Unit Title	Digital Media Production (blended)
FHEQ Level	Level 6
Unit Code	CRC20302
Credit Value	15
Unit Type	Subject

Learning Hours			
Staff – Student Contact Hours		**Independent Study Hours**	
Classes	30	Independent study	90
Supervised access to Ravensbourne resources		Preparation for assessment	30
Total		150	

Unit Description

This unit covers advanced skills in digital audio and video capture, volumetric data capture using 3D depth sensors, editing and manipulation. Students will get an overview of media production work flows, video recording, volumetric data capture and manipulation using digital tools.

This unit will advance your skills on industry-standard software including Unity, Unreal Engine, Rhino and Adobe CC; and provide advanced knowledge of 3D creation and production workflows applicable to architecture, construction, simulation, visualisation and the games industry. This will also improve the students' ability to conceptualise and visualise 3D images and models, which can be deployed in other areas.

The Five Principles underpin the Mindsets and Skillsets Manifesto and are the foundation upon which all course curriculum frameworks and unit specifications are based. The relevant Principles as stated below have been mapped against the Learning Outcomes relevant to each course unit and at each level (see Programme Specifications for full description of the Five Principles):

1. Cultivate / Where the individual thrives.
2. Collaborate / Where disciplines evolve.
3. Integrate / Where education engages industry.
4. Advocate / Where purpose meets practice.
5. Originate / creativity meets technology.

Unit Indicative Content

Industry-wide Knowledge

- Advanced 3D design
- Digital video production workflows
- Volumetric data capture and manipulation
- Motion capture
- interactive content
- Use of conventional video within VR and AR tools
- 5G technologies and other transmission mediums
- Deploying VR and AR in industrial settings
- Delivering working VR and AR apps
- Performance and installation contexts and techniques
- Models of interaction: physics, response, affordances
- Data visualisation techniques and aesthetics
- Surveillance, tracking, bias and ethics

3D Specific Knowledge Area

- Unity (inc basic C# scripting)
- Rhino
- 3DSMax
- Blender
- Unreal Engine
- STL software
- Apps for Oculus

Workflows

- 3D Model to print
- 3D Model to app
- 3D model to VR/AR headset

Unit Aims

1. To develop skills in audio/video production and their use within an application
2. To gain an understanding of AR/VR experiences and volumetric data capture using advanced tools and techniques
3. To explore use cases and variations based on industry needs in developing 3D solutions
4. To evaluate efficacy of different approaches to volumetric data capture and visualisation

Unit Learning Outcomes

LO 2 Concept/Ideation

Critically appraise and evaluate appropriate research materials to generate workable concepts or strategic project themes that inform and underpin project development.

Related Principle: ORIGINATE

LO 3 Development/Prototyping

Investigate potential pathways that result in appropriate solutions, informed by a systematic understanding of the principles of the creative process.

Related Principle: INTEGRATE

LO 5 Presentation /Storytelling for Influence

Communicate projects creatively and professionally, whether in visual, oral or written form. Methods of presentation are appropriate to the audience/client and the purpose of the work.

Related Principle: ADVOCATE

LO 6 Critical and creative mindsets

Evaluate a range of critical approaches in order to form an independent position

Related Principle: ORIGINATE

Learning and Teaching Methods

This unit will be delivered using a combination of:

- Lectures / Seminars
- Online activities
- Self-directed independent study
- Peer learning, group discussion, guest speakers

Assessment methods and tasks	
Assessment tasks	**Weighting (%)** *(one grade or multi-grade unit)*
Demonstration and presentation of artefact	100% holistic

Indicative Assessment Criteria
Evaluate design options as applied to specific tools. (LO2)
Capture professional quality audio/video and embed it within application (LO3)
Develop a AR/VR experience based on volumetric data capture using advanced tools (LO3)
Reflect upon your experience and investigate potential uses of your approach (LO2)
Identify and propose various approaches for developing 3D solutions within specific industry use cases (LO5)
Compare the efficacy of different approaches to volumetric data capture and visualisation (LO2)
Evaluate various options for transmission of data over 4G/5G networks (LO6)

Essential Reading list

Wang, Rui. Augmented Reality with Kinect. Packt Publishing, 2013.

Linowes, Jonathan. Unity Virtual Reality Projects: Learn Virtual Reality by developing more than 10 engaging projects with Unity 2018, 2nd Edition (Packt Publishing, 2018)

Recommended Reading List

Rahman, Mansib. Beginning Microsoft Kinect for Windows SDK 2.0: Motion and Depth Sensing for Natural User Interfaces. Apress, 2017.

Fascinari, Massimo, and Clemente Giorio. Kinect in Motion - Audio and Visual Tracking by Example: A Fast-Paced, Practical Guide Including Examples, Clear Instructions, and Details for Building Your Own Multimodal User Interface. Packt Publishing, 2013.

Smyth, Clifford. Functional Design for 3D Printing: Designing 3d printed things for everyday use (2017)

Brtito, Allan. Blender 2.8 for architecture: Modeling and rendering with Eevee and Cycles (2019)