S-30th May, 2015 AC after Circulars from Circular No.1 & onwards++   - 42 -

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

CIRCULAR NO. SU/Sci./B.Sc. Syll./38/2015

It is hereby inform to all concerned that, on the recommendation of the various Board of Studies, Ad-hoc Boards & Committees, the Hon'ble Vice-Chancellor has accepted the revised semester-wise syllabi on behalf of the Academic Council under Section-14[7] of the Maharashtra Universities Act, 1994 in the Faculty of Science as under :-

Sr. No.	Name of the Subject		Semester
[1]	B.Sc. Polymer Chemistry IIInd Year,	[Optional]	V & VI
[2]	B.Sc. Networking and Multimedia IIInd Year, Three Year Degree Course		V & VI
[3]	B.Sc. Dry Land Agriculture IInd Year,	[Optional]	III & IV
[4]	B.Sc. Sericulture IInd Year,	[Optional]	III & IV
[5]	B.Sc. Workshop Technology IInd Year, Three Year Degree Course		III & IV
[6]	M.Sc. Botany IInd Year [at college level]		III & IV

This is effective from the Academic Year 2015-16 & onwards as appended herewith.

All concerned are requested to note the contents of the circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF. NO. ACAD/ SU / SCI./
     2015/
Date:- 28-07-2015.

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Director,
Board of College and
University Development.

Copy forwarded with compliments to:-

1] The Principals, affiliated concerned colleges,
    Dr. Babasaheb Ambedkar Marathwada University

Copy to :-

1] The Controller of Examinations,
2] The Director, [E-Suvidha Kendra], in-front of Registrar's Quarter,
    Dr. Babasaheb Ambedkar Marathwada University,
3] The Superintendent, [B.Sc. Unit],
4] The Superintendent, [M.Sc. Unit],
5] The Superintendent, [B.C.S. Unit],
6] The Programmer [Computer Unit-1] Examinations,
7] The Programmer [Computer Unit-2] Examinations,
8] The Record Keeper.
Dr. Babasaheb Ambedkar Marathwada University.

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DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

Revised Syllabus of B. Sc III Year

Networking & Multimedia

Semester – V & VI

(Three Year Degree Course)

[Effective for Academic Year 2015-16]

Semester-V

Course Code	Course Title	No of Credits	Max Marks	No of Hrs Exam
MN318	Flash Web Site Design	3	50	3
MN319	3D Modeling and Animation I	3	50	3
MN320	3D Modeling and Animation II	3	50	3
MN321	Elective-I (Any One)	3	50	3
MN359	Practical Based on MN318 & MN319	4	50	3
MN360	Practical Based on MN320 & MN321	4	50	3
Total		20	300	

Semester-VI

Course Code	Course Title	No of Credits	No of Hrs Exam	No. of Hrs Exam
MN322	Video Introduction and Advances	3	50	3
MN323	Digital Film Editing	3	50	3
MN324	Sound Editing Engineering	3	50	3
MN325	Elective-II(Any One)	3	50	3
MN361	Major Project	4	50	3
MN362	Seminar	4	50	3
Total		20	300	

39-1.S-[F]NPW-02 June-2015-16 All Syllabus Science B.Sc. Net. Multimedia.   - 4 -

Elective-I (Select any One)

Course Code	Course Title
MN321	Working with Audio
MN321	Web Designing in Dreamweaver
MN321	3D Texturing and Lighting
MN321	3D Rigging and Animation
MN321	3D Dynamics and Particles
MN321	Digital Sculpting and Texturing

Elective-II (Select any One)

Course Code	Course Title
MN325	3D Rendering
MN325	Character Modeling
MN325	Visual Effects
MN325	Compositing
MN325	VFX Shoot
MN325	Animation Production Pipelining

Semester V

MN318: Flash Web Site Design

UNIT-1
Introduction to files, folders, and site definition
Web page production and posting- Creating folders and organizing content - Opening and saving files- Defining a site.

UNIT-2
Creating pages with Macromedia Dreamweaver
Laying out a page with tables and cells - Working with test - Working with image files - Linking pages within a site, and to pages outside a site- Site navigation- Working with tables- Determining page dimensions- Defining the viewing path- Creating a mockup- Creating a home page

UNIT-3
Planning and Designing pages
Site Plan- Website Strategy- Flow Charts- Organizing Content- Browsers and Platforms- Navigation System- Designing for a Computer Screen- Page Templates- Using Tables for Page Layout- Page Layout, The four basic design elements- Organizing white space on the screen- Splitting long documents- Using color on the web- Recognizing good vs- bad design. Consistency of Design- Contrast- Focal Point

UNIT-4
Working with Adobe Fireworks
Introduction to Fireworks tools- Using the properties inspector- Graphics in Web Design- Downloading Graphics- Working with copyright restrictions- GIF and JPEG file Formats- Compression Basics- Modifying and creating graphics- Working with layers- Importing and exporting files- Creating headers and buttons- Working with frames- Creating animated GIFs

UNIT-5
Working with Adobe Flash
Introduction to the Flash interface- Using the Flash tools- Creating and working with vector objects- Working with frames- Motion and shape "tweening"- Adding layers to animations- Action script basics- Adding flash movies to web pages,

Bringing it All Together: Web design is communication- Beginning with the idea- Sketching the theme and scheme- Creating the content- Organizing pages and files- Test, test and retest pages- Posting pages

