।। सा विद्या या विमुक्तये ।।
स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड
"ज्ञानतीर्थ" परिसर, विष्णुपूरी, नांदेड - ४३१६०६ (महाराष्ट्र)
SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY NANDED
"Dnyanteerth", Vishnupuri, Nanded - 431606 Maharashtra State (INDIA)
Established on 17th September 1994 – Recognized by the UGC U/s 2(f) and 12(B), NAAC Re-accredited with 'A' Grade
ACADEMIC (1-BOARD OF STUDIES) SECTION
Phone: (02462) 229542
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E-mail: bos.srtmun@gmail.com

आंतर–विद्याशाखीय अभ्यास विद्याशाखेतील विविध पदवी विषयांचे सी.बी.सी.एस. पॅटर्नचे अभ्यासक्रम शैक्षणिक वर्ष २०–२१ पासून लागू करण्याबाबत.

प रि प त्र क

या परिपत्रकान्वये सर्व संबंधितांना कळविण्यात येते की, **दिनांक २० जून २०२० रोजी संपन्न झालेल्या ४७ व्या मा. विद्या परिषद बैठकीतील विषय क्र. १३/४७–२०२०** च्या ठरावानुसार प्रस्तुत विद्यापीठाच्या **संलग्नित महाविद्यालयांतील आंतर–विद्याशाखीय अभ्यास विद्याशाखेतील पदवी स्तरावरील** खालील विषयांचे **C.B.C.S. (Choice Based Credit System) Pattern** नुसारचे अभ्यासक्रम शैक्षणिक वर्ष २०–२१ पासून लागू करण्यात येत आहेत.

1) B.A.-II Year Physical Education
2) B.A-I Year Education
3) B.A- II Year Library and Information
4) B.A.-II Year-Music)
5) B. Lib. and Information
6) B.A- II Year- Fashion Design
7) B.A.-I Year-Journalism & Mass Communication) (Optional I, II, III)
8) B.A.-II Year-Home Science
9) B.A.- II Year-Computer Animation and Web Designing
10) Bachelor of Journalism (B.J. Yearly Pattern.
11) B.S.W.-III Year

सदरील परिपत्रक व अभ्यासक्रम प्रस्तुत विद्यापीठाच्या **www.srtmun.ac.in** या संकेतस्थळावर उपलब्ध आहेत. तरी सदरील बाब ही सर्व संबंधितांच्या निदर्शनास आणून द्यावी.

'ज्ञानतीर्थ' परिसर,
विष्णुपुरी, नांदेड – ४३१ ६०६.
जा.क्र.: शैक्षणिक–०१/परिपत्रक/पदवी सीबीसीएस अभ्यासक्रम/२०२०–२१/६६६.
दिनांक : ०१.०९.२०२०.

स्वाक्षरित/–
उपकुलसचिव
शैक्षणिक (१–अभ्यासमंडळ विभाग)

प्रत माहिती व पुढील कार्यवाहीस्तव :

१) मा. कुलसचिव यांचे कार्यालय, प्रस्तुत विद्यापीठ.
२) मा. संचालक, परीक्षा व मूल्यमापन मंडळ, प्रस्तुत विद्यापीठ.
३) प्राचार्य, सर्व संबंधित संलग्नित महाविद्यालये, प्रस्तुत विद्यापीठ.
४) उपकुलसचिव, पदव्युत्तर विभाग, प्रस्तुत विद्यापीठ.
५) साहाय्यक कुलसचिव, पात्रता विभाग, प्रस्तुत विद्यापीठ.
६) सिस्टम एक्सपर्ट, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ.

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

Faculty of Interdisciplinary Studies

B.A Computer Animation & Web Designing

Syllabus

B.A Second Year

Semester Pattern

(Choice Based Credit System)

[Effective from June 2020-21]

CBCS - Paper Pattern in the subject of

B.A Computer Animation & Web Designing

B.A Second Year Semester Pattern-2020-21

B.A Second Year Computer Animation & Web Designing Syllabus

Contents

Semester – IIIrd

Paper No.	Title of Paper	CA Marks	ESE Marks	Practical Marks
17	Compulsory English	35	40	
18	Character Modeling	35	40	
19	BG Prop Design	35	40	
20	Web Design	35	40	
21	Character Modeling Practical			75
22	BG Prop Design Practical			75
23	Web Design Practical			75
24	Project			75
25	SEC-I Skill Course	25	25	

