCI.

Unit II

12 Hrs

Advertising Agency - Types of agency, structure, functions & scope, Planning and advertising campaigns: market research, product research, consumer analysis, Media planning and scheduling. Marketing mix, Brand building, Brand loyalty, unique selling proposition.

Unit III

12 Hrs

Public Relations: Evolution, Definitions, concept, scope, Publicity, Propaganda, advertising. Public Opinion, Lobbying, PR Campaign, Promotion. PR and social responsibility.

Unit IV

12 Hrs

Corporate communication - definition and functions. Internal and external communication. Tools of corporate communication. CSR, Crisis management. Scheduling and handling of press Conference, Press get - together, Press Meet, Press kit, PR and Media Relations. Event Management, PR code of ethics.

Reference Books

1. Agarwal C.D., Media and Advertising, Mohit publication,2008
2. Robert R. Ulmer, Timothy L. Sellnow, Effective Crisis Communication, Sage publication, 2011
3. 3.Rajiv Batra: Advertising Management, Prentice publication, 1996
4. 4.Paul A Argenti: Corporate Communication, Irwin Publication, 2015
5. 5. Al Ries & Laora Ries: The Fall of Advertising and the Rise of PR, Harper Business Publication, 2002
6. 6. Clow and Baack: Integrated Advertising Promotion and Marketing communication, 2004

BSAAVC 282: Television Production

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Television as Entertainment medium. Introduction to entertainment formats of TV programs - Soap operas, situation comedies, Discussions, game shows, quiz shows, talent Shows, musical Programs.

Unit II

12 Hrs

Single camera production: Characteristics of Single camera production - Team and their responsibilities. Production process, development stage - pre production stage - production stage - post production stage – mastering – duplication - distribution.

Unit III

12 Hrs

Multi- camera studio production and Working principles of Electronic Field Production (EFP) - team members and their roles. Studio equipment. Floor plan, sound design, lighting design, Set and props design. Production process, development stage -pre production stage - production stage - post production stage – offline and online production.

Unit IV

12 Hrs

Basic Television news production techniques: production of news magazine, Electronic News Gathering, PTC, Sound byte, Current affair programs, news interviews, Production Control room and Studio Floor. Basic elements of the documentary: selection of story, script, Different stages of documentary production techniques. Copyright issues.

Reference Books:

1. Amjad Ali, Introducing News Media, Essess publication, 2006
2. Robert C. Allen, The Television Studies Reader, Annette Hill, 2004
3. Glen Creeber, TELE- VISIONS: An Introduction to Television Studies, 2012
4. Ronald wolfe, A guide to scripting for TV, Radio and Film , Robert Hale Publisher, 200.
5. 5.Rudy Bretz, Techniques to TV Production, McGraw Hill Publisher, 2011
6. Prager, Understanding TV, Rutledge publisher, 2008
7. H Zettel, TV Production Handbook Word worth Cengage Learning Publisher , 2011
8. Allan Wurtzel, TV Production, McGraw-Hill, 1995

BSAAVC 283: Film Production

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Basics : Basic art of filmmaking, Types of Film Production, Development- Selection of concept, Film budget justification, Green-light. Pre-production- Area of research, Script development - types, Draft preparation. Shot, scene, Story board, Copy right (Law/Ethics), Hiring actors or models, Crew members Role of Director & procedures. Art Director, Cinematographer, Director of Lighting, Floor Manager, Production Manager. Preparing Production board/Management, Planning and Budgeting for Production, Location scouting. Set direction & colour correction, Equipments required and tests, Finalizing props, shooting schedule, Script breakdown,

Unit II

12 Hrs

Digital Video Equipments : Introduction to Digital Video Equipments: Digital Video Camera-Types – Format- Major Components - Operation and Functions. Lens – Types – Aperture-Shutter. Focussing Methods.

Unit III

12 Hrs

PRODUCTION : Production- Shooting on location, Shooting script, Visualization, Selection of Dialogue, Rehearsing, Basic and Special Lighting Usage. Setup-Atmospheric Lighting, Cinematography, Principal photography, Mic arrangements. Camera placement. Tool and techniques. Online, offline, recorded & live programmes. Schedule alterations. Changes in relation to artists date/location problems. Daily call sheet, Daily progress report, Cost report.

Unit IV

12 Hrs

POST-PRODUCTION : Post-production- Video Capturing and Footage review. Final scripting. Basic software & hardware's. Editing, Video Editing-types. EDL Preparations, Editing Techniques- Continuity- Sequence-Dynamic. Linear and Non-Linear Editing. A-B roll & its advantage, Method of Video Effects and Video Transition, Chromo-Keying. Re- recording Video. Voice-over, Sync sound, audio mixing, Role of audio & effects, Mix and composite, Finding Music. Special effect. (Sound, Visual, Graphics and Animation), Titles, Film Screening, FT (Fit for Telecast) certificate, Certificate Approving, Marketing-getting sponsors. Publicity, Film Releasing.