Reference Books:-

1. Adobe Flash CS5: The Missing Manual by Chris Grover, O'Reilly Publishing
2. GSBaluja, DhanpatRai& CO, Computer Graphics & Multimedia, First Edition, DhanpatRai& CO (P) Ltd, 2003.
3. VikasGubta&Kogent Solutions Inc-: Multimedia and Web DesignA Revolutionary 3-Stage Sub learning System Published by dream tech.
4. Jayne Pilling, Animation 2D and Beyond, Rotovision, September 2000.
5. Scratch 1-4 (Beginner's Guide) byMichael Badger,Shroff Publishing.
6. Alice 3 Cookbook by VanesaS-Olsen,Shroff Publishing.
7. Fundamentals of Computer Graphics by Peter Shirley, Steve Marschner, AK PETERS Publishing.
8. HTML for Beginners 2nd Edition byFiruzaAibara.
9. PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Publishing.
10. Murach's JavaScript and DOM Scripting, Murach Publishing.
11. WordPress 3 Site Blueprints by Heather R.Wallance, Shroff Publishing.

Practical: At least two practical on each unit.

MN319: 3D Modeling and Animation I

UNIT-1

Animation- multimedia & virtual reality: Fundamental key frame animation- repeating animation overtime- Hierarchical linking- Key frame- Parameters Out of- Range- Setting Animation Keys- Animating the Rotation of the Dummy Object- Creating a continuously Looping Animation.

UNIT-2

Using advanced techniques: Assigning Constraints on the Motion Panel- Applying an Ease Curve toControl Animation- Multiplier curves- Link constraint- Inverse kinematics- Solver-Applying MultiplierCurves- and Switching Hierarchical Parents.

UNIT-3

Advanced Modeling: Editable poly- Symmetry modifier- Lathe modifier- Merge- Quad polygon- Settingsdialog- NURMS- Editing Using Multiple Viewports- Adding Detail to the Model- Tessellate- Deformation- XRef- Using Modifiers to Add Detail to 3D Objects- Merging Files While Retaining a Connection.

UNIT-4

Advanced lighting effect: Placing and adjusting photometric lights- Using exposure control- Adjustingmeshing parameters- Controlling color bleed and reflectance- Making materials act as lights- ttenuation- Direct illumination- Indirect illumination- Refine Iterations- Filtering- Reflectance- Placement andAdjustment- Applying Exposure Control- Setting Radiosity Meshing at the Local Level- ControllingRadiosity Using Materials. Applying Advanced Lighting Override Material, Modeling the Building with exteriors andinteriors- the lights should be properly placed in the scene. Modeling the Mech. components- for eg: -hand tools- Auto components & animating then with key framing.

UNIT-5

Advanced Animation and Multimedia Development: The Fundamentals of Hierarchical inking- Animation controllers- Track View DopeSheet- Ease curves- Controllers- Constraints- Graph editors- Ease curves, Modeling a Project with a final output after using thatsoftware- TV Product Advt.- News channel Logo Animation- Post production effects- Animated series- Montaz- Structural Modeling and animation.

Reference Books:-

1. 3D in Photoshop CS4 by Dan Moughamian and Scott Valentine.
2. Adobe Photoshop CS6 Classroom in a Book by Adobe Creative Team
3. OpenSceneGraph 3.0 by Rui Wang,XueleiQian-Shroff Publishing.
4. Joomla 1.5 Multimedia by Allan Walker-Shroff Publishing.
5. Scratch 1-4 (Beginner's Guide) byMichael Badger,Shroff Publishing.
6. Alice 3 Cookbook by VanesaS-Olsen ,Shroff Publishing.
7. Fundamentals of Computer Graphics by Peter Shirley, Steve Marschner,AK PETERS Publishing.
8. HTML for Beginners 2nd Edition byFiruzaAibara.
9. PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Publishing.
10. Murach's JavaScript and DOM Scripting, Murach Publishing.

Practical: At least two practical on each unit.

MN320: 3D Modeling and Animation II

UNIT-1

Conceptual knowledge of game creation Understand the history and evolution of game design

and technology- Honing creativity- design- computer and problem-solving skills in the area of

game Design

UNIT-2

Advanced Animation Character Animation - Walk cycle- Run cycle- Jumping, Timing,

movement- mood- camera and lighting.

UNIT-3

Animation using weights- Character Rigging: Skeletons, Skinning and Constraints forcontrols-
Forward Kinematics and Inverse Kinematics- Deformers

UNIT-4

Facial animation for lip synch- Non-Linear Animation (Trax editor) - Animation Layering;

Animation Planning- Secondary Animation

UNIT-5

Gaming Modeling and Animation High detail low poly modeling-Poly count-Z-brush / Maya

Workflow- Knowledge of Python-Level of Detail

Reference Books:-

1. 3D in Photoshop CS4 by Dan Moughamian and Scott Valentine.
2. Adobe Photoshop CS6 Classroom in a Book by Adobe Creative Team
3. OpenSceneGraph 3.0 by Rui Wang,XueleiQian-Shroff Publishing.

