MOBILITY FRIENDS TRAINING CENTER • COURSE PROGRAM

STEM AND TECHNOLOGICAL INNOVATION

Technology, Robotics and Engineering

VIRTUAL REALITY TECHNOLOGIES: DEVELOPMENT AND APPLICATION

Your Mobility Partner

PIC Number: 948037649 | **Organisation ID:** E10207576

COURSE OVERVIEW

Virtual Reality Technologies: Development and Application offers a comprehensive and hands-on introduction to the world of immersive technologies. Throughout the course, participants will explore the core concepts, tools, and techniques involved in the creation and application of Virtual Reality experiences. The programme covers the fundamentals of VR hardware and software, user experience design, and content development using leading platforms. Through practical workshops and guided projects, learners will gain experience in building and customising their own interactive virtual environments, as well as understanding the potential and challenges of VR in real-world scenarios. By the end of the course, participants will have developed the skills and confidence needed to design, implement, and evaluate Virtual Reality solutions across a range of contexts.

TARGET AUDIENCE

This course is intended for anyone interested in discovering, understanding, and experiencing Virtual Reality technologies. It is suitable for those who wish to develop practical skills and explore the many possibilities offered by this technology, whether out of personal curiosity, academic growth, or professional interest. The course is ideal for participants who want to learn about the fundamentals, tools, and practical applications of Virtual Reality in various contexts.

REQUIREMENTS

To take part in the course, participants must meet the following requirements:

- Have at least a B1 level of English (independent user);
- Complete and submit the registration form before the start of the training;
- Bring a laptop or tablet to use during the sessions;
- Commit to active participation and attend at least 80% of the course.

COURSE OBJECTIVES

The objectives of the course are:

- Understand the fundamental principles and technologies underpinning Virtual Reality systems.
- Identify and differentiate between key VR hardware and software components.
- Develop practical skills in designing, building, and customising immersive virtual environments.
- Apply creative and technical approaches to solve real-world problems using VR.
- Evaluate the potential applications and limitations of Virtual Reality across different fields.
- Work collaboratively on VR projects, from conceptualisation to implementation and testing.
- Gain the confidence to pursue further learning or professional development in the area of immersive technologies.

CONTACTS AND REGISTRATION

For registrations, additional information, or budget requests, please contact our team by email at trainingcourses@mobilityfriends.org or visit our website at www.mobilityfriends.org .

LEARNING OUTCOMES

Upon successful completion of this course, learners will be able to:

1. Explain the key concepts and technologies involved in Virtual Reality systems.
2. Set up and configure VR hardware and software for development and user experiences.
3. Use appropriate tools and platforms to design and build interactive virtual environments.
4. Apply best practices in user experience (UX) design for immersive content.
5. Integrate multimedia elements (such as 3D models, audio, and video) into VR applications.
6. Develop and test simple VR prototypes addressing real-world challenges.
7. Collaborate effectively within teams to plan, develop, and present VR projects.
8. Critically assess the opportunities, limitations, and ethical considerations of Virtual Reality in various contexts.
9. Communicate and document the development process and outcomes of VR projects.

METHODOLOGY

The course is structured around a rigorous methodology that combines theoretical exposition, practical work, and applied demonstrations. This approach ensures a thorough understanding of the subject matter and its direct application in real-world contexts.

Theoretical sessions provide essential foundations, while practical work and demonstrations facilitate the development of technical skills and familiarity with the specific tools and procedures relevant to the course.

Continuous monitoring through individualized feedback allows for tracking learners' progress and ensures the achievement of the set objectives, preparing participants to face professional challenges with competence and precision.

ASSESSMENT

Assessment is carried out continuously throughout the course, using a holistic and learner-centered approach that reflects both participation and performance. Each participant is evaluated based on their overall engagement, regular attendance, punctuality, interest in the topics covered, ability to apply knowledge during practical tasks, and interaction with peers in individual and group activities.

The evaluation process includes a variety of classroom-based tasks (oral and written), short daily assignments, role-plays, and simulations. Trainers provide ongoing, individualized feedback to support progress and encourage active learning.

A Certificate of Participation is awarded to participants who attend at least 80% of the sessions and demonstrate consistent involvement and commitment during the training.

