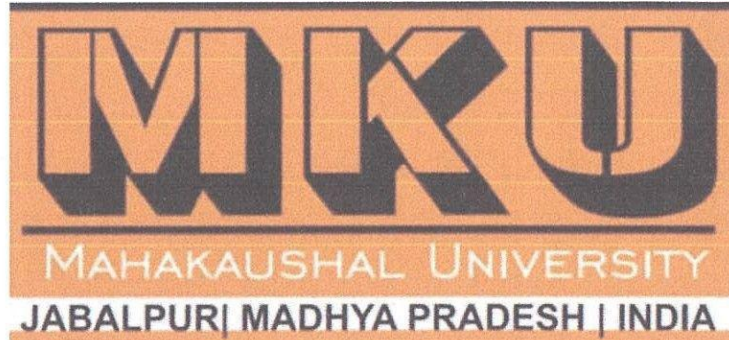


Mahakaushal University, Jabalpur (M.P.)



Syllabus

Master of Arts

Animation & Multimedia

2023-24

Duration of Course: 2 Years

Examination Mode: Semester

Examination System: Non -Grading

**Mahakaushal University
Village-Aithakheda, Mukunwara Road, Post- Tilwara Jabalpur (M.P.) 482003**

1st Semester

Basic of Animation (MMAA0101-T)

L T P
3 1 0

Unit-I

10 Lectures

Introduction to animation, Heritage of Animation, Dawn of Digital Animation, Digital effects of 3D Animation, Rotoscope to Motion Capture, Becoming an Animator, Becoming an Actor, Becoming a Storyteller, Becoming a Creative Practitioner, Applications of Animation- Entertainment, Advertisement, Education, Medical Practice and Engineering.

Unit-II

10 Lectures

Basic Principles in animation, Squash and stretch, Anticipation, Staging, Straight ahead and pose to pose, Follow through and overlapping action, Slow in and slow out, Arcs, Secondary action, Timing, Exaggeration, Solid drawing, Appeal, Mass and weight, Character acting, Volume, Line of action, Path of action, Walk cycles-animal and human.

Unit-III

10 Lectures

The use of Live Action in Animation Humans and Animals-Quick Studies from real life, Sequential movement drawing, Caricaturing the Action, Thumbnails, Drama and psychological effect, Motion Studies, Drawing for motion, The Body language, Facial expressions and Lip sync.

Unit-IV

10 Lectures

Introduction to traditional and digital equipment- The animator's drawing tools, The animation table (light box, Field charts, Exercises and warm ups on pegging sheet, Line tests, The exposure sheet ("X" sheet).

Unit-V

10 Lectures

Preproduction- Idea, Story, R&D, Script to screenplay, Storyboards. Production Layout, 3D Model, Texturing(Surfacing), Rigging/setup, Animation, 3D Visual effects, Lighting and Rendering and Post production – Colour Correction, Audio Video Editing, Final Output.

Reference Books:

1. Thomas, F., Johnston, O., & Thomas, F. (1995). *The illusion of life: Disney animation* (pp. 306-312). New York: Hyperion.
2. Laybourne, K., Canemaker, J., & Griffin, G. (1998). *The animation book: a complete guide to animated filmmaking--from flip-books to sound cartoons to 3-D animation*. New York: Three Rivers Press.
3. Goldberg, E. (2008). *Character Animation Crash Course!* Silman-James Press,U.S.
4. Patmore. (2003). *Complete Animation Course*. Barron's Educational Series.
5. Shukla, A. S. (2009). *Handbook of Multimedia and Animation*. Rajat Publications.
6. Whitaker, H., & Halas, J. (2013). *Timing for animation*. CRC Press.
7. Canemaker, J. (1982). *Treasures of Disney animation art*. Artabras.
8. White, T. (1988). *The Animator's Workbook: Step-By-Step Techniques of Drawn Animation* (Reprint edition). Watson-Guptill.
9. Williams, R. (2009). *The Animator's Survival Kit: A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators* (3rded.). Faber.
10. School, Cgt.-A. & V. O. (n.d.). *The 12 principles of animation*.
11. Williams, R. E. (2021). *The Animator's Survival Kit: Runs, Jumps and Skips*. Faber & Faber.

Writing and Storyboarding (MMAA0102-T)

L T P
3 1 0

Unit-I

10 Lectures

Role and Responsibilities of Storyboarding Artist, career options and applications in the industry – Role of storyboard artist, skills required, career options, use and different approaches of storyboarding in the industry.

Intro to visual narration, Comics, Screenplay- Visual Narrative, sequential drawing, comics and graphic novels, screenplay basics

Unit-II

10 Lectures

Writing for different medium – writing for radio, newspaper & journals, T.V. & films, writing for Animation, Program Proposal & Treatment. Story structure, script structure, handling the 3act play system – Structure of a story, elements of story, script and screenplay, understanding the 3 Act structure & different approaches.

Unit-III

10 Lectures

Application of art principles – Understanding Balance, Proportion, Contrast, Rhythm, Movement, etc. Composition – scene planning & staging, tools and techniques, Field division, Perspective and camera angles, Picture composition.

Unit-IV

10 Lectures

Theory of action and gesture – Understanding movement and action, capturing quick gestures in drawing, importance of gesture drawing. Description and visual development, tools for storyboarding – How to describe and develop a shot visually, storyboard elements and guidelines.

Unit-V

10 Lectures

Elements of the Continuity Style – Transitions, Cuts, editing styles Pacing – Story beats, thinking for a camera, speeding up and slowing down a scene.

