

# THE EDGE

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Syllabus for Dual certification MSC in  
Multimedia and Animation with Advance  
complete Animator

Subject code	Nature of Exam		Subject Name	Credit	Marks		Total Marks
					Int.	Extn.	
<b>Semester – I</b>							
MMA-01	Theory		Multimedia & Computer Graphics	4	25	75	100
MMA-02	Theory		Graphic Design & Visual Arts.	5	25	75	100
MMA-03	Theory		Digital Image Processing	5	25	75	100
MMA-P1	Practical		Digital Image Processing	3	25	75	100
MMA-P2	Practical		Drawing & Sketching.	3	25	75	100
MMA-P3	Practical		Graphic Design & Visual Arts. Practical	3	25	75	100
<b>Semester – II</b>							
MMA-04	Theory		Advance 3D Animation (Modeling & Animation)	5	25	75	100
MMA-05	Theory		Multimedia Programming	4	25	75	100
MMA-06	Theory		Virtual reality	4	25	75	100
MMA-P4	Practical		Multimedia Programming	3	25	75	100
MMA-P5	Practical		Advance 3D Animation (Modeling & Animation)	3	25	75	100
MMA-P6	Practical		Virtual reality	3	25	75	100
<b>Semester – III</b>							
MMA-07	Theory		Game Programming	4	25	75	100
MMA-08	Theory		Cinematography	5	25	75	100
MMA-09	Theory		Digital Video & Sound Editing	4	25	75	100
MMA-P7	Practical		Game Programming	4	25	75	100
MMA-P8	Practical		Digital Video & Sound Editing	4	25	75	100
MMA-P9	Practical		Cinematography	4	25	75	100
<b>Semester – IV</b>							
MMA-10	Project		Cartoon Animation & Special Effects	4	50	50	100
MMA-P11	Project		Project – Short Film Educational/Instructional Animation Graphic	8	100	100	200
	Report		Novel				

NEW SYLLABUS ACA

# Advance Complete ANIMATOR

Revised 2013-2015

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Semester - 1 Duration: 720 hrs. The edge

Semester 1 is designed for the novice entries into IMS the world of Infrastructure Management Service. The curriculum in this semester is tailored to gear up students to develop the basic IMS knowledge and further it is fashioned to guide them from basics to advanced topics.

The students, to start with, will be educating or upgrading their skill set pertaining to Digital Electronics. MS Office 2007 is the next essential syllabus which would enhance the students' acquaintance on the most popular applications used regularly such as Word, Excel, PowerPoint, Outlook and Access.

Learning A+ will augment the students' comprehension about the fundamentals of computer and the skill set pertaining to assembling and troubleshooting a computer system. In Network+, they learn about networking standards and troubleshooting networks. Learning about the operating systems in A+, the students will step further to discover the latest revolution of Microsoft, the Windows 7 OS. This is one of the latest and most popular client operating systems that is currently phenomenal in the job market.

In this semester Discuss How to improve students drawing skills using the new drawing books & they will also learn to adjust color balance to produce images that resemble watercolors and oils and produce dynamic graphics for the web with interactive buttons and rollovers. They will also be able to develop their own personal style, Vision, and design. Furthermore, they will be able to discuss elements of art such as objects, texture, color theory, space, and character design. Discuss the fundamentals of design and visualization in detail

This semester lays the foundation for learning Animation design, animation drawing & principles of animation. It includes study of anatomy, perspectives & digital art. With Project-Illustration portfolio Apply the knowledge gained to create a complete simulated project in graphics and illustration and from Creating Illustration They will also be able to create graphics for print medium like brochures, flyers, artwork, corporate presentations, CD-ROM, and CBTs.

Organizations are growing smarter with potential growth in the IT industry. Along with quality work they emphasis on public relations which becomes the essence of the business. In order to fulfill both, the students must acquire technical skills as well as the communication and personality development skills which is learnt by students in this semester.