Reference Books:

1. Gerald Millerson, Television Production, Focal press, London, 1999.
2. Gerald Millerson, The Technique of Television Production, Focal press, London, 2001.
3. Paul Wheeler, Digital Cinematography, Focal Press,. London. First edition, 2001,.
4. Peter Jarvis, The Essential of TV Director's Handbook , Focal Press. III-Edition, London,. 1996.
5. John Watkinson, An Introduction to digital Video, Focal Press, London, 1994.
6. Thomas D. Burrows, Lynne S.Gross, Video Production – Disciplines & Techniques, 2000.
7. Tom Letourneau, Lighting Techniques for Video Production, Mc will publications, 1996.

Group-I Practical-10	BSAAVP 284: 3D Dynamics Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in 3D Animation	I.A: 20 Exam: 80

List of Practicals

1. Particle Simulation (Fire, Tornado, Rain)
2. Instance Particle
3. Rigid Body Simulation
4. Concept of Soft Body
5. Applications of Goal Tool
6. Dynamics Constraints
7. Collision Reactor
8. Use of fields
9. Fluid Effects (Fire, Water flow, Pond collision)
10. Application of Paint Effects
11. Concept of Cloth Simulation
12. Concept of Fur Simulation
13. Concept of Hair Simulation
14. Creating Fire blast Simulation-Working on shading and color
15. Creating Fire blast Simulation-Creating Debris
16. Creating Fire blast Simulation- Simulation and Rendering

Reference Books:

1. Dariush Derakhshani, Introducing Maya 2009, Sybex; 1 Edition, 2009.
2. Eric Keller, Maya Visual Effects: The Innovator's Guide Sybex; 2 edition. 2013.
3. Learning Maya 7: The Special Effects handbook by Alias Leaning Tools, Sybex; 1 edition, 2005.
4. Steve Wright, Compositing Visual Effects, Second Edition: Essentials for the Aspiring Artist, Focal Press; 2 edition, 2011.

Group-I Practical-11	BSAAVP 285: Video Composing Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in Video composing	I.A: 20 Exam: 80

List of Practicals

1. Introduction to Nuke
2. Basic Composite
3. Colour Correction
4. 2D Tracking, 3D Tracking
5. Keying
6. Camera Tracking
7. 3D compositing
8. Warping
9. Stereoscopy Compositing
10. Transformation
11. Paint
12. Camera Projection
13. Warping & Morphing
14. Rotoscoping
15. Gizmo

Reference Books:

1. Sze Chianly / Samantha Goh, Digital Compositing with Nuke 101, Fatbars Limited- 2010
2. Ganbar R, NUKE 101. Professional Compositing and Visual Effects - 2011

Group-I Practical-12	BSAAMP 286: Surfacing and Lighting Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in Surfacing and Lighting	I.A: 20 Exam: 80

List of Practicals

1. Tyre Texturing
2. Rusty Automotive Texturing
3. Texturing Alley – preparing / collecting texture
4. Texturing Alley – texturing using nodes
5. Low Poly game Texturing – texturing using nodes & texture using normal mapping
6. Human Skin Texturing - preparing / collecting texture & texturing using nodes
7. Animal Skin Texturing - preparing / collecting texture& texturing using nodes
8. Practical 01 Types of lights / properties / work flow
9. Lighting techniques - 2 point & 3 point
10. Create a torch; use fog; glow
11. Create a street, use ramp, volume light (for games)
12. Under water scene / early morning scene
13. Interior and exterior lighting
14. HDRI mapping / DOF Lense / Global illumination (GI) / Final Gather (FG)

Reference Books

1. Dariush Derakhshani , Introducing Maya 2016 : Autodesk Official Press book, 1 edition, Sybex, 2015.
2. Steven Worley, Ken Perlin, Texturing and Modeling: A procedural approach, 3rd Edition, Morgan Kaufmann, 2003.
3. Owen Demers, Digital Texturing and Painting, New Riders, 2001.
4. Jermy Birn, Digital Lighting and Rendering, 3rd Edition, New Riders, 2013.

IV Semester Other Domain Course

BSAAVOE 287-E1 : Introduction to Camera

Hours/Week : 2

Exam Hours : 2

IA Marks : 10

Exam Marks : 40

UNIT I

12 Hrs

Prism and Light Spectrum – VIBGYOR – Speed of Light – Reflection –Refraction, Human Eye and Camera Lens – Comparisons and differences –Work of Muybridge and Edison – Eastman – Bioscope, Forced Perspective – Hyper focal Distance - Fore Shortening, Lens Aberrations – Spherical, Optical, Astigmatism Inner reflection –Chromatic aberrations – Corrections – Lens elements and Lens barrel.