4. Joomla 1.5 Multimedia by Allan Walker-Shroff Publishing.

5. Scratch 1-4 (Beginner's Guide) byMichael Badger,Shroff Publishing.

6. Alice 3 Cookbook by VanesaS-Olsen ,Shroff Publishing.

7. Fundamentals of Computer Graphics by Peter Shirley, Steve Marschner,AK PETERS Publishing.

8. HTML for Beginners 2nd Edition byFiruzaAibara.

9. PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Publishing.

10. Murach's JavaScript and DOM Scripting, Murach Publishing.

Practical: At least two practical on each unit.

<center>**Elective -I**</center>

MN321: Working with Audio (Elective-I)
UNIT -1
Introduction to sound
Sound-Digital sound files- different sound formats- midi & digital audio-creating digital audio files - sound producing- sound extracting- Advantages and disadvantages of midi &digital-choosing between midi and digital audio.

UNIT -2
Computer and Sound Processing
Uses of Audio in Computer Applications- Psychoacoustics-Digital representation of sound-transmission of digital sound- Digital Audio signal processing- Digital music making-Speech recognition and generation- digital audio and the computers.

UNIT -3
Working with audio Files
Burning the audio Cd, mp3, making the remix sound track with using all the special FX from the software. Exporting the files in diff formats, save in wav, mp3 etc.

UNIT -4
Applying the Processing Functions
Working with Presets- Auto Trimming and Audio Data- Changing the bit depth of the Audio File- Changing Channels of the Audio Data- Setting the DC Offset- Adjusting Audio Volume-Inserting Silence into the Audio File- Inverting the Audio Data- Muting the Volume of the Audio Data- Normalizing the Audio Volume-Planning/Expanding the Audio- Changing the Sample

Rate of the Audio File- Reversing the Audio Data- Smoothing/Enhancing the Audio Data- Changing the length of the Audio Data- Changing Volume.

UNIT -5
Speech Compression & Synthesis
Digital Audio concepts- Sampling Variables-Loss less compression of sound-loss compression & silence compression.

Reference Books:-
1. Sound Forge 9.0 in Simple Steps (dreamtech Press).
2. Sound Forge® 8 Power,the Official Guide by Scott R. Garrigus.
3. Sound Forge Power by Firewall media.
4. Multimedia Systems by John F. Koegel Buford, Addison Wesley.
5. Multimedia: Computing, Communications and Applications (Steinmetz Ralf and NahrstedtKlara,) Pearson Education
6. Multimedia System design (Prabhat K. Andheigh,) Kiran Thakrar
7. Multimedia Systems (Koegel Buford) Pearson Education.
8. Creating website by Matthew MacDonald, O'Reilly Publishing.
9. PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Publishing.
10. Murach's JavaScript and DOM Scripting, Murach Publishing.
11. HTML for Beginners by FiruzaAibara,Shroff Publishing.
12. WordPress 3 Site Blueprints by Heather R. Wallance, Shroff Publishing.

Practical: At least two practical on each unit.

MN321: Web Designing in Dreamweaver (Elective-I)

UNIT -1
Basics of HTML/DHTML:
Introduction to Web Development-Website- Webpage- Static Website- Dynamic Website. HTML Basics, HTML Elements (Tags).

UNIT -2
Advances HTML/DHTML
Attributes-Headings-Paragraphs-Formatting-Links- Images- Tables- Lists- Forms- Frames-Lists-Images- Forms- CSS in DHTML- Implementation of WebPages using CSS.

UNIT -3
Introduction to JavaScript:
How & Where to put the JavaScript Code- JavaScript Statements- Comments-Variables-Operators-Control Statements- Loops-Popup Boxes-Functions-Introduction/Overview to CGI-JavaScript- cookies- XHTML and XML.

UNIT -4
Introduction to Dreamweaver:
Dreamweaver site structure- web pages in Dreamweaver with text formatting tools and CSS styles- checking and editing Links- forms- assets- library items and templates - Dreamweaver's dynamic capabilities-Inserting Tables- Lists- Images- image types for the web- web graphic formats (transparency, interlaced, progressive)

UNIT -5
Advance Dreamweaver
Scanning graphics- Monitor resolutions- web browser displays-Images editing – understand the terms: hue- saturation & value-Use of colors- browser safe colors- and hexadecimal codes-ManagingWorkspace Layout-Site in Basic Mode- Site in Advanced Mode- Uploading Files - Managing Websites-Using Dreamweaver Templates.

Reference Books:-

1. Dreamweaver CS5 Digital Classroom (Paperback) by Jeremy Osborn.
2. Inside Maya 5 - Erick Miller,IlyaBaran& Jovan Popović.
3. Dreamweaver CS5 for Dummies Janine C. Warner, Paperback Edition.
4. Adobe Dreamweaver CS5 Bible by Joseph Lowery, Paperback Edition.
5. The Essential Guide to Dreamweaver CS4 by David Powers.
6. Adobe Dreamweaver CS5by Bible Joseph Lowery, Paperback Edition.
7. The Art of Rigging by George Biddlecombe .
8. Multimedia Systems (Koegel Buford) Pearson Education.
9. Fundamentals of Multimedia (Ze-Nian Li,Mark.S.Drew).
10. Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI- Jerry Beck.
11. Animation Book, Kit Laybourne, Three Rivers Press, ISBN-10: 0517529467.
12. Computer Animation: Algorithms and Techniques," Morgan Kaufmann, 2001by R. Parent

Practical: At least two practical on each unit.

