



## **Course Description**

### **DIG2777C | Augmented Reality Platform Development |4.00 credits**

This course provides a comprehensive curriculum that targets the key areas of augmented reality (AR). Students will learn how to enhance real life objects and environments with digitally generated image overlays. Prerequisites: DIG1729C, DIG1772C.

## **Course Competencies**

**Competency 1:** The student will demonstrate knowledge of the main AR products and technologies on the market today by:

1. Defining the differences between Augmented Reality and Virtual Reality
2. Analyzing how holographic content could be used for training purposes
3. Listing Industries that can benefit from the use of AR applications
4. Recognizing weaknesses and strengths in modern Augmented Reality devices

**Competency 2:** The student will demonstrate how to conceptualize, prototype, and develop device-based AR applications for Mobile by:

1. Defining flowcharts to explain the dataflow of an AR application
2. Recognizing software and hardware used to create Augmented Reality experiences
3. Defining and solving a problem using basic programming techniques
4. Identifying common methods and best practices to prototype AR visualizations

**Competency 3:** The student will demonstrate the ability to create spatially aware applications for wearable AR devices by:

1. Defining how to implement spatial mapping inside AR experiences
2. Recognizing how image target detection can be used to trigger holograms
3. Recognizing potential performance drawbacks while using spatial understanding
4. Identifying differences between spatial mapping and spatial understanding

**Competency 4:** The student will demonstrate the ability to build and publish photographic AR environments by:

1. Identifying limitations and advantages of both VR and AR photographic environments
2. Defining solutions to compensate for the field of view differences between AR and VR HMD
3. Listing advantages and disadvantages of using photographic versus CG environments
4. Defining the workflow to import and map equirectangular images and display them as a stereo pair

## **Learning Outcomes:**

- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Use computer and emerging technologies effectively