Estd. 1962
"A++" Accredited by NAAC(2021) With CGPA 3.52

SHIVAJI UNIVERSITY, KOLHAPUR - 416004, MAHARASHTRA
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शिवाजी विद्यापीठ, कोल्हापूर - ४१६००४,महाराष्ट्र
दूरध्वनी - ईपीएबीएक्स - २६०९०००, अभ्यासमंडळे विभाग दुरध्वनी विभाग २३१—२६०९०९३/९४

SU/BOS/Science/ 591 **Date: 08/08/2023**

To,

The Principal,
All Concerned Affiliated
Colleges/Institutions
Shivaji University, Kolhapur

The Head,
All Concerned Department
Shivaji University,
Kolhapur.

Subject: Regarding New syllabi, of **B.Sc. Part- III Animation (Entire) CBCS** degree Programme under the Faculty of Science and Technology.

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the New syllabi, Nature of question paper of **B. Sc. Part- III Animation (Entire) CBCS** under the Faculty of Science and Technology.

This syllabus, nature of question paper shall be implemented from the academic year 2023-2024 onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in (students Online Syllabus)

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully,

Dy Registrar

Copy to:

1	The Dean, Faculty of Science & Technology	7	Appointment Section
2	Director, Board of Examinations and Evaluation	8	P.G.Seminar Section
3	The Chairman, Respective Board of Studies	9	Computer Centre (I.T.)
4	B.Sc. Exam	10	Affiliation Section (U.G.)
5	Eligibility Section	11	Affiliation Section (P.G.)
6	O.E. I Section	12	P.G.Admission Section

SHIVAJI UNIVERSITY,KOLHAPUR

NAAC A++ Grade with CGPA 3.52

Choice Based Credit System

Syllabus for

B.Sc. Animation Science

PART- III SEMESTER- V & VI

(Syllabus to be implemented from Academic year 2023-24)

B. Sc. III SEMESTER– V (Duration – 6 Months)

Sr. No.	SUBJECT CODE	PAPER AND TITLE	TEACHING SCHEME						
			Theory			Practical			
			No. of lectures	Hours	Credits	Subject	No. Of lectures		Credits
1	BAST--501	3D Maya - II	3	2.4	2	BASP-507	8		4
2	BAST--502	V.F.X-II	3	2.4	2				
3	BAST--503	3D Blender -I	3	2.4	2	BASP-508	8		4
4	BAST--504	A- Market Research B- E-commerce C- UIXD	3	2.4	2	BASP-509 SEC-1 Project	5		2
5	SECC	Artificial Intelligence	2	1.2	1	BASP-510 Numerical skills	3		1
6	AECC-5	English for communication I	3	2.4	2				
	Total of SEM V		**17**	**12**	**11**		**24**		**11**
TOTAL NO OF CREDITS FOR SEMESTER V: 22									

B. Sc. III SEMESTER– VI (Duration – 6 Months)

Sr. No.	SUBJECT CODE	PAPER AND TITLE	TEACHING SCHEME						
			Theory			Practical			
			No. Of lectures	Hours	Credits	Subject	No. Of lectures		Credits
1	**BAST--601**	Game design -II	**3**	**2.4**	**2**	BASP-607	**8**		**4**
2	**BAST--602**	Blender -II	**3**	**2.4**	**2**				
3	**BAST--603**	3D-Maya -III	**3**	**2.4**	**2**	BASP-608	**8**		**4**
4	**BAST--604**	A- 3D Printing in Animation B- AR for Animation C - VR for Animation	**3**	**2.4**	**2**	BASP-609 SEC-II Project	**5**		**2**
5	**SECC**	Entrepreneurship Development	**2**	**1.2**	**1**	BASP-610 Entrepreneurship Mangt. /Industrial Training	**3**		**1**
6	**AECC-6**	English for communication II	3		2				
	Total of SEM IV		**17**		**11**		**24**		**11**
TOTAL NO OF CREDITS FOR SEMESTER VI: 22									
TOTAL NO OF CREDITS FOR SEMESTER V+ VI: 44									

B.Sc. Part III: Semester -V Animation Science (Entire)

BAST - 501: 3D Maya – II (Credits: 02)

Course Objectives:

After completion of this course students will able to;

1. Understand the technical skills needed to set up, rig, alter and support character animations effectively for all 3D Animation classes.
2. Learn skills in this class in other areas including game art, motion graphics and 2D animation.

Unit 1: 3D Rigging **9**

Basic study Elements of Rigging tools, constrains and types , Understanding Rigging, Creating and Organizing Joint Hierarchies, Orienting Joints, Naming Joints, Mirroring Joints, Rigging the Giraffe, IK Legs, FK Blending, Rotate Plane Solvers, Creating Custom Attributes, Spline IK, Full Body Inverse Kinematics, Skinning Geometry, Interactive/Smooth Binding, Painting Skin Weights

Unit 2: 3D Animation **9**

Introduction to Animation tools – Principles of Animation, Using Joints and Constraints, Inverse Kinematics, Key frame Animation, Graph Editor, Play blast and F-Check, Driven Keys, Animation Using Expressions, Motion Path Animation, Animating Constraints, Animation Layers, Creating an Animation Layer, Animating Facial Expressions Using Blend Shapes, Animating Blend Shapes Sequentially, Animating with Lattices, Animating Object Components with Clusters, Animating a Scene Using Nonlinear Deformer

Unit3: 3D Lighting **9**

Introduction to light, Principle of light Types of light –Shadows – Types of Shadows – Understanding material & lights – Software Lighting – Mental ray lighting –Final Gather – Global illumination – Caustics -- Vray lighting – HDRI – SSS Shader

Unit 4 : **3D Rendering** **9**

Introduction to Rendering – Render layers - Software Rendering – Mental ray Rendering – Types of Render passes – Diffuse Passes – Specular passes – Shadow passes – Occlusion passes – Use Background matting

Reference Books:-

1. 3Ds Maya Bible – by by Kelly L. Murdock Unit-I-Unit IV
2. Mastering Autodesk 3ds Maya-by Jeffrey M. Harper Unit-III
3. 3Ds Maya Lighting- by Boughen, Nicholas Unit-I, II, IV
4. Autodesk Maya 2018 Basics Guide (English, Paperback, Murdoch Kelly)
5. Autodesk Maya 2018 : A Comprehensive Guide (English, Paperback, Tickoo Sham)
6. Introducing Autodesk Maya 2014 (Derakhshani)

BAST - 502: V.F.X-II (Credits: 02)

Course Objectives:

Students should:

1. Learn the Primary objective of using VFX is to give rise to a Scene or images that is very close to resembling reality but may be an impossibility to capture in the camera.
2. Work as a VFX and Stereo roto Artist.
3. Developing advanced compositing skills with a focus on various pipeline workflows and shot finishing.
4. Practice advanced compositing techniques using plates from actual film projects.

