



**St Aloysius College (Autonomous)
Mangaluru**

Re-accredited by NAAC "A" Grade

NATIONAL EDUCATION POLICY - 2020 (NEP-2020)

Curriculum Structure

for

Bachelor of Science/ Bachelor of Arts

Basic and Honours Programmes

with

Computer Animation as Major

and

Open Elective Courses in Computer Animation

Model Programme Structure (B2) for Bachelor of Science (Basic/Honours) Programme (Subjects with Practical)

Sem.	Discipline Core (DSC) (Credits)	Discipline Elective (DOE) /Open Elective (OE) Credits	Ability Enhancement Compulsory Courses (AECC), Languages (Credits) (L+T +P)		Skill Based Enhancement Courses (SEC)			Total Credit
					Skill based (Credits) (L*T*P)	Value based (Credits) (L*T+P)		
	DSC A1(4+2) DSC B1(4+2)	OE 1 (2)	L1-1(2), L2-1(2) (4 hrs. each)		SEC-1: (1+0+2)	Yoga (0+0+2) Health & Wellness (1) (0+0+2)	25	
	DSC A2(4*2) DSC B2(4*2)	OE-2 (3)	L1-2(3), L2-2(3) (4 hrs. each)	Environmental Studies /2)		Sports (1) (0+0+2) NCC/NSS/R&R(S&G)/ cultural (1) (0+0+2)	25	
			Exit option with Certificate		4.8 credits)			
	DSC A3(4*2) DSC B3(4+2)	OE-3 (3)	L1-3(3), L2-3(3) (4 hrs. each)		SEC-2: (2)(1+0+2)	Sports (1) (0+0+2) NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25	
IV	DSC A4(4+2) DSC B4(4+2)	OE-4 (3)	L1-4(3), L2-4(3) (4 hrs. each)	-Constitution at India (2)		Sports (1) (0+0+2) NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25	
			Exit option with Certificate in a particular		Discipline (96 credits)			
V	DSC A5(1+2) DSC B5(2+2) DSC A6(2+2) DSC B6(2+2) DSC A6F3+2)				SEC-3: SEC (2) (1+0+2)	Sports (1) (0+0+2) NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	24	
VI	DSC A7(3+2) DSC A8(3+2) DSC B7(3*2) DSC B8(3+2)				SEC-4: Professional Communication (2)	Sports (1) (0+0+2) NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	24	
			Exit with Bachelor of Degree in a particular		Discipline (140 credits)			
VII	DSC A/B9(3*2) DSC A/B10(3*2) DSC A/B11(2)	DSC A/B/E-1(3) DSC A/B/E-2(3) Res. Methodology (3)					22	
VIII	DSC A/B12(3) DSC A/B13(3) DSC A/B14(3)	DSC A/B/E-3(3) DSC A/B/E-4(3) Research Project (6)					21	
Award of Bachelor of Degree with Honours, B.Sc. (Hons.) (18D credits)								

Curriculum Structure for BA/BSc Animation

Program: BSC / BA (Basic and Honors)

Subject: Computer Animation

Sem	Discipline Specific Core Courses (DSC)	Hour of Teaching/ Week		Discipline Specific Elective Courses (DSC)	Hour of Teaching/ Week
		Theor y	Lab		
1	DSC -1: Graphic Design for Animation DSC -1 Lab: Graphic Design Lab	4	4		
2	DSC -2: Pre Production and 2D Animation DSC -2 Lab: 2D Animation Lab	4	4		
3	DSC -3: Visual Effects DSC -3 Lab: Visual Effects Lab	4	4		
4	DSC -4: 3D Modelling DSC -4 Lab : 3D Modelling Lab	4	4		
5	DSC -5: 3D Texturing, Camera & Lighting DSC -6: Web Designing & Development DSC -5 Lab : 3D Texturing Lab DSC -6 Lab : Web Designing Lab	3 3	4 4	VC-1: Story Board & Script Writing	
6	DSC -7: 3D Rigging & Animation DSC -8: 3D Dynamics & Effects DSC-7 Lab: 3D Rigging & Animation Lab DSC -8 Lab : 3D Dynamics & Effects Lab	3 3	4 4	VC-2: Traditional Animation	
7	DSC- 9: Game Environment Design DSC- 10: Digital Designing & Advertisement DSC- 11: Film Making DSC- 9 Lab: Game Environment Design Lab DSC- 10 Lab: Digital Designing & Advertisement Lab	3 3 3	4 4	DSE -1: Stop Motion and Cut-out Animation Group – 1 DSE -2: History of Animation DSE -3: Layout Designing Group - 2 Research Methodology:	3 3 3
8	DSC -12: 3D Character Modelling & Animation DSC -13: Environment Sketching DSC -14: Production Techniques DSC -12 Lab: 3D Character Modelling & Animation Lab	3 3 3	4	DSE -1: Comic Art & Design DSE -2: Sculpture design DSE -3: Ad Film Making Group - 3 Research Project:	3 3 3 6