MN321: 3D Texturing and Lighting (Elective-I)

UNIT -1
Modeling & Texturing a Simple Character with Polygons- Modeling with Polygon Tools Working with Symmetry- Using Image Planes- Block Modeling- Sculpting the Character UV Texturing, Modeling and Texturing a Simple Character with Subdivision Surfaces- Concepts of Modeling with Subdivision Surfaces- Subdivision Surfaces Levels- Refining Surface

Components- Techniques for Texturing Subdivision Surfaces Designing and Modeling a Character with Subdivision Surfaces- Testing Geometry Deformation

UNIT -2
Modeling and Texturing a Character with NURBS- NURBS Topology Modeling with Profile Curves -Tools and Methods -Designing and Modeling a Character with NURBS , Designing a Humanoid and Modeling the Head -Human Anatomy for Modelers Using Distortions for Artistic Purposes -Methods and Tools

UNIT-3
Modeling the Humanoid Torso and Limbs -Blocking the Torso and Limbs Shaping and Refining the Torso and Limbs -Testing Geometry Deformation UV Mapping the Humanoid-UV Mapping -Facial Expression -The Anatomy of the Face (Physiognomy) -Universal Human Emotions.

UNIT -4
Lighting Fundamentals- Light types- Attributes of Light- Lighting objects & Shadows- 3 Point Lighting- Lighting a character-lighting a scene to matching the environment- To enlarge the repertoire of tools to create animation.

UNIT -5
Advanced lighting effect: Placing and adjusting photometric lights- Using exposure control- Adjusting meshing parameters- Controlling color bleed and reflectance- Making materials act as lights- attenuation-Direct illumination- Indirect illumination- Refine Iterations- Filtering, Reflectance- Placement and Adjustment-Applying Exposure Control- Setting Radiosity Meshing at the Local Level- Controlling Radiosity Using Materials-Applying Advanced Lighting Override Material.

Reference Books:-

1. Digital Lighting & Rendering, Second Edition by Jeremy Birn
2. Lighting and Rendering in Maya: Lights and Shadows by Jeremy Birn
3. Multimedia In Practical Technology and Application by Judith Jeffcoate, PHI.
4. Multimedia by Simon J.Gibbs and Dionysion C Tsichrikzis, Addison Wesley.
5. Multimedia Systems by John F. KoegelBuford,Addison Wesley.
6. 3D in Photoshop CS4 by Dan Moughamian and Scott Valentine.
7. Adobe Photoshop CS6 Classroom in a Book by Adobe Creative Team.
8. PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Publishing.
9. Murach's JavaScript and DOM Scripting, Murach Publishing.
10. Fundamentals of Computer Graphics by Peter Shirley, Steve Marschner,AK PETERS Publishing.
11. Multimedia System design (Prabhat K. Andheigh) Kiran Thakrar
12. Fundamentals of Multimedia (Ze-Nian Li,Mark.S.Drew)

Practical: At least two practical on each unit.

MN321: 3D Rigging and Animation (Elective-I)

UNIT -1
Basic Animation
Animation Principles – Camera animation – Key FrameAnimation – Dope Sheet Editor – Tracks Editor.

UNIT - 2
Non-Linear Animation
Motion Path Animation – Using Clusters – UsingDeformers – Key Frame Animation Flow Path Objects – Snap Animation.

UNIT – 3
Character Animation
Creating Walk Cycle – Creating Run Cycle – FemaleWalk – Male Walk – Four Leg Character Walk cycle – Four Leg Character Run cycle –Lazy Walk – Brisk Walk – Facial Animation – Expressions.

UNIT- 4
Basic Rigging
Creating Bones for Character – Creating Bones for Four Leg Character – Biped Rig –Quadruped Rig – Vehicle Rig – Facial Rig.

UNIT – 5
Character Rigging
Creating Ik's for Character – Creating bone's for Character –Facial Rigging - Binding Shape – Binding & Weight for character – Full body IK.

Reference Books:-

1. Inside Maya 5 - Erick Miller, IlyaBaran & Jovan Popović.
2. Learning Maya | Character Rigging and Animation Alias|Wavefront.
3. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.
4. Online Motion Retargetting. In Journal of Visualization and Computer Animation, Kwang-
5. Jin Choi and Hyeong-SeokKo., Vol. 11, No. 5, pp. 223--235, December 2000.
6. Automatic Rigging and Animation of 3D Characters.
7. The Art of Rigging by George Biddlecombe.
8. Multimedia Systems (Koegel Buford) Pearson Education.
9. Fundamentals of Multimedia (Ze-Nian Li,Mark.S.Drew).
10. Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI- Jerry Beck.
11. Animation Book, Kit Laybourne, Three Rivers Press, ISBN-10: 0517529467.
12. 3ds Max 9 Bible. Published byWiley, Inc. 2007, Kelly L.Murudock.

Practical: At least two practical on each unit.

MN321: 3D Dynamics and Particles (Elective-I)

UNIT -1
Basic of Dynamics
Concepts and methods of 3D Modeling- Particle objects -Creating particles-Set display attributes -Animate the particles-Render the particles -Advanced particle topics -Control complex motion and forces -Scale the effect of dynamics-Combine keyed transform attributes and dynamics -Parent an object to dynamic motion -Emitters.

UNIT -2
Animate Particles
Work with particle attributes-Static attributes - Dynamic attributes-Add custom attributes -Per particle and per object attributes-Edit particle attributes-particles render -Points-MultiPoint - Streak -MultiStreak -Sprites -Spheres -Numeric -Blobby surface -Cloud –Tube, Use lights-reflections- refractions- and shadows.