Unit – I

Introduction, Silhouette feature, Installation and Licensing, Interface of Silhouette, Sequence editor, Roto Node, Motion Blur, Time line, Tracker.

Unit – 2

Paint Node, Power matte Node, Composite node, Morphing, Z Matte, Depth, ROI (Region of Interest), All Nodes, and Render.

Unit – 3

Introduction of Mocha pro, Mocha pro Feature, Interface of Mocha pro, Stereo Interface, Using mocha pro plugins, Starting new project, Merging and importing projects, Tracking Basics, Stereo Tracking, Adjust track, Rotoscoping Basics, Rotoscoping with Magnetic and Freehand tools.

Unit – 4

Painting Splines with the area brush tool, Stereo Rotoscoping, Exporting Tracks, Exporting Mattes and clip, The camera Solve Module, the insert module, the mega clean plates in the Remove module, the Remove Module, The stabilize Module, the lens Module, Using Mocha Pro for 360Vr Workflow, The reorient Module, The Dope Sheet And Curve Editor, The Clip tab, Preferences, File format.

Reference books:-

1. Silhouette 5.2 User Guide (Unit I,II)
2. Silhouette v7.5 User Guide (Unit I,II,)
3. Mocha pro 2020 User guide (Unit IV)
4. Digital Visual Effects & Compositing Book.

BAST - 503: 3D Blender-I (Credits: 02)

Course Objectives:

Students Should -

1. Quick Switch a helper to quick switch workspaces and view render menu in viewport.
2. Automatically rotating an object (e.g. A sun) to match the brightest point in a HDRI environment texture.
3. Easy HRDI is a free Blender add-on that will help you to load and test your HDRI images quickly.
4. Alternative UI layout for modifiers with handy features. Available also inside the sidebar and as a popup.

Unit -I

User Interface, Workspaces, Interface Control, Buttons and Controls, Extended Controls- Data-Block Menu, List Views & Presets, Color Picker, Color, Ramp Widget, Curve Widget, Operator Search, Nodes, Tools- Tool System, Undo & Redo, Annotate Tool, Selecting.

Unit -II Modeling- Meshes- Introduction, Toolbar, Structure, Primitives, Selecting, Editing, Properties, Mesh Analysis**,** Text , Text Layout, Properties**,** Empties , Usage**,** Modifiers **-** Introduction**,** Common Modifier

Texture Nodes- Introduction, Materials Setting up Materials, Legacy Textures- Introduction, Types. Lights- Light Objects , Common Settings, Renderer Settings, Types of Lights, World Environment , Surface, Volume.

Unit III

Introduction **-**Animation, Rigging**.** Key frames - Introduction, Editing, Keying Sets. Armatures **-** Introduction**,** Bones**,** Properties**,** Structure**,** Skinning**,** Posing. Lattice - Editing, Properties, Usage. Constraints - Introduction and Interface, Motion Tracking, Transform, Tracking, Relationship.

Actions - Working with Actions, Bake Action. Drivers - Introduction, Usage, Drivers Panel, Workflow & Examples, Troubleshooting. Markers - Types, Visualization, Add Marker.

Unit IV: **9**

Markers - Selecting, Editing, Bind Camera to Marker. Shape Keys - Introduction, Shape Keys Panel, Workflow. Motion Paths – Options, particles and dynamics, vfx base animation.

Reference Books:

1.Blender Basic Second Edition by James Chronister.
2.Introduction To Blender 3D by John B Blam.
3. Blender Basic Fourth Edition by James Chronister.

BAST-504: A-Market Research (Credits: 02)

Course Objectives:-
Students Should -

1. Understand a general definition of research design.
2. Know why educational research is undertaken, and the audiences that profit from research studies.
3. Identify the overall process of designing a research study from its inception to its report.
4. Understand and familiar with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research.

Unit 1: **9**

The Backbone for E-Commerce: Early Ages of Internet; Networking Categories; Characteristics of Internet; Components of Internet – Internet Services, Elements of Internet, Uniform Resource Locators, Internet Protocol; Shopping Cart, E-Security: Security on the Internet; Network and Website Security Risks – Denial-of-Service attacks, Viruses, Unauthorized access to a computer network; Vulnerability of Internet Sites.

Unit 2: **9**

Internet Service Provider (ISP); World Wide Web (WWW); Portals – Steps to build homepage, Metadata; Advantages of Portal; Enterprise Information Portal (EIP). Implementation of E-Commerce: WWW.EBAY.COM - B2C Website – Registration, Time factor, Bidding process, Growth of ebay; paypal – New Trend in Making Payments Online; National Electronic Funds Transfer.

Unit-3 9

Definition, Characteristics Research Objectives, Research Design, Research Methodologies, Research Process, Primary and Secondary Data: Classification of Data; Secondary Data: Uses,

Advantages, Disadvantages, Types and sources; Primary Data Collection: Observation method, Focus Group Discussion, Personal Interview method. Types of Research, Research Design: Concept and Importance in Research – Features of a good research design.

Unit-4 9

Introduction to Sampling, Characteristics of a good sample, types of sampling, Formulation of Hypothesis, Characteristics of Hypothesis, Patent, copy rights , Interpretation of Data and Paper Writing – Layout of a Research Paper, Journals in animation science and Computer Science, Impact factor of Journals, When and where to publish ? Ethical issues related to publishing, Plagiarism and Self-Plagiarism.

REFERENCES :

1. Research Methodology Practice – P. Philominathan – Shri A.V.V.M. Pushpam College – Poondi –Thanjavar
2. Research Methodology – Methods & Techniques 2 nd, Kothari C. R. – Vishwa Prakashan – New Delhi 1990.
3. An Introduction to Research Procedure in Social Sciences – Gopal M. A. – Asia Publishing House – Bombay

4. Argyris C. "Personality and Organization: The Conflict Between System and Individuals "Harper and Row, New York, 1995.
5. A Practical Guide to Market Research by Paul Hague

BAST-504: B-E-commerce (Credits: 02)

Course Objectives: Students Should

1. Easy decision thanks to low initial investment
2. Our performance-linked pricing model ensures low and predictable project costs.
3. How to enhance your competitiveness by reducing risk
4. How to handle all activities associated with distribution to end customers, thereby dramatically reducing your risk exposure.