This semester leads to certifications like

- Microsoft Certified Application Specialist on Microsoft Office 2007 100Hrs
- A+ IT technician 40Hrs
- Network + 60Hrs
- MCTS: Windows 7 Configuration 100Hrs
- Animation design & visualization 120Hrs
- Project-Illustration portfolio & Creating Illustration 160Hrs
- Advance communication
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Once the students complete this semester they'll be exposed to various job profiles like;

- Application Specialist on Microsoft Office 2007
  - Hardware Engineer
  - PC Support Engineer
  - Tech Support Specialist
  - Desktop Support Technician
  - Media publisher and many more.

#### Desktop & Laptop Maintenance

Desktop & Laptop Features and Function keys  
Common Desktop & Laptop Problems  
Function of Desktop & Laptop  
Power Options For Desktop & Laptops  
Hibernate Features  
Standby Features

- Laptop battery
- Common laptop problems
- Best practices
- General maintenance of the Desktop & laptop

#### Microsoft Office Suite 2007

- Word 2007 Basics
- Editing and Proofreading a Document
- Bulleting and Numbering
- Working with Tables
- Word Styles
- Word Art, Clip Art
- Mail Merger
- Excel 2007 Basics
- Printing in Excel
- Charting
- Creating Tables
- Excel Workbook
- Special Features
- PowerPoint 2007 Basics
- Charts and Objects
- Customizing PowerPoint
- Online Presentation
- Access 2007 Basics
- Forms
- Sorting Records
- Filters

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- Information Accuracy
- Outlook 2007 Basics
- Electronic Mails
- Inbox Management
- Calendar
- Events and Meetings

### Installing and Configuring Windows 7 (MCTS)

- Installing Windows 7
- Preparing the Windows 7 Installation Source
- User and Group Management
- Password Reset Disk
- Parental Control
- Upgrading to Windows 7
- User Profiles Management
- System Images Capturing □ Virtual Hard Disk Files
- Application Compatibility
- Introducing Windows 7
- Windows Aero and Mouse operations
- Switching Users
- Disks and Device Drivers
- Network Settings
- IPv4/IPv6 Configuration
- Network Configuration
- Folder and File Access
- Branch Cache
- Printers in Windows 7
- Windows 7 Desktops Security
- Windows 7 Client Computers
- Mobile Computing and Remote Access in Windows 7

### A+

- Computer Components Identification
- Assemble and Disassemble Computer Components
- Components in Portable Computers
- Devices Installation and Configuration
- Characteristics of Cabling and their Connectors
- Common IDE, SCSI and Peripheral Devices
- Optimize PC Operations Optimization
- Determine the Issues that must be Considered when upgrading a PC
- Popular CPU Chips

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- Types of Memory (RAM)
- Types of Motherboards and their Components
- Printer Technologies, Interfaces and Options/Upgrades
- Troubleshoot Common Printer Problems
- Operating System Fundamentals OS Installation
- Common Error Codes Interpretation
- Networking Capabilities of Windows
- Basic Internet Protocols and Terminologies
- Procedures for Establishing Internet Connectivity

#### Network +

- Logical or Physical Network Topologies
- Networking Standards
- Characteristics of Different Types of Cables
- Different media Connectors and Describe their uses
- Purposes, Features and Functions of Network Components
- General Characteristics of the Different wireless technologies
- Different Network Protocols
- Classful IP and Their Subnet Masks
- Subnetting
- Private and Public network addressing schemes
- WAN Technologies
- Security protocols and authentication protocols
- Basic capabilities different server operating systems
- Benefits and characteristics of using a firewall and proxy service
- Main characteristics and purpose of extranets and intranets
- Antivirus software

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Fault Tolerance  
Network Utility to Troubleshoot Networks  
Impact of modifying, adding or removing network services  
Network Troubleshooting with Physical Topology

#### Sketching practices & Basic Art

- Discuss various sketching practices
- Discuss design techniques
- Visual thinking
- Concept development
- Concept Art Design
- Composition
- Typography
- Image Magic
- Image-editing tools □ Edit retouch image □ Apply special effects.

