



**UNSW**  
SYDNEY

**Built Environment**

**2017 | ARCH0006 | ELECTIVE**  
**Course Outline**

**CoDe PROGRAM**  
**Computational Design**

**TITLE: ADVANCED VR AND PRESENCE**

**CONVENOR: RUSSELL LOWE**

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## Course staff

- **Convenor:** Russell Lowe  
email: [russell.lowe@unsw.edu.au](mailto:russell.lowe@unsw.edu.au)

**Tutors:** TBA

## Course details

- 6 UOC
- 4 hours per week face to face.

*(Expected student workload:* 25-30 hours per unit of credit as determined by the UNSW Academic board. Differently put, this course requires approximately 150 to 180 hours of work across 9 weeks.)

## Elective location and class time

- Red Centre 2001 (AGSU room on level 2)
- Wednesday's 14:00 – 18:00 (weeks 1-9)

## Course aims

By exploring cutting edge VR experiences, designing and creating your own VR experiences and gathering empirical evidence to support critical evaluation you will be well placed to support your own VR aspirations, or the aspirations of clients, companies or institutions.

## Studio Description

2016 was the year of VR and now, in 2017, VR is everywhere. But what does this mean? What does it mean to be virtual and which, or who's, reality are people talking about? This course uses the concept of Presence to consider experience of the virtual and the real. In a semi intensive 9 week course (4hrs per week contact) you will complete two assignments. The first involves significant individual exposure to three VR experiences; Oculus First Contact, The Climb and Tilt Brush. Following a structured qualitative evaluation of Presence you will prepare a short report interpreting the findings gathered from the whole class. In the second assignment you will be introduced to entrepreneurial strategies that advocate the proposal of a "stupid" idea as the basis for a VR experience. You will then design and create that experience using the computer game editor for Unreal Engine 4. After a second structured qualitative evaluation of Presence, this time using your fellow students, you will prepare a second short report interpreting the findings.

## Student learning outcomes

By the end of the course the students will have skills in:

- Using contemporary VR technology.
- Understanding different Modes of VR interactivity.
- Qualitative evaluation methods.
- Data analysis and critical evaluation.
- Enacting entrepreneurial strategies.

- Level design in UE4
- Visual scripting in UE4
- Utilising marketplace assets in UE4

## Reference Material

Note: the list below is partial, please refer to the course blog for links to resources that emerge from discussions in studio.

### Books

Norton, R., (2013) The Power of Starting Something Stupid. Shadow Mountain

<https://www.amazon.com/The-Power-Starting-Something-Stupid/dp/1609070097>

### Papers

Newton, S., Wang, R. & Lowe, R. (2015). Blended reality and presence. International Journal of Design Sciences and Technology, 21(2), 113 – 131.

Riva, G. (2009). Is presence a technology issue? Some insights from cognitive sciences. Virtual Reality, 13(3), 159-169.

### Videos

Introduction to Level Design:

[https://youtu.be/XDsJOFyxMnw?list=PLZlv\\_N0\\_O1gaCL2XjKluO7N2Pmmw9pvhE](https://youtu.be/XDsJOFyxMnw?list=PLZlv_N0_O1gaCL2XjKluO7N2Pmmw9pvhE)

Introduction to Blueprints: [https://youtu.be/EFXMW\\_UEDco](https://youtu.be/EFXMW_UEDco)

### Online Documentation

Unreal Editor Quick Start Guide: <https://docs.unrealengine.com/latest/INT/Engine/QuickStart/index.html>

Introduction to Blueprints: <https://docs.unrealengine.com/latest/INT/Engine/Blueprints/GettingStarted/>

## Studio Blog

Information in this course outline is subject to change at the discretion of the course convenor. Students enrolled in this course are required to check the following blog site on the regular basis to receive updates and further instructions for this studio:

<http://arch0006-2017.blogspot.com.au/>

## **Assignments**

### **Assignment 1:**

**Title:**

First Contact.

**Weighting/Submission Date:**

40% submit on August 20<sup>th</sup> by 23:59

**Description:**

**Step 1:** Individually try three VR experiences; Oculus First Contact, The Climb and Tilt Brush.

**Step 2:** Evaluate Presence using the questionnaire supplied.

**Step 3:** Collate the individual data into a class wide data set.

**Step 4:** Prepare a 500 word report interpreting the findings gathered from the whole class.

**Rational in relation to the learning outcomes:**

This assignment relates to using contemporary VR technology, understanding different modes of VR interactivity, learning qualitative evaluation methods, learning data analysis and critical evaluation.

### **Assignment 2:**

**Title:**

Stupid Ideas, or, “What if the smartest people in the world understand something that the rest of us don't?” (Norton, 2013)

**Weighting/Submission Date:**

60% submit on October 8<sup>th</sup> by 23:59

**Description:**

**Step 1:** Review the entrepreneurial strategies that advocate the proposal of a “stupid” idea as the basis for a VR experience.

**Step 2:** Design and create the experience described above using the computer game editor for Unreal Engine 4.

**Step 3:** Invite participants from the class to try your newly created experience.

**Step 4:** Evaluate Presence using the questionnaire supplied.

**Step 5:** Prepare a 500 word report interpreting the findings gathered from your participants.

**Rational in relation to the learning outcomes:**

This assignment relates to enacting entrepreneurial strategies, learning level design in UE4, learning visual scripting in UE4 and utilising marketplace assets in UE4.

