

# SHIVAJI UNIVERSITY, KOLHAPUR



Estd. in 1962

‘A<sup>++</sup>’ Accredited by NAAC (2021) with CGPA 3.52

## CHOICE BASED CREDIT SYSTEM

**Syllabus For**

**B.Sc. Part - I**

**Animation (Entire)**

**SEMESTER I AND II**

**(Syllabus to be implemented from June-2021)**

## **B.Sc. Part - I**

Animation (Entire)

### **SEMESTER I AND II**

*(Syllabus to be implemented from June, 2021 onwards)*

- ❖ Guidelines shall be as per B. Sc. Regular Program
- ❖ Rules and Regulations shall be as per B. Sc. Regular Program except CBCS R. B. Sc. 3 Structure of Program and List of Courses.
- ❖ Preamble :

This syllabus is framed to give sound knowledge with understanding of Animation subject to undergraduate students of B. Sc. Animation (Entire) Program. Students will learn Animation as a separate course (Subject) from B. Sc. Part - I.

The goal of the syllabus is to make the study of Animation more popular, generate an interest amongst the students about the field and encourage them for higher studies including research.

**(i) Structure of B. Sc. Animation (Entire) Program [Semester I & II]  
Structure – I**

<b>S E M E S T E R – I (Duration – 6 Months)</b>													
Sr. No.	Course (Subject) Title	TEACHING SCHEME						EXAMINATION SCHEME					
		THEORY			PRACTICAL			THEORY				PRACTICAL	
		Credits	No. of lectures	Hours	Credits	No. of lectures	Hours	Hours	Max	Total Marks	Min	Hours	Max
1	DSC-AN-A1	2	3	2.4	2	4	3.2	2	50	450	20	100	40
2	DSC-AN-A2	2	3	2.4				2	50		20		
3	DSC-AN-A3	2	3	2.4				2	50		20		
4	DSC-AN-A4	2	3	2.4				2	50		20		
5	DSC-AN-A5	2	3	2.4				2	50		20		
6	DSC-AN-A6	2	3	2.4				2	50		20		
7	DSC-AN-A7	2	3	2.4				2	50		20		
8	DSC-AN-A8	2	3	2.4				2	50		20		
9	AECC-A	2	4	3.2				-----	-----		-----		
	<b>Total</b>	<b>18</b>	<b>28</b>	<b>24.4</b>	<b>8</b>	<b>16</b>	<b>12.8</b>			<b>450</b>			
<b>S E M E S T E R – II (Duration – 6 Months)</b>													
1	DSC-AN-B1	2	3	2.4	2	4	3.2	2	50	100	20	100	40
2	DSC-AN-B2	2	3	2.4				2	50		20		
3	DSC-AN-B3	2	3	2.4				2	50		20		
4	DSC-AN-B4	2	3	2.4				2	50		20		
5	DSC-AN-B5	2	3	2.4				2	50		20		
6	DSC-AN-B6	2	3	2.4				2	50		20		
7	DSC-AN-B7	2	3	2.4				2	50		20		
8	DSC-AN-B8	2	3	2.4				2	50		20		
9	AECC-B	2	4	3.2				-----	-----		-----		
	<b>Total</b>	<b>18</b>	<b>28</b>	<b>24.4</b>	<b>8</b>	<b>16</b>	<b>12.8</b>			<b>450</b>		<b>400</b>	
	<b>Grand Total</b>	<b>36</b>	<b>56</b>	<b>48.8</b>		<b>32</b>	<b>25.6</b>			<b>900</b>			
<ul style="list-style-type: none"> <li>• Student contact hours per week : 35.2 Hours (Min.)</li> <li>• Theory and Practical Lectures : 48 Minutes Each</li> <li>• <b>DSC</b> – Discipline Specific Core course: All papers are compulsory.</li> <li>• <b>AECC</b> – Ability Enhancement Compulsory Course (A &amp; B)- English</li> <li>• Practical Examination will be conducted annually for 100 Marks per course (subject).</li> <li>• <i>There shall be separate passing for theory and practical courses.</i></li> </ul>						<ul style="list-style-type: none"> <li>• Total Marks for B.Sc.-I (Including English) : <b>1300</b></li> <li>• Total Credits for B.Sc.-I (Semester I &amp; II): <b>52</b></li> </ul>							
<b>(A) Non-Credit Self Study Course : Compulsory Civic Courses (CCC)</b>													
<b>For Sem I: CCC – I : Democracy, Elections and Good Governance</b>													
<b>(B) Non-Credit Self Study Course : Skill Development Courses (SDC)</b>													
<b>For Sem II: SDC – I : Any one from following (i) to (v)</b>													
i) Business Communication & Presentation				ii) Event management				iii) Personality Development,					
iv) Yoga & Physical Management				v) Resume, Report & Proposal writing									

## CBCS B. Sc. Animation (Entire): List of courses

### B. Sc. Animation Part-I (Semester I & II)

#### THEORY

Course code	Name of Course	Course code	Name of Course
<b>Semester I</b>		<b>Semester II</b>	
<b>DSC AN-A1</b>	Fundamentals of Computer	<b>DSC AN-B1</b>	Computer Graphics
<b>DSC AN-A2</b>	Drawing & Sketching	<b>DSC AN-B2</b>	Advanced Foundation Art
<b>DSC AN-A3</b>	Anatomy	<b>DSC AN-B3</b>	DBMS
<b>DSC AN-A4</b>	Classical Animation	<b>DSC AN-B4</b>	Mass Communication
<b>DSC AN-A5</b>	Basics of 2D Animation	<b>DSC AN-B5</b>	Advanced 2D Animation
<b>DSC AN-A6</b>	Basics of Script Writing	<b>DSC AN-B6</b>	Advanced Script Writing
<b>DSC AN-A7</b>	Computational Mathematics	<b>DSC AN-B7</b>	Web Development
<b>DSC AN-A8</b>	Programming in C	<b>DSC AN-B8</b>	Programming in C++
<b>AECC-A</b>	English – I	<b>AECC-B</b>	English – II

