ESTD : 1880

St Aloysius College (Autonomous)

Mangaluru

Re-accredited by NAAC "A" Grade

Bachelor of Vocational Studies

In

ANIMATION & MULTIMEDIA

CREDIT BASED SEMESTER SYSTEM

(2022 –23 ONWARDS)

¸ÀAvÀ C¯ÉÆÃ²AiÀÄ¸ï
PÁ¯ÉÃdÄ
(¸ÁéAiÀÄvÀÛ)
ªÀÄAUÀ¼ÀÆgÀÄ- 575 003

ST ALOYSIUS COLLEGE
(Autonomous)
P.B.No.720
MANGALURU- 575 003, INDIA
Phone:+91-0824 2449700,2449701
Fax: 0824-2449705
Email: principal_sac@yahoo.com
Website: www.staloysius.edu.in

Re-accredited by NAAC with 'A' Grade - CGPA 3.62
Ranked 94 in College Category – 2018 Under NIRF, MHRD, Government of India
Recognised by UGC as "College with Potential for Excellence"
College with 'STAR STATUS' conferred by DBT, Government of India

Date: 17-08-2022

NOTIFICATION

Sub: Syllabus of **B.Voc. in Animation & Multimedia** Course under Credit Based Semester System.

Ref: 1. Decision of the Academic Council meeting held on 09-07-2022 vide Agenda No: 12
2. Office Notification dated 17-08-2022

Pursuant to the above, the Syllabus of **B.Voc. in Animation & Multimedia** under Credit Based Semester System which was approved by the Academic Council at its meeting held on 09-07-2022 is hereby notified for implementation with effect from the academic year **2022-23**.

ST ALOYSIUS COLLEGE MANGALORE 575 003 AUTONOMOUS

PRINCIPAL **REGISTRAR**

To:

1. The Chairman/Dean/HOD.
2. The Registrar Office
3. B.Voc. Office
4. Library

Semester- I	Category/ Mode	Code	Subject	Theory Hours/ Week	Duration of Exams (Hrs)	Marks & Credits			
						IA	Exam	Total	Credit
General Education / General Component	Language - 1:	BV 151.1	Communication Skill-1	2	3	20	80	100	2
	Language - 2:	BV 152.1a BV 152.1b BV 152.1c BV 152.1d BV 152.1e BV 152.1f	Kannada Hindi Additional English Malayalam French Konkani	2	3	20	80	100	2
	Core paper- 1 Theory	BV 153.1	History of Animation	3	3	20	80	100	3
	Core paper- 2 Theory	BV 154.1	Computer Graphics Design	3	3	20	80	100	3
	Elective Foundation	BV 155.1	Environmental Science & Value Education	2	2	10	40	50	2
Skill Component	Practical-1	BV 156.1P	Stop Motion lab	6	3	30	120	150	6
	Practical-2	BV 157.1P	Computer Fundamentals Lab	6	3	30	120	150	6
	Project/ Internship	BV 158.1P	Project-1	6		30 Viva	120	150	6
Total				30		180	720	900	30

B.Vocational - 1 Year - I Sem

B.Vocational (Diploma)- 1 Year - II Sem

Semester II	Category/ Mode	Code	Subject	Theory Hours/ Week	Duration of Exams (Hrs)	Marks & Credits			
						IA	Exam	Total	Credit
General Education / General Component	Language - 1:	BV 151.2	Communication Skill- 2	2	3	20	80	100	2
	Language - 2:	BV 152.2a BV 152.2b BV 152.2c BV 152.2d BV 152.2e BV 152.2f	Kannada Hindi Additional English Malayalam French Konkani	2	3	20	80	100	2
	Core paper-1 Theory	BV 153.2	Foundation Art	3	3	20	80	100	3
	Core paper- 2 Theory	BV 154.2	3D Modelling	3	3	20	80	100	3
	Elective Foundation	BV 155.2	Fundamentals of Indian Constitution	2	2	10	40	50	2
Skill Component	Practical-1	BV 156.2P	Script Writing & Storyboarding Lab	6	3	30	120	150	6
	Practical-2	BV 157.2P	3D Modelling Lab	6	3	30	120	150	6
	Project/ Internship	BV 158.2P	Project-2	6		30 Viva	120	150	6
Total				30		180	720	900	30

B.Vocational (Advanced Diploma)-2 Year – III Sem

Semester- III	Category/ Mode	Code	Subject	Theory Hours/ Week	Duration of Exams (Hrs)	Marks & Credits			
						IA	Exam	Total	Credit
General Education / General Component	Language - 1:	BV 151.3	Communication Skill- 3	2	3	20	80	100	2
	Language - 2:	BV 152.3a BV 152.3b BV 152.3c BV 152.3d BV 152.3e BV 152.3f	Kannada Hindi Additional English Malayalam French Konkani	2	3	20	80	100	2
	Core paper- 1 Theory	BV 153.3	2D Animation	3	3	20	80	100	3
	Core paper-2 Theory	BV 154.3	Production Techniques	3	3	20	80	100	3
	Elective Foundation	BV 155.3	Fundamentals of Business Law	2	2	10	40	50	2
Skill Component	Practical-1	BV156.3P	Production Techniques Lab	6	3	30	120	150	6
	Practical-2	BV 157.3P	Comic Art & Design Lab	6	3	30	120	150	6
	Project/ Internship	BV 158.3P	Project-3	6		30 Viva	120	150	6
Total				30		180	720	900	30

B.Vocational (Advanced Diploma)- 2 Year- IV Sem

Semester- IV	Category/ Mode	Code	Subject	Theory Hours/ Week	Duration of Exams (Hrs)	Marks & Credits			
						IA	Exam	Total	Credit
General Education / General Component	Language-1:	BV151.4	Communication Skill- 4	2	3	20	80	100	2
	Language- 2:	BV 152.4a BV 152.4b BV 152.4c BV 152.4d BV 152.4e BV 152.4f	Kannada Hindi Additional English Malayalam French Konkani	2	3	20	80	100	2
	Core paper- 1 Theory	BV 153.4	3D Texturing & Lighting	3	3	20	80	100	3
	Core paper- 2 Theory	BV 154.4	Web technology	3	3	20	80	100	3
	Elective Foundation	BV 155.4	Gender Equity & Value Education	2	2	10	40	50	2
Skill Component	Practical- 1	BV156.4P	3D Texturing & Lighting Lab	6	3	30	120	150	6
	Practical- 2	BV 157.4P	Web technology Lab	6	3	30	120	150	6
	Project/ Internship	BV 158.4P	Project-4	6		30 Viva	120	150	6
Total				30		180	720	900	30

B.Vocational (Degree)- 3 Year- V Sem

Semester- V	Category/ Mode	Code	Subject	Theory Hours/ Week	Duration of Exams (Hrs)	Marks & Credits			
						IA	Exam	Total	Credit
General Education / General Component	Core paper- 1 Theory	BV 151.5	3D Rigging & Animation	3	3	20	80	100	3
	Core paper- 2 Theory	BV152.5	2D Character & Environment Sketching	3	3	20	80	100	3
	Core paper- 3 Theory	BV 153.5	Visual Effects	3	3	20	80	100	3
	Core paper- 4 Theory	BV 154.5	Interactive Animation	3	3	20	80	100	3
Skill Component	Practical-1	BV 155.5P	Video Compositing Lab	6	3	30	120	150	6
	Practical-2	BV 156.5P	3D Animation Lab	6	3	30	120	150	6
	Project/ Internship	BV 157.5P	Project-5	6		30 Viva	120	150	6
Total				30		180	720	900	30