Reference Books:

1. The Art of Layout and Storyboarding (Author: Mark Byrne)
2. Shot by shot (Author: Steven D Katz)
3. Animation Script to Screen (Author: Shamus Culhane)

Character Design (MMAA0103-T)

L T P
3 1 0

Unit-I

10 Lectures

Introduction to Character Designing, what is Character- A Character is -what he does, Motive, The Past, Reputation, Stereotypes, Network, Habits and Patterns, Talents and Abilities, Tastes and Preferences, Body.

Unit-II

10 Lectures

Human Development- The first year, Toddlers (Age one to three), Pre School (Ages three to five, Age Six to Age Sixteen, Age Seventeen to Age Twenty-One, Young Adulthood, Mid-life, Late Adulthood, Old Age and other development issues. Assignment- Develop and design characters for a Game.

Unit-III

10 Lectures

Developing Characters- Types of people, Classic comedy, Character types, Classic Comedy v/s Negative stereotypes, Everyman v/s one-of-a-kind, Complex and original characters, starting a Profile, Types of characters, more to think about character in a story. Assignment-Develop and design characters for an animated television cartoon series.

Unit-IV

10 Lectures

Written description of characters, important design principles, Color theory etc. Character Studies from animated movies, Character studies from real life, Character studies from live action movies, Character studies from Computer Games. Assignment- Develop and design characters for an animated short film.

Unit-V

10 Lectures

The process of character creation: How to get a good gesture, exaggerate from life, apply a shape language to your characters, how to get good line quality, how to proportion effects your character design, how to use perspective to draw believable characters, how to draw your character in action, how to give your character emotion and expressions. (Study of Human Skeleton, Musculature, Shape, Proportion, Character Construction, Heads, Hands, Feet, Gesture, Acting, Drapery, Body Types,

Reference, Prop Design, Analysis, Comparative chart, Model Sheet, Expression Sheet, Pose Sheet, Color chart Noodling and Polished Render.)

Reference Books:

1. Animation Writing & Development (Author: Jean Ann Wright)
2. Animation Script to Screen (Author: Shamus Culhane)
3. Characters and View Point by Orson Scott Card
4. Illusion of Life by Ollie Johnston & Frank Thomas
5. Figure drawing without a model- by Ron Tiner
6. Creating Characters with Personality: For Film, TV, Animation, Video Games and Graphics Novels by Tom Ban Croft and Glen Keane
7. Creating Animated Cartoons with Character: A Guide to Developing and Producing Your Own Series for TV, the Web, and Short Film by Joy Murray
8. Animation: From Pencil to Pixels by Tony White

Visual Communication (MMAA0104-T)

L T P
3 1 0

Unit-I

10 Lectures

Need for and the Importance of Human and Visual Communication. Visual Literacy, Communication a expression, skill and process, Understanding Communication: SMRC- Model. Types of Media – Traditional media, Print media, Electronic media and any other new media, Theoretical explanations and presentations on color wheel, color species, Usage of Painting materials & Results mixing, colors, Primary, Secondary, Tertiary colors.

Unit-II

10 Lectures

Communication as a process. Message, Meaning, Connotation, Denotation Culture/Codes, etc Levels of communication: Technical, Semantic, and Pragmatic. The semiotic landscape: language and visual communication, narrative representation. Principles of Visual and other Sensory Perceptions. Colour psychology and theory (some aspects) Definition.

Unit-III

10 Lectures

Fundamentals of Design: Definition. Approaches to Design, Centrality of Design, Elements/Elements of Design: Line, Shape, Space, Colour, Texture. Form Etc. Principles of Design: Symmetry. Rhythm, Contrast, Balance Mass/Scale, etc. Design and Designers (Need, role, process, methodologies, etc.). Basics of Graphic Design: Definition, Elements of Graphic Design, Design process-research, a source of concept, the process of developing ideas-verbal, visual, combination & thematic, visual thinking, associative techniques, materials, tools (precision instruments etc.) design execution, and presentation, Virtual reality.

Unit-IV

10 Lectures

Information Design case studies (Choose any one): (1) department stores, (2) grocery stores, (3) museums, (4) shopping malls, (5) city centres, (6) hospitals, or (7) Food joints (8) Educational institutions (9) any other public space.

Unit-V

10 Lectures

Case studies based on: Design categories (Print, Merchandise, Web,etc), Design content and locations, Evidence of branding and placemaking, typography and layout of information, Colours, Symbols and maps used, Forms, materials, and media chosen for communication, Elements that evoke visceral, behavioural, and reflective reactions to the environments, Elements used to evoke sentiments of pleasure, play, and fun (if any).

Reference Books:

1. Hayward, P., & England, A. C. of. (1996). *Picture This: Media Representations of Visual Art and Artists* (2nd Rev ed.). University of Luton Press.
2. Lester, P. M. (2013). *Visual Communication: Images With Messages* (6th ed.). Wadsworth Pub Co.
3. Palmer, F. (1972). *Visual Awareness*. Batsford.
4. Palmer, F. (1989). *Visual Elements of Art and Design*. Longman.
5. Porter, T., & Goodman, S. (1982). *Manual of Graphic Techniques 2; for Architects, Graphic Designers, and Artists*. Charles Scribner's Sons.
6. Schildgen, T. (1997). *Pocket Guide to Digital Color: Reproduction and Printing with Digital Applications*.