UNIT -3
Keyframe Animation
-Materials from Jehee Lee-Affine geometry and transformation-Rotation and orientation: Fundamentals- Splines-Rotation and orientation: Interpolation-Keyframeinterpolation and speed control.

UNIT -4
Kinematics & Inverse
Kinematics -Materials from Jehee Lee-Kinematics-Inverse kinematics-Solving linear systems

UNIT -5
Rigid body and soft body
Field-Fluid-Particle- Cloth-Hair and fur-Effects-Render soft bodies with motion blur-Paint Soft Body Weights Tool -Paint particle goal weights on soft bodies -Make a skin a soft body-Make a wire a soft body -Make a motion path a soft body.

Reference Books:-

1.Inside Maya 5 - Erick Miller,IlyaBaran& Jovan Popović.
2.Maya Studio Projects: Dynamics ,Publisher: Sybex.
3. Learning Maya | Character Rigging and Animation Alias|Wavefront.
4. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.
5. Online Motion Retargetting. In Journal of Visualization and Computer Animation, Kwang-Jin Choi and Hyeong-SeokKo., Vol. 11, No. 5, pp. 223--235, December 2000.
6. Automatic Rigging and Animation of 3D Characters.
7. The Art of Rigging by George Biddlecombe .
8. Multimedia Systems (Koegel Buford) Pearson Education.
9. Fundamentals of Multimedia (Ze-Nian Li,Mark.S.Drew).
10. Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI- Jerry Beck.
11. Animation Book, Kit Laybourne, Three Rivers Press, ISBN-10: 0517529467.
12. Computer Animation: Algorithms and Techniques," Morgan Kaufmann, 2001by R. Parent

Practical: At least two practical on each unit.

MN321: Digital Sculpting and Texturing (Elective-I)

Unit 1
Introduction to digital sculpting and interface overview- 3D primitives.

Unit 2
Sculpture techniques-Brushes/Importing models from 3D Max/Maya- Brushes II Planar Hard Surface Sculpting.

Unit 3
Symmetry- Masking-Transposing- Subtools- Polygroups- Projection Master.

Unit 4
Z Spheres model creation, Z spheres 2 armature and unify and adaptive meshes- UVW Unwrapping of sculptures.

Unit 5
Generating diffuse through polypainting techniques-generating turntable movies for presentation/Optimization/Decimation/3D printing of sculptures.

Reference Books:-
1. ZBrush Digital Sculpting Human Anatomy by Scott Spencer
2. ZBrush Character Creation: Advanced Digital Sculpting, Scott Spencer
3. Character Modeling 3, Ballastic Publishing
4. Inside Maya 5 - Erick Miller,IlyaBaran& Jovan Popović.
5. Maya Studio Projects: Dynamics ,Publisher: Sybex.
6. Learning Maya | Character Rigging and Animation Alias|Wavefront.
7. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.
8. Adobe Flash CS3 Professional By Robert Reinhardt, Snow Dowd (Bible)
9. PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Publishing.
10.Murach's JavaScript and DOM Scripting, Murach Publishing.

Practical: At least two practical on each unit.

Semester VI
MN322: Video- Introduction and Advances

UNIT-1
Creating Digital video: Adding all raw shorted shorts and clips all together- and add few finishing touch- even a small technique make an good effect- using some nice software for video editing- making fade in – outs- mixing the sound to video file - using diff angles of shorts for different emotions - happy or sorrow- trimming the video clips as per the audio or story- giving some seconds of blank space at the end of the video- make in concentration that text should not cover the video- lights- Illuminator- silver/ gold reflector- shotgun microphone- wireless microphone. Always use 5 second pre roll and post roll of blank space.

UNIT-2
Camera types & movements: Sony PD 150 Cameras- miller Fluid-Head Tripods- DV Stead cam- handy cams- web cams- Beta cams- setting the temp grid on the floor- perspective view of cameras- panning the camera movements- zoom in the camera- dolly camera- and camera using the crane shots- camera shocking for making earthquake effect. Attaching camera on the tripod for the removal of shaking in the clips- giving the proper lightning effect- setting the lights and proper reflection- correct expose- Framing- Focus- Hand held shorts- Slow berating wile video shooting- shoulder pan- hip pan.

UNIT-3
Lenses types: Wide angle lens- Fish eye lens- colored lens- blur lens- sharpness lens.
Storytelling through visual means: Making the story board- just using the actions- emotions and happy moment's scene to making the story- can make a comedy video- short film etc to practice on it; can take the reference from some short film- comedy shows.

UNIT -4
The users of digital video: Different uses of digital videos- making add films- documentaries- even feature films.

UNIT-5

On line editing in a multi-camera TV programme production- TV Graphics and Animation:Elements of 2D Graphic Elements of 3D Graphics-3D Modeling- 3D Animation - Special effect screation -Environmental special effects Lighting camera & texturing - Introduction to virtual sets -Film Analysis: The Editor's point of view Extensive sound recording- video editing.