B.Vocational (Degree)- 3 Year- VI Sem

Semester-VI	Category/ Mode	Code	Subject	Theory Hours/ Week	Duration of Exams (Hrs)	Marks & Credits			
						IA	Exam	Total	Credit
General Education / General Component	Core paper- 1 Theory	BV 151.6	UI/ UX Design	3	3	20	80	100	3
	Core paper- 2 Theory	BV152.6	Advanced Character Illustration	3	3	20	80	100	3
	Core paper-3 Theory	BV 153.6	3D Character Animation	3	3	20	80	100	3
	Core paper- 4 Theory	BV 154.6	3D Sculpture Design	3	3	20	80	100	3
Skill Component	Practical-1	BV 155.6P	Dynamics Lab	6	3	30	120	150	6
	Practical-2	BV156.6P	Digital Compositing Lab	6	3	30	120	150	6
	Project/ Internship	BV 157.6P	Project-6	6		30 Viva	120	150	6
Total				30		180	720	900	30

Preamble

With the economic growth the demands for professionals and skilled manpower has increased manifold. This has given steep rise to demand for competent Professionals and skilled manpower in Retail industry.
This programme is designed to cater to demands of professionally trained human resource in the field of Interior Design.
The programme is highly relevant for all those who want to pursue a professional career in Interior Design practice, or in building industry, or in the field of marketing etc.

Aim: The programme aims to build individual capacities and train persons with adequate employability skills. The programme structure attempts to blend appropriate technical knowledge and skills, personal and professional skills and substantive 'hands-on' and field / site experience required in the trade.
Keeping in view the demands of the market and to provide flexible options for students the programme is designed in modular manner and allows entry and exit options at various levels. The learners will have flexibility to develop themselves according to their strengths and career interests.

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as part of college/university education, leading to Bachelor of Vocation (B.Voc.) Degree with multiple exits such as Diploma/Advanced Diploma under the NSQF (National skill Qualifications framework).The B.Voc programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles along with broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participation in accelerating India's economy by gaining appropriate employment, becoming entrepreneurs and creating appropriate knowledge.
The proposed vocational programme in Retail Management will be a judicious mix of skills, professional education related to retail and also appropriate content of general education. It is designed with the objective of equipping the students to cope with the emerging trends and challenges in the retail management sector.

Silent feature of the Course:

1. Equipping students with knowledge, practice, & necessary job-oriented skills enabling them to gain suitable employment.
2. Curriculum collaborated with the industry requirements.
3. Credit based Semester system

4. Exposure to real time application development at the end of each semester except first semester.
5. Certification of skill component by NSDC and various Sector Skill Council.
6. Collaborations with Industries for training and placements.
7. Internship in industry: partnership with 12 firms
8. Multiple exit points in 4 stages
9. Innovative and Career Oriented

1. TITLE : B. Voc. (Animation & Multimedia Syllabus (Semester Pattern)

2. YEAR OF IMPLEMENTATION: Syllabus will be implemented from January 2021

3. DURATION :

B. Voc. Part I, II and III (Three Years)

B. Voc. Part I - Diploma (One Year)

B. Voc. Part II - Advanced Diploma (One Year)

B. Voc. Part III – Degree (One Year)

4. PATTERN OF EXAMINATION - Semester Pattern

- Theory Examination – At the end of semester as per Mangalore University Rules
- Practical Examination :
  i. In the 1st, 3rd and 5th semester of B. Voc. there will be internal assessment of practical record, related report submission and project reports.
  ii. In the second semester of B. Voc. I there will be internal practical examination.
  iii. In the 4th and 6th semester of B. Voc. There will be external practical examination at the end of the semester.

5. MEDIUM OF INSTRUCTION: English

6. STRUCTURE OF COURSE : B. Voc. Part – I, II and III

Two Semester Per Year

Three General Papers per year / semester

Three Vocational Papers per Year / Semester

Two Practical papers per Year / Semester

One Project / Industry Visit/ Study Tour / Survey

7. SCHEME OF EXAMINATION:

A) THEORY –The theory examination shall be at the end of each semester.
All the general theory papers shall carry 50 marks and all the vocational theory papers shall carry 40 marks Evaluation of the performance of the students in theory shall be on the basis of semester examination as mentioned above. Question paper will be set in the view of entire syllabus preferably covering unit of the syllabus

B) PRACTICAL:

Evaluation of the performance of the students in practical shall be on the basis of semester examination (Internal assessment at the end of I, II and III and V Semester and external examination at the end of IV and VI semester as mentioned separately in each paper.

STANDARD OF PASSING :

As per the guidelines and rules of B. Voc.

ELIGIBILITY FOR ADMISSION :

A pass in Plus Two or equivalent examination or an examination recognized as equivalent thereto by this University.

CURRICULUM :

The curriculum in each of the years of the programme would be a suitable mix of general education and skill development components.

DURATION :

The duration of the B. Voc. Animation and Multimedia shall be three years consisting of six semesters. The duration of each semester shall be five months inclusive of the days of examinations. There shall be at least 90 working days in a semester.

ELIGIBILITY FOR HIGHER STUDIES :

Those who pass B.Voc. Animation and Multimedia Degree are eligible for admission to higher studies.

PROGRAMME STRUCTURE :

The B.Voc. Animation and Multimedia shall include:

- General Education Components
- Skill Components
- Project
- Internship
- Soft Skills and Personality Development Programmes.

CREDIT CALCULATION:

The following formula is used for conversion of time into credit hours.

- One Credit would mean equivalent of 15 periods of 60 minutes each, for theory, workshops/labs and tutorials;
- For internship/field work, the credit weightage for equivalent hours shall be 50% of that for lectures/workshops;

COURSE STRUCTURE :

NSQF Level	Skill Component Credits	General Component Credits	Normal Duration	Exit Points / Awards
Year 3	36	24	Six Semesters	B. Voc.
Year 2	36	24	Four Semesters	Advanced Diploma
Year 1	36	24	Two Semesters	Diploma

As per the UGC guidelines, there are multiple exit points for a candidate admitted in this course. If he/she is completing all the six credits successfully, he/she will get B. Voc. Degree in Animation and Multimedia. If he/she is completing the first four semesters successfully, he/she will get an Advanced Diploma in Animation and Multimedia. If he/she is completing the first two semesters successfully, he/she will get a Diploma in Animation and Multimedia.

B.VOC. IN ANIMATION & MULTIMEDIA DETAILED SYLLABUS

PROGRAMME OUTCOMES :

B.VOC Animation and Multimedia has been at the forefront in the animation industry. It offers many career profiles for trained and qualified candidates. Companies require people with great insight and knowledge about the animation techniques and modern-day technologies. This course can educate them with the specific know-how about the various subject areas within this course of study such as Animation Film Production and Pre-Production, Illustration Design, 3D Character Development and 2D Visual Effects (VFX). It widens the creative talent and improves technical skills, gives more focus on visualization techniques improve communication skill with good networking skills, flexibility to work on different aspects of animation.