Unit 1: **9**

The Backbone for E-Commerce: Early Ages of Internet; Networking Categories; Characteristics of Internet; Components of Internet – Internet Services, Elements of Internet, Uniform Resource Locators, Internet Protocol; Shopping Cart, E-Security: Security on the Internet; Network and Website Security Risks – Denial-of-Service attacks, Viruses, Unauthorized access to a computer network; Vulnerability of Internet Sites.

Unit 2: **9**

Internet Service Provider (ISP); World Wide Web (WWW); Portals – Steps to build homepage, Metadata; Advantages of Portal; Enterprise Information Portal (EIP). Implementation of E-Commerce: WWW.EBAY.COM - B2C Website – Registration, Time factor, Bidding process, Growth of ebay; paypal – New Trend in Making Payments Online; National Electronic Funds Transfer.

Unit 3: **9**

Defining Commerce; Main Activities of Electronic Commerce; Benefits of E-Commerce; Broad Goals of Electronic Commerce; Main Components of E-Commerce; Functions of Electronic Commerce – Communication, Process of E-Commerce; Types of E-Commerce; Role of Internet and Web in E-Commerce; Technologies Used; E-Commerce Systems.

Unit 4: **9**

Various Activities of E-Commerce; Various Modes of Operation Associated with E-Commerce; Matrix of E-Commerce Types; Elements and Resources Impacting E-Commerce and Changes, E-Payment Systems: Electronic Funds Transfer; Digital Token

Based E-Payment Systems; Modern Payment Systems; Steps for Electronic Payment; Payment Security; Net Banking.

REFERENCES:

1. E – Commerce: Strategy, Technologies and Applications" by David Whiteley
2. E-Commerce: An Indian Perspective" by P T Joseph

BAST-504: C-UID (User Interface Design)

Course Objectives: Students Should -

1. Understand User Interface
2. Project Basic Interfaces
3. Understand Advanced User Interfaces
4. Testing Interfaces

Unit I: **9**

The Backbone for E-Commerce: Early Ages of Internet; Networking Categories; Characteristics of Internet; Components of Internet – Internet Services, Elements of Internet, Uniform Resource Locators, Internet Protocol; Shopping Cart, E-Security: Security on the Internet; Network and Website Security Risks – Denial-of-Service attacks, Viruses, Unauthorized access to a computer network; Vulnerability of Internet Sites.

Unit II: **9**

Internet Service Provider (ISP); World Wide Web (WWW); Portals – Steps to build homepage, Metadata; Advantages of Portal; Enterprise Information Portal (EIP). Implementation of E-Commerce: WWW.EBAY.COM - B2C Website – Registration, Time factor, Bidding process, Growth of ebay; paypal – New Trend in Making Payments Online; National Electronic Funds Transfer.

Unit-III: **(9)**

Usability interface, usability problem, heuristic evaluation and user review, usability development process, case-study- hotel management system, types of prototypes. Analysis, vision, virtual window design, function design, prototype and defect correlation,
Reflection on user design.

Unit-iv: **(9)**

Introduction, system designs, basic steps for system development model, waterfall model, pyramid modeling, study concept- white box testing and black box testing. Introduction, entities, types of entities, entity relationship model, to study on hierarchies and trees, study concept- normalization.

Reference Books:

1. User Interface Design by Soren Louesen
2. Software Engineering by Ronald J.Leach

Skill Enhancement course

SEC-Artificial Intelligence (Credits -01)

Course objectives: Students Should-

1. Explain the basic knowledge representation, problem solving, and learning methods of Artificial Intelligence
2. Assess the applicability, strengths, and weaknesses of the basic knowledge representation, problem solving, and learning methods in solving particular particular engineering problems.
3. Develop intelligent systems by assembling solutions to concrete computational problems.
4. Understand the role of knowledge representation, problem solving, and learning in intelligent-system engineering

Unit I- OVERVIEW OF AI

What is Artificial Intelligence? , Philosophy of AI, Goals of AI , What Contributes to AI , Programming Without and With AI, What is AI Technique, Applications of AI, History of AI. What is Intelligence, Types of Intelligence, What is Intelligence Composed of? , Difference between Human and Machine Intelligence

Unit II - RESEARCH AREAS OF AI

Real Life Applications of Research Areas, Task Classification of AI, Artificial Intelligence What are Agent and Environment, Agents Terminology, Rationality, What is IdealRational Agent,The Structure of Intelligent Agents, the Nature of Environments, Properties of Environment.

Unit III -EXPERT SYSTEMS

Overview of Search Algorithm, What are Expert Systems, Capabilities of Expert Systems, Components of Expert Systems Knowledge Base , Inference Engine ,User Interface , Expert Systems Limitations, Applications of Expert System, Expert System Technology, Development of Expert Systems: General Steps ,Benefits of Expert Systems.

Unit IV -ROBOTICS

What are Robots, What is Robotics, ,Robot Locomotion , Components of a Robot , Artificial Intelligence in Robotics, Computer Vision, Tasks of Computer Vision ,ApplicationDomains of Computer Vision, Applications of Robotics ,

What are Artificial Neural Networks (ANNs), Basic Structure of ANNs, Types of Artificial Neural Networks, Applications of Neural Networks

Reference Books:-

1. Artificial Intelligence: Elaine Rich, Kevin Knight, TMH, 2nd Edition.

2. Artificial Intelligence: Structures and Strategies for Complex Problem solving: George F Luger, 4th Ed., Pearson Education, Asia.

3. Introduction to Artificial Intelligence and Expert Systems: D. W. Patterson, PHI, 2nd Edition.

BASP--507: ANIMATION LAB-XV (Credits: 04)

(BAST - 501: 3D Maya – II+ BAST - 502: V.F.X-II)

Group-I

Course Objectives: Students should -

1. Learn students the essentials of working in 3D using an array of features and tools.
2. Understand new users the basics of creating, embellishing, and animating 3D scenes.
3. Model objects using a variety of techniques.
4. Design and apply materials, Adjust basic lighting, Animate simple objects Build and animate Simple, effective environments.
5. Learn the Primary objective of using VFX is to give rise to a Scene or images that is very close to resembling reality but may be an impossibility to capture in the camera.
6. Be able to work as a Vfx Roto Artist.
7. Developing advanced compositing skills with a focus on various pipeline workflows and shot finishing.
8. Will practice advanced compositing techniques using plates from actual film projects.

Experiments:

1. Character setup overview with Building and posing skeleton.
2. Creating basic rig Bone System And Applying Fk and IK solvers.
3. Skinning and painting Skin weight
4. Constraint
5. Deformers
6. Rigging Male or female body
7. Rigging Animal body
8. Rigging Cartoon Character body
9. Animating Basic 3D objects
10. Creating 3d scene and animate with walkthrough Camera
11. Create a basic walk cycle and run cycle in 3d maya
12. Animating Facial Expression in 3d maya.
13. Creating Scene and apply three point lights.
14. Animate a scene and render by using Mental ray or V-ray.