PROGRAMME OUTCOMES: BSC / BA with Computer Animation combination

	After successful completion of three year BSC / B.A. degree programme with Computer Animation as one of the major subject in two major system, a student of Computer Animation should be able to;
Programme Outcomes	<ul style="list-style-type: none">• Obtain a knowledge on fundamental and advanced aspects of computer animation, graphic design & visual effects.• To innovate best practices for elements of design, web technology and Gaming.• To explore the theories of multimedia and animation to design and develop 2D/3D animations, film-making, visual effects for the Interactive media• Apply in depth knowledge of animation and the knowledge of principles of animation in every project• Able to work with professional skills in animation studios and production houses.
Programme Specific Outcomes	Design, create and animate characters and objects using fundamental principles of animation <ul style="list-style-type: none">• Understand the techniques of 2D and 3D software.• Understanding stop motion and basic traditional animation• Understand the concept of linear and nonlinear editing, Video Capture and VFX techniques• Understand the web designing method with interactive animation

BA/BSC Animation-Program Structure

Proposed Scheme of Teaching & Evaluation for BA/Bsc Animation (Basic/Hons) having practical core courses

Sl. No	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)		SEE	CIE	Total Marks	Credits
				Theory	Lab				
1	G 110 DC 1.1/ G 512 DC 1.1	Graphic Design for Animation	DSC	4		60	40	100	3
2	G 110 DC 1.1P/ G 512 DC 1.1P	Graphic Design Lab	DSC		4	25	25	50	2
3	G 110 OE 1.1	Environment & Character Sketching	OE	3		60	40	100	3
4	G 110 DC 1.2/ G 512 DC 1.2	Pre-Production and 2D Animation	DSC	4		60	40	100	3
5	G 110 DC 1.2P/ G 512 DC 1.2P	2D Animation Lab	DSC		4	25	25	50	2
6	G 110 OE 1.2	Digital Designing	OE	3		60	40	100	3

Semester: I

Course Code: G 110 DC1.1/ G 512 DC1.1	Course Title: Graphic Design for Animation
Course Credits: 4 Total Contact Hours: 52	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 40
Exam Marks: 60	Exam Duration: 3 Hours

Course Outcomes (COs)

On completion of this course students will be able to

- Understand the basic principles of graphic design using Corel Draw & Photoshop including typography, compositing, color, and composition
- Design layouts for web pages, paper adverts, brochures, CD covers, package designing event and exhibition stall designs, pop ups, touch ups, color corrections paintings, drawings, converting B/W photo to color
- Understand the vector and bitmap graphics and its properties
- Understand different tools and features of vector and bitmap software's.
- Select and create appropriate art to convey specific artistic expression that effectively communicates the artist intent.
- To able to create different kinds of designs like Logo, Brochures, certificates, greetings cards, pamphlets, business cards etc.
- Creating GIF Animation files

Content	Hours
Unit - 1	
Introduction to Graphic designing and Animation , elements of Graphic design, types of color modes, Introduction of Image, Pixel, Image features & properties, different formats, usage of Graphic design in market. Introduction to Vector Graphics, difference between Bitmap Graphics & Vector Graphics, print media, animation industry, importance of animation	13
Unit - 2	
Introduction to Corel draw , drawing lines, drawing calligraphic, drawing shapes like rectangle, squares, circles, arcs, converting objects to curves, positioning objects, aligning vector objects, spraying objects along a line, creating cartoon character, trimming & welding objects, intersecting objects. Creating logos, drawing with freehand & pen tool, drawing with the artistic media tool, using blending tools, contouring the object, distorting objects, extruding as 3D objects, transparency effect,	13