UNIT II

12 Hrs

Pinhole Camera – Camera Obscura – SLR – TLR –Paralleax Error. Celluloid Camera, Electronic Camera Lens-Normal Lens – Wide Angle Lens – Telephoto Lens – Fixed Focus Lenses – Image formation –Analogto Digital – Block Lenses and Focus Points – Depth of Field and Depth of Focus – Deep Focus Lenses – Variable Focus Lens – Merits and Demerits – Lens and Perspectives – 3 D Lenses.

Reference Books:

1. Vladimir Nilsen, Cinema As A Graphic Art, Penguin publisher,2007
2. Eric De Mare, Photography - Penguin publisher, 2012

IV Semester Other Domain Course

BSAAVOE 288-E2 : Lighting for Shooting

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Studies on Light – Light Spectrum – Visible Spectrum – Infra-Red and UltraViolet. Colour Chart – Primary and Secondary Colours – Light and Mixing of Colours – Mixing of Colours by Painters. Additive and Subtractive Colours –Black and White Images and Colour Images, Technicolor Processing – Kodak Colour Processing – Primary Colours and Magnetic and Digital Recording – Celluloid images – electronic images and digital images.

UNIT II

12 Hrs

Composing Images – Line of Force – Horizontal, Vertical, Diagonal, Centrifugal, Centripetal – dynamisations of images. Comparative Study of Image resolution - Lighting Equipments – Tungsten – Incandescent – CFL – HMI – LED – Colour Temperature.

Reference Books:

1. Michael Jacobs, Art of Composition, Forgotten Books publisher, 2017
2. Raymond Spottiswoode, Technique of Film, University of California press(reprint), 2012

IV Semester Other Domain Course

BSAAVOE 289-E3 : Photo Journalism

Hours/Week : 2

Exam Hours : 2

IA Marks : 10

Exam Marks : 40

UNIT I

12 Hrs

Principal parts of Photographic cameras: (a) Lens (b) Aperture (c) Shutters, various types and their functions, focal plane shutter and in-between the lens shutter, shutter synchronization, self-timer. White balance - Principles of photography: Rules of framing. Rule of third - Other important rules related to photography.

UNIT II

12 Hrs

Photography genres – Lighting - Ad photography - Photo journalism. Tips for becoming a Professional photographer / photo journalist - Ethics of photography.

Reference Books:

1. Steve Bavister, Digital Photography & Journalism, Collin's & Brown Ltd, 2000.
2. John Hedgecoe, Basic Photography, Collin's on Brown Ltd., 2000.

IV Semester Other Domain Course

BSAAVOE 290-E4 : Direction in Cinematography

Hours/Week : 2

IA Marks : 10

Exam Hours : 2

Exam Marks : 40

UNIT I

12 Hrs

Practical on Lens and Image Perception – Different types of lenses – Normal, Wide and TeleLenses – Fixed Focus Lenses and Creation of Images – lens and focus – Image qualities of various block lenses – Fore – Shortening and Forced Perspective.

UNIT II

12 Hrs

Practical on Depth of Field and Depth of Focus – Variable Focus Lens (ZoomLens) Image quality of Zoom lenses – Filters, gels and corrections. Practical on Shutter Speed – Creative uses in image formation – Pixilation, Angle, Perspective. Practical with Dolly, Trolley, Crane – Experience in follow focus. Single Frame photography, Slow Motion, Fast Motion etc.

Reference books:

1. Steve Bavister, Digital Photography & Journalism, Collin's & Brown Ltd. 2000.
2. John Hedgecoe, John Hedgecoe's Basic Photography, Collin's on Brown Ltd. 2000.

MANGALORE UNIVERSITY

Bachelor of Science- Animation & Visual Effects Degree Programme Pattern and Scheme of Examinations

V. SEMESTER

Group	Course Code	Course	Instruction Hours/Week	Duration of exams (Hrs)	Marks & Credits			
					IA	Exam	Total	Credits
I	BSAAVC331	Digital Composition	4	3	20	80	100	2
	BSAAVC332	Visual Communication	4	3	20	80	100	2
	BSAAVC333	Ad Film Making	4	3	20	80	100	2
	BSAAVC334	Aesthetics of Video Editing	4	3	20	80	100	2
	BSAAVC335	Creative Business Management	4	3	20	80	100	2
	BSAAVC336	Audio Production	4	3	20	80	100	2
	BSAAVP337	Advanced Visual Effects Lab	3	3	20	80	100	2
	BSAAVP338	Advanced Video Editing Lab	3	3	20	80	100	2
	BSAAVP339	Audio Design & Audio Compositing Lab	3	3	20	80	100	2
		Total	33	27	180	720	900	18