## **Assessment Criteria**

The course is assessed by assignment work based on the submissions set throughout the Session. Both assessments are based on individual work presented via each students blog, via written reports and in person. Your work will be assessed based on frameworks described in the Feedback and Review Sheets below.

## Course schedule and content

WEEK	DATE	TUTORIAL ACTIVITIES
1	Wednesday, July 26th	<p><b>Introduction and Discussion regarding Advanced VR and Presence:</b> The ARCH0006 Course outline fully explained.</p> <p><b>Assignment 1 introduction:</b> Presence Concepts, Presence Measures.</p> <p><b>Advanced Virtual Reality Demonstration</b></p> <p>Questions and answers between the course convenor, tutors and the students.</p>
2	Wednesday, August 2nd	Individual Evaluation of Advanced Virtual Reality Experiences: Oculus First Contact, The Climb and Tilt Brush.
3	Wednesday, August 9th	Individual Evaluation of Advanced Virtual Reality Experiences: Oculus First Contact, The Climb and Tilt Brush.  Collate data for whole class in one spreadsheet.
4	Wednesday, August 16th	Critical Analysis
	Sunday, August 20th	Submit Assignment 1 by 23:59
5	Wednesday, August 23rd	<p><b>Assignment 2 introduction:</b> Innovation and Stupid Ideas.</p> <p><b>UE4 Introduction:</b> Blueprint Visual Scripting and the Marketplace.</p> <p>Questions and answers between the course convenor, tutors and the students.</p>
6	Wednesday, August 30th	Studio Design: Individual Design of VR Experience.
7	Wednesday, September 6th	Studio Design: Individual Design of VR Experience.
8	Wednesday, September 13th	User evaluation of VR Experience.  Collate data for all participants in one spreadsheet.
9	Wednesday, September 20th	Critical Analysis
	Sunday, October 8th	Submit Assignment 2 by 23:59

## Grades and Marks

In accordance with the university policy the distribution range of marks in relation to grades and their descriptor are as follows.

<i>Grade</i>	<i>Mark Distribution</i>	<i>Academic Standard</i>
HD - High Distinction	85 - 100	Outstanding performance
DN - Distinction	75 - 84	Superior performance
CR - Credit	65 - 74	Good performance
PS - Pass	50 - 64	Acceptable performance
PC – Pass Conceded	45 - 50	Borderline performance
FL - Fail	0 - 45	Failure: performance below minimum level of competence
AF – Absent Fail	0	The student has not completed any assessment. Subsequent submission of work will not be accept
WJ		Assessment withheld due to academic misconduct.



## **ADMINISTRATIVE MATTERS**

The Built Environment Protocols and UNSW Policies & Procedures document supplements this course outline providing detail on academic policies and other administrative matters. It is your duty as a student to familiarise yourself with the policies and guidelines as not adhering to them will be considered as academic misconduct. Ignorance of the rules is not an acceptable defence.

The document can be found in your Moodle course as well as:

<https://intranet.be.unsw.edu.au/student/be-learning-teaching/academic-policies>

It covers:

- Built Environment Student Attendance Requirements
- Units of Credit (UOC) and Student Workload
- myExperience Course and Teaching Evaluation
- Academic Honesty and Plagiarism
- Late Submissions Penalties
- Special Consideration - Illness & Misadventure
- Extension of Deadlines
- Learning Support Services
- Policies and Procedures for Research Candidates
- Health & Safety

## Feedback and Review Sheet: First Contact

STUDENT NAME:	
TUTOR:	
WEIGHTING:	40%

CRITERIA	SCALE 1-5: (5 is better than 1).				
	1	2	3	4	5
<b>1. Presence questionnaires</b> - are the questionnaires completed with care and precision?					
<b>2. Data Collation</b> – is the individual data input with care and precision?					
<b>3. Analysis</b> – has the student broken the complex dataset into smaller parts that facilitate a better understanding?					
<b>4. Interpretation</b> – has the student translated the results into something meaningful and actionable?					

HD	DN	CR	PS	FL	LF	AF	GRADE
85- 100%	75-84%	65-74%	50-64%	35-49%	1-34%	No Submit	

**Feedback and Review Sheet: Stupid Ideas, or, “What if the smartest people in the world understand something that the rest of us don't?” (Norton, 2013)**

STUDENT NAME:	
TUTOR:	
WEIGHTING:	60%

CRITERIA	SCALE 1-5: (5 is better than 1).				
	1	2	3	4	5
<b>1. Stupid Idea</b> - is the idea reasonably stupid?					
<b>2. Smartest People</b> – is there a sense that the student might be onto something not entirely graspable?					
<b>3. VR Experience</b> – has the student design and created an engaging VR Experience?					
<b>4. Participants</b> – how many participants has the student attracted?					
<b>5. Data Collation</b> – is the participant’s data input with care and precision?					
<b>6. Analysis</b> – has the student broken the complex dataset into smaller parts that facilitate a better understanding?					
<b>7. Interpretation</b> – has the student translated the results into something meaningful and actionable?					

HD	DN	CR	PS	FL	LF	AF	GRADE
85- 100%	75-84%	65-74%	50-64%	35-49%	1-34%	No Submit	