Semester – IVth

Paper No.	Title of Paper	CA Marks	ESE Marks	Practical Marks
26	Compulsory English	35	40	
27	Character Rigging	35	40	
28	Animation Principles	35	40	
29	3D Animation	35	40	
30	Character Rigging Practical			75
31	Animation Principles Practical			75
32	3D Animation Practical			75
33	Project - 3D Animation Showreel or Short Film			75
34	SEC-II Skill Course	25	25	

S.R.T.M. UNIVERSITY, NANDED

Choice Based Credit System (CBCS)

Course Structure (New Scheme)

Faculty of Interdisciplinary Studies

B.A First Year Semester Pattern-2019-20

B.A Computer Animation & Web Designing

Semester – IIIrd & IVth

Semester	Core Course	Paper No	Name of Paper	Lecturer / Week	Total No. of Lectures	CA	ESE	Practical	Total Marks	Credits
Semester-III	BAAW 17	17	Compulsory English	5	60	35	40		75	3
	BAAW 18	18	Character Modeling	6	72	35	40		75	3
	BAAW 19	19	BG Prop Design	6	72	35	40		75	3
	BAAW 20	20	Web Design	6	72	35	40		75	3
	BAAW 21	21	Character Modeling Practical	6	72			75	75	3
	BAAW 22	22	BG Prop Design Practical	6	72			75	75	3
	BAAW 23	23	Web Design Practical	6	72			75	75	3
	BAAW 24	24	Project	6	72			75	75	3
	BAAW 25	25	SEC-I Skill Course	4	48	25	25		50	2
			Total-I	**51**	**612**	**165**	**185**	**300**	**650**	**26**
Semester-IV	BAAW 26	26	Compulsory English	5	60	35	40		75	3
	BAAW 27	27	Character Rigging	6	72	35	40		75	3
	BAAW 28	28	Animation Principles	6	72	35	40		75	3
	BAAW 29	29	3D Animation	6	72	35	40		75	3
	BAAW 30	30	Character Rigging Practical	6	72			75	75	3
	BAAW 31	31	Animation Principles Practical	6	72			75	75	3
	BAAW 32	32	3D Animation Practical	6	72			75	75	3
	BAAW 33	33	Project- 3D Animation Showreel or Short Film	6	72			75	75	3
	BAAW 34	34	SEC-II Skill Course	4	48	25	25		50	2
			Total-II	**51**	**612**	**165**	**185**	**300**	**650**	**26**
			Total-I&II	**102**	**1224**	**330**	**370**	**600**	**1300**	**52**

Note:

- Total Credit for First Year : 52
- Continue Assessment : 35 Marks
- End of Semester Examination : 40 Mark
- End of Semester Practical Examination : 75 Marks
- Each Theory is of 3 Credits
- Each Practical is of 3 Credits

B.A Computer Animation & Web Designing (BAAW)

It is an Undergraduate (UG) Programme of 3 Years (6 Semesters) duration.

Eligibility for Admission:

A candidate for being eligible for admission to the first year. Degree in B.A Computer Animation & Web Designing must have passed the Higher Secondary Examination (10+2) of Maharashtra State Board or any Examination of any Statutory University with Science, Arts, Commerce or Vocational streams.

EXAMINATION PATTERN

CA (Continue Assessment) - 35 Marks

Marks Distribution

- 20 Marks for Test (10+10=20)
- 15 Marks for home assignment

ESE - Theory Paper - 40 Marks

Marks Distribution

- Question No 1 is compulsory = 10 Marks
- Question No 2 to 6 solve any 3 = 30 marks

Practical's 75 Marks

Marks Distribution

- 40 Marks for Practical 2 Questions (20 + 20)
- 10 Marks for Oral
- 25 Marks for Practical Record Submission (CD/DVD/ONLINE)

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 17

Compulsory English

Theory Paper

Total Credits 03 **No. of Lectures 60**

CA	ESE	Total
35	40	75

Note – Compulsory English For Second Year Syllabus Will Applicable For As Per BA To B.A Computer Animation & Web Designing

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 18

Character Modeling

Theory Paper

Total Credits 03 **No. of Lectures 60**

CA	ESE	Total
35	40	75

Course Objectives and Goals

After completing this course, students will be familiar with a typical work-flow for creating 3D art assets in a modern game engine. Students will gain understanding of techniques and technical specifications of common high quality Model used in Film and Games today.

