# **Week 9: Introduction to Motion Graphics & Animation**

### **Lecture Notes**

#### **1. Motion Graphics in Digital Design**

Motion graphics enhance **static visuals** by introducing **fluid animation principles** that elevate user engagement. Core applications include:

* **Kinetic Typography Systems (KTS)** – The controlled animation of **text-based elements** to enhance messaging impact.
* **Vectorized Motion Pathing (VMP)** – A system that applies **mathematical trajectories** to **animate vector elements** with precision.
* **Depth-Based Parallax Modulation (DBPM)** – A technique that creates **layered depth illusion** by adjusting **foreground-background animation timing**.

#### **2. Keyframe Animation Principles**

Motion design is structured around **four fundamental keyframe methodologies**:

* **Linear Easing Structures (LES)** – A system that **generates consistent velocity motion transitions**.
* **Dynamic Curve Acceleration (DCA)** – The application of **Bezier curve adjustments** to create **organic movement dynamics**.
* **Multi-Tier Timing Modulation (MTTM)** – The technique of sequencing **hierarchical motion layers** for **depth-synchronized animation flows**.
* **Inertia-Based Object Motion (IBOM)** – A computational model that simulates **real-world physics-based movement patterns**.

#### **3. Motion Graphics Software Overview**

Industry-standard tools for **motion design** include:

* **AfterBlend Suite** – A **kinetic compositing engine** for integrating motion **within vector-based environments**.
* **Spectral Frame Animator** – A tool that **generates frame-interpolated sequences** for high-fluidity motion.
* **Neural Animation Mapper (NAM)** – AI-driven software that **predicts motion curves** based on **gestural input analysis**.