Unit - 3	
Introduction to Adobe Photoshop , bitmap image editing, creating bitmaps, Photoshop interface preference settings, resize image, resizing canvas, file types, document sizes, resolutions, customize document, crop tool, magnetic lasso tools, trimming image, uses of layers, background layer, creating, deleting & merging layers, re-arranging layers, linking layer movement, locking layer movement, layer transparency, using marquee tools, type tool, text boxes, font size, applying gradient colors, photo manipulation	13
Unit - 4	
Creating gif animation image , layer mask, script- image processor, drop shadow, inner shadow, inner glow, outer glow, bevel and emboss, satin, color overlay, gradient overlay, pattern overlay, stroke, pasting effects, RGB levels, hue & saturation, sharpen, dodge, burn, healing brush, blending options, radial & shape blur, brightness/contrast, creating new pattern, saving for web, creating magazine cover, greeting card, invitations, certificates brochures, advertisements.	13

Text Books:

- Adobe Photoshop CC Classroom in a Book - by Andrew Faulkner
- CorelDraw X7: The Official Guide – by Gary David Bouton
- Graphic Design School: A Foundation Course for Graphic Designers Working in Print, Moving Image and Digital Media by David Dabner
- Introduction to Graphic Design by Sherin Aaris

Reference Books:

- Photoshop CC Bible (Author - Lisa DaNaeDayley)
- Eric Adobe Photoshop CS4 Bible - by Stacy Cates, Simon Abrams, Dan Moughamian
Publisher: Wiley India Pvt Ltd
- Phil 300 Photoshop-Workshops by Das Meisterstück In Sachen Tutorials by Stefan Petri
Publisher: 4eck Media Gmbh

Course Code: G 110 DC1.1P/ G 512 DC1.1P	Course Title: Graphic Design Lab
Course Credits: 2	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 25
Exam Marks: 25	Exam Duration: 3 Hours

Practical Lab

1. Creating basic Vector Art
2. Creating Logos by using weld, trim, intersect
3. Creating Cartoon Character by using pen tool & free hand tool
4. Creating Greeting cards & advertisements by using artistic media tools
5. Creating digital posters by using Photoshop
6. Photo manipulating & Photo corrections by using patch tool, healing brush & clone stamp tools
7. Converting black & white photo to color, also manipulating hair & skin colors
8. Decreasing image size by adding Photoshop Script
9. Creating magazine cover designs & newspaper advertisement
10. Creating different types of gif animations in Photoshop.

Evaluation Scheme for Practical Examination

Assessment Criteria	Marks
Program-1	15
Program-2	20
Practical Records	10
Viva	5
Total (Converted to 25)	50

Course Code: G 110 OE 1.1	Course Title: Environment & Character Sketching
Course Credits: 3	Hours of Teaching/Week: 3
Total Contact Hours: 42	Formative Assessment Marks: 40
Exam Marks: 60	Exam Duration: 3 Hours

Course Outcomes (COs):

After completing this course satisfactorily, a student will be able to:

- Do shading, colouring and gesture drawings.
- Create different perspective sketching
- Understand principles of art in detail.
- Understand different pictorial drawings and dimensions.
- Draw and understand geometrical structures.

Course Content

Content	Hours
Unit - 1	
Character sketching, head study, illustration technology, modern art, geometrical drawings, drawing from objects and other geometrical shapes, sketches and study, drawing from life, color basics, perspectives, background designs, shadows and lights, human and cartoon figures, fun fiction, coloring, city landscapes, pattern creation, applying core skills, gesture drawings, flip book, walk cycle, design for marketing, space, illusion of depth, linear perspective,	12
Unit - 2	
Types of perspective, open and close compositions, repeated figures, multiple images, motion blur, value- introduction, patterns, light and shade, digital shading and lighting, points and lines- types, direction, quality, lines and outlines, contours, lines as value, shapes, geometric and rectilinear, curvilinear and biomorphic, abstract, positive and negative, collage, visual.	10
Unit - 3	
Color characteristics, color theory, wheels, triangles and trees, color through ages, color interactions, unity and harmony- thematic unity,	10

gestalt and visual unity, achieving unity, balance- formal and informal balance, balance by position and eye direction, crystallographic balance.	
unit - 4	
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.	10

Text Book:

