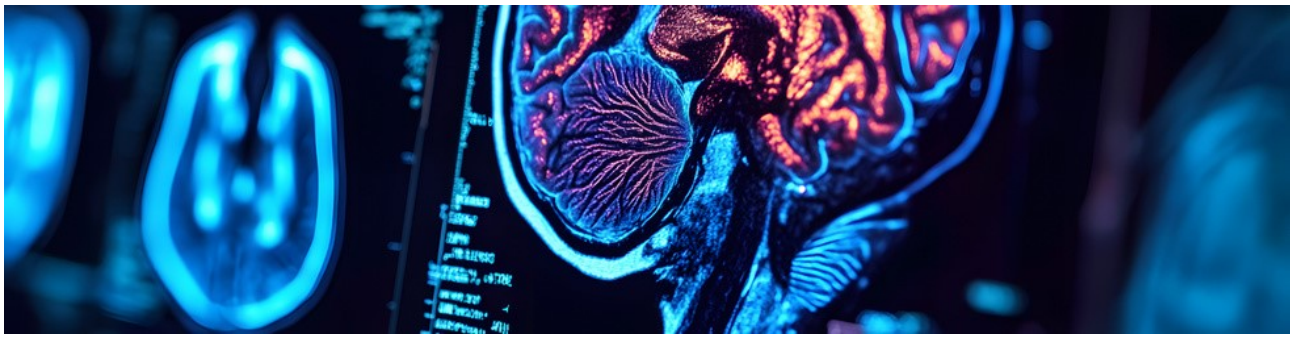
Summer school

The ARCA Summer School: Unlocking Psychological Expertise for Academic and Business Success



The Summer School **"The ARCA Summer School: Unlocking Psychological Expertise for Academic and Business Success"**, organized as part of the internationalization strategy of the University of Padua, is aimed at Master's and PhD students, both local and international. The initiative seeks to provide advanced technical and methodological skills in the field of psychological research, with a training program that combines innovative content and interdisciplinary approaches.

The main objective is to expand access to the **ARCA (Applied Research Courses Academy)** and **CARS (Advanced Courses for Scientific Research)** programs—already active during the academic year for a limited number of students—to a broader international audience. The Summer School will enable students to learn cutting-edge research tools: students will learn how to design and implement experiments, analyze neural, hemodynamic, behavioral, and textual data, interpret them using statistical methods, and communicate findings clearly and effectively.

The program is enriched by the participation of nationally and internationally renowned speakers and is co-organized with the **Department of Psychology and Cognitive Science of the University of Trento** and the **Institute of Psychology of the University of Graz**, a member of the **Arqus Alliance**.

The school is divided into two independent weekly modules, allowing for flexible participation. However, **the awarding of 6 ECTS credits** will only be possible upon attendance of **both modules** and passing the final exam.

During the **first week**, students will acquire foundational knowledge for the optimal design of experimental paradigms in psychological research, exploring both theoretical and practical aspects. Four key techniques will be introduced: **electroencephalography (EEG)**, **functional near-infrared spectroscopy (fNIRS)**, **kinematic analysis**, and **virtual reality use in brain-computer interfaces**. These methodologies will be addressed with an applied approach, through lectures and seminars delivered by national and international experts. In particular, the advantages of using fNIRS in the study of movement and the analysis of emotions through facial expressions will be discussed.

The **second week** will focus on the acquisition of **computational and statistical skills**. Students will learn basic concepts of the most commonly used programming languages in psychological research, such as **Python and R**, through a cross-disciplinary introductory course. They will also learn to create scientific reports and presentations using **Quarto** software and to design **Shiny Apps**, open-source interactive web applications developed in R.

Another module will be dedicated to **quantitative text analysis**, a rapidly growing field that involves the use of advanced tools to extract knowledge from large volumes of textual data. Students will also cover the **basics of machine learning**, applied to the modeling of psychological data, and will take part in a seminar on **neuroethics**, a topic of increasing relevance in cognitive neuroscience.

Overall, the Summer School will provide students with a **comprehensive and multidimensional education**, useful for developing cross-disciplinary skills that are increasingly in demand in both academic and professional settings.

Beyond technical skills, the experience will offer the opportunity to **hear firsthand insights from international experts** and engage with them, creating concrete opportunities for **networking**. In a context of growing digital transformation, the Summer School will also help enhance students' **problem-solving abilities** and **digital skills**, which are essential in many research and professional environments.

KEY INFO

Dates: 29th June 2026 – 10th July 2026

Module 1: Experimental design + neuroscientific methods (EEG, fNIRS, motion tracking, VR) Seminars on **movement and emotion analysis**
Module 2: Programming (Python, R), Quarto for reporting, Shiny Apps, text analysis, ML - Includes a **seminar on neuroethics**

Target: Master's and PhD students

Location: Padua, Psychology Campus

ECTS: 6, only for participants who attend both modules and pass the final exam

Fee: 500 euros per week / 20% fee waiver for students of partner universities / 50% fee waiver for Arqus students (including UNIPD students). A maximum number of waivers might apply.

Contact: summerschool@unipd.it

Application dates: 15th November 2025 – 15th March 2026