

## COURSE CONTENT

<b>Course Code</b>	DT5004 (DT2013)
<b>Course Title</b>	Fundamentals of Immersive 360° and VR experiences
<b>Pre-requisites</b>	NIL
<b>No of AUs</b>	3
<b>Contact Hours</b>	39 hours studio contact

### **Course Aims**

This elective course will introduce you to techniques and processes involved in producing immersive 360° media. You will have the opportunity to apply techniques to your own creative project. The strategies and approaches developed in this course can be applied to projects in a variety of other media-based courses.

### **Intended Learning Outcomes (ILO)**

By the end of the course, you should be able to:

1. Identify and discuss techniques used to convey immersive experiences.
2. Demonstrate fundamental techniques required to create 360° media.
3. Apply techniques and artistic considerations to create immersive experiences.
4. Present and reflect clearly on 360 and VR work in discussions and presentations.
5. Critique 360 and VR explorations, techniques and solutions employed by peers in a constructive manner

### **Course Content**

#### **The role of immersive media**

The experience of being immersed by enticing 360° audio-visuals brings your audience one step closer to the reproduction of reality, or at least a believable representation of another time and space. Creating immersive 360° experiences is both a technical and artistic challenge, but highly rewarding. The course will introduce you to the basic concepts of immersive media and will deliver a practice-based introduction to the fundamental techniques and processes involved in producing and presenting 360° experiences.

#### **Image acquisition and post-production**

Through practice-based exercises and project assignments, you will learn essential and advanced image acquisition techniques and post-production workflows required for immersive media.

#### **Viewing experiences**

By analysing a variety of examples, you will be able to identify the strength and weaknesses in 360° imagery, to refine your own assessments.

#### **Beyond traditional narrativity**

You will explore storytelling and narrative considerations for immersive environments that deviate from traditional formats.

### Artistic considerations

What makes a good composition for an environment in which you cannot define your frame? How can you direct your audience to stay focussed or look around? Which role do audio and other senses play? Through analysis of a variety of examples, you will develop a sense of creative considerations and their role in creating successful immersive experiences.

### Class assignments

Creative projects, which explore concept-development, fundamental image acquisition and editing techniques, as well as story-formats for immersive media. Developed through lectures, tutorials, class exercises and peer/instructor feedback sessions.

### Assessment (includes both continuous and summative assessment)

Component	ILO Tested	Programme LO	Weighting	Team/ Individual
Continuous Assessment Immersive projects 1 - 4	1,2,3	--	40	Individual
Final Project: Immersive final project	1,2,3,4	--	40	Individual
Continuous Assessment: Participation	5	--	20	Individual
Total			100%	

### Reading and References

1. Grimshaw, Mark. (ed.) *The Oxford Handbook of Virtuality*. Oxford University Press, 2014
2. McErlean, Kelly. *Interactive Narratives and Transmedia Storytelling: Creating Immersive Stories Across New Media Platforms*. Focal Press, 2018
3. DeSalle, Rob. *Our Senses: An Immersive Experience*. Yale University Press, 2018
4. Bucher, John. *Storytelling for Virtual Reality: Methods and Principles for Crafting Immersive Narratives*. Focal Press, 2017
5. Jerald Jason. *The VR Book: Human-Centered Design for Virtual Reality*. Morgan & Claypool Publishers (ACM Books), 2015
6. [www.roadtovr.com](http://www.roadtovr.com)

### Course Policies and Student Responsibilities

#### (1) General

You are expected to complete all assigned readings, activities, assignments, attend all classes punctually and complete all scheduled assignments by due dates. You are expected to take responsibility to follow up with assignments and course related announcements. You are expected to participate in all project critiques, class discussions and activities.

## (2) Punctuality

You are expected to be punctual for all classes. If you are more than 30 minutes late, you will be deemed as absent and will not be able to sign on the attendance register.

## (3) Absenteeism

In-class activities make up a significant portion of your course grade. Absence from class without a valid reason will affect your participation grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for in-class activities.

## Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

## Planned Weekly Schedule\*

\*Subject to adjustment by instructor according to the teaching situation, students' progress, public holidays and unforeseeable circumstances. A revised schedule will be issued to students at the start of the semester.

Week	Topic	Course LO	Readings/ Activities
1	<ul style="list-style-type: none"><li><b>Introduction to 360° and VR media</b></li></ul> Overview of key concepts, common techniques, image acquisition and presentation methods. Through analysis of examples, develop a sense of common issues. Introduction to 360° panorama photography.	1,2, 3, 5	<b>Introductory Lecture</b> <b>In-class discussion and analysis</b> of immerse projects examples <b>In-class exercise:</b> Creating a 360° panorama photo

<p>2-3</p>	<ul style="list-style-type: none"> <li>• <b>Fundamentals of 360° and VR media</b></li> </ul> <p>Introduction to image acquisition and presentation methods. Students will learn basic techniques of image acquisition.</p> <p>On-going analysis of examples.</p>	<p>1,2, 3, 5</p>	<p><b>Lectures on:</b></p> <ul style="list-style-type: none"> <li>- <b>History of immersive media</b></li> <li>- <b>Image acquisition</b></li> <li>- <b>Viewing experiences</b></li> </ul> <p><b>In-class exercises:</b> Practice of basic image acquisition techniques</p> <p><b>Project critique and feedback</b> on in-class exercises and assigned projects</p> <p><b>Assigned project 1:</b> Familiarize with the concepts of immersive image creation</p>
<p>4-8</p>	<ul style="list-style-type: none"> <li>• <b>Basic practices</b></li> </ul> <p>Applying core competencies to enable students to create high-quality imagery and immersive viewing experiences.</p> <ul style="list-style-type: none"> <li>• <b>Artistic considerations</b></li> </ul> <p>Through analysis of examples, students will learn which attributes contribute to a successful immersive experience.</p> <ul style="list-style-type: none"> <li>• <b>Narrative considerations</b></li> </ul> <p>An exploration of strategies to construct narratives for immersive experiences.</p>	<p>1, 2, 3, 5</p>	<p><b>Lectures on:</b></p> <ul style="list-style-type: none"> <li>- <b>360° panorama photography and videography</b></li> <li>- <b>Stereography</b></li> <li>- <b>Editing</b></li> </ul> <p><b>In-class exercises:</b> An in-depth practice of image acquisition techniques.</p> <p><b>In-class discussion and analysis</b> of compositing examples to investigate aesthetic considerations</p> <p><b>Assigned project 2:</b> Expand your competency by creating an original immersive image</p> <p><b>Assigned project 3:</b> Expand your competency by creating an original immersive moving image</p> <p><b>Project critique and feedback</b> on in-class exercises and assigned projects</p> <p><b>Student presentations</b> on assigned projects</p>
<p>9-13</p>	<ul style="list-style-type: none"> <li>• <b>Exploring advanced techniques</b></li> </ul> <p>An exploration of strategies to create immersive experiences utilising advanced techniques.</p>	<p>1, 2, 3, 4, 5</p>	<p><b>Lectures on:</b></p> <ul style="list-style-type: none"> <li>- <b>Stereography</b></li> <li>- <b>Animation and Post-Production</b></li> <li>- <b>Interactive Virtual Reality</b></li> </ul> <p><b>In-class exercises:</b> Practice of advanced techniques to create immersive experiences.</p> <p><b>Assigned project 4:</b> Create an immersive project utilising advanced techniques</p> <p><b>Project critique and feedback</b> on in-class exercises and assigned projects</p> <p><b>Project consultation</b> and continuous</p>

		<p>review, assessment and feedback throughout the production of the final project</p> <p><b>Final project:</b> Immersive experience demonstrating core competencies, technical skills and artistic considerations.</p> <p><b>Student Presentations</b> on the final project with critique and feedback</p>
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