MAVP01: Virtual Environment Design & Asset Development

Status	Approved
Module Name	Virtual Environment Design & Asset Development
Module Code	MAVP01
Credit Value	30
Level	7
Pre-requisites	
Named Module Leader	Chandler, Katie

Module Aim

The module is designed to equip students with the creative and technical skills necessary to design and originate “2+D” plates and 3D immersive virtual environments. Students will also research alternate methods of achieving certain special effects outcomes, (eg from painted mattes to green screen), incorporating these tools in their armoury of creative solutions.

Summary Module Description

This module introduces the fundamentals of designing virtual environments and developing high-quality digital assets, challenging students to develop optimised 3D assets for real-time production pipelines. Students explore the principles of composition, scale, lighting, and narrative integration to create visually engaging settings. Through hands-on tutorials in tools (such as Blender, Maya, and Substance Painter), learners build skills in 2+D and 3D modelling, texturing, and asset optimisation—ensuring assets are production-ready for engines including Unreal. Emphasis is placed on understanding the balance between aesthetic quality and real-time performance, with reflective skills that encourage critical analysis of contemporary virtual environments. Academic and production research, iterative project work and peer reviews reinforce the theoretical concepts, preparing students to generate environments that support seamless integration into virtual production workflows. This comprehensive approach lays a solid foundation for advanced digital storytelling and immersive design.

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.

Critical Thinking & Analysis You will refine your ability to critically evaluate screen-based production through advanced theoretical and practice frameworks and research methodologies. You will challenge conventions, synthesize interdisciplinary perspectives, and develop original insights that contribute to contemporary discourse in film, media, and creative industries.

Technical Skills You will advance your expertise in applying and critically assessing emerging and established technologies, ensuring their effective and ethical use. You will master complex digital workflows, industry-standard software, and experimental technologies, allowing you to push creative and technical boundaries in your work.

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.

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.

Collaboration and Team Working You will cultivate high-level collaboration and leadership skills, working across disciplines to develop ambitious, industry-relevant projects. You will refine your ability to foster creativity in team environments, navigating complex professional dynamics with confidence and adaptability.

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.

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 environment	Process
2	2. Collaboration: Analyse interpersonal skills and self-discipline to support working within diverse teams to deliver a successful project	Collaboration
3	6. Analysis: Analyse critical texts and discourse to formulate a reasoned argument and offer evidence for your claims	Analysis

Assessment Methods

Assessment Method	Description of Assessment Method	%	Learning Outcomes Assessed	Compulsory or Compensatable
AR	Creation of a 2+D environment with examples of accompanying assets in response to virtual environment design brief	100	LO: 1,2,3	Compulsory

The following codes for assessment methods apply	
AR	Artefact (a made object)

Modes of delivery

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

Indicative list of resources

Bordwell, D., & Thompson, K., Smith, J. (2020), Film Art : An Introduction, New York, McGraw Hill Education.

Paul Bourke The Photogrammetry Guidebook

Byrne, B. (2009). The visual effects Arsenal : VFX solutions for the independent filmmaker. Burlington, Mass, Focal Press.

Dinur, E., (2024). The filmmaker's guide to visual Effects : the art and techniques of VFX for directors, producers, editors and cinematographers. New York, NY, Routledge.

Kumar, A. (2022). Beginning VFX with Autodesk Maya : Create Industry-Standard Visual Effects from Scratch. Berkeley, CA, Apress : Imprint: Apress.

Pincus, E., S. Ascher (2019). The Filmmaker's Handbook : a comprehensive guide for the digital age. New York, Plume.

Susan Zwerman & Jeffrey A. Okun Virtual Production for Filmmakers: A Guide to Producing Films in the Digital Age , New York Focal Press

FXGuide online Magazine (fxguide.com) The State of Virtual Production – (VP workflows, including photogrammetry, asset pipelines.)

80 Level: Photogrammetry in Game Development & Film (80.lv case studies and tutorials on 3D scanning for virtual production).

Unreal Engine Blog: How Epic Games' MetaHuman Creator is Changing Digital Humans

Unreal Engine YouTube Channel Photogrammetry for Virtual Production *(*Step-by-step guide to scanning real-world objects for VP.)

Unreal Engine Virtual Production Learning Hub – Free courses on asset creation, photogrammetry, and VP pipelines.

DNEG Masterclass (YouTube) Virtual Production: From Previs to Final Pixel *(* asset creation, LED walls, real-time rendering.)

Chris Nichols (Chaos Group CG Garage *(*photogrammetry, 3D scanning, real-time asset creation.)

Named Awards

Course
MAVIPRSFP01 MA Virtual Production (CFS)