#### PRACTICAL

<b>DSC AN-P1</b>	Lab Course I (Based on DSC AN-A1 and A2)	<b>DSC AN-P5</b>	Lab Course V (Based on DSC AN-B1 and B2)
<b>DSC AN-P2</b>	Lab Course II (Based on DSC AN- A3 and A4)	<b>DSC AN-P6</b>	Lab Course VI (Based on DSC AN-B3 and B4)
<b>DSC AN-P3</b>	Lab Course III (Based on DSC AN-A5 and A6)	<b>DSC AN-P7</b>	Lab Course VII (Based on DSC AN-B5 and B6)
<b>DSC AN-P4</b>	Lab Course IV (Based on DSC AN-A7 and A8)	<b>DSC AN-P8</b>	Lab Course VIII (Based on DSC AN-B7 and B8)

\*DSC AN: Discipline Specific Core Course Animation

\*AECC: Ability Enhancement Compulsory Course: Compulsory English

**(ii) Structure of B. Sc. Animation (Entire) Program [Semester III & IV]**

**Structure – II**

<b>S E M E S T E R – III (Duration – 6 Months)</b>															
Sr. No.	Course (Subject) Title	TEACHING SCHEME							EXAMINATION SCHEME						
		THEORY			PRACTICAL				THEORY				PRACTICAL		
		Credits	No. of lectures	Hours	Credits	No. of lectures	Hours	Hours	Max	Total Marks	Min	Max	Min		
1	DSC-AN-C1	3	4	3.2	2	4	3.2	2	50	300	20	<b>Practical Examination is ANNUAL</b>			
2	DSC-AN-C2	3	4	3.2				2	50		20				
3	DSC-AN-C3	3	4	3.2				2	4		3.2		2	50	20
4	DSC-AN-C4	3	4	3.2									2	50	20
5	DSC-AN-C5	3	4	3.2				2	4		3.2		2	50	20
6	DSC-AN-C6	3	4	3.2									2	50	20
7	SEC-I	---	---	---	2	4	3.2	---	---	---	---				
8	AECC-C	4	4	3.2	---	---	---	---	---	---	---				
	<b>TOTAL</b>	<b>22</b>	<b>28</b>	<b>22.4</b>	<b>08</b>	<b>16</b>	<b>12.8</b>			<b>300</b>	---				
<b>S E M E S T E R – IV (Duration – 6 Months)</b>															
1	DSC-AN-D1	3	4	3.2	2	4	3.2	2	50	100	20	<b>As per BOS Guidelines</b>			
2	DSC-AN-D2	3	4	3.2				2	50		20				
3	DSC-AN-D3	3	4	3.2				2	4		3.2		2	50	20
4	DSC-AN-D4	3	4	3.2									2	50	20
5	DSC-AN-D5	3	4	3.2				2	4		3.2		2	50	20
6	DSC-AN-D6	3	4	3.2									2	50	20
	SEC-II	---	---	---	2	4	3.2	---	---	---	---				
7	AECC- C AECC- D	---	---	---	---	---	---	3	70 30	100	25 10				
	<b>TOTAL</b>	<b>18</b>	<b>24</b>	<b>19.2</b>	<b>08</b>	<b>16</b>	<b>12.8</b>			<b>400</b>	---				
			<b>52</b>	<b>41.6</b>		<b>32</b>	<b>25.6</b>			<b>700</b>	--				
<ul style="list-style-type: none"> <li>• Student contact hours per week : 44.2 Hours (Min.)</li> <li>• Theory and Practical Lectures : 48 Minutes Each</li> <li>• <b>DSC</b> : - Discipline Specific Core Course : All papers are compulsory.</li> <li>• <b>AECC</b>- Ability Enhancement Compulsory Course (C) : Environmental Studies: EVS ( Theory – 70 &amp; Project – 30 Marks)</li> <li>• Practical Examination will be conducted annually for 100 Marks per course (subject). SEC practical exam will be held internally.</li> <li>• <i>There shall be separate passing for theory and practical courses also for Environmental Studies.</i></li> </ul>								<ul style="list-style-type: none"> <li>• Total Marks for B.Sc.-II (Including EVS) <b>1100</b></li> <li>• Total Credits for B.Sc.-II (Semester III &amp; IV): <b>56</b></li> </ul>							
<ul style="list-style-type: none"> <li>• <b>SEC-I- 50</b>    <b>20</b></li> <li>• <b>SEC-II- 50</b>    <b>20</b></li> <li>• ---    ---</li> <li>• ---    ---</li> <li>• <b>400</b>    ---</li> </ul>															

## CBCS B. Sc. Animation (Entire): List of courses

### B. Sc. Animation Part-II (Semester III & IV)

#### THEORY

Course code	Name of Course	Course code	Name of Course
<b>Semester-III</b>		<b>Semester-IV</b>	
<b>DSC AN-C1</b>	Basics of 3D Animation	<b>DSC AN-D1</b>	Advanced 3D Animation
<b>DSC AN-C2</b>	Rigging in 3D Animation	<b>DSC AN-D2</b>	Rendering in 3D Animation
<b>DSC AN-C3</b>	Cinematography	<b>DSC AN-D3</b>	Digital Editing
<b>DSC AN-C4</b>	Basics of Printing Technology	<b>DSC AN-D4</b>	Advanced Printing Technology
<b>DSC AN-C5</b>	Motion Graphics	<b>DSC AN-D5</b>	IPR & Cyber Security
<b>DSC AN-C6</b>	Basics of Production Process	<b>DSC AN-D6</b>	Programming in Dreamweaver cc
<b>AECC-C</b>	Environmental Studies (Theory)	<b>AECC-D</b>	Environmental Studies (Project)