#### Animation design & visualization

- Animation Fundamentals
- Fundamentals of Design & Visualization
- Basic drawings with form

Project-Illustration portfolio

- Intro to Computer Graphics
- Intro to Adobe Photoshop
- Adobe Photoshop
- Apply the knowledge gained to create a complete simulated project in graphics and illustration

#### Communication Skills and Personality Development

- Importance of Effective Communication
- Types of Communication
- Scope of Written Communication
- Types of Writing
- Effective Writing
- Reading Skills
- Listening
- Improving one's Vocabulary
- Root words
- Usage of words with similar meaning
- Homophones, Synonyms & Antonyms
- Personality, its types
- Significance of Personality-An organizational perspective
- Public Speaking - As part of personality development

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- Group Discussion - A practice of corporate personality development Interviews
- Presentation Skills - The root of Personality Development
- Acting your speech (intonation)- Effective public speaking tips
- Public Presentation
- Nature and scope of a group discussion

Semester - 2 Duration: 520 hrs.

With an ample essence of basics, the students are set to learn the advanced topics in semester II The second semester enhances skills in pre-production aspects such as concept design, storytelling, scriptwriting, character designing & layouts, storyboarding with application of film language and creating animatics. E-Project A project proposal that includes Synopsis, Script & Screenplay, Character Designs & Layouts, Storyboard & Animatics.

In this semester Enhance skills in anatomy study, storyboarding, 2D animation & audio-video editing. One of the greatest uses of Computer Graphics is in Architectural Pre-Visualization and Animations. It is plain wise and intuitive to model and create a structure/building in 3D and visualize it in complete photorealism before even the first brick is laid. This is especially important for builders to justify commercial exploration to potential clients before even taking the risk of constructing the complex/structure. This semester covers production for animation - both high-end 2D Digital & 3D.

To further enhance the personality traits of the students, they are exposed to Personality Development and Communications skills training at advanced levels. Effective communication, public speaking, leadership qualities, time management and interview skills are the few essential topics and certification are covered in this semester.

Syllabus and certification are covered in this semester

<input type="checkbox"/> Pre-production for animation	120Hrs
<input type="checkbox"/> 2d design & animation suite	140Hrs
<input type="checkbox"/> Production for animation	160Hrs
<input type="checkbox"/> Personality Development	60Hrs
<input type="checkbox"/> Project	40Hrs

Once the students complete this semester they'll be exposed to various job profiles like;

- Concept designer
- 2D Animator
- Graphics designer
- Web page Designer

Pre-production for animation

- Concept design

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- Art of storytelling & scriptwriting
- Character design
- Layouts
- Acting & expressions
- Concepts of storyboarding & film language
- Editing for animatics □ E-Project

#### 2d design & animation suite

- Anatomy study
- Concepts of Storyboarding
- Concepts of 2D Animation
- Working with Audio(Basic of audio, audio recording & capturing)
- Video Streaming and editing
- 2D Graphics and Animation with Flash
- Principles of animation using Flash
- Scripting with Flash
- Advance Scripting with Flash
- Web Weaver
- Project-2D Animation Portfolio & (Case Study)
- Technology-Value Addition (Discuss classical/ToonBoom Storyboard Pro in details.)

#### Production for animation

- Concepts of 2D Digital Animation
- 2D Digital production process
- Clay modeling
- 3D modeling
- Texturing
- Rigging
- Animation principles in 3D
- Lip Sync & Sound Synchronisation

#### Communication Skills and Personality Development

- Scope of verbal Communication
- Formal Communication
- Informal Communication
- Phonetics
- Pronunciation
- Listening
- Accent and Neutral Accent
- Reading a formal Text
- Pace of Communication
- Dictionaries
- Interviews and its types
- Skills required for facing an interview
- Effective Presentation Skills
- Significance of Leadership
- Factors of Leadership
- Qualities of a good leader



- Interviewer and Interviewee - Roles and Responsibilities



Semester - 3 Duration: 430 hrs.

this semester, aims at introducing students to computer animation and its nuances. Students will learn modeling, shading, lighting and animation including character animation and effects animation using AutoDesk 3D Studio Max.

Computer Animation Basics and Workflows Learning from Traditional Animation AutoDesk 3D Studio Max - Modeling, Shading, Lighting, Animation, Dynamics [Including Cloth, PFlow] the topics covered move to a more advanced level.