Salient Features:

In simple phrases, **3D modeling** is a creation of fully **rendering** three-dimensional objects or scenes. The product of **3D modeling** is called a **3D model** or a **3D** object. Fundamentally, **3D** object is a number of **points** in space connected by complex geometric entities (for example triangles, curved surfaces, lines, etc.).

Utility of Course:

1. 3D modeling is a technique in computer graphics for producing a 3D digital representation of any object or surface.
2. An artist uses special software to manipulate points in virtual space(called vertices) to form a mesh: a collection of vertices that form an object.

Learning Objectives:

1. To be a good 3D Modeler
2. Doing freelance projects of 3D Character Models etc.

Prerequisites:

- Knowledge of 3Ds Max

Syllabus

Unit 1: Introduction : 3D interface, Basic skills for handling the selected software like transforming objects, Object properties, Hierarchies, Pivots Etc.

Unit 2: Interface: Creating a New Project, Editing and Changing Projects, File References.

Unit 3: Tools Of Modelling : Polygon Vertices, Polygon Edges, Polygon Faces, Working with Smooth Polygons, Understanding NURBS, Understanding Curves, Understanding NURBS Surfaces Surface Seams, NURBS Display Controls.

Unit 4: The Process Of 3D Character Creation : Male or female anatomy. Body Structure - Proportion and construction of body parts (Torso, Face, Eyes, Nose, Ears, Mouth, Hand, Feet etc.

Unit 5: Sculpting Polygons : Soft Select Tool, Sculpting Polygons.

Software: Autodesk Maya

References:

How to Draw What You See: Rudy De Reyna

Figure Study Made Easy: Aditya Chari

Figure Drawing Without a Model: Ron Tiner

Career Options:

- In film and television production there are jobs for Modeling.
- The games industry is a big employer, and for any major game title, more than half of the production budget will go on art production.

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 19

BG Prop Design

Theory Paper

Total Credits 03 **No. of Lectures 60**

CA	ESE	Total
35	40	75

Course Objectives and Goals

After completing this course, students will be familiar with a typical work-flow for creating 3D Background art assets in a modern game engine. Students will gain understanding of techniques and technical specifications of common high quality Background Model used in Film and Games today.

Salient Features:

In simple phrases, **3D BG modeling** is a creation of fully **rendering** three-dimensional objects or scenes. The product of **3D BG modeling** is called a **3D model** or a **3D** object. Fundamentally, **3D** object is a number of **points** in space connected by complex geometric entities (for example triangles, curved surfaces, lines, etc.).

Utility of Course:

3. 3D BG modeling is a technique in computer graphics for producing a 3D digital representation of any object or surface.
4. An artist uses special software to manipulate points in virtual space(called vertices) to form a mesh: a collection of vertices that form an object.

Learning Objectives:

3. To be a good 3D BG Prop Modeler
4. Doing freelance projects of Background Models etc.

Prerequisites:

- Knowledge of 3Ds Max

Syllabus

Unit 1: Introduction to 3D graphics, 3D Object's Coordinate System: X, Y and Z axis. How to identify the X, Y and Z axis by itscolor (Red, Green, Blue), 3D softwares available, What is 3D Animation? 3D production pipeline, 3D animation and their applications in animation movies, visual effects, advertisements, 3D visualisation, simulation, training videos Etc

Unit 2: 3Dimensions –viewports–standard primitives –transformations –file formats and operations –selection –cloning–group –ungroup –alignment –basic rendering -Array –Array Transformations –Splines –Common Rollouts -editing splines –architectural tools –max scene files –modifiers-World space modifiers –object space modifiers –modifier stack –instanced modifier -Compound Objects –types

Unit 3: Modeling –Nurbs–converting objects to NURBS-Mesh Modeling –converting objects to editable mesh –sub objects –Vertex, Edge, Face, Polygon, Element-Edit Mesh Modifier –Editable Poly Modeling -Material Editor –toolbar buttons-assigning materials to objects –material editor options-material properties –material types -Concepts of Light –Omni Lights , spotlight , Target Lights, Free Lights , Directional Light, Area Lights –Mental Ray –Skylight, Creating Max Basic Lights –Lights Parameters-Positioning Lights, Creating Max light in exterior and Interior Environment

Unit 4: Exterior Modeling: Buildings, Street, House, children's park Etc. Interior Modeling: Room and furnitures. Exterior lighting, Interior Lighting: Global illumination, Final Gather. Rendering: Render settings, Batch rendering, Rendering image sequences

Software: Autodesk Maya

References:

How to Draw What You See: Rudy De Reyna

Figure Study Made Easy: Aditya Chari

Figure Drawing Without a Model: Ron Tiner

Career Options:

- In film and television production there are jobs for Modeling.
- The games industry is a big employer, and for any major game title, more than half of the production budget will go on art production.