#### PRACTICAL

<b>DSC AN-P9</b>	Lab Course IX (Based on DSC AN-C1,DSC AN-C2 & DSC AN-C3)
<b>DSC AN-P10</b>	Lab Course X (Based on DSC AN-C4, DSC AN-C5 & DSC AN-C6)
<b>DSC AN_P11</b>	Lab Course XI (Based on DSC AN-D1, DSC AN-D2 & DSC AN-D3)
<b>DSC AN-P12</b>	SEC (I &II)- Color Theory LAB

\*DSC AS: Discipline Specific Core Course Animation

\*AECC: Ability Enhancement Compulsory Course: Environmental Studies

**(iii) Structure of B. Sc. Animation (Entire) Program [Semester V & VI]**

**Structure – III**

<b>S E M E S T E R – V (Duration – 6 Months)</b>														
Sr. No.	Subject Title	TEACHING SCHEME						EXAMINATION SCHEME						
		THEORY			PRACTICAL			THEORY				PRACTICAL		
		Credits	No. of	Hours	Credits	No. of	Hours	Hours	Theory	Internal	Min Marks	Hours	Max Marks	Min Marks
1	DSE-AN-E1	3	4	3.2	2	5	4	2	40	10	16+4=20	Practical Examination is ANNUAL		
2	DSE-AN-E2	3	4	3.2	2	5	4	2	40	10	16+4=20			
3	DSE-AN-E3	3	4	3.2	---	---	---	2	40	10	16+4=20			
4	DSE-AN-E4	3	4	3.2	---	---	---	2	40	10	16+4=20			
	SEC-III	---	---	---	2	5	4	---	---	---	---			
5	AECC-E	2	4	3.2	---	---	---	2	40	10	16+4=20			
6	Project	---	---	---	2	5	4	---	---	---	---			
	<b>TOTAL</b>	<b>14</b>	<b>20</b>	<b>16</b>	<b>8</b>	<b>20</b>	<b>16</b>		<b>200</b>	<b>50</b>	<b>---</b>			
<b>S E M E S T E R – VI (Duration – 6 Months)</b>														
1	DSE-AN-F1	3	4	3.2	2	5	4	2	40	10	16+4=20	As per BOS Guidelines	100	40
2	DSE-AN-F2	3	4	3.2	2	5	4	2	40	10	16+4=20		100	40
3	DSE-AN-F3	3	4	3.2	---	---	---	2	40	10	16+4=20		100	40
4	DSE-AN-F4	3	4	3.2	---	---	---	2	40	10	16+4=20		PW	40
	SEC-IV	---	---	---	2	5	4	---	---	---	---		SEC III-50	20
5	AECC-F	2	4	3.2	---	---	---	2	40	10	16+4=20		SEC IV-50	20
6	Project	---	---	---	2	5	4	---	---	---	---			
	<b>TOTAL</b>	<b>14</b>	<b>20</b>	<b>16</b>	<b>8</b>	<b>20</b>	<b>16</b>		<b>200</b>	<b>50</b>	<b>---</b>			
	<b>GRAND TOTAL</b>		<b>40</b>	<b>32</b>		<b>40</b>	<b>32</b>		<b>400</b>	<b>100</b>	<b>--</b>		<b>400</b>	
<ul style="list-style-type: none"> <li>Student contact hours per week : 32 Hours (Min)</li> <li>Theory and Practical Lectures : 48 Min. Each</li> <li><b>DSE-</b> Discipline Specific Elective : All papers are compulsory.</li> <li><b>AECC-</b> Ability Enhancement Compulsory Course (E &amp; F) : English</li> <li>Practical Examination will be conducted annually for 400 Marks. SEC practical exam will be held internally.</li> <li><b>There shall be separate passing for theory, internal and practical.</b></li> </ul>								<ul style="list-style-type: none"> <li>Total Marks for B.Sc.-III (Including English) : <b>900</b></li> <li>Total Credits for B.Sc.-III (Semester V &amp; VI) : <b>44</b></li> </ul>						
<b>(A) Non-Credit Self Study Course : Compulsory Civic Courses (CCC) For Sem V: CCC – II : Constitution of India and Local Self Government</b>														
<b>(B) Non-Credit Self Study Course : Skill Development Courses (SDC) For Sem VI: SDC – II: Any one from following (vi) to (x)</b>														
vi) Interview & Personal Presentation Skill,      vii) Entrepreneurship Development Skill,      viii) Travel & Tourism, ix) E-Banking & Financial Services,      x) RTI & Human Right Education (HRE), IPR & Patents														

**CBCS B. Sc. Animation (Entire): List of courses**

**B. Sc. Animation Part-III (Semester V & VI)**

**THEORY**

Course code	Name of Course	Course code	Name of Course
<b>Semester-V</b>		<b>Semester-VI</b>	
<b>DSE AN-E1</b>	Basics of VFX	<b>DSE AN-F1</b>	Advanced VFX
<b>DSE AN-E2</b>	Game Design	<b>DSE AN-F2</b>	Game Production
<b>DSE AN-E3</b>	Basics of Sound Editing	<b>DSE AN-F3</b>	Advanced Sound Editing
<b>DSE AN-E4</b>	C# .NET	<b>DSE AN-F4</b>	Basics of Python
<b>AECC-E</b>	English – III	<b>AECC-F</b>	English – IV