BSAAVC 331: Digital Compositing

Hours/Week: 4

IA Marks : 20

Exam Hours: 3

Exam Marks : 80

Unit I**12 Hrs**

Image Generation Pixels, Components and channels, Spatial Resolution, Bit depth Normalized values Additional Channels, HSV Color Representation, Image Input Devices, Digital image File formats, File Format Features Vendor Implementations of File formats, Compression Choosing a File Format Nonlinear Color Spaces, Basic Image Manipulation Terminology Color Manipulations, 3D Transforms Warping Expression Language Filtering Algorithms

Unit II**12 Hrs**

Matte Image: The integrated Matte Channel, Multi source operators: over, mix, subtract, In, Out, Atop. Masks, compositing with pre multiplied images, color difference method, specialized keying software, Matting techniques: garbage mattes, edge mattes, combining mattes, manipulating mattes , time and temporal manipulations, apparent motion, temporal resolution, temporal artifacts, changing the length or timing of a sequence key framing.

Unit III**12 Hrs**

Tracking an element into a plate, choosing the feature to track, limiting the search area, human intervention, using tracking curves manually, stabilizing a plate, tracking multiple points, interface interaction workflow, online versus batch methods of representing the compositing process, compressed trees, timelines, curve editors, working with proxy images, Image viewing and analysis tools, image viewers, Histograms.

Unit IV**12 Hrs**

Media, resolution, aspect ratio, non square pixels, deciding on a resolution for an aspect ratio, format conversion pipeline, format conversion example, Film formats: 35mm formats, 16mm formats, specialized film formats, Video formats, lines of resolution, fields, color resolution, gamma, NTSC, Pal, SEACAM, HDTV, other formats, Reference stand-in, clean plates, film stocks, filters, rotoscoping, morphing, Shooting with blue screens, shooting with green screens, Scene continuity, lighting, shadows, lens flares, motion blur, focus, film grain.

Reference Books:

1. Ron Brinkmann, The art and science of digital compositing, 2nd Edition, Morgan Kaufman, 2008.
2. Steve Wright, Digital compositing for film and video, 4th Edition, Focal Press, 2017.
3. Dough Kelly, Digital compositing in depth, Coriolis Group Books, 2000.

BSAAVC 332: Visual Communication

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Need for and the Importance of Human and Visual Communication. Communication a expression, skill and process, Understanding Communication: SMRC-Model. Types of Media – Traditional media, Print media, Electronic media and any other new media.

Unit II

12 Hrs

Communication as a process. Message, Meaning, Connotation, Denotation Culture/Codes etc Levels of communication: Technical, Semantic, and Pragmatic. The semiotic landscape: language and visual communication, narrative representation. Principles of Visual and other Sensory Perceptions. Colour psychology and theory (some aspects) Definition,

Unit III

12 Hrs

Fundamentals of Design: Definition. Approaches to Design, Centrality of Design, Elements/Elements of Design: Line, Shape, Space, Colour, Texture. Form Etc. Principles of Design: Symmetry. Rhythm, Contrast, Balance Mass/Scale etc. Design and Designers (Need, role, process, methodologies etc.)

Unit IV

12 Hrs

Basics of Graphic Design: Definition, Elements of GD, Design process-research, a source of concept, the process of developing ideas-verbal, visual, combination & thematic, visual thinking, associative techniques, materials, tools (precision instruments etc.) design execution, and presentation.

Reference Books:

1. Lester, E ,Visual Communications: Images with Messages. Thomson Learning,2000.
2. Schildgen, T, Pocket Guide to color with digital applications. Thomsom Learning, 1998.
3. Philip Hayward, Picture this: Media Representation of Visual Arts and artists. University of Luton Press, 1998.
4. Palmer, Frederic: Visual Elements of Art and Design, Longman press, 1989,
5. Porter, Tom and Goodman, Sue: Manual of Graphic Technique 2: For Architects,
6. Graphic Designers, and Artists, Astragal Books. London, 1982.
7. Palmer. F: Visual Awareness, Batsford, 1972.

BSAAVC 333: Ad Film Making

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Video advertising: origin and growth, principles, impact, persuasion process, potential qualities of advertising, Modern advertising, Structure of advertising, function of different departments of ad agency, use of people in campaign planning.

Unit II

12 Hrs

Advertising research activities, objectives of market analysis, product analysis, SWOT, USP, consumer profile, Motivational research, Campaign: Planning and execution process, Pre-production, production planning, production and post-production stages.

