

FACULTY OF COMPUTER APPLICATIONS
B.Sc.(IT) (Animation, Vfx and Game Design)

- **Sem** : 5
- **Subject Code** : 05BA0506
- **Subject** : Digital Compositing

- **Course Objectives** : Students will be able:
 1. Understand the fundamental principles of node-based compositing.
 2. Learn to navigate and utilize the Nuke interface and toolsets.
 3. Integrate CG and live-action elements seamlessly using keying, tracking, and rotoscoping.
 4. Develop professional-level compositing techniques including color correction, layering, and 3D compositing.
 5. Prepare students for industry-level VFX pipelines and collaborative post-production workflows.

- **Prerequisites** : Basic understanding of visual effects and familiarity with digital imaging concepts.

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PRACTICALS

Unit No	Topics Covered	No of lectures required
1	Introduction to Nuke <ul style="list-style-type: none"> ▪ Node-based compositing vs. layer-based ▪ Interface walkthrough: Viewer, Properties, Node Graph ▪ Importing footage and project setup ▪ Working with merge operations and channels ▪ Basic color correction tools ▪ Masking and Keying ▪ Rotoscoping using Roto and RotoPaint nodes ▪ Understanding alpha channels and masks ▪ Keying techniques: Primatte, Keylight, and IBK ▪ Edge blending and spill suppression ▪ Matte refinement and garbage mattes 	30

2	Tracking and Stabilization <ul style="list-style-type: none"> ▪ 2D Tracking using Tracker node ▪ Match moving and screen replacement ▪ Planar tracking with CornerPin 	30
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	<ul style="list-style-type: none"> ▪ Stabilizing shaky footage ▪ Working with expressions and linked nodes ▪ 3D Compositing and Final Output ▪ Introduction to Nuke's 3D workspace ▪ Importing 3D geometry and cameras ▪ Using lights and environment for compositing ▪ Rendering and write nodes ▪ Final compositing project: combining all techniques in a portfolio-ready shot 	
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Course Outcomes:

1. Students will confidently use Nuke's interface and core tools for node-based compositing.
2. Students will apply keying and rotoscoping techniques to extract and combine image elements.
3. Students will perform motion tracking and stabilization for visual integration.
4. Students will integrate 3D elements and manage compositing depth and light.
5. Students will produce a complete composite shot suitable for showreel presentation.

Course Outcomes – Program Outcomes Mapping Table:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	H	M	-	-	H	-	-	M	-	H	M
CO2	M	-	H	-	-	L	-	H	M	-	H
CO3	-	H	M	-	-	-	M	-	H	M	-
CO4	-	-	-	H	L	-	H	-	-	H	M
CO5	L	-	H	M	-	M	-	H	M	-	H

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Text Book:

1. Digital Compositing for Film and Video by Steve Wright 2024 by Routledge .

Reference Books:

1. The Art and Science of Digital Compositing by Ron Brinkmann 2008 by Morgan Kaufmann
2. Compositing Visual Effects by Steve Wright 2017 by Focal Press

Web Reference:

1. <https://learn.foundry.com/nuke> – Nuke official learning resources
2. [YouTube Channels]: Surfaced Studio, ActionVFX, Compositing Academy

App Reference:

1. Udemy App – Course: Compositing in Nuke for Beginners to Pro
2. LinkedIn Learning App – Course: Nuke Essential Training.

Syllabus Coverage from text /reference book & web/app reference:

Unit	Chapter Numbers
1	Book 1 – Ch. 1–3 (Basics of Compositing, Node Workflow)
2	Book 1 – Ch. 4–6 (Keying, Rotoscoping)