Universidad de los Andes Colombia | School of Management Leadership for Life

international summer school 2026

COURSE SYLLABUS

Teamwork in Extreme and Dynamic Environments

On-campus | PM

Universidad Complutense de Madrid

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Short Biography

Mirko Antino is an Associate Professor of Research Methods at the Department of Psychobiology and Methodology for Behavioral Sciences, Universidad Complutense de Madrid. He received his PhD in Psychology at the same University in 2010, and a Master Degree in Methodology for the Behavioral and Sciences at Universidad Autonoma de Madrid /Universidad Complutense de Madrid/UNED. in 2011. His research has been published in several scientific journals like Academy of Management Journal, Journal of Applied Psychology, Sociological Methods and Research, Safety, Journal of Occupational Health Psychology, Journal of Personality and Individual Differences, Work & Stress, Small Group Research, Mindfulness, Journal of Happiness Studies, Journal of Business Strategy, Information Communication and Society and Rationality & Society among others.

Introduction/Course Description

In recent years, the study of teamwork and leadership in extreme environments has gained increasing relevance in psychological, organizational, and behavioral sciences. Contexts such as polar expeditions, space missions, deep-sea operations, and high -risk emergency scenarios provide unique natural laboratories for understanding human behavior under pressure, with clear applications to dynamic phases within traditional business settings. These environments challenge conventional leadership and team-dynamics models, requiring rapid adaptation, shared decision -making, resilience, and trust under isolation, uncertainty, and physical and psychological stress. This course examines how individuals and teams operate, communicate, and lead in dynamic and extreme environments, drawing on multidisciplinary research from psychology, cognitive science, human factors, and organizational behavior. Special attention is given to empirical studies in analog environments such as Antarctica and space missions, now central in understanding the limits and potential of human collaboration. Through case studies, simulations, and critical discussions, students will develop conceptual frameworks and practical tools to analyze and promote effective teamwork and leadership in high-stakes contexts.

Course Objectives

This course aims to:

- Develop competencies to understand the performance of teams operating in extreme, dynamic, or isolated environments.
- Analyze team functioning using scientific frameworks and leadership models.
- Integrate concepts of diversity and inclusion into team performance and decision-making.
- Strengthen psychological resilience as a core element of team effectiveness in demanding contexts.

Course Methodology

The course integrates presentations and discussions of cutting-edge scientific research with practical exercises based on validated training protocols, enabling students to critically understand empirical findings and apply evidence-based decision-making in real contexts. Instruction combines Problem-Based Learning (PBL) and Experiential Learning: PBL develops analytical reasoning through complex teamwork problems (e.g., Session 8 analysis of real team-performance datasets, learning aggregation and multilevel logic through guided inquiry), while Experiential Learning, grounded in Kolb's model, promotes learning through action and reflection (e.g., Session 4 decision-making scenarios inducing task conflict and cross-group negotiation, and a final team-based project requiring continuous evaluation of group functioning and member contribution). This structure ensures students both conceptualize and experience group processes, applying theory through structured reflection and feedback.

Evaluation System

The course evaluation will be performed based on the following set of activities:

- Final Project (30%)
- Class Activities (20%)
- Theoretical Exam (40%)
- Participation (10%)

Course Prerequisites

Basic knowledge of organizational psychology, leadership, or team management.