**Practical**

<b>DSE AN-P8</b>	Lab Course VIII (Based on DSE AN-E1 & DSE AN-E2)
<b>DSE AN-P9</b>	Lab Course IX (Project Phase)
<b>DSE AN-P10</b>	Lab Course X (Based on DSE AN-F1 & DSE AN-F2)
<b>DSE AN-P11</b>	SEC (III & IV) PHP Lab

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DSE AN: Discipline Specific Elective Animation

\*AECC: Ability Enhancement Compulsory Course: Compulsory English



## **B.Sc. Part I - Animation**

### **Semester -I**

#### **DSC-AN-A1: Fundamentals of computer**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

#### **Unit-I**

**18**

##### **Introduction to Computer –**

Evaluation of computer and its generations,  
Classification of Computer  
Computer Software's (System and Application)  
Introduction to Presentation Tools.  
Input and output devices, Secondary storage devices  
-Memory and its types

##### **Number System-**

Number system and its conversions  
Boolean Algebra and its laws  
Computer Codes and combinational circuits

#### **Unit-II**

**18**

##### **Computer Languages-**

Introduction to Microcontrollers  
Algorithms and flowchart  
Computer Languages (High , Middle and Low level languages)

##### **Internet and its applications-**

Introduction to Internet, its history and applications.  
Basic services of Internet(ELECTRONIC MAIL, TELNET, INTRANET, EXTRANET)  
Protocols (FTP, SMTP, TCP/IP, PPP etc.)  
Introduction to World wide web and Browsers

#### **Reference Books:**

1. Digital Electronics circuits and systems by V.K. Puri, TMH- Unit-I ,II
2. Computer Fundamentals by P.K. Sinha (Unit-I ,III , IV)

## **DSC-AN-A2: Drawing and Sketching**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit- I**

**18**

Introduction to Drawing and sketching, History of drawing and sketching

Various categories of drawing and sketching History of pencil, types of a Pencil, Instruments used in Drawing.

Visual and creative development of an artist, How to draw gestures, Basic Proportions, Heads, Rotation in Arcs, Key Lines ,Perspective and its types , Introduction of Calligraphy, types of calligraphy, History of logo and how to design a Logo.

### **Unit-II**

**18**

Mannequin, Volume Construction, Balance, Muscles, Light & shade, Shape and Action Hands & Legs, Foreshortening, Facial expressions. Introduction to pose to pose sketching (Action analysis).Introduction to Acting, Modeling, Sketching from Acting, Sketching from live models ,Introduction to Rapid Sketching Techniques, Sketching from Memory, live action.

### **Reference Books: -**

1. The Animator Survival Kit by Richards Williams Unit-IV
2. Basic Drawing Techniques by Richards Box(Unit-I,II)
3. Drawing and Anatomy by Victor Petard (Unit-I,II)
4. Cartoon Animation by Preston Blair

## **DSC-AN-A3: Anatomy**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit -I**

**18**

#### **Introduction of Anatomy,**

Proportion of Anatomy,

Drawing Text and Lettering How to Draw Letters, How to Draw Bubble Letters, How to Have Beautiful Writing. How to Design a Logo

#### **'Drawing Realistic Characters**

How to Draw Basic Human Figures, How to Draw a Body , How to Draw People, How to Draw Realistic People, How to Draw Human Faces, How to Draw a Facial Expression.

### **Unit -II**

**18**

#### **Animal Anatomy Introduction**

Drawing Animals How to Draw Realistic Animals with Depth, How to Draw an Elephant, Draw a Horse, How to Draw a Bird, How to Draw Cat, How to Draw a Dog, How to Draw a Pig, How to Draw a Dog Face, How to Draw a Frog.

#### **Cartoon and Comic Drawing**

How to Draw a Cartoon like Face, How to Draw a Cartoon Cat, How to Draw a Cute Cartoon Person, How to Draw a Cartoon Monkey, How to Draw a Stick Figure, How to Draw Monsters, How to Draw a Sea Creature.

#### **Reference Books: -**

- 1) The Animator Survival Kit by Richards Williams
- 2) Basic Drawing Techniques by Richards Box
- 3) Drawing and Anatomy by Victor Perard
- 4) Sketching by Pratap Mulik
- 5) Human Anatomy for Artist by Eliot Goldfinger
- 6) How to Draw Baby Animal by Susan Sonkin
- 7) Cartoon Animation by Preston Blair
- 8) Human anatomy by Victor Ferard
- 9) Figure drawing made easy by Aditya Chari
- 10) How to Draw Human Figures by Pundalik Waze

## **DSC-AN-A4: Classical Animation**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit-I**

**18**

History of Animation,  
Overview of the process pre production, Production & post production,  
Perspective, Background Design,  
Script writing process.  
Effects Animation1.

Introduction Storyboard,  
Storyboard Layout.  
Assisting Animation,  
Color Theory,  
Effects Animation2,  
Storyboarding Final Film Concept

### **Unit-II**

**18**

Art Direction,  
Animation Final Film Project,  
Layout Recap, Premiere,  
Sound Breakdown.