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 20

Web Design

Theory Paper

Total Credits 03 **No. of Lectures 60**

CA	ESE	Total
35	40	75

Course Objectives and Goals

- High lighting the theories and principles underlying website design.

Salient Features:

- To understand web technologies and the issues involved in web designing.

Utility of Course:

- Understand the concept of design and implementation of HTML CSS to design a particular design of their creativity.

Learning Objectives:

- By the end of the course the student will be familiarized with the design of the webpage and create an interactive and dynamic web page.

Prerequisites:

- Knowledge of Photoshop

Syllabus

Unit 1 - Fundamental of Web Design: What is Web Design?**,** How the Web Works **,** Step for Website Design

Unit 2: Photoshop: Understanding Raster Graphics, Understanding Pixels, Understanding Image, Understanding Layers, Image Size and Resolution, Brushes, Styles and Textures, Using Filters for effects, Color Adjustment, Image Editing for Print Projects, Image Editing for Web.

Unit 3: Structuring an HTML Document – Elements and Attributes, Tags, The DOCTYPE Element, Creating and Saving an HTML Document, Validating an HTML Document, Viewing an HTML Document, Hosting Web Pages, Understanding Elements, Working with Text, Defining the DIV Element and SPAN Element, Working with Links The target

Attribute, The id Attribute, Creating Tables, Working with Images, Colors and Canvas, Working with Forms, Working with Multimedia

Unit 4: CSS - Evolution, Syntax, CSS Selectors, Inserting CSS in an HTML Document, Backgrounds and Color Gradients in CSS, Font Properties, Creating Boxes and Columns Using CSS, Displaying, Positioning, and Floating an Element, Effects, Frames and Controls in CSS

Unit 5: Adobe Dreamweaver: Exploring Dreamweaver Interface, Planning & Setting Web Site Structure, Working with panels, Understanding and switching views, Using property inspector, Formating text, Creating Web pages, HyperLinking pages, External Linking

Unit 6: Uploading site, Learning to use FTP, Setting FTP, Uploading of site, Using Control panel, SEO (Search Engine Optimization), Google Analytics

Software: Adobe Photoshop, Adobe Dreamweaver

Reference Book:

1. Developing Web Applications, Ralph Moseley and M. T. Savaliya, Wiley-India

2. Web Technologies, Black Book, Dreamtech Press

3. HTML 5, Black Book, Dreamtech Press

4. Web Design, Joel Sklar, Cengage Learning

5. Internet and World Wide Web How to program, P. J. Deitel & H. M. Deitel, Pearson

Reference Links:

1. http://www.w3schools.com

Career Options: Web Design

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 21

Character Modeling Practical

Practical Paper

Total Credits 03 **No. of Lectures 72**

Practical	Total
75	75

Salient Features: In simple phrases, **3D modeling** is a creation of fully **rendering** three-dimensional objects or scenes. The product of **3D modeling** is called a **3D model** or a **3D** object. Fundamentally, **3D** object is a number of **points** in space connected by complex geometric entities (for example triangles, curved surfaces, lines, etc.).

Utility of Course:

5. 3D modeling is a technique in computer graphics for producing a 3D digital representation of any object or surface.
6. An artist uses special software to manipulate points in virtual space (Called vertices) to form a mesh: a collection of vertices that form an object.