Year 1 – First Semester

Subject	Credits
1. Communication Skill – 1	2
2. Language- 2	2
3. HISTORY OF ANIMATION	3

RATIONALE :

Understanding the early history of animation and various paintings, Murals from different countries, ancient animations, feature film technologies, development of cartoon characters, the rise of different animation studios.

COURSE OUTCOMES :

- To understand past history of animation.
- To understand ancient Victorian Parlor toys and other different means of animation techniques.
- Understanding animation of different countries.
- Understanding the rise of different animation studios.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :-

- Describe past history of origin of animation.
- Understand the emergence of animation from different countries.
- Understanding the rise of computer animation.
- Understanding the era of golden age of animation.
- Understanding the shift of animation trend from big screen to small screen.

SYLLABUS :

Unit – 1

Early Animation, The past – Cave painting, Flip book, Egyptian murals, the magic lantern, The present – Stop motion, CGI animation, the future animated humans, Victorian parlor toys, Zoetrope (190 AD:1834) Thaumatrope (1824), Phenakistoscope (1831), Praxinoscope (1877).

Unit – 2

Animation industry in different country, Chinese animation, Iranian Animation, Japanese animation, British animation, French animation.

Unit - 3

First color cartoon, First animated feature film, early Walt Disney, History of Mickey mouse, silly Symphonies, origin of Warner Bros, MGM cartoon studios, sound animation.

Unit - 4

The rise of Computer Animation, the fall of traditional animation, from big screen to small screen, start of television era, modern animation in USA, eighties trends, golden age of animation.

4. COMPUTER GRAPHICS DESIGN **3**

RATIONALE :

Need to understand different tools and different parameters. Working on different shapes and different transformations, layout, work area. Need to understand in depth about Filters, effects etc.

COURSE OUTCOMES:

- To understand different shapes.
- To understand different tools and techniques.
- Understanding resolutions, file types.
- Understanding work area.
- Understanding color correction.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :-

- Understand different tools and features.
- Understand the creation of Layout.
- Create different kinds of designs like Logo, Brochures, Pamphlets, Business cards etc.
- Enhance the design by applying different kinds of Filter effects and colour corrections.

Syllabus :

Unit - 1

Introduction of Computer Graphics, Vector shapes, Bitmap & Vector difference, different color modes, Introduction to Corel draw, Drawing lines, Drawing calligraphic, Copying, converting, and removing outlines, Spraying objects along with line, Drawing shapes, Drawing rectangles and squares.

Drawing ellipses, circles, arcs, Drawing polygons and stars, Drawing spirals, transformations, and effects, Positioning objects, Aligning and distributing objects.

Unit – 2

Creating cartoon character, Using curve objects, Drawing Closed Curves, Drawing with the Artistic Media tool, 3-Point Curve tool, Special Effect of Corel draw, Blending tool, Contouring the Object, Distorting Objects, Envelope tool, Extruding of the Object, Drop Shadow, Applying Transparency Effect, Trim, Welding objects, Intersecting objects.

Unit – 3

Introduction to Adobe Photoshop, Learning about pixels & resolution, Zoom Tool Interface, Resize Image, Resizing Canvas, File types, document sizes, customize document, Crop Tool, Magnetic Tools, Trimming Image, Background Layer, Creating A New Layer, Re-arranging Layers, Preference setting, Linking Layer Movement, Locking Layer Movement, Layer Transparency, Elliptical Marquee options, Adjustment Layers, Typing styles, Gradient Editor, Gradient Layer.

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, RGB Levels, Hue & Saturation, Blur, Sharpen, Dodge, Burn, Healing Brush, patch tool, Blending Options, radial & shape blur, Brightness/Contrast Creating new pattern, , saving for web, creating Magazine cover, greeting card, invitations, logos, brochures, advertisements.

5. ENVIORNMENTAL SCIENCE & VALUE EDUCATION 2

6. STOP MOTION LAB 6

RATIONALE :

Need to understand storyboards for proper implementation of ideas and to enhance creativity level. To create stop motion and development of story, script and materials required to create stop motion. Understanding frame rates, understanding frame by frame animation and camera setup.

COURSE OUTCOMES :

- To understand the concept of stop motion.
- Understanding Frame rate and frame by frame animation.
- Storyboard development ideas.

PROGRAM SPECIFIC OUTCOMES :

The student should be able to :-

- Understand the concept of Stop Motion animation.
- Understand creation of characters, layout, props.
- Know the expressions required for the characters.
- Work on Stop Motion software.
- Camera setup required for animation.
- Understand frame by frame.
- Create their own stop motion animation in a refined manner.

PRACTCAL LAB TOPICS -

1. Key frame animation using monkey jam.
2. Calculating the frame rates and adding in-between keys.
3. Create accurate and aesthetically appealing stop motion animation.
4. Describe characteristics of well-designed and executed animation.
5. Using papers cutout and silhouette animation
6. Assess and critique past and current animation trends.
7. Demonstrate progress in basic sculpting, puppet making and animation skills.

7. COMPUTER FUNDAMENTALS LAB 6

RATIONALE :

Gaining the knowledge of hardware components and also about hardware configurations, getting the knowledge about MS Word and its features, knowing about MS Excel and its different applications and its different functions. Understanding the concepts of modern communication system.

COURSE OUTCOMES :

- Introduction to computer hardware.
- Understanding different hardware devices and their applications.
- Understanding MS Office and its options, features and parameters.
- Presentation with PowerPoint& understanding its application, working on templates, slideshow, custom animation and transition.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Learn about different computer hardware devices and their applications.
- Work on MS Word application and can work on different features of the MS Word document and able to set the document with said configuration.
- Work on different types of presentations using MS PowerPoint with different slideshows, templates as required.

SYLLABUS :

A. **Introduction to Word –** Opening new file • Formatting Text: Font Size, Font Style • Font Colour, Use the Bold, Italic, and Underline • Change the Text Case • Line spacing, Paragraph spacing • Shading text and paragraph • Working with Tabs and Indents, Shapes, Clipart and Picture, Word Art, Smart Art.

B. Columns and Orderings - To Add Columns to a Document • Change the Order of Objects • Page Number, Date & Time • Inserting Text boxes • Inserting Word art • Inserting symbol, Inserting custom Header and Footer • Inserting objects in the header and footer • Add section break to a document.

C. Multilevel numbering and Bulleting • Creating List • Customizing List style • Page bordering • Page background, working with Tables, Table Formatting • Table Styles • Alignment option • Merge and split option.

D. Typing new address list • Importing address list from Excel file • Write and insert field • Merging with outlook contact • Preview Result • Merging to envelopes • Merging to label • Setting rules for merges • Finish & Merge options.

E. **Introduction to Excel interface** • Understanding rows and columns, Naming Cells • Working with excel workbook and sheets, Currency, Accounting and other formats • Modifying Columns, Rows & Cells.

F. Creating Simple Formulas • Setting up your own formula • Date and Time Functions, Financial Functions • Logical Functions, Lookup and Reference • Functions Mathematical Functions • Statistical Functions, Text Functions. Sort and filtering data • using number filter, Text filter • Custom filtering • Removing filters from columns • Conditional formatting.

