

MAVP03: Real Time Interactive For Virtual Production

Status	Approved
Module Name	Real Time Interactive For Virtual Production
Module Code	MAVP03
Credit Value	30
Level	7
Pre-requisites	
Named Module Leader	Chandler, Katie

Module Aim

This module enables students to develop technical expertise in the use of 3D environment software including Unreal Engine and to enable the creation of real-time cinematic experiences and interactive virtual production scenes.

Summary Module Description

This module enables the creation of immersive virtual productions using real-time rendering and advanced digital cinematography techniques. Students start by mastering Unreal and other interfaces and core functionalities, progressing to in-depth explorations of material creation, lighting, and camera work. Emphasis is placed on visual scripting using Blueprints, enabling learners to build interactive elements without extensive coding. Practical exercises include creating cinematic sequences, integrating virtual cameras, and applying dynamic particle effects with the Niagara system.

The curriculum also covers troubleshooting, optimization, and collaborative multi-user workflows, which are essential for efficient production environments. Through project-based learning, students gain hands-on experience in developing interactive narratives and high-fidelity visuals, ensuring they are prepared to meet the demands of modern digital filmmaking. This module ultimately cultivates both technical proficiency and creative storytelling capabilities using Unreal Engine.

You will study key creative issues for a project script, with an emphasis on integrating technology, creative storytelling, and collaboration. Responding to a script for a sequence with a specified duration, collaboratively developed with MA Filmmaking and Screenwriting cohorts and incorporating at least two virtual environments, you will use pre-visualisation tools to agree a plan in detail, then shoot and edit the sequence

Module-Specific Employability Skills

The module will offer you an opportunity to develop and refine advanced skills that can be applied in professional settings across the film and creative industries, as well as in academia and beyond. Through critical research, industry engagement, and professional practice, you will develop expertise that positions you as a skilled entrant in your field.

Industry & Business Knowledge You will build an advanced understanding of industry structures, business strategies, and evolving creative economies. You will critically engage with emerging business models, funding structures, and entrepreneurial opportunities to position yourself within contemporary industry developments.

Expanded Worldview You will critically engage with diverse global creative practices, exploring how cultural, social, and political contexts shape media production and consumption. Your work will reflect an informed, inclusive, and forward-thinking approach to representation and storytelling.

Health and Safety You will take a proactive approach to health and safety, embedding best practices into your professional and academic work. Your awareness will extend beyond compliance, incorporating emerging concerns around mental well-being, sustainability, and safe working environments.

Problem Solving and Innovation You will refine your ability to apply complex theoretical models to creative challenges, developing original solutions that drive industry and academic innovation. Your work will reflect a deep engagement with research-led creative problem-solving.

Imagination and Creativity You will enhance your creative practice by exploring experimental, research-driven approaches to storytelling and production. You will engage with both traditional and emerging methodologies to develop a distinct creative voice and produce work that challenges artistic and industry conventions.

Communication Skills You will enhance your ability to articulate complex ideas with clarity and impact, whether in written, verbal, or visual forms. Your communication will be tailored for diverse audiences, ensuring effective engagement with industry professionals, academic communities, and the public.

Personal Development You will take ownership of your professional and academic growth, critically reflecting on your strengths, challenges, and aspirations. You will cultivate resilience, adaptability, and a lifelong learning mindset, equipping you for sustained success in an evolving creative landscape.

In addition to its subject focus, the course will prepare you for other types of creative industry careers. All the above skills are transferable, which means that they can be adapted and deployed in a variety of fields and careers.

Assessment Strategy

Learning Outcomes

LO #	Learning Outcome Name	Assessment Criteria Category
1	1. Technical: Demonstrate the technical requirements of the design and delivery process of a virtual production shoot	Process
2	3. Communication: Demonstrate a command of diverse professional, effective communication and presentation skills	Communication
3	7. Innovation: Analyse the creative elements required for development and effectively resolve challenges throughout the production process of a narrative or factual project	Innovation

Assessment Methods

Assessment Method	Description of Assessment Method	%	Learning Outcomes Assessed	Compulsory or Compensatable
AR	Submit a pre-visualisation plan which includes a VP pipeline and example indicative assets	100	LO: 1,2,3	Compulsory

The following codes for assessment methods apply

AR	Artefact (a made object)
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Modes of delivery

Learning Activities	
Type	Hours
Structured Learning Activity	75
Guided Independent Study	225
Total	300

Indicative list of resources

Andurlekar, H. (2023). Build stunning real-time VFX with Unreal Engine 5 : start your journey into Unreal particle systems to create realistic visual effects using Niagara. Birmingham, Packt Publishing, Limited.

Khan, H. and H. Dulull (2024). Virtual Filmmaking with Unreal Engine 5 : A Step-By-step Guide to Creating a Complete Animated Short Film. Birmingham, England, Packt Publishing Ltd.

Sawicki, M., J. Moody (2020). Filming the fantastic with virtual technology : Filmmaking on the digital backlot. Milton, Taylor and Francis Group.

Hussin Khan, Unreal Engine 5 Virtual Production: A Practical Guide for Independent Filmmakers Pakt New York 2024 (hands-on guide for VP workflows in UE5, including real-time asset management.)

Epic Games Blog : How Disney's 'The Mandalorian' Uses Unreal Engine for Virtual Production

Brett Seymour, The Unreal Engine 5 Cinematographer's Handbook

Siggraph/GDC, on YouTube, Real-Time Live Sessions

Named Awards

Course
MAVIPRSFP01 MA Virtual Production (CFS)