Unit III

12 Hrs

Ad Production: Direction, cinematography, camera types, lens type, camera angles, Types of lighting- 3key, Chroma, outdoor, indoor, differences between indoor and outdoor shoot, aspects of chroma shooting, usage of rig, slider, crane, jim jip

Unit IV

12 Hrs

Photography- types of cameras, usage of DSLR, aperture, shutter speed, ISO, exposure, lens and filters, rule of third, DOF, Focus, white balance, types of photography- product, architecture, candid, monochrome and silhouette, image quality and resolution, raw vs. jpeg, HDR, panorama, lighting equipment for photography- flash, strobe light, reflectors, soft boxes, umbrellas.

Reference Books:

1. Chunnawala, Advertising theory and practices, Himalaya publishing house- 2011
2. Dennis P. Curtin, Digital Photography, 2004
3. Roy Thompson and Christopher bowen, Grammar of the shot, Focal Press, 2009.
5. Seema Hasan, Mass Communication, principles and concepts, Cbs; 2nd edition, 2013.

BSAAVC 334: Aesthetics of Video Editing

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I**12 Hrs**

Bird's-eye view of the modern editing process and modern editing terminology Principles of Video Editing: Various principles of Editing like Contrast, Parallelism, Symbolism, Simultaneity Continuity, Making an edit invisible, Motivation for every edit, Delivering a message, Bearing audio in mind, editing is creating, Control of Overuse technique or Visual effects. Editing setup:-efficient editing habit, factory-standard systems to support the editing process Non -Linear Editing (NLE) Concept. The Three-Point Edit: Understanding Three-Point Editing, Overview of the Three-Point Editing Process, Different Ways to Do Three-Point Editing. Working in the Timeline / Transitions / Key framing / Applying Filters / NLE Compositing / Color Correction & Color Grading / Titling / Final Review &Project.

Unit II**12 Hrs**

Stabilizing a Shot , Controlling shakey video, Cropping the borders efficiently, Analysing and Tracking a Point in the footage, The Tracker Panel & Motion Tracker Options, Corner Pin Tracking, Exporting Track data, Introduction to Masks, Animating Masks, Working with Mask Interpolation, Basics of Rotoscopy, Analysing the shot for Rotoscopy, Using Masks for Position Key frames, Creating a Simple Rotoscopic Animation.

Unit III**12 Hrs**

Introduction to Particle Playground, Filters, Plugins, Understanding the Gravity, Mass, Vortex, Turbulance, Color, Fields etc. Animating the Emitter, Key frame animation, Path Animation, Basic expressions, BASIC COMPOSITING, Applying Layer Blending Modes, Creating a Track Matte, Keying & Key light, Compound Effects: Gradient Wipe Displacement Map, Wave World & Caustics, Precomposing & Nesting.

Unit IV**12 Hrs**

Footage pre-processing, Stabilization, Undistortion, Shutterfix, Tracking Basics, Camera properties, Filmback, Focal length, Resolution, Using trackers, Import/Export tracking data, Merge/Split tracks, Hide, remove, disable etc., Tracking multiple footages, Auto track. Camera and Object solution , Using survey, Taking survey, Marker placement, Scale reference, Texture and Lighting reference, Optimizing solution, Texture extraction, Layering solutions, Scene setup, Scene scale, Scene orientation, Exporting solution

Text Books:

1. Gary H. Anderson, "Video Editing and Post – Production: A Professional Guide", Focal Press Publications, 4th Illustrated Edition, 1999.
2. Declan McGrath, "Editing and Post Production", Focal Press Publications, Illustrated Edition, 2001,

Reference Books:

1. Eve Light Honthaner, "The Complete film Production Handbook, Volume 1", Focal Press Publications, 3rd Illustrated Edition, 2001
2. Adele Droblas and Seth Greenbeg, "Adobe Pre 2001,miere Pro 2 Bible (W/ Cd)", Wiley – India Publications, 2007.
3. J. J. Marshall and Zed Saeed, "After Effects 5 Bible", John Wiley and Sons Publication, 2002 .

BSAAVC 335: Creative Business Management

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Proprietary Properties – Overview; film, television, home video/DVD, internet and wireless animation, gaming. Personal – requirements, job description, compensation, hiring. Budgeting; average budgets, production phases, scheduling issues, budget components, the budget. Distribution; television, film, internet, home video, gaming, timing of distribution windows.

Unit II

12 Hrs

Ancillaries; methods of expanding into ancillaries, categories, major ancillary categories. Marketing and promotions; trade marketing, consumer marketing, marketing costs, franchisee marketing. Pitching a property – research and first contact, tailoring the pitch, the written proposal, the live pitch, pitch materials, representation, networking, timing.