3D Studies Lab (MMAA0105-P)

L T P
0 0 2

Discussion & Experiments

1. Experimenting on 3D modeling Technique
2. 3D Production pipeline
3. Editing 3d meshes and creating 3d Texts
4. Concept of mesh smooth, mirroring, duplicating, merging, edge looping, and Exporting the models from scene to scene for facilitating faster production flow
5. Technical issues related to polygon modelling
6. Working with image reference while modelling
7. Managing huge sets and models using proxy meshes.
8. 3D for architectural walk through
9. Concepts of materials and textures, Introduction to UV unwrapping&UV mapping.
10. Editing textures for organic and Inorganic object, Use and creation of Bump, displacement and render passes.
11. 3D character modelling using Autodesk Maya
12. 3D Character Sculpting using Z- Brush Software or Mudbox
13. 3D Modeling for Game

Reference Books:

1. Autodesk Maya Bible

Reference Books:

1. 5 Tips for Multimedia Enhanced Teaching and Learning—Technology Enhanced Learning. (n.d.).
2. Laskevitch, S. (2020). Adobe Photoshop: A complete course and compendium of features. San Rafael, CA: Rocky Nook.
3. Carlson, J. (2020). Adobe photoshop elements 2020 classroom in a book. ADOBE Press.
4. Concepcion, R. (2021). Adobe photoshoplightroom classic classroom in a book. S.l.: adobe press.
5. Anil Madan Graphics Design in Delhi—Justdial. (n.d.).
6. Nichols, R. (2020). Mastering Adobe Photoshop Elements 2020: Supercharge your image editing using the latest features and techniques in Photoshop Elements. Brimingham, UK: Packt Publishing.
7. Mayer, R. E. (2002). Multimedia learning. In Psychology of learning and motivation (Vol. 41, pp. 85-139). Academic Press.
8. Team, A. C. (2013). Adobe Photoshop CC Classroom in a Book. Adobe Press.
9. Gyncild, B. (2012). Adobe Photoshop CS6: classroom in a book. Peachpit.

Clay Modelling Lab (MMAA0106-P)

L T P
0 0 2

Discussion & Experiments

(Software Package: (Zbrush))

1. Geometrical shapes (Sphere, Pyramid, Cube)
2. Geometrical shapes intersection
3. Fruits or Vegetables(Scaled model upto min 5 times with details)
4. Human parts- Nose (Scaled model upto min 5 times with details)
5. Human parts- Ear (Scaled model upto min 5 times with details)
6. Human parts- Lips (Scaled model upto min 5 times with details)
7. Human parts- Hand (Scaled model upto min 5 times with details)
8. Human parts- Foot (Scaled model upto min 5 times with details)
9. Human head study- Basic
10. Animal studies- Eg: Hen/Rabbit etc
11. Animal studies- Animal Standing Eg: Dog
12. Project work: Fantasy character.

Reference Books:

1. Clay Modelling for Beginner: An Essential Guide to Getting Started in the Art of Sculpting Clay (Clay Modelling | Clay Modeling | Clay Art) by Jeanie Hirsch
2. The Indian Technique of Clay Modelling- Motilal Banaršidas Publisher-1970 Web links and video

Discussion & Experiments

1. Introduction to Mix Media Animation, Types of Animation, Types of Mix Media Animation, Importance of Pre-production, Production, and Post Production Process.
2. Idea – script – treatment, designing characters and prop, planning your shots – basic film grammar/composition of shots, the storyboard, editing – Animatics and story reels.
3. Explore various software like Photoshop, Monkey Jam, Adobe Illustrator, After Effects Rotoscoping Animation, using live action videos, Cutout Animation.
4. Hardware requirements for stop motion animation, Clay Animation, Stop Motion Techniques, Flip book, Animation set designing- interior & exterior, Clay Character Modeling & Animation, Technique of working in groups, Budgeting, Time and Money.
5. Mix Media animation work with different tools like: Digital medium, Water colors, Poster colors, Oil Pastel colors, Acrylic colors, Pencil colors, Charcoal, Pen and Ink, Using waste material such as sand, stones, grass, hardboard, different types of color papers & clay etc. For creating experimental animation film.

Reference Books:

1. The Advanced Art of Stop Motion By Ken A. Priebe
2. The Kultz Book of Animation: How To Make Your Own Stop Motion Movies By Nicholas Berger and John Cassiday
3. The Animator Inside Of You How To Make Stop Motion and Clay Animation Basic Tricks and Tips By Chris Capps
4. Richard Taylor, “Encyclopedia of Animation Techniques”, New Burlington Books, 2002.
5. Tom Gasek, “Frame by Frame Stop Motion: Non-Traditional Approaches to Stop Motion Animation”, Taylor & Francis, 2013.
6. Tony White, “Animation from Pencils to Pixels: Classical Techniques for Digital Animators”, Taylor & Francis, 2006.
7. Stop Motion: Craft skills for model animation By Susannah Shaw

8. Art Through the Ages by Helen Gardner
9. An Introduction to Art and Culture in Ancient Egypt Art in Ancient Egypt Volume Christopher Witcombe
10. A Survey of Art in Ancient Egypt from Predynastic Times to the Graeco-Roman Period
11. Art in Ancient Egypt Volume 2 By Christopher Witcombe
12. Art in the Hellenistic World: An Introduction Paperback – October 6, 2014 by Andrew Stewart (Author)
13. Greek Art: A Study of the Formal Evolution of Style By Rhys Carpen

2nd Semester

Art of Film Making (MMAA0201-T)

L T P
3 1 0

Unit-I

10 Lectures

Basic art of filmmaking, Types of Film Production, Development- Selection of concept, Film budget justification, Green-light. Pre-production- Area of research, Script development - types, Draft preparation. Shot, scene, Story board, copy right (Law/Ethics), Hiring actors or models, Crew members Role of Director & procedures. Art Director, Cinematographer, Director of Lighting, Floor Manager, Production Manager. Preparing Production board/Management, Planning and Budgeting for Production, Location scouting. Set direction & color correction, Equipment required and tests, finalizing props, shooting schedule, Script breakdown.