Reference Books:-
1. Basic photography by J. J. Langford
2.3D in Photoshop CS4 by Dan Moughamian and Scott Valentine.
2. Adobe Photoshop CS6 Classroom in a Book by Adobe Creative Team
3. OpenSceneGraph 3.0 by Rui Wang-XueleiQian-Shroff Publishing.
4. Joomla 1.5 Multimedia by Allan Walker-Shroff Publishing.
5. Scratch 1-4 (Beginner's Guide) byMichael Badger-Shroff Publishing.
6.Alice 3 Cookbook by VanesaS-Olsen-Shroff Publishing.
7.Fundamentals of Computer Graphics by Peter Shirley- Steve Marschner- AK PETERS Publishing.
8.HTML for Beginners 2nd Edition byFiruzaAibara.
9.Adobe Flash CS3 Professional By Robert Reinhardt, Snow Dowd (Bible)
10. Creating website by Matthew MacDonald, O'Reilly Publishing.
11. PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Publishing.

Practical: At least two practical on each unit.

MN323: Digital Film Editing

UNIT-1
Lenses and Cameras Types of lenses: Zoom Lens- Prime Lens ,Types of Cameras: HD Cameras- Basics of Film Camera- Difference between Film Camera and Digital Camera- DSLR and HDSLR Cameras -Lighting- Psychology of light- Visual Environment- Directional Effect of Light- Lighting design process -Three-point lighting- High-Key lighting- Low Key lighting - Construction of a Shot- Color- Contrast- Deep Focus- Shallow Focus- Depth of Filed- Exposure- Racking focus- Frame Rate- Telephoto shot- Zoom shot--Framing- Angle of Framing- Aspect Ratio- Level of Framing- Canted Framing- Following Shot- Reframing- Point-Of-View shot- Wide angle Lens -Scale- Extreme long shot- Long shot- Medium long shot- Medium Close-up- Close-up- Extreme Close-up-Space- Deep space-Frontality- Matte shot-Offscreen space- Shallow space -Movement of Camera- Crane Shot- Handheld Camera- Steady Shot- Pan- Tilt- Tracking shot

UNIT-2
Whip Pan-Working with Audio- Capturing Audio while shooting- Recording Audio with HDSLR -Video Camera- Importance of Audio while shooting-Costume- Acting and Typage-Direction- Screenplay- Role of Directors- Vision of Directors- Screenplay and it's presentation- Scene Analysis- Working with Actors.

UNIT-3

UNIT-4

Music recordings- Familiarization with acoustic and electronic musical instruments- Types of microphones and their placement in recording music- Sound mixing and processing in multi-track recording of music.

UNIT-5

Critical listening in music recording- Outdoor sequence involving action- Dialogue- based short story- Song with musical composition- Scoring background music- Effect sounds- Techniques of recording spoken words and music for radio broadcasting and the Internet.

Reference Books:-

1. Basic photography by J. J. Langford.
2. Scratch 1-4 (Beginner's Guide) byMichael Badger-Shroff Publishing.
3. Alice 3 Cookbook by VanesaS-Olsen-Shroff Publishing.
4. Joomla 1.5 Multimedia by Allan Walker,Shroff Publishing.
5. Scribus 1.3.5 by Cedric Gemy, Shroff Publishing.
6. Unity 3D Game Development by example by Ryan Henson Creighton,Shroff Publishing.
7. Adobe Flash CS3 Professional By Robert Reinhardt, Snow Dowd (Bible)
8. Creating website by Matthew MacDonald, O'Reilly Publishing.
9. PHP, MySQL & JavaScript by Robin Nixon, O'Reilly Publishing.
10. Murach's JavaScript and DOM Scripting, Murach Publishing.
11. HTML for Beginners by FiruzaAibara,Shroff Publishing.
12. WordPress 3 Site Blueprints by Heather R.Wallance, Shroff Publishing.
13. OpenStreetMap by Jonathan Bennett, Shroff Publishing.

Practical: At least two practical on each unit.

Elective II

MN325: 3D Rendering (Elective-II)

UNIT-1

Rendering – Rendering Methods – Render Scene Dialog Box – Rendering Tools – Rendering an Animation – Previewing Animations – Using the RAM Player – Adding Effects to Animations – Environments Effects – Rendering Effects – Video Post .

UNIT-2

Time Controls -Working with Keys- Motion Panel and Ghosting- Animation Preferences and Animating Objects-Working with Previews- Restricting Movement with Constraints-Controllers

UNIT-3

Types and Assigning Controllers- Render Parameters and Rendering Preferences- Render Frame Window- RAM Player-Creating Panoramic Images-Creating an Environment-Type of rendering-Render passes-GI and FG-AO.

UNIT-4

Concepts and methods of 3D Modeling- Particle objects-Render the particles-Field-Fluid- Cloth-Hair

UNIT-5

Fur-Effects-Render soft bodies with motion blur-Paint Soft Body Weights Tool -Paint particle goal weights on soft bodies -Make a skin a soft body-Make a wire a soft body -Make a motion path a soft body.

Reference Books:-

1. 3ds Max 2009 by Kelly L. Murdock (Bible) 2. Adobe Photoshop CS6 Classroom in a Book by Adobe Creative Team.
2.3D Max Design, 2009: A tutorial Approach by Sham Tickoo.
3. Maya Studio Projects: Dynamics ,Publisher: Sybex.
4. Learning Maya | Character Rigging and Animation Alias|Wavefront.
5. Animation Book, Kit Laybourne, Three Rivers Press, ISBN-10: 0517529467.
6. Inside Maya 5 - Erick Miller,IlyaBaran& Jovan Popović.
7. Maya Studio Projects: Dynamics, Publisher: Sybex.
8. Learning Maya | Character Rigging and Animation Alias|Wavefront.
9. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.
10. Mastering Maya 8.5 2007, Published by Wiley Inc.
11.3Ds Max 9 Essentials by Boaz Livny and Eric Keller.