Unit III

12 Hrs

Financing and deal making – television, film, home video, online, interactive software. Contract work – overview of work for higher projects, commercial animation, long form and short form entertainment, special effects, gaming, corporate opportunities, broadcast design, rides and theme parks, post production.

Unit IV

12 Hrs

Personnel and budgeting for contract work – Personnel requirements, budgets, flexibility. Soliciting and pricing contract work – creating and maintaining a profile, pitching and soliciting bids, pricing, animation reps. The company; overhead and funding – startup cost, ongoing overhead costs, funding the operation. Strategy and management, the world market – animation market, characteristics, entering the global market.

Reference Books:

1. Karen Raugust, The Animation Business Handbook, St Martin's Press, 2004.
2. Howard G. Birnberg, Project Management for designers and facilities Managers, J.Ross, 2015.
3. William Ramroth, Project Management for Design Professionals, Kaplan Publishing, 2006.

BSAAVC 336: Audio Production

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Sound - Sound Basics, Characteristics of waves, Hearing, Perception of sound direction, Recording – Introduction, Microphone & Speaker Mechanism, Microphone & Placement techniques, Recording techniques, Stereo recording techniques, Setups and Equipment, Computer Based Recording, tempo, harmony and beats.

Unit II

12 Hrs

Introduction to audio software's, Software Interface, Settings and Preferences, Recording through audio software, Processing in audio software, introduction to spectrogram – horizontal and vertical spectrogram, signal reconstruction, noise cancelling, audio filters.

Unit III

12 Hrs

Introduction to Seven essential Acting concepts, The Audience, The Character, The Scene, Movement, Speech, the Camera, The Technique, The Form, The Medium, Classroom and an acting analysis, audio identification, audio matching, audio alignment, audio panning.

Unit IV

12 Hrs

Audio representation, wave and wave forms, frequency and pitch, dynamics intensity and loudness, timbre, midi representation, analog signal, digital signal, time rapping, music synchronization, audio thumb nailing, audio precision, recall, F-measure.

Text Books:

1. Drew O. McDaniel, Rick C. Shriver, Kenneth Ray Collins, "Fundamentals of Audio Production", Pearson's/ A & B Publications, 2008,
2. John Harrop, "Acting: Theatre Concepts", Routledge Publications, 1992

Reference Books:

1. Rhonda L. Blair, "Acting: The first six Lessons", Routledge Publications, 2010, 2nd Edition.
2. Tomlinson Holman, "Sound for film and television, Volume 1", Focal Press Publications, 2002, 2nd Illustrated Edition.
3. John Purcell, "Dialogue Editing for motion picture: a guide to the invisible art", Elsevier Publications, 2007, Illustrated Edition.

Group-I Practical-13	BSAAMP 337: Advanced Visual Effects Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in Advanced Visual Effects	I.A: 20 Exam: 80

List of Practicals

1. Introduction and Interface Navigation to Blackmagic Design **Fusion and Adobe After Effects**
2. Creating a Basic animation using effects and Pre-sets
3. Animating text
4. Working with shape Layers
5. Animation
6. Puppet tools
7. Color Correction
8. Building 3D objects
9. Using 3D features
10. Camera Tracking
11. Particle Effect
12. 3D compositing
13. Motion Graphics
14. Keying
15. Motion Path
16. Introduction to channels / nodes of transformations
17. Chroma keying / animation
18. Rotoscopy - introduction (image)
19. Rotoscopy - Techniques (video)
20. Rotopaint / animations
21. Animating text / 3D text
22. Particles / camera
23. Tracking – 2D and 3D camera
24. Color correction techniques
25. Match moving – preparing live shoot
26. Match moving - technique application
27. Practical 12 - Polishing and Finishing Portfolio

Reference Books:

1. Adobe Creative Team, Adobe After Effects CS6 Classroom in a Book, 1st Edition, Adobe Press, 2012.
2. Mark_Christiansen, Adobe After Effects CS5 Visual, Adobe Press, 2010.
3. Blackmagic Design, Fusion 7 User Manual, 2014.
4. EyeonSoftware, Digital Fusion Courseware (Book and Disc).