Unit-II

10 Lectures

Introduction to Digital Video Equipments: Digital Video Camera- Types – Format Major Components - Operation and Functions. Lens – Types – Aperture - Shutter. Focussing Methods. Focal Length. Depth of Field. Video signal- Types and Functions. Tripod Types. Clapboard- Usage. Light meter. Other useful accessories. Digital Camera Movements- Composition-Shots-Angles. Single & multi-camera operations.

Unit-III

10 Lectures

Production- Shooting on location, Shooting script, Visualization, Selection of Dialogue, Rehearsing, Basic and Special Lighting Usage. Setup - Atmospheric Lighting, Cinematography, Principal photography, Mic arrangements. Camera placement. Tool and techniques. Online, offline, recorded & live programmes, Schedule alterations, Changes in relation to artists date / location problems. Daily call sheet, Daily progress report, Cost report.

Unit-IV

10 Lectures

Post-production- Video Capturing and Footage review. Final scripting. Basic software & hardwares. Editing, Video Editing-types. EDL Preparations, Editing Techniques Continuity-Sequence-Dynamic.

Linear and Non-Linear Editing. A-B roll & its advantage, Method of Video Effects and Video Transition, Chromo-Keying. Rerecording Video.

Unit-V

10 Lectures

Voice-over, Sync sound, audio mixing, Role of audio & effects, Mix and composite, Finding Music. Special effect. (Sound, Visual, Graphics and Animation), Titles, Film Screening, FT (Fit for Telecast) certificate, Certificate Approving, Marketing-getting sponsors. Publicity, Film Releasing. VIDEO & AUDIO CODECS Definition and use of codecs. Codec formats & types. Storage devices CD/DVD/BD (Blue-ray Disc). Montage, promos, special promos.

Reference Books:

1. Watkinson, J. (2002). An introduction to digital audio. Taylor & Francis.
2. Ohanian, T. A., & Ohanian, H. C. (1998). Digital nonlinear editing: Editing film and video on the desktop. Butterworth-Heinemann.
3. Nobel, P. S. (2005). Placing shadows: lighting techniques for video production. Taylor & Francis.
4. Owens, J. (2015). Television production. CRC Press.
5. Gross, L. S., Foust, J. C., & Burrows, T. D. (2005). Video Production: Disciplines and Techniques. McGraw-Hill.
6. JARVIS, P. (1998). The Essential TV Director's Handbook (1st ed.). Focal Press.
7. Millerson, G. (1990). The Technique of Television Production, 12th, Twelfth Edition (12thed.). Focal Press.
8. Wheeler, P. (2001). Digital Cinematography. Focal Press.

Animation Theory (MMAA0202-T)

L T P
3 1 0

Unit-I

10 Lectures

The History and Science of Animation-Persistence of Vision, Old Technologies, Animation before Disney, Introduction to major art movements- Art Movements and Aesthetics (Indian and Western)

Unit-II

10 Lectures

Introduction to Narrative Structures – Different modes and mediums of storytelling Traditional animation – Traditional Animation Process, Terms and definitions, early examples, classic films.

Unit-III

10 Lectures

Digital Animation – Digital technology, CGI Contemporary trends in Animation – Contemporary storytelling, stylization and techniques.

Unit-IV

10 Lectures

Ideas for short animation films – Developing ideas, research on subject, creating the world for the story. Description and visual development, tools for storyboarding – How to describe and develop a shot visually, storyboard elements and guidelines.

Unit-V

10 Lectures

Role of Sound in Animation – importance of sound, sound design, tools and techniques Elements of the Continuity Style – Transitions, Cuts, Editing styles.

Reference Books:

1. Animation Script to Screen (Author: Shamus Culhane)
2. The Art of Layout and Storyboarding (Author: Mark Byrne)
3. Shot by shot (Author : Steven D Katz)
4. The Illusion of Life – Essays on Animation, Edited by Alan Cholodenko, Power Publication in association with Australian Film Commission, SYD, 1991

Western Art (MMAA0203-T)

L T P
3 1 0

Unit-I

10 Lectures

About world Art and Western Art. Egyptian civilization its philosophy and Art Form.

Unit-II

10 Lectures

About Greek Art. Greek Geometric period and Greek Vase Painting. Sculpture of Greek Archaic Period.

Unit-III

10 Lectures

Artwork of Greek Classical period Artwork of Greek Hellenistic period.

Unit-IV

10 Lectures

Evaluation of Greek Renaissance Art. Art of High Renaissance.

Unit-V

10 Lectures

Modernization of Western Art. Romanticism, Impressionism, Cubism, Surrealism.

Reference Books:

1. Animation The History of Western Art by Sandhya Ketkar
2. ART OF THE WESTERN WORLD From Ancient Greece to Post Modernism Paperback – 1989 by Michael Wood
3. ARCHAIC AND CLASSICAL GREEK ART (OXFORD HISTORY OF ART) ROBIN OSBORNE
4. HISTORY OF MODERN ART (7TH EDITION) H. H. ARNASON, ELIZABETH C. MANSFIELD
5. Greek Sculpture: The Classical Period, a Handbook (World of Art), 1985 by John Boardman (Author)
6. Greek Art (Fourth Edition) (World of Art) –1996 by John Boardman (Author)
7. The Story of Art by E.H. Gombrich

Digital Image Editing Using Photoshop (MMAA0204-T)

L T P
3 1 0

Unit-I

10 Lectures

Introduction of Photoshop : Creating a New File, Main Selections, Picking color, Filling a selection with color, More ways to choose colors and fill selections.

Unit-II

10 Lectures

Painting with paintbrush tool, Using the magic wand tool and applying a filter, Saving your document Color Mode, Gray Scale Color Mode, RGB Color Mode, CMYK Color Mode, Bitmap Mode, Open a file, Preference.