Group-II

Experiments:

1. Point Track in Silhouette FX Roto.
2. Planer Track in Silhouette FX Roto.
3. Mocha Track in Silhouette FX Roto.
4. Stereo (3d conversion) Rotoscoping in Silhouette FX Roto (Output in Color,Grey,Alpha).
5. VFX(Green Screen Croma) Rotoscoping in Silhouette FX Roto (Output in Color,Grey,Alpha).
6. Clean plate in Silhouette FX Roto.
7. Motion Blur in Rotoscoping in Silhouette FX Roto.
8. Basics of the Remove Module With mocha pro.
9. Tracking and Screen Replacement With Mocha for After effect.
10. Mega plate Module With Mocha pro .
11. Stabilize 360 video with Mocha pro.
12. Build up Complex Composite Using Trees Window in Silhouette Fx Roto.
13. The reorient Module,

Reference Books:-

1) 3Ds Maya Bible – by by Kelly L. Murdock
2) Mastering Autodesk 3ds Maya-by Jeffrey M. Harper
3) 3Ds Maya Lighting- by Boughen, Nicholas

BASP—508- ANIMATION LAB-XVI (Credits: 04)

(BAST - 503: 3D Blender-I + BASP-504: A-Market Research / B-E-commerce / C-UID (User Interface Design)

Group-I

Course Objectives:

Students Should able to learn

1. Quick Switch a helper to quick switch workspaces and view render menu in viewport.
2. Automatically rotating an object (e.g. a sun) to match the brightest point in a HDRI environment texture.
3. Easy HRDI is a free Blender add-on that will help you to load and test your HDRI images quickly.
4. Alternative UI layout for modifiers with handy features. Available also inside the sidebar and as a popup.

Experiments:

1. Blender Tutorial for Beginners: Coffee Cup
2. Blender 2.6 Modelling Tutorial - Making a Dinner Table Fork - Part 2 Filling and Extruding
3. Blender3D - Modelling a Leather Seat
4. Blender Tutorial for Beginners: Cup with Wood Texture
5. Texturing a wooden table in blender
6. Blender Tutorial: Fuzzy Stuffed Bear
7. Blender Tutorial: Photorealistic Ring
8. How to make a Glossy Plastic material in Blender
9. Blender Character Creation: Modelling
10. Create any low poly animal | Blender
11. Blender Simple Studio Lighting
12. Blender - Easy Light Sign in Eevee
13. Blender Tutorial: Copper Wire Text
14. Blender 2.77a Basic Architecture Tutorial
15. Interior Lighting Tutorial

Reference Books:

1.Blender Basic Second Edition by James Chronister.
2.Introduction To Blender 3D by John B Blam.
3. Blender Basic Fourth Edition by James Chronister.

Group-II

A-Market Research

Course Objectives:-
Students Should -

1. Understand a general definition of research design.
2. Know why educational research is undertaken, and the audiences that profit from researchstudies.
3. Identify the overall process of designing a research study from its inception to its report.
4. Understand and familiar with ethical issues in educational research, including those issuesthat arise in using quantitative and qualitative research.

Experiments:

1. What is e-commerce and early ages of internet; networking categories.
2. Explain characteristics of internet; components of internet – internet services, elements of internet.
3. E-security: security on the internet; network and website security risks
4. Denial-of-service attacks, viruses, unauthorized access to a computer network;vulnerability of internet sites.
5. Modern Payment Systems; Steps for Electronic Payment; Payment Security; Net Banking.
6. Implementation of e-commerce: www.ebay.com - b2c website – registration, time factor, bidding process,
7. Growth of eBay; PayPal – new trend in making payments online; national electronic funds transfer.
8. What is a Research Paper and how to write abstract.
9. Explain Classification of Paper into one or the other Category
10. How to write Proposal of Research Papers with Citation Formats.
11. Write down the Steps for Writing the Research Paper and Why Formatting is Important.
12. Write down the Steps for generating Ideas for Topic of the Research Paper.
13. How to do Bibliographies.
14. Write down the procedure for publishing paper.
15. Publish paper in conference or in journal.

REFERENCES:
1. Research Methodology Practice – P. Philominathan – Shri A.V.V.M. Pushpam College – Poondi –Thanjavar
2. Research Methodology – Methods & Techniques 2 nd, Kothari C. R. – Vishwa Prakashan – New Delhi 1990.
3. An Introduction to Research Procedure in Social Sciences – Gopal M. A. – Asia Publishing House – Bombay
4. Argyris C. "Personality and Organisation: The Conflict between System and Individuals "Harper and Row, New York, 1995.
5. A Practical Guide to Market Research by Paul Hague

B-E-commerce

Course Objectives: Students should learn-

1 .Easy decision thanks to low initial investment
2. Our performance-linked pricing model ensures low and predictable project costs.
3. How to enhance your competitiveness by reducing risk
4. How to handle all activities associated with distribution to end customers, thereby dramatically reducing your risk exposure.

Experiments:

1.What is e-commerce and early ages of internet; networking categories.
2.Explain characteristics of internet; components of internet – internet services, elements ofinternet.
3.E-security: security on the internet; network and website security risks
4.Denial-of-service attacks, viruses, unauthorized access to a computer network; vulnerability of internet sites.
5.Steps to build homepage, metadata; advantages of portal; enterprise information portal.
6.Implementation of e-commerce: www.ebay.com - b2c website – registration, time factor,bidding process,
7.Growth of eBay; PayPal – new trend in making payments online; national electronicfunds transfer.
8. Defining ecommerce; main activities of electronic commerce; benefits and goals of e-commerce;
9. Process of e-commerce; types of e-commerce
10. Role of internet and web in e-commerce; technologies used; e-commerce systems.
11. Various activities of e-commerce.
12. Various modes of operation associated with e-commerce
13. Modern Payment Systems with examples.
14. Steps for Electronic Payment with examples.
15. Payment Security and Net Banking with examples.

REFERENCES:
1. Commerce: Strategy, Technologies and Applications" by David Whiteley
2. E-Commerce: An Indian Perspective" by P T Joseph

C-UID (User Interface Design)

Course Objectives: Students Should learn to-

1. Understand User Interface.
2. Project Basic Interfaces.
3. Understand Advanced User Interfaces.
4. Testing Interfaces.