G. **Introduction to Power Point -**Inserting Column, Pie chart etc. • Create an effective chart with Chart Tool • Design, Format, and Layout options • Adding chart title • Changing layouts • Chart styles • Editing chart data range • Editing data series •

H. Changing chart New, Open, Close, Save, Save As • Typing the text, Alignment of text • Formatting Text: Font Size, Font Style • Font Color, Use the Bold, Italic, and Underline • Cut, Copy, Paste, Select All, Clear text • Find & Replace.

I. Working with Tabs and Indents Inserting new slide • Changing layout of slides • Duplicating slides • Copying and pasting slide • Applying themes to the slide layout • Changing theme color •

J. Slide background • Formatting slide background • Using slide views Inserting Hyperlinks and Action Buttons • Edit Hyperlinks and Action Button • Word Art and Shapes.

8. PROJECT – 1 **6**

Year 1 – Second Semester

Subject	Credits
1. Communication Skill – 2	2
2. Language- 2	2
3. FOUNDATION ART	3

RATIONALE:

Need to understand in depth about pre- historic scenario of India in art, understanding the concept of Renaissance art, understanding different perspectives of drawing and geometrical structures and gestures.

COURSE OUTCOMES:

- To understand Elements and principles of art.
- Brief knowledge about pre- historic scene of India.
- To understand the Renaissance art.
- Understanding different pictography.
- Understanding different geometrical drawings & sketches.
- Getting the knowledge of gesture drawings and different anatomies.

PROGRAM SPECIFIC OUTCOMES :

The student should be able to:-

- Understand Western art in detail.
- Understand different elements of art.
- Understand different pictorial drawings and dimensions.
- Draw and understand geometrical structures.
- Do shading, colouring and gesture drawings.

SYLLABUS -

Unit - 1

Elements and principles of art, History of Indian Art, A brief knowledge about the pre-historic scene of India. Western Art - cave paintings of ALTAMIRA and LAZCAUX. Egyptian Art – Renaissance to the modern era-Renaissance art, Modern art.

Unit - 2

Nature & Architecture Study Nature, Building, Historical place – light and shade. Distribution & understanding the images, Perspective & dimensional studies, Basic understanding of pictorial space, form & planes. Drawing based work.

Unit - 3

Geometrical Drawings, Drawing from objects, Square, Cubes, cones, Cylindrical, Circle objects and other geometrical shapes, sketches and study. Observed and studied in various rendering media and Techniques Conditions.

Unit - 4

Figurative & Non – Figurative study drawing from human figure, mainly based on genera form and gesture Animal Figure–Gesture, movement, form & Rhythm. Study based composition from outdoor subjects – Village life, City life. Pencil Shading, water coloring, Pattern making.

4. 3D MODELLING **3**

RATIONALE :

Exploring the 3D software interface, buttons, navigation, displays and getting up close with its properties and parameters. Understanding different tools to create different shapes with proper anatomies. Creating a good visualized detailed environments, objects and characters.

COURSE OUTCOMES :

- To understand the interface and customizing it.
- To understand the tools and different parameters.
- To create different types of 3D related objects with proper anatomies.
- Able to understand how proportions are at work.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :-

- Understand the viewport.
- Understand the usage of tools.
- Create different 3D environments, models, structures, architectures.
- Understand how mesh works.

SYLLABUS –

Unit- 1

Definition of Modeling, Creation of 3D objects. Exploring the 3D Max Interface, Controlling & Configuring the Viewports, Customizing the Max Interface & Setting Preferences, Working with Files, Importing & Exporting, Selecting Objects & Setting Object Properties, Duplicating Objects, Creating & Editing Standard Primitive & extended Primitives objects, Transforming objects, Pivoting, aligning etc.

Unit - 2

Understanding 2D Splines & shape, Extrude & Bevel 2D object to 3D, Understanding Loft & terrain, Modeling simple objects with splines, Understanding morph, Modeling with Polygons, using the graphite, working with deforming surfaces & using the mesh modifiers, modeling with patches & NURBS, 3D Modeling from 2D Objects, The Lathe Modifier, The Extrude Modifier, The Sweep Modifier.

Unit - 3

Understanding Compound Object Types, ShapeMerge Object, Creating Connect Objects, Modeling with Boolean Objects, Creating a Scatter Object.

Creating a Loft Object, Using the Get Shape and Get Path buttons, The Deformation window interface, Modeling some interior objects, Modeling a garden, Creating AEC Extended objects, Creating Mountains, Exterior Modeling using railing and wall, creating doors, windows and stairs, Creating street for gaming.

Unit - 4

Modeling in Maya - Maya interface, tools, buttons, navigate between different artwork displays through key commands and shortcuts, creating basic 3D models, using Transform tools to move, rotate, and scale, grouping objects, parent objects and pivot them, selecting components and rotating, face and edge deleting, extrude, poke, or cut to add details to the objects, Boolean, duplicate, flip, split polygons by creating new vertices and faces and draw new polygons freehand, creating gradients and bevels to smoothen edges, modeling basic shapes and figures using primitives.

5. FUNDAMENTALS OF INDIAN CONSTITUTION 2

6. SCRIPT WRITING & STORYBOARDING LAB 6

RATIONALE :

Creating basic elements of stories and different plot structures, understanding the theme, emotions of the characters and also principles relating to backstory, narratives and dialogues.

COURSE OUTCOMES :

- Creating basic elements of story and analysing different plot structure.
- Understanding the theme and emotions of the character.
- Understanding plot, progressiveness, complications involved in it, climax etc.
- Understanding screen writing structure, narratives and dialogues.

PROGRAM SPECIFIC OUTCOMES :

- Create a proper storyline by adding basic elements of story, plot and anti plot structure.
- Understand the theme required and basic mood and emotions of the character.
- Create a story which involves turning points, setups, climax. etc.

SYLLABUS :

Unit- 1

Basic elements of story, Archplot, Multiplot, Miniplot, Nonplot, Antiplot structure. Discuss Theme, Meaning, Emotion and Character.

Unit- 2

Discuss historical approaches to structure, power and conflict, reversals of plot and expectation, the inciting incident, progressive complications, turning points. Set ups and pay offs, crisis, climax and resolution.

Unit- 3

Principles of Exposition, Backstory, Flashbacks, Screenwriting Problems, narrative and Dialogue, Produce a series of cohesive storyboards from a script. Recognize and define common storyboard terminology.

Unit- 4

Apply basic drawing techniques to create legible storyboards. Create and output a simple Animatic from scratch. Identify and state common pre production workflow.

7. 3D MODELLING LAB 6

RATIONALE :

Exploring the software interface, buttons, navigation, displays and getting up close with its properties and parameters.

Understanding different tools to create different shapes with proper anatomies. Creating a good visualized detailed environments, objects and characters.

COURSE OUTCOMES :

- To understand the interface and customizing it.
- To understand the tools and different parameters.
- To create different types of 3D related objects with proper anatomies.
- Able to understand how proportions are at work.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :-

- Understand the viewport.
- Understand the usage of tools and parameters.
- Create different 3D environments, models, structures, architectures.
- Understand how mesh works.

