

Branch Name:	Bachelor of Computer Application (Graphics Animation and VFX)
Program Code:	CS102
Course Title:	Digital Compositing & Visual Effects (Nuke)
Course Code:	16-CAM308-3C
Pre-requisite Course:	Digital Compositing & Visual Effects (Nuke) is Motion Graphics & Visual Effects (Adobe After Effects).

Course Objectives (CO):

- To introduce students to node-based compositing workflows used in the visual effects industry.
- To develop proficiency in The Foundry Nuke for professional compositing and VFX production.
- To understand compositing principles, color management, keying, rotoscoping, and tracking techniques.
- To create seamless visual effects shots by integrating multiple image elements and render passes.
- To prepare students for careers in compositing, visual effects, post-production, and digital content creation.

Teaching and Examination Scheme:

Teaching Scheme(Hours. per week)				Evaluation Scheme (Marks)								
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory				Practical				Total
				University Assessment		Continuous Assessment		University Assessment		Continuous Assessment		
				Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	
1	1	-	2	09	25	09	25	-	-	-	-	50

Course Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1.	Introduction to Digital Compositing and Nuke Interface: Overview of VFX production pipeline, digital compositing fundamentals, node-based workflow, Nuke interface, node graph management, image formats, color spaces, project settings, and workflow organization.	15	25
2.	Keying, Rotoscoping and Paint Techniques: Green screen compositing, chroma keying, despill techniques, garbage mattes, rotoscoping workflows, roto animation, paint tools, cleanup techniques, wire removal, object removal, and image restoration methods.	15	25
3.	Tracking, Matchmoving and Multi-Pass Compositing: 2D tracking, planar tracking, camera tracking fundamentals, stabilization, matchmoving concepts, render passes, AOVs, depth compositing, integration of CGI elements, and scene reconstruction workflows.	15	25
4.	Advanced Compositing and Visual Effects Production: Color correction, color grading, relighting techniques, deep compositing concepts, visual effects integration, shot finalization, compositing optimization, portfolio development, and final VFX project creation.	15	25

Course Learning Outcomes (CLO):

At the end of this course, the student would be able to:

1. **CLO1:** Understand digital compositing principles and node-based workflows used in professional VFX production.
2. **CLO2:** Apply keying, rotoscoping, tracking, and paint techniques for visual effects creation.
3. **CLO3:** Integrate CGI renders, live-action footage, and multiple render passes into seamless composites.
4. **CLO4:** Perform color correction, grading, and advanced compositing techniques using Nuke.
5. **CLO5:** Create portfolio-ready visual effects shots following industry-standard compositing pipelines.

List of Textbooks

1. Digital Compositing for Film and Video – Steve Wright.
2. The Art and Science of Digital Compositing – Ron Brinkmann.
3. Nuke 101: Professional Compositing and Visual Effects – Ron Ganbar.

List of Text Reference Books

1. The VES Handbook of Visual Effects – Jeffrey A. Okun & Susan Zwerman.
2. Visual Effects Society Handbook – VES Publications.
3. Color Correction Handbook – Alexis Van Hurkman.

E-Resources / Web Links

1. Foundry Nuke Learning Portal
2. Foundry Documentation
3. Foundry Learn and Support
4. FXPHD Nuke Training
5. Compositing Pro Tutorials
6. CG Spectrum VFX Learning Resources
7. Gnomon Workshop

Assignment Description

1. Create a basic node-based compositing project.
2. Perform green screen keying and background replacement.
3. Create a rotoscoping and matte extraction project.
4. Remove unwanted objects using paint and cleanup tools.
5. Perform wire and rig removal techniques.
6. Create a 2D tracking and stabilization project.
7. Integrate CGI elements into live-action footage.
8. Perform multi-pass compositing using render layers.
9. Create depth-based compositing effects.
10. Apply color correction and grading techniques.
11. Create a visual effects shot using multiple compositing techniques.
12. Develop a short VFX sequence for film or advertising.
13. Build a compositing showreel showcasing VFX skills.
14. Create a final portfolio-ready compositing project.

Mapping of CLO, PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO1	H	H	M	M	H	L	L	M	M	M	L	L	H	M	L
CLO2	M	H	H	M	H	M	M	M	H	M	M	L	H	H	M
CLO3	M	M	H	H	H	M	M	H	H	M	M	L	H	H	H
CLO4	H	M	H	H	H	M	M	M	H	M	H	L	H	H	H
CLO5	H	M	M	H	H	H	M	M	H	H	H	M	H	H	H

H: High, M: Medium, L: Low