Experiments:

1. What is e-commerce and early ages of internet; networking categories.
2. Explain characteristics of internet; components of internet – internet services, elements of internet.
3. E-security: security on the internet; network and website security risks
4. Denial-of-service attacks, viruses, unauthorized access to a computer network; vulnerability of internet sites.
5. Modern Payment Systems; Steps for Electronic Payment; Payment Security; Net Banking.
6. Implementation of e-commerce: www.ebay.com - b2c website – registration, time factor, bidding process,
7. Growth of eBay; PayPal – new trend in making payments online; national electronic funds transfer.
8. To study the concept of user interface, usability factors and usability problems.
9. To study about user review.
10. To study and implement the usability development process and waterfall model.
11. Case study on hotel management system.
12. To study on data model, task description and data description.
13. To study on entity relationship model.
14. To study on hierarchies and trees.
15. To study about normalization.

Reference Books:

1. User Interface Design by Soren Louesen
2. Software Engineering by Ronald J.Leach

BASP-509 Animation LAB - XVII -SEC-I-Project (Credits -02)

Project Information

10- Marks for industrial training in vacation, 10 days after completion of Semester V

05- Marks for industrial visit / Excursion (Educational Tour) in Semester VI

35- Marks for project

Project Marks Distribution (35) marks

Project Viva - 05

Project Design - 25

Project Report – 05

Note: - Project should be based on 2D Adobe Flash / Adobe Animate / Toonboom Harmony or 3D MAYA / MAX / 3D Blender with VFX.

Skill Enhancement course

Animation LAB - XVIII

BASP-510:SECC-Artificial Intelligence (Credits -01)

Course objectives: Students Should-

1. Explain the basic knowledge representation, problem solving, and learning methods of Artificial Intelligence
2. Assess the applicability, strengths, and weaknesses of the basic knowledge representation, problem solving, and learning methods in solving particular particular engineering problems.
3. Develop intelligent systems by assembling solutions to concrete computational problems.
4. Understand the role of knowledge representation, problem solving, and learning in intelligent-system engineering

Experiments-

1. Algorithm to print the given number is even or odd.
2. Algorithm to prime the number is prime or not.
3. Algorithm to print factorial of a number.
4. Algorithm to print multiplication of table.
5. Algorithm to print Specified structure using special character.
6. Figure out and explain Applications of AI.
7. Illustrate Importance of AI.
8. Enlist various sectors explore with AI.

Reference Books:-

1. Artificial Intelligence: Elaine Rich, Kevin Knight, TMH, 2nd Edition.
2. Artificial Intelligence: Structures and Strategies for Complex Problem solving: George F Luger, 4th Ed., Pearson Education, Asia.
3. Introduction to Artificial Intelligence and Expert Systems: D. W. Patterson, PHI, 2nd Edition.

B. Sc. Part – III Animation (Entire) Semester – VI

BAST-601: Game Design –II (Credits -02)

Course Objectives: Students Should -

1. To create model with basic skills.
2. Instructional Methods
3. The Unity Game Programming curriculum is a -semester course covering topics typically found in Video Game Design or similar courses.

Unit I: -

Object-Oriented Concepts - Defining Classes, Creating and Using Classes , Defining Functions , Accessing Game Objects , Constructor and Property Functions.
Managing Game Objects -Prefabs, Creating and Destroying Objects , Activating and Deactivating Objects , Controlling Object Lifespans with Invoke.
Exceptions and Debugging - Run-Time Exceptions , Finding Run-time Errors , Using the Debugger, Loops and Arrays - Arrays , for and foreach Loops , while Loops.

Unit II: -

Virtual Worlds - Moving Cameras , Setting Boundaries , Building a Tile World , Mini-Maps Scrolling Games - Wrapping Background , Scrolling Game Mechanics , Parallax Effects Animation - Simple Unity Animation , Animator States , Scripting Animations , Animations and Colliders.

Unit III : -

Sound Effects - Sound Files , Adding Sounds to Game Objects , Scripting Sounds.

Advanced Game Physics - Applying Forces , Unity Physics Joints , Unity 2D Effectors. Multiple Scenes • Creating New Scenes -Scripting Scene Changes , Saving Objects Across Scenes Mini Artificial Intelligence - Artificial Intelligence Concepts , Flowcharts and Algorithms , Scripting AI User Interfaces - Unity Buttons , Other UI Controls , UI Design Concepts.

Unit IV: -

Game Art - Perspectives, Color Theory , Image Editing.

Publishing Games - Splash Screens, Credit Scenes and Icons , Publishing to PC, Mac and Linux Computers , Publishing to Smartphone's , Publishing to Game Consoles.

Reference Books:

1. Blender Basic Second Edition by James Chronister.
2. Introduction To Blender 3D by John B Blam.
3. Blender Basic Fourth Edition by James Chronister.

BAST-602: 3D Blender-II (Credits -02)

Course Objectives: Students Should -

1. Understand UV's.
2. Project Basic UV's.
3. Understand Advanced Unwrapping.
4. Testing UV's.
5. To provide an overview of a range of effects rendering techniques that adds realism to an image or scene.

Unit-I: **(9)**

Introduction,EEVEE,Cycles,Workbench,Cameras,Lights,Materials,Shader,Nodes,Color-Management,freestyles,Layer & Passes.

Unit-II: **(9)**

Introduction, Output Options, File Formats, Audio Rendering, Metadata, Stereoscopy, Rendering Animations, Animation Player

Unit-III: **(9)**

Introduction, Rigid Body, Cloth Simulation, Soft Body, Particles System, Fluid Simulation, Dynamic Paints, Forces, Collision, Baking Physical Simulation.

Unit-IV: **(9)**

Basic 3D Modelling, Building Basic Models, Textures and Environment, Animation, Game Input, Managing and Viewing Game Data, Creating a Game Design Document.

Reference Books:

1.Blender Basic Second Edition by James Chronister.
2.Introduction To Blender 3D by John B Blam.
3. Blender Basic Fourth Edition by James Chronister.

BAST-603: MAYA-III(Credits -02)

Course Objectives: Students Should

1. To provide an overview of a range of effects rendering techniques that adds realism to an image or scene.
2. To study process of creating bitmap images of your scene based on various shading, lighting and camera attributes.
3. Use of rendering in architecture, video games, simulators, movie or TV visual effects.
4. Understanding the nparticle workflow.
5. Draw paint effect strokes.
6. Create and manipulate ncloth objects.

Unit-I: Paint Effects, Toon shading **(9)**

Using the Paint Effects Canvas, Painting on 3D Objects, Understanding Strokes, Designing Brushes, Create Complexity by Adding Strokes to a Curve, Shaping Strokes with Behavior Controls, Animating Strokes, Rendering Paint Effects, Using Toon Shading.