3D MODELING LAB EXERCISES:

1. Creating House, Chairs, tables
2. Architectural modeling design
3. Creating Mountains – Interior & Exterior Modeling,
4. Modeling a garden – Modeling a Landscape.
5. Modeling aeroplane and helicopter
6. Modeling the Body – Modeling a Female Character
7. Modeling car – Modeling a High Polygonal.
8. Modeling a pot using Boolean
9. Making snake using loft
10. Developing interior placing furniture
11. Making Table Lamp.

9. PROJECT – 2 **6**

Year 2 – Third Semester

Subject	Credits
1. Communication Skill – 3	2
2. Language- 2	2
3. 2D ANIMATION	3

RATIONALE :

Understanding the concept of 2D Animation process, drawing different shapes, understanding different layer properties, symbols, tweening and different file formats.

COURSE OUTCOMES :

- Understanding the process of 2D animation.
- Understanding different tool bars.
- Creating different tweening effect.
- Importing and placing sound within the software.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to:-

- Create 3D graphic animation.
- Understand how to import sound and edit it.
- Work on timeline and understand tools and features of software.
- Work systematically on layers and masking.
- Create different types of tweening effects.
- Apply filter effects, glow etc to enhance animation.
- Render in different file formats.

SYLLABUS –

Unit - 1

Introduction to 2D animation, animation uses, animation industry, 2D animation production process, story board components, drawings for animation. Live model study, Drawings with shapes.

Unit - 2

Animatics, Interface, Drawing Tool bar, View Tool bar, Color Tool bar, Option Tool bar, Properties Panel, Modeling Objects and shaping, Timeline status, Layers Play head, Time Line header, Creating Layer, Folders & Properties, Layer Mask, Symbols, Graphic, Move Clip, Button, Using Library.

Unit - 3

Under lining data type, Raster and vector, 2D graphics creation features. Typography animation.

Unit - 4

Animation, Tweening Animations, Motion Tween, Shape Tween, Filters Drop Shadow, Blur, Glow , Bevel, Gradient Glow & bevel, Sound, Importing Sound, Placing Sound, Button, Editing, Start and End Points of Sound, Publish setting, swf-html-gif-jpeg-png- Quick time.

4**. PRODUCTION TECHNIQUES** **3**

RATIONALE :

To understand the art of design and direction along with important concepts of editing, transitions and different audio & video formats for proper output. Understanding the tools, arranging the clips, keyframes and timeline, getting to know about audio mixer and fine tuning of the project.

COURSE OUTCOMES :

- To understand voice tracking.
- To understand the concept of transitions, layering.
- Understanding different audio/ video formats.
- Understanding the concept of video capture.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :-

- Understand the concept of editing.
- Learning different transitions, wipes and effects required for editing.
- Learning how to develop and trim the story.
- Understand how to organize clips.
- Understand timeline, keyframes.
- Create their own short films, documentaries with proper sync between videos & audios.

SYLLABUS :

Unit - 1

Importance of design and art direction in films. Voice track Casting, Rehearsal. Preparation, Recording, Animation, Story reels, Animatics, Exposure sheets, Titles.

Unit - 2

Introduction to linear and nonlinear editing. Analog versus Digital - the difference, Transitions-Fades, Cuts, Dissolves, Wipes, Keying & Layering, formats- Avi, MPG-2, Mov, wmv, VCDs and DVDs, Internet formats, VHS.

Unit - 3

Live Video capture from capture card, tuner card, satellite & local channel capture to edit, Capturing and gathering media Build and organize your story, – titles, importing, Rough cut, Trim your story, Stop Motion, Motion Effects Text, Titles, Multiclip Filtering and Keying, Organizing Clips In The Browser, THE Creation of Sequences and BINS, The Icon View and Columns View, Marking Controls.

Unit - 4

Elements of edit, The Timeline Buttons and Controls, The Timeline Overview, Editing Clips Into The Canvas & Timeline, Transferring Clips in the Timeline, applying keyframes, Trimming Using the Selection Tool, Closing and Finding Gaps, Adjusting Audio Over Time, The Audio Mixer & using the voice over tool, Delete Between the In/out Points.

5. FUNDAMENTALS OF BUSINESS LAW 2

6. PRODUCTION TECHNIQUES LAB 6

RATIONALE :

To understand the art of design and direction along with important concepts of editing, transitions and different audio & video formats for proper output. Understanding the tools, arranging the clips, keyframes and timeline, getting to know about audio mixer and fine tuning of the project.

COURSE OUTCOMES :

- To understand voice tracking.
- To understand the concept of transitions, layering.
- Understanding different audio/ video formats.
- Understanding the concept of video capture.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :-

- Understand the concept of editing.
- Understand different transitions, wipes and effects required for editing.
- Understand how to develop and trim the story.
- Understand how to organize clips.
- Understand timeline, keyframes.
- Create their own short films, documentaries with proper sync between videos & audios.

PRACTICAL LAB EXERCISES :

1. Interface of video editing program.
2. Slideshows with transitions and video effects.
3. Working with resolution and presets.
4. Using footages and images.
5. Making a double acting video.
6. Chroma key, Blue screen and green screen videos.
7. News Program editing for television.
8. Documentary Edit.
9. Animated titles.
10. Rendering and exporting to film file formats.

7. COMIC ART & DESIGN LAB 6

RATIONALE :

Introduction to comics and visual story telling techniques, understanding different layouts of individual images also production and distribution. Getting knowledge of marketing, also getting into different international comic cultures and creating different project works around it.

COURSE OUTCOMES :

- Getting the knowledge about basics of comics and understanding visual story telling.
- Focussing on different comic cultures.
- Experimenting with different types of tools, stylings and construction of sequences.
- Introducing the main and coming forms of publishing and distribution that is important for comic culture.

PROGRAM SPECIFIC OUTCOMES:

The student will be able to :

- Understand story telling process.
- Understand technical aspects and forms of narration and artistic practise.
- Understand tools, styles and construction of sequences.

PRACTICAL LAB EXERCISES -

a. Cultural backgrounds of comics in different cultures.
b. Storytelling traditions and stereotypes in different cultures
c. Comics dramaturgies
d. Visual storytelling in contemporary media landscapes.
e. Relevant fields of comics-research.
f. Production of a comic, from idea to published product forms of production and publication.

8. PROJECT – 3 **6**

Year 2 – Fourth Semester

Subject	Credits
1. Communication Skill – 4	2
2. Language- 2	2
3. 3D TEXTURING & LIGHTING	3

RATIONALE :

Understanding the concept of adding skin and color to an object. Get into detailed proximity on UVW and Unwrap UVW maps to texture objects. Working with different material properties to enhance its texture objects. Working with different material properties to enhance its texture, working with various mapping, shaders and materials. To understand the basic structure of 3D cameras and to understand different light setups to create desired ambience for the concerned projects.