Unit-III

10 Lectures

Foreground & background, Changing Foreground and Background colors, Using the Large color selection Boxes and small color swatches.

Unit-IV

10 Lectures

Using the Eyedropper tool to sample Image color, Changing the Fore ground Color While using a Painting Tool, Using Brushes, Selecting the Brush Shape.

Unit-V

10 Lectures

Drawing a vertical and Horizontal Straight lines with any brush, Drawing connecting Straight Lines (at any angle) with any brush, creating a New Brush, Saving Brushes, Loading Brushes, creating a Custom Brushes, Using the Painting Modes, Fade, Airbrush Options, Pencil Options.

Discussion & Experiments

1. Introduction to Documentary Animation Films
2. Study and discussions on few awarded and Oscar nominated animation documentary films Study and discussions on few awarded and Oscar nominated documentary films
3. Case Studies
4. Documentary Animation Film Makers
5. Discussion: Story structures, Story stages from prep to edit, Defining a story style, Scene-based storytelling, Theme-based storytelling, Visual storytelling, Characters and narrators, Research and access, Production and timescales.
6. Discussion: Production Designs-Camera Rules, Composition, Staging & Formats, Rhythm & Style Variety, Value & Color.
7. Discussion and Practice: Concept writing on various topics on social issues.
8. Discussion and Practice: Implementation of concept into visual storytelling.
9. Discussion and Practice: Audio-visual presentation by the end of semester.
10. Assignment & workshop based on Pre-Production: Concept, Story, Script, Screen-Play, Voice Recording, Inspirational Sketches, Character Design, Prop Design, Story Boarding, Animatic, Layout (Final Posing with Background Design)

Reference Books:

1. Producing Independent 2D Character Animation: Making and Selling a Short Film by Mark Simon
2. Animation from Script to Screen By Shamus Culhane
3. Animated Documentary By Annabelle Honess Roe
4. Simplified Drawing for Planning Animation By Wayne Gilbert
5. Sketching for Animation: Developing Ideas, Characters and Layouts in Your Sketchbook by Peter Parr
6. Dream Worlds: Production Design for Animation (Library Binding) by Hans Bacher, Don Hahn

Discussion & Experiments

1. Introduction to Animation: Review course outline, intro to projects. Intro to digital animation: Intro to Maya animation interface and keyframing animation.
2. Using of Key frame: History of animation: Preparing a scene for key framing using groups. Node Hierarchy. Overview of Bouncing ball animation (squash and stretch). Creating Playblast animations.
3. Rigging with IK/FK: Introduction to Rigging: Adding a joint to simple objects. FK and IK kinematics.
4. Skinning: Skinning and painting weights: Painting skin weights and adjusting joint orientation.
5. Driver and Driven Key, Motion path: Advanced rigging systems and controls: Using Human IK to rig a character. Integrating Maya into various workflows Lab: Maya animation techniques: Motion Path animation & Set Driven Key, expressions and dynamics

Reference Books:

1. Maya Help File (in Maya menu, F1 key)
2. The Art of Maya: An Introduction to 3D Computer Graphics by Autodesk Maya Press
3. Getting Started in 3D with Maya by Adam Watkins, Focal Press, 2012
4. Introducing Autodesk Maya 2016: Autodesk Official Press by Dariush
5. Derakhshani, Sybex, 2015
6. Mastering Autodesk Maya 2016: Autodesk Official Press by Todd Palamar, Sybex, 2015
7. Autodesk Maya 2014 Essentials by Paul Naas, Sybex, 2013
8. Digital Art Masters series by 3DTotal publishing Character Animation Fundamentals by Steve Roberts, Focal Press, 2012
9. Rig it Right! Maya Animation Rigging Concepts by Tina O'Hailey, Focal Press, 2013
10. Sculpting the Figure in Clay: An Artistic and Technical Journey to Understanding the Creative and Dynamic Forces in Figurative Sculpture 1st Edition

Game Design Lab (MMAA0207-P)

L T P
0 0 2

Discussion & Experiments

1. Making Games: i) Game Play and Game Data ii) Designers and Development Process iii) The Designer's role in Game Development Process
2. Game Play and Game Mechanics Game Play and Game Mechanics i) Game play and the fun factor ii) Play Elements iii) Mechanics of Game Play iv) Modeling Reality
3. On Movement i) Graphic Interface Requirements ii) Game Statistics for Movement iii) Terrain Features iv) Movement Algorithm
4. Game Characters and Items i) Creating Player Characters ii) Item Categories iii) Game functions of Items
5. Storytelling in Games i) Stories in Games ii) Structuring Stories in Games iii) Linking plot o game play iv) Creating a Game Story
6. Assignment on Game Design and Development i) Pre-Production ii) Production iii) Post-Production

Reference Books:

1. Basics of Game Design by Michael Moore (2011), CRC Press
2. Level Up! - The Guide to Great Video Game Design, by Scott Roge
3. Fundamentals of Game Design, By Ernest W Adams

3rd Semester

Indian Art & Animation (MMAA0301-T)

L T P
3 1 0

Unit-I

10 Lectures

Pre-Historic rock paintings and Art of Indus valley, Buddhist and Jain Art - Pre-Historic Art -Period and location, sites, objective and characteristics. Mohenjo-Daro and Harappa (study of seals, sculptures, terracotta). Art in caves of Ajanta, (Location, period, No. of caves, Chaitya and Vihara, Paintings and Sculptures subject matters and technique etc.) Ellora. Pal and Jain school.