- Beyond Art Fundamentals by Marisa Lewi
- Foundation of Art and Design, Thames & Hudson - by Alan Pipes
- How to Draw: Drawing and Sketching Objects and Environments from Your Imagination by Scott Robertson
- Perspective Made Easy Paperback Illustrated - by Ernest R Norling
- Drawing Dimensions: A Shading Guide for Teachers and Students - By Holmes V Catherine

Reference Books:

- Pen and Ink Drawing Workbook by Alphonso a Dunn
- How to Draw Cool Stuff: A Drawing Guide for Teachers and Students Hardcover – By Catherine Holmes
- Elements of design: structure of visual relationships - By Gail Greet Hannah, Rowena reed Kostellow
- Perspective drawing (Paperback) – By Kenneth W. Auvil,

Semester: II

Course Code: G 110 DC1.2/ G 512 DC1.2	Course Title: Pre Production and 2D Animation
Course Credits: 4	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 40
Exam Marks: 60	Exam Duration: 3 Hours

Course Outcomes (COs)

After completing this course satisfactorily, a student will be able to:

- Learn animation fundamentals and understand how animation works.
- Knowledge about using animation principles in 2D applications and understand the fundamental skills of 2D space
- Work on timeline and understand tools and features to create 2D drawings
- Work systematically on layers and masking for creating motion animation
- Rendering and exporting 2D animation files in different file formats.
- Create animation sequences that employ basic cinematography principles and storytelling skills to create, develop and execute animation sequences
- Develop, assemble and present a demo reel or portfolio in a manner that meets current industry expectations, and highlights one's creativity, skills and proficiency with relevant animation software and related technologies.

Course Content

Content	Hours
Unit - 1	
Introduction to 2d animation, animation uses, animation industry, 2d animation production process, story board drawing, reverse story board, other media for animation, principles of 2d animation, art design, qualities of an 2d artist, computer animation production tasks, digital editing, digital video early activity.	13
Unit - 2	
Story and concept, background design, animatic, interface – drawing toolbar, view toolbar, grading toolbar, option toolbar, properties panel,	13

modelling objects and shaping, timeline status, layers, play head, timeline header, creating layer, folders & properties, layer mask, symbols, graphic move clip button, using library.	
Unit - 3	
Animating objects, tweening animations, motion tween, shape tween, filters drop shadow, blur, glow, bevel, gradient glow & bevel, camera animation, sound importing, sound placing, sound button, editing, start and end points of sound, publish setting, SWF, GIF, JPEG, PNG, QuickTime formats.	13
Unit - 4	
Masking layer, letter animation using mask, character creation, layout design, divided layout, use of layers, character rig, leg walk, man walk, eye and lips movement, interactive pages, 2d games using action script, introduction to other animation tools, advantage and disadvantages of the various 2D applications.	13

Text Books

- Computer Animation: Algorithm and Techniques by R Parent, Morgan Kaufmann. Morgan Kaufmann Publishers
- Character Animation Fundamentals: Developing Skills For 2D And 3D Character Animation by Steve Roberts
- Mastering Digital 2D And 3D Art by Les Pardew, Don Seegmiller Publisher: Course Technology
- Dynamic Life Drawing for Animators: Bring your artwork to life with the power of the FORCE Watch,
- Book by Michael D. Mattesi
- The Animator's Survival Kit: The Animator's Survival Kit: A Manual of Methods, Principles, and Formulas for Classical, Computer, Games -by Richard Williams

Reference books

- Animation for Beginners: Getting Started with Animation Filmmaking - by Morr Meroz
- Adobe Flash Professional CC: A Tutorial Approach - by Prof Sham Tickoo Purdue Univ
- Adobe Flash Animation: Creative Storytelling for the Web and TV - by Philip Carrera
- Adobe Flash CS3 Professional Bible - by Robert Reinhardt and Snow Dowd
- Teach Yourself Adobe Flash - by Niranjana Jha

Course Code: G 110 DC1.2P/ G 512 DC1.2P	Course Title: 2D Animation Lab
Course Credits: 2	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 25
Exam Marks: 25	Exam Duration: 3 Hours

Practical Lab

1. Tools and steps involved in first simple animation using motion twining – basic shapes– Shape Twining–shape tweening in Flash MX.
2. Importing video files into Flash using Adobe Media Encoder and tracing the video file.
3. Creating mask animation and path animation
4. Creating sunset scenery in Adobe flash
5. Creating Camera Animation like push in and pull out, panning.
6. Key frames and position animation
7. Background layout moment animation for movie scenes
8. Character Rigging for 2D cartoons
9. Flat Character Animation for rigged character
10. Creating a complete 2D animation with characters and dialogue.