Practical: At least two practical on each unit.

MN325: Character Modeling (Elective-II) VI SEM

UNIT – 1
Character Sketch – Creating 2D Sketches – Side View – Front View – ¾ th View.

UNIT – 2
Character Modeling – Modeling a House – Creating Mountains – Interior & Exterior Modeling - Modeling a garden – Modeling a Landscape.

UNIT -3
Maya Character Modeling – Modeling a Head Using Cube – Modeling the eyes, nose – Modeling the Leg of the Character – Modeling the body – Modeling a Female Character – Modeling a Male Character – Modeling a High Polygonal.

UNIT – 4

Material assigning – Hyper Shade over view – Shades and Textures – Material Linking – Light linking to the materials – Mental Ray Shades – Mental Ray Textures – Image based Lighting Shades – Controlling Photon Emission from Shades.

UNIT – 5
Character UV Texturing – UV Texturing over View – Applying Texturing for Dice – Applying UV's for Inorganic Models – Applying UV's for head – Applying UV's for body – Applying UV's for B.G, Facial Expression:-The Anatomy of the Face (Physiognomy)-Universal Human Emotions and Their Physical Expression-Overall Workflows for Facial Expressions.

Reference Books:-

1. Maya 2008 Character Modeling and Animation by Tereza Flaxman
2. Mastering Maya 8.5 by John Kundert-Gibbs, Mick Larkins, DariushDerakhshani, and Eric Kunzendorf
3. ZBrush Digital Sculpting Human Anatomy by Scott Spencer
4. ZBrush Character Creation: Advanced Digital Sculpting, Scott Spencer
5. Character Modeling 3, Ballastic Publishing
6. Inside Maya 5 - Erick Miller,IlyaBaran& Jovan Popović.
7. Maya Studio Projects: Dynamics ,Publisher: Sybex.
8. Learning Maya | Character Rigging and Animation Alias|Wavefront.
9. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.
10.Mastering Maya 8.5 2007 ,Published by Wiley Inc.
11.3Ds Max 9 Essentials by Boaz Livny and Eric Keller

Practical: At least two practical on each unit.

MN325: Visual Effects (Elective-II)

UNIT – 1
Visual Effects- Description- Types- Particles – Analysis- Size- Sand Effects – Smoke Effects- Fire Effects – Cloud Effects – Snow Effects

UNIT-2
Fluid Effects-Coloring- designing Clouds Background – Designing Fog Effects –Explosion Effects– Fire Effects with flames - Space Effects and designs- Designing Thick Smoke

UNIT-3

Designing Paint Effects – Coloring paints- Designing Trees and green effects – Designing Weather and seasons –Effects on seasons- Designing Glass image – Designing, Different glass reflection- Designing Glow Effects – Liquid Effects and reflection design

UNIT-4

Designing Special Effects – Designing effects of Hair and shape – Designing Fur Effects- Designing Clothes and effects

UNIT-5

Visual Effects Tool and advanced functions– Converting images from 2D to 3D Pictures. Creating 3D Effects- Differentiation 2D effects and 3D effects.

Reference Books:-

1.3D in Photoshop CS4 by Dan Moughamian and Scott Valentine.
2. Adobe Photoshop CS6 Classroom in a Book by Adobe Creative Team.
3. OpenSceneGraph 3.0 by Rui Wang, XueleiQian-Shroff Publishing.
4. Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI- Jerry Beck.
5. Animation Book, Kit Laybourne, Three Rivers Press, ISBN-10: 0517529467.
6. Inside Maya 5 - Erick Miller,IlyaBaran& Jovan Popović.
7. Maya Studio Projects: Dynamics ,Publisher: Sybex.
8. Learning Maya | Character Rigging and Animation Alias|Wavefront.
9. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.
10.Mastering Maya 8.5 2007 ,Published by Wiley Inc.
11.3Ds Max 9 Essentials by Boaz Livny and Eric Keller

Practical: At least two practical on each unit.

MN325: Compositing (Elective-II)

UNIT – 1

Single integrated application – vector paint – motion graphics design – animation – composting – Full 3D composting environment – Advanced visual effects tools – keying-color correction, tracking, grain management, and masking tools inherited from the Flame visual effects system.

UNIT – 2

Edit Operator – break free from your NLE – assemble clips complete with transitions right in Combustion – Rich set of effects-tools – fully integrated – interactive particle system – warping and morphing – 3D Post filters.

UNIT – 3

Comprehensive paint and rot scoping tools – Fully customizable brushes –Comprehensive animation tools –animation curve editor – key framing – Expressions – Intuitiveschematic view to simplify visualization and organization of complex effects.

UNIT – 4

OpenGL® application programming interface acceleration – multiprocessor support –extensive caching for improved system performance – Multiple simultaneous view ports,Resolution , independence with 8-, 10, 12, 16, and 32-bit (float) per component imageprocessing – real-time RAM looped playback.

UNIT – 5

Image processing – special effects – 2D & 3D animation – compositing – rendering and editing – cell & computer animation – model building – key frame animation – dynamic particles – character animation – modeling and animation techniques.