DURATION

The standard duration of our course is 20 hours (5 days), designed to ensure comprehensive and effective learning. However, this duration can be adjusted, in specific cases, to meet the particular needs of each group, in order to optimize outcomes and better suit the training context.
For further details or to discuss a customized schedule, please get in touch with us.

PRICE AND FUNDING

Each quotation is personalized and depends on several factors, such as the number of participants, the number of training hours, the location of the course, and any additional services requested (accommodation, transport, meals, cultural activities, etc.).
To receive a tailored quotation for your group, please get in touch with us.
The training can be funded through programs such as Erasmus+ (KA1 – Learning Mobility), among other European support mechanisms. For more information about funding, participants should contact their sending organization or their country's National Agency directly.

LOCATION AND COURSE LANGUAGE

We have training rooms in several cities in Mainland Portugal, such as Barcelos (headquarters), Braga, Póvoa de Varzim, and Porto. We also have spaces in the islands of Madeira (Funchal) and the Azores (Ponta Delgada). Additionally, we have facilities in Valencia, Spain.
The course is delivered in English.

CERTIFICATION

A Certificate of Participation is awarded to participants who attend at least 80% of the sessions and demonstrate consistent engagement and commitment throughout the training. Upon completion of the course, a formal certification ceremony will take place, during which the certificates will be presented to the participants.

OTHER SERVICES

To enrich the training experience, Mobility Friends offers a range of additional services, subject to availability and additional cost, which can be arranged for individual participants or groups.
Services include:

- Accommodation in partner residences or hotels
- Meals (lunch and/or dinner)
- Transfers between the accommodation and the training room
- Airport transfers
- Cultural visits

All services are subject to availability and must be requested in advance. For more information and personalised quotes, please contact our team.

COURSE CONTENTS

MODULE 1: FOUNDATIONS AND INSPIRATIONS IN VIRTUAL REALITY

- Key concepts: VR, AR, MR – similarities, differences, and terminology.
- Evolution of VR and its impact across sectors.
- Demonstration of VR hardware (headsets, controllers, tracking systems).
- Showcase of notable Unity-based VR projects and experiences.

MODULE 2: UNITY ESSENTIALS FOR VR

- Introduction to the Unity interface and workspace.
- Project setup: organising folders, importing standard assets.
- Scene construction: adding and positioning 3D objects, prefabs, basic lighting.
- Asset management: importing 3D models, textures, and audio files into Unity.

MODULE 3: BUILDING INTERACTIVE VIRTUAL ENVIRONMENTS

- Setting up a VR project in Unity (XR Interaction Toolkit or similar).
- Configuring VR device support and player controllers.
- Designing immersive scenes: spatial layout, lighting, soundscapes.
- Adding interactive elements: grab, throw, press, trigger simple animations.

MODULE 4: USER EXPERIENCE AND INTERACTION DESIGN IN UNITY

- Best practices for VR user experience (UX) and user interface (UI).
- Implementing intuitive navigation and locomotion (teleport, walk, interact).
- Handling user input from VR controllers.
- Comfort and accessibility: motion sickness prevention, inclusive design.

*Please note that program content may be subject to change based on input from our trainers.

COURSE CONTENTS

MODULE 5: COLLABORATIVE MINI-PROJECT - PROTOTYPING IN UNITY

- Group or individual ideation: defining a simple VR experience (e.g., virtual exhibition, training simulation, storytelling).
- Scene building: environment design, interaction coding, testing.
- Implementing basic C# scripts for interactivity (e.g., open doors, collect objects, trigger events).
- Iterative development: prototyping, peer feedback, refinement.

MODULE 6: TRENDS, ETHICS AND PROFESSIONAL PRACTICE IN VR

- Latest Unity features for VR and XR integration.
- Cross-platform development considerations.
- Ethics and safety: user privacy, accessibility, responsible content.
- Professional pathways: building a portfolio, self-learning, industry standards.

MODULE 7: FINAL SHOWCASE AND REFLECTION

- Presentation and demonstration of Unity VR mini-projects.
- Group feedback and discussion of lessons learned.
- Personal reflection, future learning, and resources for advancing in Unity VR.

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