Learning Objectives:

5. To be a good 3D Modeler
6. Doing freelance projects of 3D Character Models etc.

Prerequisites: Knowledge of 3Ds Max

Practical List

- 3D interface (Maya)
- Transforming, Rotating, Scaling Tool
- Object properties, Hierarchies, Pivots
- Set Project
- Modeling Overview
- Importing 3D Model Sheet
- Creating 3D Model: Body (Torso, Face, Eyes, Nose, Ears, Mouth, Hand, Feet etc.)
- Use Extrude Command
- Combine & Extract, Merge Vertex Tool
- Insert Edge Loop Tool, Multi Cut Tool, Create Polygon Tool
- Sculpting Character: Sculpt Geometry Tool
- Soft Modification Tool
- Polygon Hair and Cloth

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 22

BG Prop Design Practical

Practical Paper

Total Credits 03 **No. of Lectures 72**

Practical	Total
75	75

Course Objectives and Goals

After completing this course, students will be familiar with a typical work-flow for creating 3D Background art assets in a modern game engine. Students will gain understanding of techniques and technical specifications of common high quality Background Model used in Film and Games today.

Salient Features:

In simple phrases, **3D BG modeling** is a creation of fully **rendering** three-dimensional objects or scenes. The product of **3D BG modeling** is called a **3D model** or a **3D** object. Fundamentally, **3D** object is a number of **points** in space connected by complex geometric entities (for example triangles, curved surfaces, lines, etc.).

Utility of Course:

7. 3D BG modeling is a technique in computer graphics for producing a 3D digital representation of any object or surface.
8. An artist uses special software to manipulate points in virtual space(called vertices) to form a mesh: a collection of vertices that form an object.

Learning Objectives:

7. To be a good 3D BG Prop Modeler
8. Doing freelance projects of Background Models etc.

Prerequisites:

- Knowledge of 3Ds Max

Practical List

- 3D interface (Maya)
- Transforming, Rotating, Scaling Tool
- Object properties, Hierarchies, Pivots
- Set Project

- Modeling Overview
- Collecting BG Modeling Reference
- Creating BG Prop Model: Interior, Exterior.
- Use Extrude Command
- Combine & Extract, Merge Vertex Tool
- Insert Edge Loop Tool, Multi Cut Tool, Create Polygon Tool
- Basic Texturing for BG Model : UV Mapping.
- Basic Rendering Process.

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 23

Web Design Practical

Practical Paper

Total Credits 03 **No. of Lectures 72**

Practical	Total
75	75

Course Objectives and Goals

- High lighting the theories and principles underlying website design.

Salient Features:

- To understand web technologies and the issues involved in web designing.

Utility of Course:

- Understand the concept of design and implementation of HTML CSS to design a particular design of their creativity.

Learning Objectives:

- By the end of the course the student will be familiarized with the design of the webpage and create an interactive and dynamic web page.

Prerequisites:

- Knowledge of Photoshop

Syllabus

Name of Practical

- Creating a structure of the web page layout.
- Creating basic wireframe layout using Adobe Photoshop.
- Creating lists using basic HTML coding.
- Creating web layouts using tables method in Adobe Dreamweaver.
- Working on the basics of Cascading Style Sheet.
- Creating a basic layout using CSS styling.
- Creating basic links for buttons using HTML coding.
- Creating rough paper work layout of a commercial static webpage for the genre.
- Creating different sitemap layout of a commercial static webpage for the genre.

- Creating banner advertisements related to commercial products for the static web-pages.
- Designing approved commercial static responsive web-pages using

Software: Adobe Photoshop

Reference Book:

1. Developing Web Applications, Ralph Moseley and M. T. Savaliya, Wiley-India

2. Web Technologies, Black Book, Dreamtech Press

3. HTML 5, Black Book, Dreamtech Press

4. Web Design, Joel Sklar, Cengage Learning

5. Internet and World Wide Web How to program, P. J. Deitel & H. M. Deitel, Pearson

Reference Links:

1. http://www.w3schools.com

Career Options: Web Design

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 24

Project Practical

Practical Paper

Total Credits 03 **No. of Lectures 72**

Practical	Total
75	75

Learning Objective:

- Will gain the knowledge of handling a complete Character Modeling, BG Prop Design and Web Design

Utility:

- To understand and explore complete 2D Character Modeling, BG Prop Design and Web Design

Pre-requisites: Basic Computer Knowledge

Practical List:

All work of Character Modeling, BG Prop Design and Web Design

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 25

Skill Enhancement I (PR)

Practical Paper

Total Credits 02 **No. of Lectures 48**

CA	ESE	Total
25	25	50

A. Fundamentals of Computer

1. What is computer and its Advantages?
2. Components of Computer
3. User interface of MS Office
4. Introduction to the Word Processing Screen, Ribbons, Office Button and Quick Access Toolbar
5.Document formatting

B. Introduction to Spreadsheet Software

1.Introduction to Data Types and Cell Referencing.
2. Use of functions of various Categories.
3.Linking Sheets.
4.Spreadsheet Software
Cell Formatting Options
Formulas.
5.Functions Charts
Sort, Filter, What if Analysis,
Grouping

C. Introduction to Presentation Software

1.Introduction to Presentation Software
2.Creating Slide Shows, Fine tuning Presentation and good presentation Techniques.