Reference Books:-

1. 3-D Movie Making: Stereoscopic Digital Cinema (By:BernardMendiburu)Publisher: Focal Press.
2. 3-D Filmmakers: Conversations with Creators of Stereo(By: Ray Zone)Publisher: The Scarecrow Press.
3. Digital Compositing for Film and Video (Paperback) by Steve Wright.
4. The Ultimate Multimedia Handbook, Tata McGraw Hill.
5. Animation Book, Kit Laybourne, Three Rivers Press, ISBN-10: 0517529467.
6. Inside Maya 5 - Erick Miller,IlyaBaran& Jovan Popović.
7. Maya Studio Projects: Dynamics ,Publisher: Sybex.
8. Learning Maya | Character Rigging and Animation Alias|Wavefront.
9. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.
10.Mastering Maya 8.5 2007 ,Published by Wiley Inc.
11.3Ds Max 9 Essentials by Boaz Livny and Eric Keller

Practical: At least two practical on each unit.

MN325: VFX Shoot (Elective-II)VI SEM

UNIT – 1

3D CGI Primer-Shading and Mapping-Advanced Lighting-Modeling Objects and Characters-Image-Based Modeling-Conceptualization of Visual Effects (VFX) and Special Effects (SFX) according the film-Making story board for short selection

UNIT – 2

Division-Matte Paintings -Miniatures-In-Camera Miniatures-Hanging Miniatures with Live Action -Miniatures with Composited Elements- Front and Rear Projection -Forced Perspective with Live Action -Blue- or Greenscreen Composites -Motion Control - In-Camera Practical Effects-(Mechanical) Effects and Visual Effects.

UNIT – 3

Handing off Shots to VFX Facilities-The Shot Delivery Schedule-Visual Effects by the Reel-Milestones-Matching the VFX to the Live Action-Grading in the Digital Age-Two for the Price of One-

UNIT – 4
Negative Scanning; Handling Negative-Count Sheets-Scanning Sheets-A Word about Counts and Time Codes-Scanning the Negative-Recording the Final Image-Keeping up with Editorial Changes-First Line of Defense-Temps-VFX and the Marketing Department.

UNIT – 5
Matte Painting Plate Unit-Visual Effects Plate Unit-Miniature Unit-Traveling Matte (i.e., Blue- or Greenscreen) Unit-Motion Control Unit-Animatronics Unit-Motion and Performance Capture Units-Stage and Visual Effects Photography Procedures-VFX Crews-Assembling a Crew-On-Set Safety.

Reference Books:-
1. TheVisual Effects Producer by Chartles Finance,Susan Zwerman
2.Industrial Light & Magic: The Art of Special Effects (Hardcover) by Thomas G. Smith.
3. Digital Compositing for Film and Video (Paperback) by Steve Wright.
4. Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI- Jerry Beck.
5. Animation Book, Kit Laybourne, Three Rivers Press, ISBN-10: 0517529467.
6. Inside Maya 5 - Erick Miller,IlyaBaran& Jovan Popović.
7. Maya Studio Projects: Dynamics ,Publisher: Sybex.
8. Learning Maya | Character Rigging and Animation Alias|Wavefront.
9. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.
10.Mastering Maya 8.5 2007 ,Published by Wiley Inc.
11.3Ds Max 9 Essentials by Boaz Livny and Eric Keller

Practical: At least two practical on each unit.

MN325: Animation Production Pipelining(Elective-II)

UNIT – 1
Application/Scene
Scene/Geometry database traversal -Movement of objects, and aiming and movement of view camera-Animated movement of object models-Description of the contents of the 3D world-Object Visibility Check including possible Occlusion Culling- Select Level of Detail (LOD).

UNIT – 2
Geometry
Transforms (rotation, translation, scaling)- Transform from Model Space to World Space (Direct3D)- Transform from World Space to View Space- View Projection- Trivial Accept/Reject Culling- Back-Face Culling (can also be done later in Screen Space).

UNIT – 3
Lighting

Perspective Divide - Transform to Clip Space- Clipping- Transform to Screen Space.

UNIT – 4
Triangle Setup
Back-face Culling (or can be done in view space before lighting)- Slope/Delta Calculations - Scan-Line Conversion.

UNIT – 5
Rendering / Rasterization
Shading- Texturing- Fog- Alpha Translucency Tests- Depth Buffering- Antialiasing (optional) -Display.

Reference Books:-

1.Body Language: Advanced 3D Character Riggingby Eric Allen, Kelly L. Murdock

2. Introducing Character Animation with Blender by John Wiley & Sons.

3. Mastering Blender by John Wiley & Sons.

4. The Ultimate Multimedia Handbook, Tata McGrawHill.

5. Animation Book, Kit Laybourne, Three Rivers Press, ISBN-10: 0517529467.

6. 3D Computer Graphics, 2nd Edition, Design Books, New York, 1989 by Glassner.A.

7. 3D Computer Graphics: Second Editionby Addison-Wesley, New York, 1993.

8. Learning Maya | Character Rigging and Animation Alias|Wavefront.

9. Maya Character Creation: Modeling and Animation Controls, Chris Maraffi.

10.Mastering Maya 8.5 2007 ,Published by Wiley Inc.

11.3Ds Max 9 Essentials by Boaz Livny and Eric Keller

Practical: At least two practical on each unit.

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