This semester covers the complete process of animation filmmaking, from pre-production & production to postproduction. This semester creates job-ready professionals that are required by Animation Studios, Graphic Design companies & Gaming Studios. Choose from 4 specialization options at the end of the course. Finally this semester will also teach how to face the interview how you have to present in front of your interviewer how your curriculum should represent you

Syllabus and certification are covered in this semester

- 3d animation suite 120Hrs
- Film making 140Hrs
- 3D stereoscopic filmmaking. 160Hrs
- Interview Skill 60Hrs
- Project 40Hrs

Once the students complete this semester they'll be exposed to various job profiles like;

- 3D Animator
- VFX Artist
- 3D film maker
- Video Editor
- Sound editor
- Compositor

#### 3D Animation suite

- Concepts of 3D and Animation
- Study 3D animation & special effects
- Claymation: A stop-motion animation technique
- 3D basics: Modeling to animation
- Modeling with 3D
- Lights, Camera & Animation materials
- Painting 3D Objects
- Character Animation and Visual FX
- 3D Motion Graphics & FX
- Concepts of Digital film making
- Rendering with V-Ray

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- Visual FX
- Digital FX
- Project-3D Animation Portfolio
- 3D Animation/ Architectural Visualization Portfolio (Case Study)
- Technology-Value Addition

#### Film making

- Aesthetics of Film-Making
- Character Animation
- 3D Character Development
- Rigging & Character Set-up
- Digital Painting
- Matte Painting
- BG Modeling and Surfacing
- Texturing & Look Development
- Lighting & Rendering
- Particle Dynamics
- Digital Enhancement
- Basics of Compositing
- Concepts of stereoscopy
- Clean plate creation
- Rotoscopy
- Planar Tracking
- Depth creation for 2D/3D conversion
- Advanced Node based Compositing
- Matchmoving
- Pre-production
- Storyboarding
- Cinematography
- Concepts of Film Making
- Stop Motion
- Digital Design
- Compositing
- Modeling & Texturing
- Character Setup & Skinning
- Character Animation
- Sound Editing
- Concepts of Non-Linear Editing
- Lighting & Rendering
- Particle & Dynamics

3D stereoscopic filmmaking.

- Digital Design
- Basics of Photography
- Layer Based Compositing

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- Projection for Visual Effects
- Match Moving & Camera Tracking
- Pyrotechnics
- Advanced Compositing
- Node Based Compositing
- Clean Plate & Wire Removal
- Stereoscopic Pipeline
- 3D Design with Autodesk 3dsmax™/ Autodesk Maya™
- Advanced Particle Effects/ Fluids/ Cloth FX
- Concepts of Set Extension and CG Integration
- VFX Case Studies

#### Advance Communication, Personality & Interview Skill

- Grammar, Pronunciations, General knowledge
- Debates, Communication skill
- Group discussion, Voice clarity
- Vocabulary generation
- Accent neutralization
- Body language, texture
- Dressing style
- Aptitude & awareness
- Sitting style, Positive behavior
- Good manners
- Skills to face an interview
- Boosting self confidence
- Enhancing personal skill
- Corporate manner
- Time management
- Group discussion
- Mock interview
- Making curriculum vitae

#### Semester-IV

Semester - 4Duration: 640 hrs.

Semester IV, The last semester covers post-production process in animation & animation specialization. At the end of this semester, students will create a portfolio in a specialized area of animation & Advanced 3D animation techniques with specialization in the area of interest & portfolio development.

This module aims at introducing students to computer animation and its nuances. Students will learn modeling, shading, lighting and animation including character animation and effects animation using AutoDesk Maya. This module also includes a session on RealvizMMTrack for THE EDGE, an automated match moving engine for AutoDesk Maya which enables artists to extract camera animation and data from a live action video.

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Computer Animation Basics and Workflows Learning from Traditional Animation AutoDesk Maya - Modeling, Shading, Lighting, Animation, Dynamics [Including Cloth, Fluids and Fur] RealvizMMTrack for THE EDGE [Matchmoving]Project Digital Sculpting & Painting This module aims at introducing PixologicZBrush, a digital sculpting application being used by all major studios worldwide. Off late, digital sculpting using ZBrush has become a preferred production technique for constructing highly detailed characters and environments. ZBrush works with geometry from Autodesk Maya, 3ds max etc. for sculpting and detailing in addition to providing builtin tools for creating remarkable and highly detailed objects and characters. One of the most important processes involved in realizing a 3D animated shot or a live action based visual effects shot is Compositing which involves layering multiple elements together to form a single composition or shot.