Unit-II

10 Lectures

The Mughal, Rajasthani and Pahari schools of Miniature painting- Origin and Development. Sub-Schools of Rajasthani painting-Mewar, Bundi, Jodhpur, Bikaner, Kishangarh, and Jaipur. Sub-Schools of Pahari painting-Basoli, Guler, Kangra Main features of the Rajasthani, Mughal and Pahari Schools ..

Unit-III

10 Lectures

The Bengal School of Painting and the Modern Trends in Indian Art - Introduction to the Bengal school of painting, Origin and development, main features of Bengal school of painting. Artists and their famous paintings Nandlal Bose, Abanindranath Tagore, Kshitindranath Majumdar, Ram gopal vijayvargiya. Study and appreciation of contemporary (Modern) Indian artist and their paintings-Raja Ravi verma, Jamini Roy, Amrita sher gil, M.F.Hussain.

Unit-IV

10 Lectures

Graphic Storytelling in India – An overview of graphic narratives and their evolution Understanding Comics and Sequential Art – Comic art and its derivatives Planning character design, layout design, illustration style, composition, staging, backgrounds pertaining to Indian culture & tradition – Concept art and production design for Indian stories Indian Archetypes v/s Stereotypes – Exploring heroes and villains in Indian mythology Popular Indian Graphic novels – Case studies of some graphic novels.

Unit-V

10 Lectures

Animation as a storytelling (narrative) medium – Exploring the art of storytelling through animation
Visual Concepts - Character Exploration, Backgrounds & Storyboards for animation Feature animation
– Case studies of some Indian Animation feature films Personal films and expression - Case studies and
scope of independent animation films Advertisements and Education - Use of animation in
advertisements in India.

Reference Books:

1. History of Indian Art by Devender kumari , Paperback.
2. Bhartiya chitrakala ka Itihas- Dr. Avinash Bahadur verma, Prakash book dipo,Bareli(U.P.)
3. The Heritage of Indian art-Dr. Vasudev Sharan Agarwal
4. Indian Painting-Percy brown,YMCA Publishing house,Massey hall,Jai singh road, New Delhi
5. Story of Indian Art- S.k.Bhattacharya, Atma Ram & sons, Kashmiri gate, Delhi.
6. History of India and Indonesian Art- A.K.Coomaraswamy, Dover publication,Inc., New york.
7. A Passage to India: From Traditional Miniature Paintings to Contemporary Multi-Media Works,
Art from India Is Strengthening Its Presence on the American Art Scene by Hart, JaneArt
Business News, Vol. 29, No. 5, May 2002
8. Rajput PaintingBy Sherman E. Lee; George MontgomeryUnknown, 1960
9. The Art of Mughal IndiaBy Stuart C. WelchH.N. Abrams, 1963
10. Indian Painting in the Punjab Hills: EssaysBy W. G. Archer; Victoria and Albert MuseumH. M.
Stationary Off., 1952
11. Animation Script to Screen (Author: Shamus Culhane)
12. The Art of Layout and Storyboarding (Author: Mark Byrne)
13. Shot by shot (Author: Steven D Katz)
14. The Illusion of Life – Essays on Animation, Edited by Alan Cholodenko, Power Publication in
association with Australian Film Commission, SYD, 1991

3D Character Effects (MMAA0302-T)

L T P
3 1 0

Unit-I

10 Lectures

Illustrative eg: Forms and folds for clothing, viewing body forms as simple shapes, applying clothing edges and hemlines, establish form for clothing, pipe folds, zig-zag folds, spiral folds, Half-lock folds, diaper folds, drop folds, fashionable details.

Unit-II

10 Lectures

Introduction to cloth simulations, building joints with cloth simulation, wrap deform, cloth simulation to rig, stretching and joint pulling, rope and curves for deformers, inherited cloth nodes, lag problems.

Unit-III

10 Lectures

Introduction to hair system, nucleus nodes, paint hair follicles tool, hair clumps, hair collisions, hair dynamics and settings, caching simulations.

Unit-IV

10 Lectures

introduction to nHair, curve types and deforming hair, creating hairs with curves, paint texture tool, introduction to Xgen, grooming brushes, adding beard, adding noise and primitives, Painting density and physical hair shaders, eyebrows.

Unit-V

10 Lectures

Long hair, hair splines, hair utilities, curves to guides, hairstyle refining and hair modifiers, animating hair, lighting rendering hair, Interactive Grooming tools, adjusting hair density, rendering hair.

Reference Books:

1. Animation and Visual Effects Resources Blog | Tips & Techniques |JcTools.(n.d.).
2. ArtStation—HAIR MAYA XGEN CORE GROOMING PROCESS WORKFLOW. (n.d).
ArtStation

3. Hair and Clothing - Mastering Autodesk Maya 2016: Autodesk Official Press [Book]. (n.d.).
4. Cloth | Maya 2016 | Autodesk Knowledge Network. (n.d.).
5. Create hair and fur using interactive grooming splines | Maya 2020 | Autodesk Knowledge Network. (n.d.).
6. How to Draw Clothes: Wrinkles and Folds. (n.d.).
7. Industrial Design—Generative Design, 3D Product Rendering | Altair. (n.d.-a).
8. Introduction to Maya nCloth. (2007). Oklahoma, OK: PL Studios.
9. England, W. (n.d.). Introduction to sculpting fluid dynamics: Real flow techniques. Gnomon Workshop.
10. Maya Getting Started: Creating joints. (n.d.).
11. Maya Tutorial: Understanding and Creating nCloth Simulations | Pluralsight. (n.d.).
12. nCloth | Maya 2020 | Autodesk Knowledge Network. (n.d.).
13. nCloth Dynamic Properties Explained. (n.d.).
14. nHair> Create Hair. (n.d.).
15. Palamar, T. (2016). Mastering Autodesk Maya 2016. Sybex, a Wiley brand.
16. Phoenix FD Advanced Water FX Course – RedefineFX. (n.d)
17. Real flow, Finix FD , Xgen, Yethi software books
18. RealFlow: Soft Body Simulation for Motion Graphics. (2015). linkedin.com.
19. Realistic Dog Grooming for Production with Xgen | The Gnomon Workshop. (n.d)
20. Reussner, R. H., Becker, S., Happe, J., Heinrich, R., Koziolk, A., Koziolk, H., Kramer, M., &Krogmann, K. (2016). Modeling and Simulating Software Architectures: The Palladio Approach. The MIT Press.
21. Sybex.Introducing.Maya.2008.pdf. (n.d.).
22. Watkins, A. (2012). Getting Started in 3D with Maya: Create a Project from Start to Finish—Model, Texture, Rig, Animate, and Render in Maya (1st ed.).