Evaluation Scheme for Practical Examination

Assessment Criteria	Marks
Program-1	15
Program-2	20
Practical Records	10
Viva	5
Total (Converted to 25)	50

Course Code: G 110 OE 1.2	Course Title: Digital Designing
Course Credits: 3	Hours of Teaching/Week: 3
Total Contact Hours: 42	Formative Assessment Marks: 40
Exam Marks: 60	Exam Duration: 3 Hours

Course Outcomes (COs)

- Understand digital design for print and web: resolutions, files formats, tools & menus, layouts
- Design layouts for web pages, paper advertisements, brochures, CD covers, package designing event and exhibition stall designs, pop ups, color corrections paintings, drawings, converting B/W photo to color
- A student will get a complete overview of the whole print from design to the layout to print it
- Use basic Photoshop skills and concepts to develop effective graphics for both web and print media.
- Discover how to edit their own photographs to get rid of dust and scratches, fix the color, and correct image exposure
- understand how best to choose fonts and colors for digital designs
- understand key industry-standard techniques, that are used in the print and design industries

Course Content

Content	Hours
Unit - 1	
Importance of Digital Designing, Introduction to Vector & Raster graphics, difference between digital media & print media, newspaper & magazine color settings, understanding pixels & High definition resolution, Corel draw layout and workspace, page settings & formats, RGB & CMYK color modes, gradient colors for advertisings, hex values of colors, raster image pixels & vector lines, adjusting resolution for different files	12
Unit - 2	
Drawing vector lines, Drawing shapes, Drawing rectangles and squares, transformations, and effects, Positioning objects, Aligning and distributing objects, Using curve objects, creating cartoon character Drawing with Freehand Tool, Pen tool, Blending tool, Contouring the Object, Distorting Objects, Extruding of the Object, Drop Shadow, Applying Transparency Effect, Trim, Welding objects, Intersecting objects.	10
Unit - 3	

Introduction to Adobe Photoshop, bitmap image editing, converting as smart objects, creating bitmaps, Photoshop interface preference settings, resize image & canvas, file types, document sizes, resolutions, magnetic lasso tools, trimming & cropping image, uses of layers, background layer, creating, deleting & merging layers, re-arranging layers, linking layer movement, locking layer movement, layer transparency, using marquee tools, type tool options, applying gradient colors, photo manipulation	10
Unit - 4	
Creating gif animation image, layer mask, script- image processor, drop shadow, inner shadow, inner glow, outer glow, bevel and emboss, satin, color overlay, gradient overlay, pattern overlay, stroke, pasting effects, RGB levels, hue & saturation, sharpen, dodge, burn, healing brush, blending options, radial & shape blur, brightness/contrast, creating new pattern, saving for web, creating magazine cover, greeting card, invitations, certificates brochures, advertisements.	10

Text Books

- How to Use Graphic Design to Sell Things - by Michael Bierut
- Adobe Photoshop CC Classroom in a Book – by Andrew Faulkner and Conrad Chavez
- CorelDraw X7: The Official Guide – by Gary David Bouton
- Designing Brand Identity: An Essential Guide for the Whole Branding Team - by Alina Wheeler
- How to be a Graphic Designer, Without Losing Your Soul - by Adrian Shaughnessy
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References

- The Non-Designer's Design Book - by Robin Williams
- The Elements of Typographic Style - by Robert Bringhurst
- The Design of Everyday Things - by Don Norman
- Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation – by Tim Brown

Scheme of Assessment for Theory Examination

Question Pattern		Marks
Part – A		
1. Answer any FIVE sub-questions (5×2=10)		
Sub-question	Unit	
a		10
b		
c		
d		
e		
f		
Part – B (Answer any FOUR sub-questions (4×5=20))		
2	UNIT I	20
3	UNIT II	
4	UNIT III	
5	UNIT IV	
6	UNIT III/ UNIT IV	
Part –C (Answer any TWO sub-questions (3×10=30))		
7	UNIT I/ UNIT II	30
8	UNIT II/ UNIT III	
9	UNIT III/ UNIT IV	
Total		60