COURSE OUTCOMES :

- Understanding texturing materials.
- Learning different mapping to enhance effect.
- Working on different shaders.
- Understanding UV Mapping.
- Learning dynamic effects.
- Understanding the specifics of the camera.
- Understanding different setups and alignment of cameras.
- Understanding different types of lights.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Give detailed texturing and colouring to 3D characters or objects.
- Understand how shaders are applied.
- Work on different mapping to enhance the details of the object.
- Understand the concept of hair dynamics and different presets.
- Get detailed understanding of 3D cameras.
- Create camera animations.
- Understand different alignments. Parameters and lens setting.
- Understand different types of light setting.
- Create a desired lighting required for the 3D scene e.g. interiors, exteriors.
- Set a desired camera angle for the required scene.

SYLLABUS :

Unit - 1

Working with default maps, Understanding Material Properties, Opacity and transparency, Shininess and specular highlights, Working with the Material Editor, Using the sample slots, Naming materials. Getting new materials, Assigning materials to objects, Picking materials from a scene, Selecting objects by material, Previewing materials and rendering maps.

Unit - 2

Understanding Material Map Types, 2D maps, 3D maps, Reflection and refraction maps, Diffuse Color mapping, Specular Level mapping, Glossiness mapping, Opacity mapping, Bump mapping, UVW Map modifier, Using the Unwrap UVW modifier.

Unit - 3

Working with Shaders & Hair, Using Shading Types, Blinn shader, Phong shader, Anisotropic, Multi-Layer shader, Oren-Nayar-Blinn shader, Metal shader, Strauss shader, Translucent shader, Multi-Layer Materials, Blend, Double Sided, Using Compound Materials, Raytrace Materials.

Unit - 4

Multi/Sub-Object Top/Bottom, Ink 'n' Paint Material, Using material IDs, Working with Hair, Growing hair, Setting hair properties, Adding hair to a Man's head, Using hair presets, Using Hair Dynamics, Running a simulation, Creating golden objects, creating net texture.

4. WEB TECHNOLOGY 3

RATIONALE :

Getting to know about the basic procedures and principles involved in developing a website, rules to be followed for creating a website, need to understand scripting languages, browsers and compatibility, understanding the blogs and its importance and also web content management systems.

COURSE OUTCOMES :

- To learn basic principles of developing a website.
- Getting introduced to web technologies.
- Understanding different domains and hosting.
- Understanding the way to publishing sites and promoting websites.
- Understanding client server scripting language.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Create and design websites.
- Understand the development process and its principles to create a website.
- Understand server scripting languages.
- Create different types of websites themes and do different modifications onto websites.

SYLLABUS :

Unit - 1

Basic principles involved in developing a web site. Planning process. Five Golden rules of web designing. Design Concept. Home Page Layout. Designing navigation bar.

Unit - 2

Web Standards. Why to create a web site. Audience requirement. Introduction to web technologies. Careers and job roles. How the websites work. Web servers. Client and server scripting languages. Browsers and compatibility.

Unit - 3

Types of web sites. Domains and hosting. Static and dynamic sites. Government, personal and commercial sites. Introduction to blogs. Importance of blogs. Search engines.

Unit - 4

Web standards and W3 recommendations, web Content management system. Word press, Joomla, Drupal etc. Website themes and modifications. Publishing sites and promoting websites.

5. GENDER EQUITY & VALUE EDUCATION **2**

6. 3D TEXTURING & LIGHTING LAB **6**

RATIONALE :

To understand the basic structure of 3D cameras and to understand different light setups to create desired ambience for the concerned projects.

COURSE OUTCOMES :

- Understanding the specifics of the camera.
- Understanding different setups and alignment of cameras.
- Understanding different types of lights.

PROGRAM SPECIFIC OUTCOMES :

Students will be able to –

- Get detailed understanding of 3D cameras.
- Create camera animations.
- Understand different alignments. Parameters and lens setting.
- Understand different types of light setting.
- Create a desired lighting required for the 3D scene e.g. interiors, exteriors.
- Set a desired camera angle for the required scene.

PRACTICAL LAB EXERCISES -

a. Creating interior Textures for house
b. Creating reflecting objects
c. Creating Glass materials
d. Creating Multi colored object
e. Lighting controls - Intensity, Distribution, Color and Movement
f. Glow effects in 3D
g. Creating realistic golden trophy
h. Creating face textures using UV Map
i. Lights – Sources of Light and Realistic Look.
j. Types of Lights: Ambient Light – Directional, Point
k. Spot Lights: Area light, Volume Light, Color, Intensity and Gobos
l. Light Decay Rate: Light Linking, Spotlight properties, Spotlight Effects.
m. Light decay Regions and Barn Doors – D map Resolution, Filter Size, and Bias – Ray traced Shadows.
n. Light Effects –Light Fog, Environment Fog, Simple Fog, Physical Fog, and Volume Fog – Glow and Halo

7. WEB TECHNOLOGY LAB 6

RATIONALE :

Getting to know about the basic procedures and principles involved in developing a website, rules to be followed for creating a website, need to understand scripting languages, browsers and compatibility, understanding the blogs and its importance and also web content management systems.

COURSE OUTCOMES :

- To learn basic principles of developing a website.
- Getting introduced to web technologies.
- Understanding different domains and hosting.
- Understanding the way to publishing sites and promoting websites.
- Understanding client server scripting language.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Create and design websites.
- Understand the development process and its principles to create a website.
- Understand server scripting languages.
- Create different types of websites themes and do different modifications onto websites.

PRACTICAL LAB EXERCISES -

a. Basic structure of HTML file including various head and body tags
b. Simple web page creation with images and text.
c. Hyperlinks –HTML link, image links, pdf, email and download links
d. Incorporating video and Flash files into web pages
e. Displaying tabular data in web pages using tables
f. Web page using forms and Frameset tags.
g. Web page layouts – tables and div tags
h. Creating a complete website (minimum 3 pages)
i. Styling with CSS

8. PROJECT – 4 **6**

Year 3 – Fifth Semester

Subject **Credits**

1. 3D RIGGING & ANIMATION **3**

RATIONALE :

Getting in depth knowledge about Rigging techniques, animation keys, understanding wraps, modifiers, constraints, learning about Biped, working with postures and poses and understanding skinning process.

COURSE OUTCOMES :

- To understand the concept of Rigging (Placement of bones).
- Understanding different types of Wraps, Modifiers, Constraints.
- Understanding animation keys.
- Understanding Ik solves.
- Understanding bone systems.
- Understanding skinning process.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Understand and create Object and character animation.
- Understand different controllers, wraps and modifiers.
- Work with poses and postures.
- Work with bone parameters and IK Solvers.
- Do skinning process with much ease.

SYLLABUS :

Unit - 1

Introduction to Object Animation, The Rendering Menu, Understanding the Max Renderers, Creating Atmospheric Effects, Adding effects to a scene. Batch Rendering options, Video Post toolbar, Adding an image input event, Adding scene events, Adding image filter events, Adding an image output event.

Unit - 2

Assigning controllers in the Track View, Transform controllers, Position track controllers, Rotation and Scale track controllers, Learning the Track View Interface, Track View menus and toolbars, Track View menus and toolbars.

Unit - 3

Working with Space warps & Reactor, Creating a Space Warp, Binding a Space Warp to an object. Space Warp Types, Forces, Deflectors, Geometric/Deformable Space Warps, Modifier-Based Space Warps, Using reactor, wind, Using the Preview window, Creating animation keys, Morpher modifier, Working with the constraints.