Unit-II: Lighting with Mental ray and Shading Techniques **(9)**

Shadow-Casting Lights, Indirect Lighting: Global Illumination, Indirect Lighting: Global Illumination, Image-Based Lighting, Physical Sun and Sky, Light Shaders, Shading Concepts, Creating Blurred Reflections and Refractions Using Standard Maya Shaders, Basic mental ray shaders, Car Paint Materials, The MIA Material.

Unit-III: Rendering for compositing and Introducing nparticles **(9)**

Render Layers, Render Passes, Render Pass Contribution Maps, Setting Up a Render with mental ray, Mental ray Quality Settings, Using Fluid Containers, Creating a Reaction, Rendering Fluid Container, Create Fluids and nparticle Interactions.

Creating nparticles, Making nparticles Collide with ncloth Surfaces, Using nparticles to Simulate Liquids, Using Wind, Shading nparticles and Using Hardware Rendering To Create Flame Effects, Rendering Particles with mental ray.

Unit-IV: Dynamic Effects **(9)**

Creating ncloth Objects , Creating ncloth and nparticle Interactions , Rigid Body Dynamics, Creating Smoke Trails, Adding Fur to Characters, Rendering Fur Using mental ray, Adding Hair to a Character, Rendering Hair, Creating Clothing for Characters.

Reference Books:

1. Mastering Autodesk Maya 2015, Author-Tood Palmar (Unit III,IV).
2. Mastering Autodesk Maya 2011 by Eric Keller(Unit I,II).

BAST - 604: A-3D Printing in Animation (Credits -02)

Course objectives: Students Should -

1. The immediate and powerful impact of motion design.
2. Reinforce basic to advanced graphic design principles in motion graphics.
3. Acquaint students with industry standard software, hardware and accompanying techniques.
4. Provide historical and current perspectives in the area of motion graphics.
5. To terminology and concepts in motion graphics.
6. To the categories of commercial, broadcast, main title and music video.

Unit I **9**

Introduction of Unity, Unity Project, Unity Projects, Assets, and Scenes, Assets and Project Files, Navigating Scenes and Viewports, Game Objects, Transforms, and Components Cameras, Scripting and the Unity API, Performance, Profiling, and the Stats Panel

Unit II **9**

Materials and Textures, Mesh Renderers,Shaders Materials for 2D Games, Method 1: Use White Ambient Light Method 2: Use Light-Immune Shades, Creating Textures Power-2 Dimensions Retain Quality, Expand Alpha Channels for Transparency

Unit III

Introduction of Motion graphics, Creating composition, Basic animation, Layer Management, Modes, Masks & Mattes, Camera, lights,

Unit III

Text Animation, Effects and presets, Color keying, Time & Tracking, Working with audio, Exporting & rendering.

Reference Books:

1. Motion Graphic Design: Applied History and Aesthetics. **Author**: Jon Krasner. **ISBN**: 9780240809892. **Publisher**: Focal Press.
2. Premiere Pro CS6 Digital Classroom. **Author**: Jerron Smith, AGI Creative Team. **ISBN:** 9781118553008. **Publisher**: John Wiley & Sons, 2012.
3. Mastering Autodesk Maya 2015, Author-Tood Palmar (Unit III,IV).
4. Mastering Autodesk Maya 2011 by Eric Keller(Unit I,II).

BAST 604 B: AR for Animation (Credits -02)

Course outcomes –Students Should -

1. Augment reality involve the presentation of artificial stimuli to present what looks like real, physical and tactile elements through the use of multisensory technology.
2. Augmented reality (AR) is a groundbreaking technology which enhances the real world by virtual objects in order to create a new mixed reality environment.

Unit I

Introduction of Unity, Unity Project, Unity Projects, Assets, and Scenes, Assets and Project Files,

Navigating Scenes and Viewports, Game Objects, Transforms, and Components Cameras, Scripting and the Unity API, Performance, Profiling, and the Stats Panel

Unit II

Materials and Textures, Mesh Renderers,Shaders

Materials for 2D Games, Method 1: Use White Ambient Light Method 2: Use Light-Immune Shades, Creating Textures

Power-2 Dimensions Retain Quality, Expand Alpha Channels for Transparency

Unit III

Introduction to Augmented reality

Definition and Scope, history of augmented reality, Industry and construction, Medical,television, games

Displays

Multimodal Displays, visual perception, Spatial Display model, Visual Displays.

Tracking

Tracking, Calibration, and Registration, Coordinate system, Model transformation, viewtransformation, projective transformation.

Unit IV

Modeling and annotation

Specifying geometry, specifying appearance, semi- automatic reconstruction, free- form modeling, annotation.

Mobile Sensors

Global positioning system, wireless networks, magnetometer, gyroscope.

Optical tracking

Model based versus model free tracking, illumination, markers versus features, target identification.

References:

1. Dieter schmalstieg, Tobias hollerer, “Augmented Reality”.
2. Steve aukstakalnis, “Practical Augmented reality”...
3. Jon peddle, “Augmented reality: where we will all live”.
4. Alan B. Craig, “Understanding augmented reality: Concepts and applications”.

BAST- 604: C -VR for Animation (Credits -02)

Course Objectives: Students Should -

1. Virtual reality took its beginning in the entertainment area, but over time it got the practical use too and education did not stand aloof.
2. The main goal of Virtual Reality in education is to make studying process exciting and more effective.
3. VR simulations provide a deep understanding of the material by a learner with its further application in real life.

Unit I Introduction of Unity

Introduction of Unity, Unity Project, Unity Projects,
Assets, and Scenes, Assets and Project Files,
Navigating Scenes and Viewports, Game Objects, Transforms, and Components Cameras, Scripting and the Unity API, Performance, Profiling, and the Stats Panel

Unit II Materials and Textures

Materials and Textures, Mesh Renderers, Shaders
Materials for 2D Games, Method 1: Use White Ambient Light
Method 2: Use Light-Immune Shades, Creating Textures
Power-2 Dimensions Retain Quality, Expand Alpha Channels for Transparency

Unit III: Introduction

Virtual Reality, Modern VR Experiences, History repeats.

The Geometry of virtual Worlds

Geometric Models, changing Position and orientation, Axis- Angle Representation of rotation, viewing transformation, changing the transformation

Computer Graphics for virtual reality

Graphics system and models open Graphics programming, Geometric objects and transformations.

Lighting And Shading: Light and Matter, Light Sources, The Phong Reflection Model, Computation of Vectors, Polygonal Shading, Subdivision, Specifying Lighting Parameters,

Unit IV : Visual Rendering

Ray Tracing and shading Models, rasterization, Correcting optical Distortions, Improving latency and frame rate, immersive photos and videos.