3.Creating Slide Show by using

Animation Technique.

Slide Master.

4. Picture Editing

5. Final PPT Presentation

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IIIrd BAAW 26

Compulsory English

Theory Paper

Total Credits 03 **No. of Lectures 60**

CA	ESE	Total
35	40	75

Note – Compulsory English For Second Year Syllabus Will Applicable For As Per BA To B.A Computer Animation & Web Designing

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IVth BAAW 27

Character Rigging

Theory Paper

Total Credits 03 **No. of Lectures 60**

CA	ESE	Total
35	40	75

Course Objectives and Goals

In this Maya Course, we will understand all about rigging with characters. Working on making connections, basic joint structure, creating controllers and lastly learning skinning is all covered in this module.

Salient Features:

It's the process of taking a static mesh, creating an internal digital skeleton, creating a relationship between the mesh and the skeleton (known as skinning, enveloping or binding) and adding a set of controls that the animator can use to push and pull the character around as if he/she is a puppeteer.

Utility of Course:

- Animators use these to pose and animate the character.
- One purpose of joints is to define the freedom that the character has in its movement.

Learning Objectives:

- To be a Good Rigger

Prerequisites:

- Knowledge of 3Ds Max

Syllabus

Unit 1: Introduction : Understanding Rigging, Character Structure, Joints and their manipulations, IK and FK, Attribute controls, Rig controls.

Unit 2: Character Skeleton : Creating and Organizing Joint Hierarchies, Orienting Joints, Naming JointsMirroring Joints.

Unit 3: Rigging the Character : Rigging the Character, IK Legs, FK Blending, Rotate Plane Solver, Creating Custom Attributes, Driven keys, Constraints, Spline IK.

Unit 4: Human Inverse Kinematics : Skeleton Generator, Character Controls, Interoperability, Fk & Ik Switch.

Unit 5: Skinning Geometry : Interactive/Smooth Binding, Weighting, Painting Skin Weights, Editing Skin Weights in the Component Editor, Copying Skin Weights, Mirroring Skin Weights.

Software: Autodesk Maya

References:

- Animation Methods -Rigging Made Easy: Rig Your First 3D Character in Maya: David Rodriguez
- Blender Studio Projects: Digital Movie Making: Tony Mullen, Claudio Andaur
- Maya Character Rigging: Cheryl Cabrera

Career Options:

- Rigging Artist in Film Production

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IVth BAAW 28

Animation Principles

Theory Paper

Total Credits 03 **No. of Lectures 60**

CA	ESE	Total
35	40	75

Course Objectives and Goals

By the end of this course participants will be able to: Express personality through weight and timing. Demonstrate the physics of follow-through. Demonstrate a character thinking and anticipating. Demonstrate a natural walk. Demonstrate a basic understanding of Maya animation controls.

Salient Features:

Once you understand these 12 principles of animation, you'll be able to take your motion work to the next level.

Utility of Course:

- Squash and stretch is a great principle to utilize to exaggerate animations and add more appeal to a movement.
- Anticipation Anticipation is used in animation to set the audience up for an action that is about to happen. ... Imagine if these actions had no anticipation - they wouldn't be believable.

Learning Objectives:

- Create **animated** sequences from the development of the original concept through design to final film or video production.
- Communicate ideas, believable action and emotion effectively by employing **principles** of **animation** and performance in all aspects of drawing.

Prerequisites:

- Knowledge of 2D Animation

Syllabus

Unit 1: Using squash and stretch : to create the Illusion of Life. Introduction to Maya animation controls.

Unit 2: Overlap and Drag : Overlaping Concept with Pendulum.

Unit 3: Staging and Exaggeration:Examine the use of poses and silhouette in performance. Clearly expressing emotion and attitude with a 3D character. Introduction to biped movement

Unit 4: Follow Through and Anticipation : Understanding the fluid movement of hair and cloth.