Discussion & Experiments

1. Introduction to Art, digital Art, what is digital painting - it's various forms- techniques, utility, Talents and Abilities.
2. Digital tools, various softwares used for digital painting, hardwares
3. Developing paintings- Types of paintings, BG paintings, landscapes, portraits, illustrations, matte paintings etc.
4. Written description of digital paintings, important Art principles, Art elements, Color theory, Study of light on various surfaces, Study of reflection and refraction, creating textures, using layers, Understanding Hue, Saturation and Histogram, Color level and curves, Using brushes etc.
5. Advantages of digital painting for production, comparison between traditional and digital paintings, case studies on digital artists and their work
6. Assignments:
 - i) Develop and design BG paintings for an animated short film.
 - ii) Develop and design Matte paintings for a Game.
 - iii) Develop and design portraits on a theme.

Reference Books:

1. Illusion of Life By Ollie Johnston & Frank Thomas
2. Figure drawing without a model- by Ron Tiner
3. The Digital Matte Painting Handbook by David B.

Compositing and Editing Techniques Lab (MMAA0304-P)

L T P
0 0 2

Discussion & Experiments

1. Introduction to Compositing – Basics concepts about compositing, Matching Foreground & Background – Techniques of matching and extending sets and backgrounds.
2. Masking – Creating Masks, using alpha channels, Isolating A Moving Object from A Footage – Rotoscopy, Using Roto Brush and masking to isolate an area of a frame.
3. Camera – Camera types, properties and movements, Tracking – Motion Tracking, Camera Tracking
4. Creating A Cinematic Look – Using color correction, depth of field and other effects to create cinematic look, Creating Transparent Screens – Using layers and effects to create screens and HUDs
5. Transitions & Editing Techniques – Understanding transitions and continuity editing, Case Studies – Review films and analyze the effects used

Reference Books:

1. Maya The Art and Science of Digital Compositing by Ron Brinkmann
2. Digital Compositing for Film and Video Compositing, Visual Effects by Steve Wright
3. Digital Visual Effects and Compositing by Jon Gress
4. In the Blink of an Eye by Walter Murch
5. Art of the Cut: Conversations with Film and TV Editors by Steve Hullfish

Discussion & Experiments

1. Introduction to Graphics, Understanding graphic designing process, Interrelation between graphic designing and Advertising, Introduction to Advertising, Design basics - conventional forms - techniques, Tools, utility.
2. Understanding the vast area of Ad designing, various types of Advertisements, corporate Identities, Introduction to typography, Advanced typography. Campaign designing.
3. Principles and elements of design, Layout and references, Visualizing idea, Introduction to visualization and copy writing for an Ad, Illustration designing, designing for various media, Print media and digital media, printing techniques.
4. Introduction to emerging media, understanding the latest trends, soft wares and hard wares used in designing, developing raster and vector illustrations.
5. Creating images for print & web, managing image size, Managing file size, Web page designs, Packaging design, presentation skills., case studies on famous Ad campaign.
6. Graphic design assignments: i) Design an Ad campaign for a product ii) Develop an Ad campaign on a social topic iii) Presentation

Reference Books:

1. Advertising management, Jaishree jethwaney ,Shruti jain , Oxford university
2. The design process by Karl Aspelund
3. Fundamentals of Graphic Design by Gavin Ambrose/Paul Harris
4. Adobe Photoshop CC Classroom
5. Adobe Illustrator CC Classroom
6. Mass Communication in India by Keval J. Kumar
 - a. Web Design in a Classroom by Jeremy Osborn , Jennifer Smith
 - b. Killer UX Design by Jodie Moule

Discussion & Experiments

1. Idea Creation for Animation
2. Concept Development
3. Visual Storytelling
4. Animation Characters
5. Principles of Animation
6. Various Runs, Walks, Jumps, Skip and Leap
7. Flexibility
8. Overlap
9. Overlapping Action
10. Weight & Force
11. Anticipation
12. Takes & Accents
13. Timing, Staggers, Wave & Whip
14. Dialogue & Action

Reference Books:

1. Maya Simplified Drawing for Planning Animation by Wayne Gilbert
2. The Animator's Survival Kit By Recharad Williams
3. Animation: The Mechanics of Motion By Chris Webster
4. Timing for Animation By Harold Whitaker
5. Acting for Animators By Ed Hooks
6. Sketching for Animation: Developing Ideas, Characters and Layouts in Your Sketchbook By Peter Parr
7. Character Animation Fundamentals: Developing Skills for 2D and 3D Character Animation by Steve Roberts

Discussion & Experiments

1. Basic interface and commands of UDK, Intro to Static Mesh Browser, Actor Class Browser
2. Project 1: Creating Environments, Project 2: Building the Stage, Project 3: Creating the backdrop and placing the assets in the level
3. Project 1: Advanced Kismet: Creating a Third Person Platformer, Project 2: Mission Design
4. Project 1: Level and Camera Creation, Project 2: Adding player functionality
5. Project 1: Collectables, Project 2: Finalizing the Mission