Digital Ink and Paint,  
2D Digital Animation Sound,  
Photoshop, Adobe flash. Toon boom

### **Reference Books:-**

1. The Animator Survival Kit by Richards Williams
2. Basic Drawing Techniques by Richards Box
3. Drawing and Anatomy by Victor Petard

## **DSC-AN-A5: Basics of 2D Animation**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit I:**

**18**

Introduction to 2D Animation,

- Traditional Animation, Computer Based Animation

Overview of Flash:

- Flash Interface, Stage Setting, Frame Rate, Layers, Timeline, Properties, Flash Tools

Drawing in Flash:

- Drawing Modes, Drawing Techniques, Text and Colors

### **Unit II:**

**18**

Symbols:

- Graphic Symbol, Button Symbol, Movie clip symbol

Animation: Frame and Key frame, Motion Guide, Key frame animation, Masking

Tweens: Motion Tween, Classic Tween, Shape Tween

Sound in Flash:

- Importing Sound, Editing Sound

### **Reference books:**

- Flash CS4 Professional Bible Published by Wiley Publishing (Robert R & Snow D.)

## **DSCAN-A6: Basics of Script Writing**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **UNIT I :**

**18**

Introduction to Language Skills for Animation:

- Comprehension Skills, Vocabulary, Verbs, Tense, Subject verb agreement

Introduction to Creative Thinking:

- The way the mind works, Difference between lateral and vertical thinking, Nature of Lateral Thinking, Use of Lateral Thinking, Creative Thinking: Technique and Application
  - The generation of alternatives, Challenging assumptions, Innovation, Suspended judgement
- Story Dynamics: Building Blocks, Different scripts for varied mediums, Identifying your script with a Genre, Role of Foreshadowing, Crisis and Big Event.

### **UNIT II:**

**18**

- Turning points in a plot- Plot structure of Action and Emotion driven script
- Plot structure of Goal driven script, Drawing captivating characters.

Story Dynamics: Content Development:

- The role of dialogue, subtext and exposition Writing for television: Suspense and Sitcoms, Copy editing, Review Writing, Introduction to Script Writing, Materializing your ideas
- Development of plot and sub-plot, Review your story from third person perspective
- Drafting of a spec script.

### **Reference books:**

- Practising English (A Workbook), by M. S. Nagaraja Rao and D. S. Manjunatha, Published 2013 (Reprinted 2014), Orient Black Swan Private Ltd.
- Lateral Thinking- Creativity Step by Step, by Edward De Bono, Published 1990 (Reissued 2015), Harper Perennial.
- Creativity Workout- 62 Exercises to Unlock Your Most Creative Ideas, by Edward De Bono, Published by Ulysses Press, US.

## DSC-AN –A7: Computational Mathematics

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit-I Mathematical logic**

**18**

Introduction to Logic and Applications of logic  
Logical Connectives, (statements and notations, connectives – negation,  
Conjunction, Disjunction, conditional, bi-conditional  
Predicates, Truth Tables and its Laws  
Tautology, Contradiction and Logical Equivalence

#### **Set Theory**

Introduction to Set theory  
Basic concepts in Set theory, Power set of a set, Product of two sets.  
Applications of Set theory  
Venn Diagram representation

### **Unit-II Matrix-I**

**18**

Introduction to Matrix and its Basic operations  
Square matrix, types of matrix  
Isomorphism, Adjacency and  
Incidence matrix- Definition, Examples.

#### **Graph**

Preliminary terms and definitions of graph, Applications of graph  
Types of Graphs  
Matrix representation of Graphs,  
Complement of Graph  
Dijkshtra's Algorithm

#### **Reference Books:**

1. Discrete Mathematics; Kenneth Rosen- Tata McGraw Hill. (**Unit-I & II**)
2. Matrices: Shanti Narayan; S.Chand & Co. N.Delhi(**Unit-III**)
3. Discrete Mathematical Structures with applications to Computer Science by Tremblay and Manohar (**Unit-IV**)
4. Graph Theory, Ron Clark and Derek Holton- Narosa (**Unit-IV**)

## **DSC-AN-A8: Programming in C**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit-I**

**18**

Languages Fundamentals Algorithm, Flow Chart What is 'C' Constants Variable data types in 'C' Statements Definition Symbolic Constantans

Operators Arithmetic Operator Relation Logical Assignments, Conditional, Comma, Increment and Decrement Expression

### **Unit-II**

**18**

Data Input - Output Statements Data Input and Output Using getch() ,getche() , getchar() , putchar() Formatted input – output – printf(), scanf()

Control Structures Conditional Statements- if , if else, nested if, switch Looping- while, do while, for , nested for

### **Reference Books:**

1. Let us C by Y. Kanetkar BPB publication 12<sup>th</sup>Edition (Unit-I-IV)
2. C The Complete Reference, 4th Edition by Herbert Scheldt (Unit-I-IV)
3. ANCI 'C' by E Balgurusamy (Unit-I-IV)



## **DSC-AN-P1 (Lab Course I (Based on DSC AN-A1 and A2))**

### **Experiments:**

#### **Group –I**

1. Presentation Tools- (Taking 5 examples on each).
2. Presentation Tools (Taking 5 examples on it).
3. Presentation Tools - (Taking 5 examples on it).
4. Using Presentation Tools - Access create data ANI and apply primary key(Taking 5 examples on it).
5. Command Prompt – MD, DATE, MKDIR,CD etc
6. Convert Binary and Decimal numbers to other number systems (Taking 5 examples on each).
7. Working with Internet connectivity and creating account on any three servers.
8. Creating Account and Upload , Download files.
9. Downloading video , Software, Audio, Documents etc
10. Online Shopping .

#### **Group-II**

1. Free hand sketching from real objects:
2. Building, vehicles, chair, table, trees etc.
3. Sketching from live models
4. How to draw gestures, Basic Proportions, Heads, Rotation in Arcs
5. Facial expressions
6. Basic Head Drawings male, female, children, old person
7. Draws Text, letters, logos.
8. Draw BG (Backgrounds) Layouts for Animation.
9. Realistic Human Drawings, Anatomy. Animal Drawings
10. Cartoons and Comic Drawings.