Unit 5: Arcs and Solid Drawing : How to research for animation How to breakdown a movement for clean key management.

Unit 6: Straight Ahead Action and Pose to Pose : Acting for clarity of emotion.

Unit 7: Slow in and slow out, Appeal : Examine the Characters Motion and any Objects Motion Starting with slow and Stopping with slow.

Software: Autodesk Maya

References:

Principles of Traditional Animation Applied to 3D Computer Animation: John Lasseter

The Illusion of Life: Disney Animation:Frank Thomas & Ollie Johnston

The Animator's Survival Kit: Richard Williams

Career Options:

- In film and television production there are jobs for Modeling.
- The games industry is a big employer, and for any major game title, more than half of the production budget will go on art production.

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IVth BAAW 29

3D Animation

Theory Paper

Total Credits 03 **No. of Lectures 60**

CA	ESE	Total
35	40	75

Course Objectives and Goals

This paper covers larger details of character animation process and wherein student would be learning more techniques of animation to be incorporated in a film. They shall also learn the lip sync and acting process that adds life to the film.

Salient Features:

One of the most obvious differences between 2D and **3D Animation** is the appearance of depth or the three-dimensional **features**. 2D **Animation** is a flat **animation** where all the actions happen in x and y-axes.

Utility of Course:

1. Classroom & Lab Training in Vital features of animation, covering stages from Storyboarding to creation of the final movie.
2. Be able to make Smooth 3d Animation in short films and Animated films.

Learning Objectives:

1. To be a good Animator
2. Doing freelance projects of Animation, Adds etc.

Prerequisites:

- Knowledge of 3Ds Max

Syllabus

Unit 1: Introduction : Timeline, Keyframe, Frame rate, Poses, Line of action, Working with 3d Rigs: Importance of poses, Creation of poses from reference images, Importance of familiarizing with the rig's controllers, Understanding the body mechanic

Unit 2: Bouncing ball with (spacing, Timing and distance), Different materials bouncing balls together with Concept, Understanding the usage of Graph Editor, Progressive Bouncing Ball with (timing, spacing & distance), Progressive Bouncing Ball with (Stretch and Squash

Unit 3: Pendulum with Settlement, Box with antenna Introduction to Character Studio

Unit 4: Motion Mixer, Posing for understanding the body balance and arc, Walk Cycle, Run Cycle.

Unit 5: Jump, Lip Sync and Facial Animation, Camera Animation.

Software: Autodesk Maya

References:

- The Book of Animation Survival Kit **by Richard Williams**
- The Book of Cartoon Animation **by Preston Blair**
- The Book of Animation For Beginners **by Morr Meroz**

Career Options:

- 3D Animation Artist in Film Production & Add.

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IVth BAAW 30

Character Rigging Practical

Practical Paper

Total Credits 03 **No. of Lectures 72**

Practical	Total
75	75

Salient Features: It's the process of taking a static mesh, creating an internal digital skeleton, creating a relationship between the mesh and the skeleton (known as skinning, enveloping or binding) and adding a set of controls that the animator can use to push and pull the character around as if he/she is a puppeteer.

Utility of Course:

1. Animators use these to pose and animate the character.
2. One purpose of joints is to define the freedom that the character has in its movement.

Learning Objectives:

- To be a Good Rigger

Prerequisites : Knowledge of 3Ds Max

Practical List

- Rigging Overview
- Joints and their manipulations
- Attribute controls
- Freeze Transformation, Centering Pivot
- Create Joint Skeleton
- Use IK Handle & IK Spline Handle
- Mirror Joint, Orient Joint
- Constrain (Point, Aim, Orient, Scale, Parent, Pole Vector)
- Add Attribute
- Component Editor
- Set Driven Key
- Expression Editor
- Smooth Bind, Paint Skin Weight Tool, Mirror Skin Weight

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IVth BAAW 31

Animation Principles Practical

Practical Paper

Total Credits 03 **No. of Lectures 72**

Practical	Total
75	75

Salient Features: Once you understand these 12 principles of animation, you'll be able to take your motion work to the next level.

Utility of Course:

1. Squash and stretch is a great **principle** to utilize to exaggerate **animations** and add more appeal to a movement.
2. Anticipation Anticipation is used in **animation** to set the audience up for an action that is about to happen. ... Imagine if these actions had no anticipation - they wouldn't be believable.