In this syllabus , we introduce students to the art of compositing using Adobe AfterEffects. Once the students are comfortable with compositing basics, they're taken through a comprehensive module in node based compositing for film and television using Eyeon Fusion, one of the most widely acclaimed high end and node based compositing application by Eyeon Software, Canada. This application has seen its use in major Hollywood productions such as The Matrix Revolutions, The Aviator, Sky Captain & The World of Tomorrow, Swordfish, X-Men and many more. Some of the features which set Fusion apart is its unique ability to work with 2D and 3D elements (geometry) and its industrial strength color correction tools and particle suite.

Following Eyeon Fusion, students will be oriented on Apple Shake based on the Apple Mac Pro workstations. Apple Shake has been a weapon of choice for many international productions owing to its strong node based architecture and a flexible workflow among other things. Non Linear Editing [NLE] Editing Basics with Adobe Premiere

Non Linear Editing with Apple Final Cut ProCompositing Basics with Adobe After Effects Node Based Compositing using Eyeon Fusion Orientation to Apple Shake (Node Based Compositing) The last but very essential topic in this final semester is the Soft skills development.

Syllabus and certification are covered in this semester

- |                          |  |        |
|--------------------------|--|--------|
| <input type="checkbox"/> | Post-production & specialization for animation | 180Hrs |
| <input type="checkbox"/> | Advanced 3d animation & portfolio development  | 260Hrs |
| <input type="checkbox"/> | Gaming   | 140Hrs |
| <input type="checkbox"/> | Soft Skill development                         | 60Hrs  |

Once the students complete this semester they'll be exposed to various job profiles like;

Project Developer

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Animator  
Specialists  
Game Developer  
Texture designer

#### Post-production & specialization for animation

- Lighting & rendering
- Concepts of compositing & editing
- Post-production
- Specialisation & Digital Portfolio Development □ E-Project :
- 30-second short film in 2D Digital Animation or 3D Animation.
- Animation specialization areas (students pick one of 5):
- 2D Digital Animation
- Modelling & Texturing
- Lighting & Renderin
- Rigging & Animation
- Compositing & VFX

#### Advanced 3d animation & portfolio development

- Modeling with Maya
- Modeling with Z Brush
- Texturing with Maya
- Lighting & rendering with Maya
- Rigging with Maya
- Character animation with Maya
- Paint effects & dynamics using Maya □ Specialisation (Choose 1 elective):
- ☺ Modeling & Texturing
- ☺ Lighting & Rendering
- ☺ Rigging & Animation □ Compositing & VFX.
- Portfolio Demo Reel
- Orientation to creative test

#### Gaming

- Basics of Art
- Game Theory
- Game Development Pipeline
- Game Concept Art □ Concept Design
- Introduction to 3D
- Pre - Viz of Level Design
- Fundamentals of Texturing

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- Fundamentals of Sculpting
- Environment Modeling
- Stylised Character Modeling
- Next-Gen Character Modeling
- Next-Gen Vehicle Modeling
- Rigging & Animation for games
- Introduction to Game Engine
- Asset Integration in Game Engine
- Portfolio Development

### Soft Skills Development



Transition from College to Corporate

- Business Written Communication
- Email etiquette
- SMS etiquette
- Business Spoken Communication
- Telephone etiquette
- Net and web meetings etiquette
- Working in Teams
- Attitude At Work
- Work Ethics

#### ★SOFTWARE COVERED:-

##### ★Corel Draw

Vector Artwork and Basics, Color composition and theory, Page layout, Understanding Font and typefaces, Digital Vector art, Ad composition and rules, tips and tricks and lots more...

##### ★Adobe Pagemaker

Page layout, Fonts and Typefaces,.. and lots more...

##### ★Autodesk AutoCAD

Drafting Basics, 2D Shapes, Shape Modification and Transformation, 3D Object Creation, Adapting an Architectural drawing in AutoCAD and lots more...