Unit - 4

Working with Biped & Bones, Creating a Biped, Customizing a biped, Modifying a biped, Bending links, Working with Postures and Poses, Animating a Biped, Using Footstep Mode, Building a Bones System, Assigning an IK Solver, Setting bone parameters, IK Limb solver, Understanding the Skinning Process, Binding to a skeleton.

2. 2D CHARACTER & ENVIORNMENT SKETCHING 3

RATIONALE :

Designing and creating characters and understanding perspectives and basics of color, understanding different landscape and gesture drawings and anatomy sketching, getting to know about different character perspectives and walk cycle.

COURSE OUTCOMES :

- Understanding character sketching and anatomy study.
- Studying Matte paintings and different shapes and forms.
- Creating landscapes, colouring and creating patterns.
- Creating walk cycle and gesture drawing.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Create different types of character sketches.
- Create different cartoons and human figures.
- Create different types of landscapes as per the proportions.
- Create walk cycle and gesture drawings.

SYLLABUS :

Unit – 1

Research and inspiration of character sketching, Head study, drawing from life, Color basics, Perspectives.

Unit – 2

Background designs, Matte paintings, Shapes, Forms, Shadows and lights, Human and cartoon figures.

Unit – 3

Fun fiction, Coloring, City landscapes, Pattern creation.

Unit – 4

Applying core skills, Gesture drawings, Contour, Walk cycle, Design and development.

3. VISUAL EFFECTS 3

RATIONALE :

Understanding Photographic principles, understanding VFX techniques, usage of cameras, getting to know about lights, expressions, Motion tracking, Green screen, Rotoscopy techniques.

COURSE OUTCOMES :

- Getting to know about VFX technique.
- Usage of cameras, editing concepts.
- Understanding lights and cameras, exporting composition.
- Understand the concept of Motion Tracking.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Understand camera techniques and concepts of editing.
- Create keyframe animations.
- Render different file formats.
- Do motion tracking of footages.
- Create compositing effects like green screen removal, Rotoscopy, Masking.

SYLLABUS :

Unit – 1

Introduction to vfx - Photographic principles - Introduction to the Interface. Basic Animation. Basic Rendering. Using cameras in editing and applying VFX, demonstrate basic media management techniques.

Unit – 2

Rear Projection-Stop Motion Animation-Matte Paintings. Anchor point-Key frames- Motion Sketch, explosions, water, Fire.

Unit – 3

Titling styles, Lights and Cameras, Expressions, Painting, applying animation presets, blending modes, 3d layers, mattes, rendering techniques, exporting composition to other file formats.

Unit – 4

Motion tracking - 2D and 3d camera tracking- rotomation - wire removal techniques- color corrections.

4. INTERACTIVE ANIMATION 3

RATIONALE :

Understanding the interactive animation concept, planning and creating of websites, understand the interface of Flash software, getting detailed knowledge about action scripts/ HTML.

COURSE OUTCOMES :

- Understanding Flash animation and its applications.
- Navigating through different buttons.
- Understanding action scripts.
- Getting into different sounds, tracks and sliders.

PROGRAM SPECIFIC OUTCOMES :

- Understanding Flash software and its different applications.
- Create Flash animation cartoons.
- Write action script/ HTML.

SYLLABUS :

Unit – 1

Difference between Flash animation and interactive animation, asset management in library, Learn to export and deploy Flash content on the Web, describe the steps of web site planning and implementation, Describe the difference between user-defined and timeline-defined actions, Apply simple action scripting to execute navigational components in a Flash movie, publish and post a Flash movie online.

Unit – 2

Organizing a complex object into layers, Duplicating Movie Clips, animating a complex Movie Clip, Controlling objects with buttons, Understanding frame labels, Using buttons to navigate labeled frames, Nesting code within Movie Clips, Adding drag interactivity to the object, use Buttons and Action Script to enable basic user interaction.

Unit – 3

Using transparency in a video & Embedding video in web pages and other applications, Creating an advanced animation with video, Copying the video to create a reflection, Reflecting the video, Enhancing a video reflection with a mask, Building an MP3 Player, Loading sounds from external files, Controlling sound playback with Play and Pause buttons, Changing tracks, Wiring the progress bar & Building the progress bar slider, Making Flash movies accessible.

Unit – 4

Understanding Dynamic text fields, applying HTML with Action Script, Animating the scrolling text with the buttons, Easing the text using the buttons, Understanding Flash Mobile, Exploring Device Central, Creating and testing Flash Lite applications.

5. VIDEO COMPOSITING LAB **6**

RATIONALE :

Understanding the concept of VFX and Special effects, going through detailed compositing process as required by the industry, developing visual effects pipeline.

COURSE OUTCOMES :

- Creating visual effects and special effects as required by the industry.
- Understanding various image processing techniques including Chroma keying.
- Understanding compositing process & getting to know different techniques involved in it.
- Understanding Motion Tracking techniques.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Create different kinds of special effects and visual effects and work on Compositing techniques like Green Screen, rotoscoping, Matte Painting.
- Composite footages like color correction, color grading, adding various effects.
- Create Motion tracking effect.
- Understand the difference between a visual effect and a special effects.
- Determine when to choose whether to create a visual effect or a special Effect.
  and determine when the two techniques can work together.
- Pull mattes using various image processing techniques including chroma- keying
- Understand RGB and RGBA
- Describe and use the compositing process and identify major Applications used in industry
- Develop a visual effects pipeline for integration in the filmmaking process
- Demonstrate the use of Layer based compositing techniques.
- Understand the difference between a visual effect and a special effect
- Track motion data using various techniques including 2D pixel tracking, Planar.

6. 3D ANIMATION LAB 6

RATIONALE :

Developing 3D characters with proper body proportions and animating it, creating movements of characters, walk cycle and creating dynamic effects like wind, displace animation.

COURSE OUTCOMES :

- Creating character animation.
- Understanding and working on facial expressions.
- Understanding text animation.
- Creating dynamic effects.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Create character animation with synchronised body movements.
- Create detailed facial expressions.
- Create walk cycle and jump & run animation.
- Create different dynamic effects like wind, explosion, debris etc.

LAB EXCERISES –

a. Object motion and basic techniques of 3D Animation
b. Fan, Airplane, Helicopter animation
c. Particle Animation
d. Cracker, water, snow, rain animation
e. Rigging models with skeleton
f. Face morphing animation
g. Mass FX & rigid body animation
h. Cloth & wind animation
i. Character walking, running, jumping animation
j. Creating 3D clip and rendering

7. PROJECT – 5 6

Year 3 – Sixth Semester

Subject	Credits
1. UI/ UX DESIGN	3

RATIONALE :

UX design focuses on the interaction that a human user has with everyday products and services. The goal of UX design is to make using these products and services, both digital or physical, easy, logical, and fun. UI (User Interface) design is the user-centered approach to *designing the aesthetics* of a digital product. In essence, they create the look and feel of a website or application's user interface. An interface is the graphical layout of the application. These interfaces should not only be functional, but they should be easy to use and visually appealing.

COURSE OUTCOME :

- Understand UI design and its core principles.
- Design thinking process.
- Branding
- Website designing.