## **DSC-AN-P2 (Lab Course II (Based on DSC AN-A3 and A4))**

### **Experiments:**

#### **Group- I**

- 1) Draw the Basic Drawing of human Anatomy
- 2) Draw the Proportion of Male body with keys
- 3) Draw the Proportion of Female body with keys
- 4) Individual Muscles Leg and Foot with keys
- 5) Draw the Proportion of Head
- 6) Proportion of Animal Anatomy
- 7) Different between human and animal
- 8) Human Figure with Table of Muscle Origins and Insertion
- 9) Proportion of Animal with Limb Variation
- 10) Proportion of Neck with keys

#### **Group-II**

1. Create a basic shape & forms, Basic Character Design and Composition.
2. Life Drawing with Perspective, Create Layout with appropriate dimension.
3. Create Background Design.
4. Character Design with props.
5. Create Bouncing Ball Effects Animation.
6. Storyboarding with detailed Layout.
7. Assisting Animation with Color Theory.
8. Final Film Project.
9. Layout Recap.
10. Premiere.

## **DSC-AN-P3 (Lab Course III (Based on DSC AN-A5 and A6))**

### **Experiments:**

#### **Group I**

- 1 Assignment on Drawing in Flash
- 2 Assignment on Table fan animation
- 3 Assignment on Frog Jump animation
- 4 Assignment on Bouncing ball
- 5 Assignment on Moving car
- 6 Assignment on Giant wheel
- 7 Assignment on Bi-ped walk cycle
- 8 Assignment on Quadruped walk cycle
- 9 Assignment on Bird fly cycle
- 10 Assignment on Facial expressions

#### **Group II**

1. Writing your script with a Genre.
2. Emotion driven script
3. Action Script.
4. Goal driven script.
5. Writing for television: Suspense
6. Review Writing a Script
7. Copy editing the Script
8. Writing script for Sitcoms
9. Writing script for captivating characters.
10. Review your story from third person perspective.

## **(Lab Course IV (Based on DSC AN-A7 and A8))**

### **Experiments:**

#### **Group I**

- 1) Introduction to Logic and Applications of logic
- 2) Logical Connectives, (statements and notations, connectives – negation, Conjunction, Disjunction, conditional, bi-conditional,)
- 3) Predicates, Truth Tables and its Laws
- 4) Tautology, Contradiction and Logical Equivalence
- 5) Introduction and applications of Set theory
- 6) Power set of a set, Product of two sets.
- 7) Venn Diagram representation of **A Union B and A Intersection B**
- 8) Introduction to Matrix and its Basic operations
- 9) Study of Graph Theory
- 10) Study of Matrix representation of Graphs,

#### **Group II**

1. Write an algorithm to calculate average of two numbers.
2. Write an algorithm to Convert Temperature Celsius into Fahrenheit.
3. Write an algorithm to Find the Area and Circumference of a Circle.
4. Write an algorithm to Find the Area of a Triangle.
5. Write an algorithm to Check Number Is Positive or Negative.
6. Draw a flowchart to calculate average of two numbers.
7. Draw a flowchart to Convert Temperature Celsius into Fahrenheit.
8. Draw a flowchart to Find the Area and Circumference of a Circle.
9. Write a C program to Check Number Is Positive or Negative.
10. Write a C program to Calculate Factorial of a Given Number.

# **B.Sc. Part I Animation**

## **Semester -II**

### **DSC-AN-B1-: Computer Graphics**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

#### **Unit –I (Starting and setting up)**

**18**

Starting and quitting CorelDraw X7, Changing the language, Changing start-up settings  
Understanding vector graphics and bitmaps, Starting and opening drawings, Working with  
multiple drawings, Undoing, redoing, and repeating actions, Zooming, panning, and scrolling

#### **(Lines, shapes, and outlines& Objects, symbols, and layers)**

Working with lines, outlines, and brushstrokes, Drawing shapes, Shaping objects, Working  
with objects, Working with layers, Working with symbols, Linking and embedding objects,  
Managing projects

#### **Unit –II (Color, fills, and transparencies & Text)**

**18**

Working with color, Filling objects, Changing the transparency of objects, Managing and  
sharing fills and transparencies, Using color management, Adding and manipulating text,  
Formatting text Working with text in different languages, Managing fonts, Using writing tools

#### **(Working with pages and layout tools, printing& File format)**

Specifying the page layout, Choosing a page background Adding, duplicating, renaming, and  
deleting pages, Inserting page numbers, Using the rulers, Printing basics, Preparing files for  
print service providers, Importing and exporting files, Supported file formats

#### **Reference Books: -**

1. CorelDraw Training - Back to the Basics and Beyond
2. CorelDRAW X7 The Official Guide - Gary David Bouton

## **DSC- AN- B2: Advanced Foundation Art**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **UNIT I :**

**18**

Introduction To Visual Design:

- Elements of Design, Principles of Design, Space - positive & negative space

Gestalt's Laws of Design:

- Proximity, Similarity, Law of Closure, Figure and Ground

### **UNIT II :**

**18**

Introduction to Material:

- Paper, Cloth, Wood, Clay

3D Modelling Techniques:

- Paper Modelling, Cloth Puppets, Clay Modelling, Cut out animation character

Set Design:

- Floor Plan, Structure Design, Set Modelling, Texturing

### **Reference books:**

Figure Study Made Easy By- Aditya Chari - Grace Publication

Perspective By Milind Mulik -- Jyotsna Prakashan

## DSC-AN-B3: DBMS

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit-I**

**18**

#### **Introduction to DBMS –**

What is Database?