Reference Books:

1. Mastering UDK Game Development Hotshot, eight projects specifically designed to help you exploit the Unreal Development Kit to its full potential, John P. Doran, Packt
2. Learning Unreal Engine Android Game Development, Nitish Mishra, Packt
3. The Essential Beginner's Guide to Getting Started with UDK: How to techniques, tips and insight by Alex Galuzin, World of Level Design.com

4th Semester

Modern Art & Animation (MMAA0401-T)

L T P
3 1 0

Unit-I

10 Lectures

Origin of Modern Art, major stylistic movements, periods and artists. Neoclassicism-Ingre, Jacques Louis David, Jean August Dominique, Romanticism-Delacroix, Goya, Realism- Millet, Corot, Courbet, Manet –Artist and their paintings.

Unit-II

10 Lectures

Impressionism – Claude Monet, Renoir, Dega. Post- Impressionism- Paul Cezanne, Paul Gauguin, Vincent Van Gogh, Seurat and their paintings.

Unit-III

10 Lectures

Fauvism, Cubism –Picasso, Dadaism, Surrealism, Expressionism, Pop Art - Artist and their paintings.

Unit-IV

10 Lectures

Case studies – Animation films inspired by modern art.

Unit-V

10 Lectures

Case studies – Contemporary Animation.

Reference Books:

1. Gardner's Art Through the Ages: A Global History, Vol. 1, 14th Edition (Paperback) - Fred S. Kleiner
2. Art History, Combined Volume (4th Edition) (Paperback) - Marilyn Stokstad, Michael W. Cothren
3. History of Modern Art (7th Edition) -H. H. Arnason, Elizabeth C. Mansfield
4. Life with Picasso -Francoise Gilo
5. Art & Today - Eleanor Heartney

Experimental Motion Graphics Lab (MMAA0402-P)

L T P
0 0 2

Discussion & Experiments

1. Introduction to Motion Graphics Introduction to Motion Graphics – What is Motion Graphics, key concepts and applications
2. Multiplaning, Keyframing – Using layers to create depth, adding key frames, layer attributes and effects, graphic editor
3. Camera – Camera types, Orientation, Depth of Field, limitations
4. Camera Movements – realistic camera, purpose driven camera movements
5. Effects and Presets – Using the inbuilt effects and presets
6. Particle Systems – Using customized particle systems
7. Storytelling – Script, Story, Message, Pacing, Hierarchy
8. Time Remapping – Slowing, speeding up, remapping
9. Kinetic Typography – Storytelling with text Animation
10. Assignment Review – Review the assignment shots completed during the course

Reference Books:

1. The Visual Effects Producers: Understanding the Art and Business of VFX By Charles Finance and Susan Zwerman.
2. The VES Handbook of Visual Effects Edited by Jeffrey A. O Kun and Susan Zwerman.
3. Compositing, Visual Effects, Essential for aspiring artists By Steve Wright
4. The Art and Science of Digital Compositing: Techniques for Visual Effects, Animation and Motion Graphics by Ron Brinkmann
5. The Visual Effects Producer: Understanding the Art and Business of Vfx by Charles Finance
6. Digital Compositing for Film and Video by Steve Wright

Discussion & Experiments

1. Visual Effects before Computers - Stop Motion Animation, Puppets and Animatronics Matte Painting, Miniatures, Projections, Forced Perspective with Live Action – Techniques of creating and extending sets and backgrounds.
2. Blue or Green Screen Composites – Using Chroma keying Digital Effects, 2D and 3D CGI – Two dimensional and three-dimensional computer-generated imagery.
3. Production Breakdown – Analyzing and breaking down the production process Pre-Production and Preparation – Arranging Team, Basic VFX Technologies and Equipment.
4. Production – Shooting, On Set Operations, On-Set References, Motion Control, In-Camera Practical Effects, Motion Capture Post Production – Digital Workflow, Changes, Rendering
5. Rendering – Completing and exporting the shot. Assignment Review – Review the assignment shots completed during the course.

Reference Books:

1. The Visual Effects Producers: Understanding the Art and Business of VFX By Charles Finance and Susan Zwerman.
2. The VES Handbook of Visual Effects Edited by Jeffrey A. O Kun and Susan Zwerman.
3. Compositing, Visual Effects, Essential for aspiring artists By Steve Wright
4. The Art and Science of Digital Compositing: Techniques for Visual Effects, Animation and Motion Graphics by Ron Brinkmann
5. The Visual Effects Producer: Understanding the Art and Business of Vfx by Charles Finance
6. Digital Compositing for Film and Video by Steve Wright

Discussion & Experiments

1. Introduction of 3D: What is 3D, Elements of 3D in detail, what is texture and various methods of texturing, Uses of sculpting and texturing in multimedia. Difference between low and high poly.
2. Low poly to high Poly detailing: how to prepare basic figure using default shapes, work with sub tools and layers, making mask for detail in specific part, setup posing.
3. Refine or polishing and applying texture: Introduction of Zbrush and substance painter, how to use alpha maps for more detailed sculpting, Use of different brushes and spotlight tool.
4. Optimizing Model: How use decimation process, convert model high to low poly, Uses of color profiles for further texturing process.
5. Various texturing techniques: Learn to apply texture on model, learn uv mapping process.

Reference Books:

1. Vitamin 3-D: New Perspectives in Sculpture and Installation Adriano Pedrosa
2. Sculpting the Figure in Clay: An Artistic and Technical Journey to Understanding the Creative and Dynamic Forces in Figurative Sculpture 1st Edition