Group-I Practical-14	BSAAVP 338: Advanced Video Editing Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in Advanced Video Editing	I.A: 20 Exam: 80

List of Practicals

1. Introduction to Adobe Premier
2. Setting up a Project
3. Importing Media
4. Organizing Media
5. Working with Clips and Markers
6. Adding Transition
7. Advance Editing Techniques
8. Putting clips in motion
9. Multi-camera editing
10. Editing and Mixing Audio
11. Sweeting Sound
12. Adding Video Effects
13. Color correction and Grading
14. Video editing (Trailer, Adv. Making etc...)
15. Effects
16. Creating Titles using text and images
17. Adding Sub-titles
18. Storytelling with images
19. Editing using video effects
20. 180 degree dialogue shot editing
21. Editing a Montage
22. Shooting and Editing a documentary- Shoot/Aquiring a footage
23. Shooting and Editing a documentary-Rough cuts
24. Shooting and Editing a documentary-Syncing Audio and Video
25. Shooting and Editing a documentary-Final cut and Export to media format

Reference Books:

1. Adobe Creative Team ,Adobe Premiere pro CS6 Classroom in a book, Adobe Press, 2012.
2. Adele Droblas, Adobe Premier Pro CS3 Bible, John Wiley & Son, 2007.
3. Adobe Creative Team, Adobe Premiere pro CC Classroom in a book, Adobe Press,2017

Group-I Practical-15	BSAAVC339: Audio Design & Audio Compositing Lab	36 Hours
Practical/Week: 3 Hrs Credits: 2	Exercises in Audio Design & Audio Compositing	I.A: 20 Exam: 80

List of Practicals

1. Introduction to Adobe Audition
2. Basic Editing
3. Effects
4. Audio Restoration
5. Sound Design
6. Creating and Recording Files
7. Multi-Track Editor Orientation
8. Editing Clips
9. Automation
10. Scoring Audio to Video
11. Create a haunted environment
12. Compose music to a video
13. Auto tune
14. Voice over recording
15. Fade in and Fade out of audio

Reference Books:

1. Adobe Creative Team, Adobe Audition CS6 Classroom in A Book, Adobe Press, 2012.
2. Antony Brown, The Focal Easy Guide to Adobe Audition 2.0, Focal Press, 2006.

MANGALORE UNIVERSITY

Bachelor of Science -Animation & Visual Effects Degree Programme Pattern and Scheme of Examinations

VI. SEMESTER B.Sc.(AVE)

Group	Course Code	Course	Instruction Hours/ Week	Duration of exams (Hrs)	Marks			Credits
					IA	Exam	Total	
I	BSAAVC 381	Media Ethics and Copyright Law.	4	3	20	80	100	2
	BSAAVC 382	Project Management.	4	3	20	80	100	2
	BSAAVC 383	Project/Desertion	28	3 Hrs/Batch	140	Dissertation Report : 460 Demo Reel Presentation : 100	700	14
	Semester Credit Total						900	18
	Grand Total Credit for three year Degree Programme : 100							

Total Marks : 5000

Total Credits: 100

BSAAVC 381: Media Ethics and Copyright Law

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam Marks : 80

Unit I

12 Hrs

Press Laws: History of Press Laws in India – National objectives, Responsibilities of the press, Rights and Privileges; Freedom of the press and Reasonable Restrictions; Defamation, Sedition, Obscenity, Incitement of violence, Press and registration of books act 1867, Copy right law, The Working Journalists acts of 1955, 1956, and 1958; Contempt of court act 1971. The Newspaper (Price & Page) Act 1971. Press council guidelines; Press Council code on Communal writing; Editor’s Responsibilities.

Unit II

12 Hrs

The Contempt of Courts Act 1971; Official Secrets Act, 1923; Trade related Aspects of Intellectual Property Rights (TRIPS) & TRIMs; International Intellectual propriety of rights; The India Telegraph Act , The design Act, 1911, The Patents Act, 1957. Law of defamation; Libel and Slander; Prasar Bharti Act; The Broadcast Bill; Cable television act 1995, Broadcasting Services Regulation Bill, 2006, Cinematograph Act 2006.

Unit III

12 Hrs

Right to Information (Information Bill; Laws of Human Rights- Child labour Acts Indecent Representation of woman (prohibition) Act, 1986, The monopolies and restrictive Trade Practices Act, 1969, Salient feature.

Unit IV

12 Hrs

Cyber Laws-Information Technology Act, 2000; Hackers, Cyber Terrorism, Cyber Stalking, spamming, cryptography and digital signature, computer viruses, child pornography, privacy and cyber crime, electronic governance; Copy right Act 1957.

Reference Books:

1. Neelamalar. M, Media Laws and Ethics, PHI Learning Pvt. Ltd, November 2009.
2. Hasan, Seema, Mass Communication: Principles and Concepts, CBS Publisher, 2010.
3. Philip Patterson, Media Ethics: Issues and Cases, Mcgraw Hill, 2013
4. Don Pember, Clay Calvert, Mass Media Law, 2012

BSAAVC 382: Project Management

Hours/Week : 4

IA Marks : 20

Exam Hours : 3

Exam. Marks : 80

Unit I

12 Hrs

Basic concepts of management-definition, need and scope-management theories - managerial skills and functions - Management in Media organization – Structure –nature and process of management – levels of management.