What is DBMS and its Benefits. What is RDBMS (Codd's Rule)

Difference between RDBMS and DBMS.

#### **Data Models-**

Introduction to Data Models, Normalization, -ERD Model, Introduction to SQL

Types of Commands. Introduction to DDL, DML, DCL Commands

### **Unit-II**

**18**

#### **Introduction to database supporting Software-**

Introduction to Database supporting software's

Presentation tools- Access, SQL server 2000/2005/2008

MySQL, PLSQL ORACLE.

#### **Relational Algebra-**

Introduction to Relational algebra. Relational algebra operations

SQL Statements. Accessing Database using SQL query

#### **Reference Books:**

- 1) Database concepts by Korth - Tata McGraw Hill Publications -5th Edition (Unit-I, II,III,IV)
- 2) Database systems by Ramkrishna and Gherke - Tata McGraw Hill Publications 3rd edition.
- 3) Oracle SQL, PL/SQL programming by Prof. Rajendra Salokhe (Unit- III &IV)

## **DSC-AN-B4: Mass Communication**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit I- Mass Communication**

**18**

Introduction to Mass Communication, culture & Media literacy  
The Evolving Mass Communication Process, A historical perspective of Media Literacy  
Media, Media Industries & Media Audiences (Books, Newspapers, Magazines, Films, Radio & Recording, Television & Mobile Video, Video Games, the internet & Web, Supporting Industries, Public Relations, Advertising, Theories & Effect of Mass Communication.

#### **Online Journalism**

What is online journalism? Earlier websites of newspapers, E-books and E-publishing  
Introduction to content management system, Hyper-textuality, Multi-mediality and interactivity, Use of various online tools to manage text, links, photos, maps, audio, video.

### **Unit II- Digital storytelling**

**18**

Digital storytelling: Tools of multimedia journalists;  
Learn to report, write and produce in a manner that is appropriate for online media  
Feature writing for online media: Story idea, development and news updates  
Podcast and Webcast.

#### **Media and Society**

Perspectives on Media & Society, Influence of Media on Society, Indian Social Changes & Media, Media Effects on Groups & Sub Cultures.

#### **Reference Books:**

1. Nath, Shyam. Assessing the State of Web Journalism. Authors Press, New Delhi, 2002
2. Chakravarthy, Jagdish. Net, Media and the Mass Communication. Authors press, New Delhi, 2004
3. Bhargava, Gopal. Mass Media and Information Revolution. Isha Books, New Delhi, 2004
4. Menon, Narayana. The Communication Revolution. National Book Trust.



## **DSC-AN - B5: Advanced 2D Animation**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit - I**

**18**

Shaping Objects - Overview of shapes, Drawing & Modifying Shapes.

Basic Principles of Text. Bitmap Images & Sounds.

Object Selection, working with objects & transforming Objects.

### **Unit - II**

**18**

Animation - Principles , Frame by frame animation, tweening, masks.

Building a Movie- Symbol, Libraries, Structure & Exporting Movie.

### **References:**

1. Flash CS4 Professional Bible Published by Wiley Publishing (Robert R & Snow D.)
2. FLASH MX For PC/Mac Published by – FIREWALL MEDIA – Laxmi Publications

## **DSC-AN-B6: Advanced Script Writing**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **UNIT I:**

**18**

Advanced Language Skills:

- Comprehension skills and vocabulary, Modal Auxiliaries.

Advanced Creative Thinking Strategies:

- Role of Fractionation, The Reversal Method, Brainstorming, Analogies
- Choice of Entry Point and Attention, Area.

Tools for Enhancing Creative Thinking:

- Random Stimulation, Concept/ division/ polarization, The Importance of Cues to the Mind.
- Mind block, Problem solving.

### **UNIT II:**

**18**

Script Writing: Drafting and Binding:

- Birds eye view of formatting, Study of a Sample Script, Scene heading, Narrative

Description and Dialogue.

Script Writing Terms:

- Compilation of Terms Discussed, During the Course, Compilation of Rarely Used Terms

Marketing your content:

- Making your script market-ready, finding an agent, crafting the query, preparing a pitch
- Protecting your work.

### **Reference books:**

- Practising English (A Workbook), by M. S. Nagaraja Rao and D. S. Manjunatha, Published 2013 (Reprinted 2014), Orient BlackSwan Private Ltd.
- Lateral Thinking- Creativity Step by Step, by Edward De Bono, Published 1990 (Reissued 2015),Harper Perennial.
- Creativity Workout- 62 Exercises to Unlock Your Most Creative Ideas, by Edward De Bono, Published by Ulysses Press, US.

## DSC-AN-B7: Web Development

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit-I**

**18**

#### **Introduction to HTML –**

Introduction to HTML Editors ,Applications of HTML

Difference between HTML and XML

Basic HTML Elements , Headings , HTML

Paragraphs HTML Styles

#### **Commands in HTML**

Table, Hyperlink creation in HTML

Cascade Style Sheet, CSS Links

Web Page Designing using HTML.

Comments in HTML

### **Unit-II**

**18**

#### **Form Design-**

HTML Forms,Form Elements in HTML

Input Types HTML, Input Attributes

#### **Dream viewer software -**

Interface of Dream viewer

Toolbox Workspace,

Web Page designing using Dream viewer

Applications, Advantages and Disadvantages of Dream viewer

#### **Reference Books: -**

- The Complete Reference HTML and XHTML 4/e Thomas A. Powell – TMH
- HTML beginners guide – by Wendy Willard – TMH
- HTML black book by Steven Holzner – Dream-tech press
- Server Database and Application Development by Prof. DepaliR.Dhainje
- Programming PHP O'Reilly (SPD)-By Rasmus Lerdorf& Kevin Tatroe.