Tracking

Tracking 2D Orientation, tracking 3D Orientation, Tracking position and orientation, tracking attached bodies, 3d Scanning of environments

Advanced Rendering: Going Beyond Pipeline Rendering - Ray Tracing - Building a Simple Ray Tracer - The Rendering Equation - Image-Based Rendering.

Virtual Reality Modelling Language: Introduction, exploring and building a world, building object, lighting, sound and complex shapes, animation and user interaction, walk through navigation, virtual track ball navigation.

REFERENCES:

1. Steven M. Lavalle, " BIRTUAL REALITY"
2. Edward Angel, "Interactive Computer Graphics: A Top-Down Approach Using opengl", Addison-Wesley, 2009.
3. Foley James D, Van Dam, Feiner and Hughes, "Computer Graphics: Principles and Practice", Pearson Education, 2002.
4. Donald Hearn and Pauline Baker, "Computer Graphics C Version", Pearson Education, 2002.
5. David F Rogers, "Procedural Elements for Computer Graphics", mcgraw Hill, 1998.
6. Opengl Architecture Review Board, "opengl Reference Manual: The Official Reference Document to opengl, Version 1.1", Addison-Wesley, 1997.

SECC- Entrepreneurship Development (Credits -01)

Course Objectives: Students Should-

1. To develop conceptual understanding of the topic among the students a
2. Comprehend the environment of making of an Entrepreneur.

Unit I : Entrepreneurship

Definition, requirements to be an entrepreneur, entrepreneur and entrepreneur, entrepreneur and manager, growth of entrepreneurship in India, women entrepreneurship, rural and urban entrepreneurship.

Unit II : Types of Enterprises and Ownership Structure:

Small scale, medium scale and large scale enterprises, role of small enterprises in economic development; proprietorship, partnership, Ltd. Companies and co-operatives: their formation, capital structure and source of finance.

Unit III: Management of Enterprises

Objectives and functions of management, scientific management, general and strategic management; introduction to human resource management: planning, job analysis, training, recruitment and selection, etc.; marketing and organizational dimension of enterprises; enterprise financing : raising and managing capital, shares, debentures and bonds, cost of capital; break- even analysis, balance sheet its analysis..

Institutional Support and Policies: institutional support towards the development of entrepreneurship in India, technical consultancy organizations, government policies for small scale enterprises.

Unit IV: Projects:

Identification and selection of projects; project report: contents and formulation, concept of project evaluation, methods of project evaluation: internal rate of return method and net present value method.

REFERENCES:

1. Badhai, B 'Entrepreneurship for Engineers', Dhanpat Rai & co. (p) Ltd.
2. Desai, Vasant, ' Project Management and Entrepreneurship', Himalayan Publishing House, Mumbai, 2002.
3. Gupta and Srinivasan, 'Entrepreneurial Development', S Chand & Sons, New Delhi.
4. Ram Chandran, 'Entrepreneurial Development', Tata mcgraw Hill, New Delhi
5. Saini, J. S., 'Entrepreneurial Development Programmes and Practices' , Deep & Deep Publications (P), Ltd.
6. Khanka, S S. 'Entrepreneurial Development', S Chand & Company Ltd. New Delhi

B. Sc. Part – III Animation (Entire) Semester – VI

BASP-607- Animation Lab-XIX (Credits -04)

(BAST-601: Game Design –II +BAST-602: 3D Blender-II)

Group-I

Course Objectives: Students Should -

1. To Create model with basic skills.
2. Instructional Methods
3. The Unity Game Programming curriculum is a -semester course covering topics typically found in Video Game Design or similar courses.

Experiments:

1. Deep Space

2. Deep Space 2

3. Bug Hunt

4. Banana Breakout

5. Loops and Arrays - Arrays , for() and foreach() Loops , while() Loops.

6. Planning Documents

7. Treasure Hunt

8. RoboDash sound with Animation

9. Mini-Golf

10. Space Creeps buttons

11. Publish Your Game

12. Publishing to PC, Mac and Linux Computers .

13. Publishing to Smartphone's .

14. Publishing to Game Consoles.

15. Sound Effects - Sound Files , Adding Sounds to Game Objects , Scripting Sounds.

Reference Books:

1. Blender Basic Second Edition by James Chronister.
2. Introduction To Blender 3D by John B Blam.
3. Blender Basic Fourth Edition by James Chronister.

Group-II

Course Objectives: Students Should -

1. To study process of creating bitmap images of your scene based on various shading, lighting and camera attributes.
2. Use of rendering in architecture, video games, simulators, movie or TV visual effects.
3. Understanding the nparticle workflow.
4. Draw paint effect strokes.
5. Create and manipulate ncloth objects.

Experiments-

1. Render inorganic object.(BOX)
2. Render interior and exterior scene.(Architectural)
3. Rendering environmental scene.
4. EEVEE Blender rendering with basic object.
5. Exporting videos with various format.
6. Sample scene with smoke and Cloth Simulation.
7. Water Simulation with scene.
8. Dynamic Paint. (EEVEE)
9. Simple Game Concept in blender.
10. Create A Dice Game.
11. Basic 3D Modelling, Building Basic Models,
12. Textures and Environment, Animation, Game Input.
13. Managing and Viewing Game Data,
14. Creating a Game Design Document.
15. Stereoscopy, Rendering Animations, Animation Player

Reference Books:

1. Blender Basic Second Edition by James Chronister.
2. Introduction To Blender 3D by John B Blam.
3. Blender Basic Fourth Edition by James Chronister.

BASP-608 Animation Lab-XX
(BAST-603: MAYA-III + A-3D Printing in Animation/
B - AR for Animation/
C -VR for Animation)

Group-I

Course Objectives: Students Should-

1. To provide an overview of a range of effects rendering techniques that adds realism to an image or scene.
2. To study process of creating bitmap images of your scene based on various shading, lighting and camera attributes.
3. Use of rendering in architecture, video games, simulators, movie or TV visual effects.
4. Understanding the nparticle workflow.
5. Draw paint effect strokes.
6. Create and manipulate ncloth objects.

Experiments:

1. Render settings with sun and sky.

2. Rendering paint effects (creating grass in maya by paint effect, shadow effect).

3. Designing brushes (growing flowers, adding leaves).

4. Painting 3D objects using 3D paint tool with environmental scene .

5. Applying paint effects to maya text curves(minimum 3 types).

6. Toon shading (Toon fills and toon outlines)with Character.

7. Render glass in mental ray in maya (exterior scene).

8. Mental ray shader with interior rendering .

9. Fooling around with nparticles.

10. Snow simulation with nparticles.

11. Rain simulation with nparticles.

12. Introduction to dynamics-ncloth(flag).

13. Creating fur in maya.Creating hair in maya.

14. Adding Hair to a Character, Rendering Hair,

15. Creating Clothing for Characters.

Reference Books:

1. Mastering Autodesk Maya 2015, Author-Tood Palmar (Unit III,IV).
2. Mastering Autodesk Maya 2011 by Eric Keller(Unit I,II).