Learning Objectives:

1. Create **animated** sequences from the development of the original concept through design to final film or video production.
2. Communicate ideas, believable action and emotion effectively by employing **principles** of **animation** and performance in all aspects of drawing.

Prerequisites : Knowledge of 2D Animation

Practical List

- Squash and Stretch
- Anticipation
- Staging
- Straight Ahead Action and Pose-to-Pose
- Follow Through and Overlapping Action
- Slow In, Slow Out
- Arcs
- Secondary Action
- Timing
- Exaggeration
- Solid Drawing
- Appeal
- Smooth Bind, Paint Skin Weight Tool, Mirror Skin Weight

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IVth BAAW 32

3D Animation Practical

Practical Paper

Total Credits 03 **No. of Lectures 72**

Practical	Total
75	75

Salient Features: One of the most obvious differences between 2D and **3D Animation** is the appearance of depth or the three-dimensional **features**. 2D **Animation** is a flat **animation** where all the actions happen in x and y-axes.

Utility of Course:

- Classroom & Lab Training in Vital features of animation, covering stages from Storyboarding to creation of the final movie.
- Be able to make Smooth 3d Animation in short films and Animated films.

Learning Objectives:

- To be a good Animator
- Doing freelance projects of Animation, Adds etc.

Prerequisites : Knowledge of 3Ds Max

Practical List

- Animation Overview
- Timeline, Keyframe, Frame rate
- Understanding Controllers
- Bouncing ball with Sliding
- Squash & Stretch Ball
- Pendulum with Settlement
- Graph Editor
- Tangents (Auto, Spline, Clamped, Linear, Flat, Step, Break, Unify, Free)
- Weighted Tangents, Non-Weighted Tangents
- Trax Editor
- Dope Sheet
- Walk Cycle, Run Cycle Animation
- Jump
- Lip Sync and Facial Animation
- Camera Animation

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IVth BAAW 33

3D Animation Showreel or Short Film

Practical Paper

Total Credits 03 **No. of Lectures 72**

Practical	Total
75	75

Learning Objective:

- Students have to prepare 3d animation Showreel or film project in campus under the supervision of concerned

Utility:

- teacher and submit the project report 20 days prior to theory examination of the semester. Students will have to follow the following steps while preparing the project:

Pre-requisites: Basic Computer Knowledge

Practical List:

3D Animation Showreel : Bouncing Ball, Squash & Stretch Ball, Pendulum, Walk-Cycle, Run-Cycle or Facial Expression Animation, Jump Animation or Weight Shift Animation.

OR

3D Animation Short Film : Write the Script, Storyboard, Model Designing, Rigging, Animation, Voice Composition.

B.A First Year Semester Pattern-2020-21

(CBCS)

B.A Computer Animation & Web Designing

Semester – IVth BAAW 34

Skill Enhancement II (PR)

Practical Paper

Total Credits 02 **No. of Lectures 48**

CA	ESE	Total
25	25	50

A. Introduction to Adobe Photoshop

1. Interactive Media Design Standards: Concept

2. Understanding how images are formed,

Image file formats and their properties.

3. Image Fundamentals

4.Understanding Various Tools

5. Understanding various Palettes

B. Understanding Image

1. About Tonal value

2. Shadow areas contrast & details

3. Switch colors.

4. Edit Image in Standard mode. Quick Mask Mode.

Various Image Display

5.Mode RGB /CYMK /LAB /Grayscale

C. Final Image Editing

Principle of scanning

Graphic drawings inputs

Various Filter Effects

Lightning Effects and Blur

Print Option

This question Paper contains 1 printed page

AJ-11-2019

FACULTY OF INTERDISCIPLINARY STUDIES

B.A (First Semester) EXAMINATION

MARCH/APRIL 2020

B.A COMPUTER ANIMATION & WEB DESIGNING

(Graphic Design)

(Wednesday, 20,03,2019) **Time: 10.00 a.m. to 12.00 noon**

Time-2 Hours *Maximum Marks – 40*

N.B. :- (i) Q. No. 1 is compulsory.

(i) Solve any *three* questions from Q. 2 to Q. 6.

1. 10

2. 10

3. 10

4. 10

5. 10

6. 10