PROGRAM SPECIFIC OUTCOME :

The students will be able to –

- Create data-driven UI designs and user experiences.
- Build an impressive design portfolio with effective and compelling designs.
- Design digital experiences that bring user satisfaction, user loyalty, and product success
- Create website designing far more professionally.

SYLLABUS -

Unit – 1

Introduction to user interface stating the importance uses vital elements of designing, job opportunities - UI Design core principles - rules, guidelines, hierarchy, and flexibility while creating a website, Color theory, and typography

Unit – 2

Introduction to user experience, importance, elements, uses, job opportunities – Principles of user experience design – design law and rules, Difference between UI & UX – uses of Adobe Xd in website designing.

Unit – 3

Design Thinking process – case studies of design thinking – emotional and responsive design – Logo designing, references, brainstorming, research, keywords, mockups, invoice billing

Unit – 4

Universal Design and principles - Branding, visual representation of brands, Business canvas model, Brand identity, Brochure design, concept designing, competitor analysis, Website designing.

2. ADVANCED CHARACTER ILLUSTRATION **3**

RATIONALE :

Creation of different characters used for animation and doing a detailed study about it. Identifying different mannerism of character, understanding the need of UW maps, Unwrapping, texturing and lighting, creating realistic background.

COURSE OUTCOMES :

- To understand different types of characters used for animation.
- Identifying textures and UW maps and Unwrapping.
- To understand lighting.
- Learning basics of perspective, environment modelling.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Understand different types of characters needed for animation and gaming.
- Create their own characters with proper anatomies.
- Create desired textures using UW maps and Unwrapping.
- To create visualized environment with proper lighting.

SYLLABUS :

Unit- 1

Introduce different 'styles of characters used for animation and gaming. Create own character, Detailed Study on Character Design, Clay Modelling methodology.

Unit- 2

Animal Anatomy- Character in Perspective, Detailed study of animal Face, Body, Hands and Legs. Human Anatomy- Character in Perspective, Detailed study of Human Face, Body, Hands and Legs.

Unit- 3

Creature Anatomy- Detailed study of Creature Face, Body, Hands and Legs, Animal Anatomy- Character in Perspective, Detailed study of Animal Face, Body, Hands and Legs. Props design- Armoury, Warrior. Texture Study for character design.

Unit- 4

Dynamic Sketching, Character in Perspective. Matte painting, Landscape Painting, Shading and Lighting for the characters, atmospheres and interiors. Backgrounds and layouts. Colour Scheme for characters, backgrounds and other atmospheres.

3. 3D CHARACTER ANIMATION 3

RATIONALE :

Character animation is a type of animation that uses movement, speech and tone to bring a character to life. Animators can shape characters to take on a desired personality, experience specific emotions, or embark on a physical or mental journey.

COURSE OUTCOME :

- To understand the animation principles.
- Learning keyframe animations.
- Studying facial features and facial animations.
- Learning about audio file formats.

PROGRAM SPECIFIC OUTCOME :

The students will be able to learn –

- Fundamentals and applications of the 12 principles of animation.
- Understanding the anatomy.
- Staging & composition to tell a story.
- Learn the basics of full facial animation, including lip sync etc.
- Understand various audio file formats.

SYLLABUS :

Unit - 1

Character Animation**,** Import, FBX, Staging a Scene, Workflow for animating multiple characters, key framing, animating a scene (Situation based) with multiple characters.

Unit - 2

Facial Animation, Study of Facial Muscles, Control points, Eye Blink Animation, Facial Expressions, Facial animations with blending shapes.

Unit – 3

Lip Sync**,** Basic Vowels, Facial Expression Chart, different formats of blends, Body and Lip sync animation for audio clip, audio formats, converting MP3, MP4, and MPEG.

Unit – 4

Refining Animation**,** Refinement of the Final Animated Scene, Using Graph Editor and Tangents. Importance of break, linear and auto tangents. Use track editor and outliner. Refining Motion Capture Animations, Procedural Animation.

4. 3D SCULPTURE DESIGN **3**

RATIONALE :

Understanding digital sculpting in order to create realistic mesh as per required, knowing the concept of UV textures.

COURSE OUTCOMES :

- Understanding workspace, buttons, palettes of digital sculpting software like ZBrush.
- Understanding Topology.
- Understanding different UV textures, Polypaint materials.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to:

- Create realistic digital sculpting using ZBrush.
- Understand the workspace, buttons and palettes and use it more efficiently.
- Create desired UV textures to give subtle look to 3D characters or objects.

SYLLABUS :

Unit - 1

Introduction to ZBrush, Introduction to Digital sculpting, workspace, hotkeys, Custom buttons / palettes, Sculpting with images.

Unit - 2

Modeling vs sculpting Base meshes Dynamesh, ZSpheres, ZSketch, Insert brushes, Kitbashing, Custom brushes, Dynamesh sketch, Insert brushes, Kitbashing, Custom brushes, Dynamesh sketch.

Unit - 3

Refine and polish, Polishing brushes, Topology and cleanup, Projection and maps, Detailing and FX, Nanomesh, Fibermesh, Model preparation.

Unit - 4

Sub tools Poly groups UVs Textures/polypaint Materials, Standard Materials Matcaps, Scene' preparation, Lighting Light caps.

5. DYNAMICS LAB 6

RATIONALE :

Working on emitters, particles and particle systems, different types of constraints, force fields, active passive bodies, Fluid simulation, Create ocean, Create smoke, nCloth simulations, understanding different parameters to create dynamic effects.

COURSE OUTCOMES :

- Creating dynamic particle effects using particle simulations, particle systems.
- Understanding time control.
- Understanding frame rate/ Key modes.
- Usage of Array particle systems.

PROGRAM SPECIFIC OUTCOMES :

The student will be able to :

- Create dynamic particle effects using particle simulations, particle systems.
- To Understand time control.
- To Understand frame rate/ Key modes.
- Know the usage of Array particle systems.

LAB EXCERSISES :

1. Creating Fire effect.
2. Creating Fluid smoke simulation
3. Creating glow effect
4. Creating ncloth flag waving effects
5. Creating Active Passive colliders
6. Creating Tearable surface
7. Creating Particles and collision
8. Creating pond and float objects

6. DIGITAL COMPOSITING LAB 6

RATIONALE :

It is typically used to create visual effects and digital compositing for movies, TV-series and commercials and employs a node-based interface in which complex processes are built up by connecting a flowchart or schematic of many nodes, each of which represents a simpler process, such as a blur or color correction.

COURSE OUTCOME :

- Combine live action with cameras.
- Stabilize cameras, Tracking Rotoscopy points.
- Keying any element using powerful options like delta keyer, Luma keyer to get best possible results.
- Includes many built- in tools which can be combined with third party filters to create innumerable effects.

PROGRAM SPECIFIC OUTCOME :

Students will be able to learn –

- About Green screen techniques using powerful keying options.
- Learn about camera tracking
- Well versed with color correction.
- Learn visual effects and its techniques which the software provides.
- Learn compositing.

LAB EXCERCISES -

a. Understanding software tools and features.
b. Green Screen removal.
c. Camera Tracking.
d. Chroma Keying.
e. Matte Painting effect.
f. Bitmap Masking.
g. Fusion Particles.
h. Text effects in Fusion.

7. PROJECT – 6 **6**

****