



# AUGMENTED AND VIRTUAL REALITY IN OUR SOCIETY, SENSORS AND NETWORK INFRASTRUCTURE

**Certificate awarded by:** ECE Paris

**Welcome event:** July 3<sup>rd</sup>, 2017 (morning)    **Start date of courses:** July 3<sup>rd</sup>, 2017 (afternoon)

**End date:** July 27<sup>th</sup>, 2017    **Certificate Ceremony:** July 27<sup>th</sup>, 2017

**Total ECTS:** 8    **Total contact hours:** 72

**Program requirement:** a minimum 18 years of age

**Program location:** ECE Paris - Campus Eiffel I, 10 Rue Sextius Michel, 75015 Paris, France

**Language of instruction:** English

## PROGRAM FEE: 1,850€

### FEE INCLUDES:

- Orientation/Welcome Event
- Weekly cultural visits/activities
- Computer accounts at the school (WIFI access)
- Access to the school's MediaCenter
- Official transcript of grades
- Program Certificate
- Certificate Ceremony

### PROGRAM OVERVIEW/OBJECTIVE:

#### Summary

What does it mean the term "Virtual and Augmented Reality" ?

What is the need of the "Virtual and Augmented Reality" in our Society ?

What is the future of the "Virtual and Augmented Reality" ?

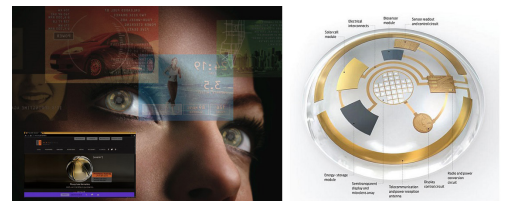
We will try by these lectures to give response to those questions, by presenting an exhaustive view of the Virtual and Augmented Reality domain, including a global view, a panorama of example, and a projection to the future.

#### Key words

Virtual and Augmented reality, Technology, 3D, Market, Network, Business Model

#### Official language

English (alternative explanation in French and Portuguese is possible)



**CONTACT** [summer@pariseiffel.fr](mailto:summer@pariseiffel.fr)

### PROGRAM COURSE LIST

Course Title	ECTS (credits)	Contact hours	Level (undergraduate or graduate)
Augmented/Virtual Reality Introduction	3	24	Beginner, undergraduate's or graduates students and researchers
Augmented/Virtual Reality Products/ Projects and Future	3	30	Beginner, undergraduate's or graduates students and researchers
Augmented/Virtual Reality sensors network Infrastructure	2	18	Beginner, undergraduate's or graduates students and researchers

**Take into account to plan "External Visits":** This part includes a visit for an experimentation room for Augmented Reality : as CAVES, etc.

### COURSE 1

Course Title	Augmented/Virtual Reality Introduction
Learning outcomes	<ul style="list-style-type: none"> <li>• How using technology as «VR/AR» can help us in our life ;</li> <li>• How it is easy to use this kind of technology</li> </ul>
Pre-requisites	<p>This lecture provides a comprehensive introduction to the fields of Augmented Reality. No technical previous Knowledge is required.</p> <p>But a previous knowledge of 3D geometry fundamentals, or virtual reality and Object Recognition is a JOKER.</p>
Recommended readings	TerraDynamica Project ; Build your own world "Vuforia™ Smart Terrain™", KINECTS, CAVES, VRPN, FFAST, AUGMENTED RETINA

### COURSE CONTENT:

#### Lectures

- Lecture 1: Module presentation
- Lecture 2: Virtual and Augmented Reality Introduction : history, definition, global view
- Lecture 3: How Virtual and Augmented Reality helps the Reality

#### Tutorials

This part it is organized by a set of demo using sensors (Kinects, IPAD with 3D sensors, etc) to test directly the using of Augmented Reality.

### COURSE 2

Course Title	Augmented/Virtual Reality Products/Projects and Future
Learning outcomes	<ul style="list-style-type: none"><li>• How to sell new applications in RA/RV : Business Model;</li><li>• How to include new technology in your work to make it more productive</li></ul>
Pre-requisites	<p>This lecture provides a comprehensive introduction to the fields of Augmented Reality. No technical previous Knowledge is required.</p> <p>But a previous knowledge of 3D geometry fundamentals, or virtual reality and Object Recognition is a JOKER.</p>
Recommended readings	<p>TerraDynamica Project ; Build your own world "Vuforia™ Smart Terrain™", KINECTS, CAVES, VRPN, FFAST, AUGMENTED RETINA</p>

### COURSE CONTENT:

#### Lectures

- Lecture 4: Virtual and Augmented Reality Applications : a panorama of product
- Lecture 5: Virtual and Augmented Reality Applications : a panorama of Research project
- Lecture 6: Virtual and Augmented Reality tools : the link with the industry of sensors
- Lecture 7: The future of the Augmented Reality

#### Tutorials

This part it is organized by a set of demo using sensors (Kinects, IPAD with 3D sensors, etc) to test directly the using of Augmented Reality.

### COURSE 3

Course Title	Augmented/Virtual Reality sensors network Infrastructure
Learning outcomes	How monitoring the technological advances, is one of the keys of the success for RA/RV applications
Pre-requisites	This lecture provides a comprehensive introduction to the fields of Augmented Reality. No technical previous Knowledge is required. But a previous knowledge of 3D geometry fundamentals, or virtual reality and Object Recognition is a JOKER.
Recommended readings	TerraDynamica Project ; Build your own world "Vuforia™ Smart Terrain™", KINECTS, CAVES, VRPN, FFAST, AUGMENTED RETINA

### COURSE CONTENT:

#### Lectures

- Lecture 8: panorama and history of the using of sensors in AR and VR
- Lecture 9: Networks, Communications, Protocols : the infrastructure for success of AR and VR

#### Tutorials

In this part is organized by a set of demo.