Unit II

12 Hrs

Organizational structure of print media -Newspaper as a business enterprise and its public service role; Ownership of Newspapers; Sources of revenue of newspapers; Circulation of newspapers; Promoting circulation; Newspaper’s policy; Organization; Functions; Duties and responsibilities ; Audit Bureau of Circulation (ABC); Advertisement department of a Newspaper; Duties and responsibilities; Different types of advertisement in newspapers: classified and display.

Unit III

12 Hrs

Organizational structure of broadcast media-Radio as a communication tool organizational structure of a radio station-radio economics. TV as a communication tool - ownership patterns-costs and revenues in television industry-TRP-FilmProduction management – pre-production, scheduling, budgeting, financing, controlling, production, post-production.and delivery.

Unit IV

12 Hrs

Media convergence-Entrepreneurship –. Financial management. Future of media business – Employment opportunities and status of media industry-Advertising management - profit, sales and market share objectives, setting the budget, media selection and media scheduling. Marketing – management – creativity and innovation – internal communication and external communication-Understanding market and factors - audiences – research and analysis, ratings, trends in marketing and selling- FDI in media industry-future trends-scope of media opportunities.

Reference Books:

1. Andrej Vizjak and Max Riglster, Media management, Springer, 2003
2. Alan B. Albarran, Sylvia A handbook of Media management and Economics – Lawrence Elbaun Associate Publishers, 2006.
3. William James, Willis and Diane B. Willis, New Directions in Media Management, Routledge, 2006.
4. Agarwala V.B, Gupta V. S.- Handbook of Journalism and Mass Communication – Concept Publishing Company - 2001.

BSAAVE 383: Project / Dissertation**I. GUIDELINES TO EXAMINERS REGARDING PROJECT VIVA-VOCE**

External and internal Examiners shall together conduct project viva-voce objectively. To begin with, the finer details about various points contained in the scheme of valuation may be conclusively agreed upon through mutual consultation. During project evaluation, a student shall present his/her work through live demonstration of the software application developed as a part of project. However, if live demonstration is not possible due to the reason that some companies do not divulge source code on account of ownership rights or copyrights, students may be allowed to make PPT presentation of their authentic works. In such cases, candidates shall produce necessary declarations issued by the companies to this effect. However, students shall be enabled to present their work in entirety. The primary objective of project evaluation shall be to assess the extent of effort that was put in to meet the objectives of the project and also to gauge the understanding gained by the students in course of their project works.

While evaluating Project Reports, examiners shall scrutinize whether Software Development Life Cycle (SDLC) principles have been consistently followed in the project work and the same are documented well in the Reports. However, the relative and overall emphasis of these principles to a particular problem domain chosen may be taken into account so that project evaluations remain fair and objective.

Group	Course Code	Theory/Practical Hours/ Week	Duration of exams (Hrs)	Marks			Credits
				IA	Exam	Total	
	BSCAVE 353	28	3 Hrs/ Batch	140	Dissertation Report : 400 Demo Reel Presentation : 100 VIVA : 60	700	14
				Semester Credit Total			18

II. THE SCHEME OF PROJECT EVALUATION

Sl.No	Particulars		Marks	
1	Internal Assessment Tests:		140 Marks	
	<ul style="list-style-type: none"> • Two Internal Assessment (IA) Tests shall have to be conducted. • Each test shall be for maximum 70 marks. • sum of two IA tests marks is the final marks. 		140	
2	Viva- Voce Examination:		100 Marks	
	Demo Reel Presentation:			
	2.1	Live Demonstration (Captured videos may be used to walk through complete scenarios) - consistency and completeness	30	
	2.2	Explanation about each work presented	25	
	2.3	Explanation on the use of software tools	25	
	2.4	Question and Answer related to the specialization taken up. (Oral only or Oral and written)	10	
2.5	Soft Skills - Communication skills, Team spirit (Group Project) Group Project should be a 2D or 3D animation short film.	10		
3	Report Evaluation:		460 marks	
	3.1	Innovativeness and utility of the project for Industry/Academic	50	
	3.2	Related studies about the project (Adequacy)	50	
	3.3	Project plan & implementation – target achieved / output delivered (effectiveness)		
		1.3.1	Analysis	75
		1.3.2	Design	75
		1.3.3	Implementation	75
		1.3.4	Output	75
3.4	Other mandatory documents & information (certificates, contents, tables, figures, bibliography etc.)	60		
Total Marks			460	