## **DSC-AN-B8: Programming in C++**

**Total Contact Hours: 36 hrs. (45 lectures of 48 minutes)**

**Credits: 02**

**Theory: 03 Lect./Week**

**Total Marks: 50**

### **Unit-I**

**18**

#### **Introduction to Language –**

Why to Learn C++, Object-Oriented Programming, C++ Keywords, Primitive Built-in Types, Variables, Type Qualifiers in C++, operator: Arithmetic Operators, Relational Operators, Logical Operators, Bitwise Operators, Assignment Operators, Misc Operators.

### **Unit-II**

**18**

While loop, for loop, do...while loop, nested loop, break statement, continue statement, goto statement.

Classes and Objects, Access Control and Inheritance, Type of Inheritance, C++ overloading.

C++ polymorphism, Data abstraction, C++ encapsulation.

#### **Text Books:**

1. Problem Solving with C++ (4th edition)
2. Computing fundamentals with C++, Object oriented programming & design (2nd edition) Rick Mercer MacMillan
3. Object Oriented Neural Networks in C++ Joey Rogers Academic Press

## **DSC-AN-P5: (Based on DSC AN-B1 and B2)**

### **Experiments:**

#### **Group-I**

(Experiments in coreldraw X7)

1. How to make 3d logo.
2. Easy way to draw Rainbow & Sky.
3. Bottle Shaped Text Wrap using Envelope tool
4. Realistic 3D Bottle Design.
5. 3D Flower Pot Designing Idea.
6. Flex Design.
7. Professional Business Card.
8. Typography Design.
9. Dispersion Effect:
10. How to make Hindu Wedding Card Design || Invitation Card Design

#### **Group-II**

- 1 Assignment on Logo Design
- 2 Assignment on Photo Collage
- 3 Assignment on Paper Model
- 4 Assignment on Cloth Puppet
- 5 Assignment on Wood carving
- 6 Assignment on Clay model
- 7 Assignment on Set model
- 8 Assignment on Wall painting
- 9 Assignment on Graffiti
- 10 Assignment on Retail Design

## **DSC-AN-P6: (Based on DSC AN-B3 and B4)**

### **Experiments:**

#### **Group-I**

- 1) Creating Employee Database using Presentation tools. Access and Insert Values in it.
- 2) Creating School Database, Table using Presentation tools. Access and Insert Values in it.
- 3) Creating Table and apply primary key, Foreign key on it.
- 4) Creating Table and draw ER diagram for College Management System
- 5) Creating Table and draw ER diagram for Hospital Management System
  
- 6) Write down SQL query on **CREATE , INSERT, WHERE, UPDATE** commands (taking 5 Examples).
- 7) Write down SQL query on **GROUP BY, ORDER BY, DELET, DROP,ALTER** commands (taking 5 Examples).
- 8) Creating Relational Algebra Query.
- 9) Creating Database using SQL server 2000/2005/2008.
- 10) Creating Student Table using SQL server 2000/2005/2008.

#### **Group-II**

1. Case study on earlier websites of newspapers, E-books and E-publishing
2. Design Newspaper lay out with help of any Newspaper
3. Design Creative Magazines Cover Page and Book Cover Page
4. Design any Creative Title of Movie
5. Design Video Game Poster
6. Design Web-Page
7. Digital storytelling: Tools of multimedia journalists;
8. Case study on Use of various online tools to manage text, links, photos, maps, audio, video,
9. Case study on Status of online journalism today
10. Case study on Blogs.

## **DSC-AN-P7: (Based on DSC AN-B5 and B6)**

### **Experiments:**

#### **Group-I:**

- 1 Assignment on Calculator
- 2 Assignment on Image Gallery
- 3 Assignment on Button click
- 4 Assignment on Image swapping
- 5 Assignment on Keyboard events
- 6 Assignment on Puzzle game
- 7 Assignment on Quiz game
- 8 Assignment on E- learning application
- 9 Assignment on Interactive website
- 10 Assignment on Flash game with sound

#### **Group-II:**

1. Writing on Own Script
2. Drafting on Own Script
3. Concept Telling on Own Script
4. Developing concept With Dialogue
5. Developing concept with description.
6. Writing script for children programmers.
7. Writing script for adult programmers.
8. Binding your own Script
9. Scene Heading on your own Script
10. Compilation on your own Script

## **DSC-AN-P8: (Based on DSC AN-B7 and B8)**

### **Experiments:**

#### **Group-I:**

- 1) Create HTML pages using basic HTML tags,
- 2) Create HTML page and display FRAME and TABLE
- 3) Design page using CSS.
- 4) Insert images and clip art using HTML.
- 5) Working with Hyperlinks and Tabular information of Students bio data using HTML.
- 6) Create a form design with controls using HTML.
- 7) Design a simple Web site template and themes using HTML.
- 8) Design a simple Login form and Registration form using HTML.
- 9) Design a simple Website with site map, search facility using Dream viewer.
- 10) Design a simple Login form and Registration form using Dream viewer.

#### **Group-II:**

1. Write a C++ program to calculate Fibonacci Series.
2. Write a C++ program to calculate Prime number.
3. Write a C++ program to calculate Sum of Digits.
4. Write a C++ program to calculate Swap two numbers without using third variable.
5. Write a C++ program to calculate to Check Whether Number is Even or Odd.
6. Write a C++ program for OOPs Concepts.
7. Write a C++ program for Constructor.
8. Write a C++ program for Destructor.
9. Write a C++ program for Inheritance.
10. Write a C++ program for Encapsulation.