Group-II

A-3D Printing in Animation

Course objectives: Students Should -

1. Provide historical and current perspectives in the area of motion graphics.
2. to terminology and concepts in motion graphics.
3. to the categories of commercial, broadcast, main title and music video.

Experiments :

1. Create props for game design character.
2. Create a Scene in Unity.
3. Animations in Unity.
4. Creating environmental background.
5. Smooth text animation in after effect .
6. Pop up circles animation for intros in after effect.
7. Animating a scene in after effect.
8. Create explainer video Animation in after effects.
9. Portfolio motion graphics in after effects.
10. Creating advertising product animation in after effects.
11. Introduction of Motion graphics,
12. Creating composition,
13. Basic animation with examples.
14. Materials and Textures, Mesh Renderers,Shaders
15. Materials for 2D Games, Method 1: Use White Ambient Light

Reference Books:

1. Mastering Autodesk Maya 2015, Author-Tood Palmar (Unit III,IV).
2. Mastering Autodesk Maya 2011 by Eric Keller(Unit I,II).

B: AR for Animation

Course outcomes –Students Should -

1. Augment reality involve the presentation of artificial stimuli to present what looks like real, physical and tactile elements through the use of multisensory technology.
2. Augmented reality (AR) is a groundbreaking technology which enhances the real world by virtual objects in order to create a new mixed reality environment.

Experiments:-

1. Create props for game design character.
2. Create a Scene in Unity
3. Animations in Unity
4. Creating environmental background.
5. Alien world in a cylinder target in 3d unity.
6. Creating Augment reality mobile app in 3d unity.
7. Watch Display animation in after effects.
8. 3d camera tracking in after effect.
9. AR Cube with Vuforia in Unity 3D.
10. Marker based AR with vuforia and unity.
11. User defined target (No coding version) AR with vuforia and unity.
12. 3D object tracking with vuforia and unity.
13. Working with multitarget (Cuboid target) AR with unity and vuforia.
14. Virtual button with unity and vufoari.
15. Marker tracking, Multiple, Camera infrared tracking,

References:

1. Dieter schmalstieg, Tobias hollerer, “Augmented Reality”.
2. Steve aukstakalnis, “Practical Augmented reality”...
3. Jon peddle, “Augmented reality: where we will all live”.
4. Alan B. Craig, “Understanding augmented reality: Concepts and applications”.

C -VR for Animation

Course Objectives: Students Should -

1. Virtual reality took its beginning in the entertainment area, but over time it got the practical use too and education did not stand aloof.
2. The main goal of Virtual Reality in education is to make studying process exciting and more effective.
3. VR simulations provide a deep understanding of the material by a learner with its further application in real life.

Experiments:-

1. Import character with mesh.
2. Create props for game design character.
3. Create a Scene in Unity.
4. Animations in Unity.

5. Creating environmental background.
6. Drawing basic 2D and 3D primitives in opengl.
7. Implementation of various parallel and perspective projections for simple 3D objects.
8. Simulation of various lighting and shading models. .
9. Construct the primitives with different color models
10. Simulate the conversion from one model to another.
11. Develop a new texture and apply various mapping on 3D objects.
12. Use Light-Immune Shades, Creating Textures
13. Exploring and building a world, building object,
14. Building object, lighting, sound and complex shapes.
15. Building object and animation and user interaction, walk through navigation, virtual track ball navigation.

References:

1. Steven M. Lavalle, " BIRTUAL REALITY"
2. Edward Angel, "Interactive Computer Graphics: A Top-Down Approach Using opengl", Addison-Wesley, 2009.
3. Foley James D, Van Dam, Feiner and Hughes, "Computer Graphics: Principles and Practice", Pearson Education, 2002.
4. Donald Hearn and Pauline Baker, "Computer Graphics C Version", Pearson Education, 2002.
5. David F Rogers, "Procedural Elements for Computer Graphics", mcgraw Hill, 1998.
6. Opengl Architecture Review Board, "opengl Reference Manual: The Official Reference Document to opengl, Version 1.1", Addison-Wesley, 1997.

BASP-609 Animation LAB - XXI -SEC-II-Project (Credits -02)

Project Information

10- Marks for industrial training in vacation, 10 days after completion of Semester V

05- Marks for industrial visit / Excursion (Educational Tour) in Semester VI

35- Marks for project

Project Marks Distribution (35) marks

Project Viva - 05

Project Design - 25

Project Report – 05

Note: - Project should be based on 2D Adobe Flash / Adobe Animate / Toonboom Harmony or 3D MAYA / MAX / 3D Blender with VFX.

Standard Project Report Documentation Format

1. Cover Page
2. Institute/College Recommendation
3. Guide Certificate
4. Declaration
5. Acknowledgement
6. Index
7. Chapters with page Numbers
   1) Introduction of Project
   2) Script
   3) Storyboard
   4) Layout and Animatics
   5) Characters with Family
   6) Backgrounds
   7)Characters Model sheet
   8) Voice and Music
   9) Staging Scenes
   10)Animation
   11) Output
   12) Conclusion and Suggestions
   13) Future Plan
   14) Bibliography

Animation LAB - XXII

BASP-610 SECC- Entrepreneurship Development (Credits-01)

Course Objectives: Students Should -

1. To develop conceptual understanding of the topic among the students a
2. Comprehend the environment of making of an Entrepreneur.
3. Entrepreneurship Management or /Industrial Training

Experiments:

1. Search a successful entrepreneur and study his case and make presentation (Team work is expected).

2. Strategy making for solving business problem

3. Collection of different documents needed in business and study the same.

4. Creation of Advertisements in animation and publish. .

5. Basic financial calculation like film making video editing, website creation etc..

References:

1. Badhai, B 'Entrepreneurship for Engineers', Dhanpat Rai & co. (p) Ltd.
2. Desai, Vasant, 'Project Management and Entrepreneurship', Himalayan Publishing House, Mumbai, 2002.
3. Gupta and Srinivasan, 'Entrepreneurial Development', S Chand & Sons, New Delhi.
4. Ram Chandran, 'Entrepreneurial Development', Tata mcgraw Hill, New Delhi
5. Saini, J. S., 'Entrepreneurial Development Programmes and Practices' , Deep & Deep Publications (P), Ltd.
6. Khanka, S S. 'Entrepreneurial Development', S Chand & Company Ltd. New Delhi