##### ★Adobe Photoshop

Computer Generated Images Explained, Fundamental Concepts, Digital Artwork, Image retouching and Color correction techniques, Composition and Aesthetics, The Print, Internet and Broadcast industries, Image Effects and lots more...

##### ★Adobe Premiere

Non-Linear Editing concepts and process, Types of Editing methodologies, Video and Film formats, Packaging and Delivery, Line-ups, Incorporating audio and dialogues, Effects and Continuity and lots more...

##### ★Autodesk 3ds max

Understanding 3D Animation and Workflow, Understanding software as a tool and customizing it for production, Integrating AutoCAD data, Polygonal Modeling, Shading and CG Lighting concepts and practices, Mental Ray, camera fundamentals and Animation for Architectural Animation, Particle Effects, Post-Production processes and lots more...

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★ **Autodesk Maya**

Autodesk Maya, for sculpting and detailing in addition to providing built-in tools for creating remarkable and highly detailed objects and characters. One of the most important processes involved in realizing a 3D animated shot or a live action based visual effects shot is Compositing which Understanding 3D Animation and Workflow, Understanding software as a tool and customizing it for production, Integrating AutoCAD data, Polygonal Modeling, Shading and CG Lighting concepts and practices, Mental Ray, camera fundamentals and Animation for Architectural Animation, Particle Effects, Post-Production processes and lots more...

★ **Adobe After Effects**

Compositing and Visual Effects concepts, 2D and 3D Compositing, Motion Tracking, Color Correction, Effect setups, Broadcast animation and titles, FX Composition and Animation and lots more...

★ **Syntrillium Cool Edit Pro**

Audio Basics and Fundamentals, Multi-track audio setups, Audio Effects and Non-linear compositions and lots more...

★ **Mocha™** mocha enables artists to quickly and easily solve difficult tracks and export transform, scale, rotation and perspective keyframes to the industry's most popular packages: After Effects, Final Cut, Flame, Smoke ,Avid|DS, Quantel, Fusion, Nuke & more.

★ **Trebuchet MSFusion™** Visual Effects, VFX, Artists, Post Production, AVID Editors, use eyeon's *Fusion*, Vision, Generation, Dimension, Rotation, Connection software, for compositing,

★ **Autodesk Mudbox™** Autodesk Mudbox is digital sculpting and digital painting software for artists, modelers, and texture artists in games, film, television, and design. is high-resolution, brush-based 3D sculpting software built for creating the most detailed organic models for the most challenging visual

★ **Fume FX™** FumeFX is a fluid dynamics engine designed for simulation and rendering of realistic fire explosion and other gaseous phenomena. It's versatility, robustness and intuitive workflow makes it a solution for the most demanding tasks in the computer graphics industry. Almost every aspect of simu can be customized through 3ds max scripting, allowing user to interfere with simulation computation lowest level.

★ **Real Flow™** is a fluid and dynamics simulator for the 3D industry, The technology uses particle based simulations. These particles can be influenced in a multitude of ways by point-based nodes, known as daemons, which can do anything from simulating gravity to recreating the vortex-like motion of a tornado. RealFlow can also simulate soft and rigid body collisions and interactions

★ **PF Track™** Featuring The Pixel Farm's distinctive node-based flowgraph architecture, PFTrack 2012 introduces revolutionary approaches to camera and object motion calibration, scene preparation, project management and data flow, opening new doors to how the information generated by match moving can be utilized and exploited facility-wide. With fully-integrated Python scripting and workflow customization tools, facilities can access the underlying metadata management core of PF Track 2012 and tightly integrate the software to their own unique workflow.



**FoundryNuke™**NUKE is a node-based digital compositing software produced and distributed by The Foundry, and used for film and television post-production.

**Unity™ (Game Engine)**Unity is a feature rich, fully integrated development engine for the creation of interactive 3D content. It provides complete, out-of-the-box functionality to assemble high-quality, high-performing content and publish to multiple platforms. Unity helps indie developers and designers, small and major studios, multinational corporations, students and hobbyists to drastically reduce the time, effort and cost of making games.

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