

# PH.D. IN MATHEMATICS AND COMPUTER SCIENCE

# COURSE SCHEDULE

ACADEMIC YEAR 2022/2023

## PARALLEL COMPUTING OPTIMIZATION TECHNIQUES IN COMPUTATIONAL SCIENCE

LECTURER: WILLIAM SPATARO  
UNIVERSITY OF CALABRIA

25 - 28 SEPTEMBER

COMPUTATIONAL SCIENCE IS A FIELD OF MATHEMATICS THAT ADOPTS TECHNIQUES, TOOLS, AND THEORIES BY EXPLOITING THE COMPUTING POWER OF ADVANCED PARALLEL COMPUTERS. TYPICAL APPLICATIONS ARE FOUND SCIENCE AND ENGINEERING, AND REGARD AMONG OTHERS COMPLEX SYSTEMS, BIOINFORMATICS, DATA SCIENCE, AND MODELLING AND SIMULATION IN GENERAL. AFTER A RAPID OVERVIEW OF PARALLEL COMPUTING AND HIGH PERFORMANCE COMPUTING PARADIGMS, THE COURSE PRESENTS OPTIMIZATION TECHNIQUES THAT ARE ADOPTED TO FURTHER SPEED-UP DI PERFORMANCES OF COMPUTATIONAL MODELS ON PARALLEL MACHINES. AS SUPPORT, SIMPLE COMPUTATIONAL FLUID DYNAMICS (CFD) MODELS, REFERRED TO LANDSLIDE AND LAVA FLOW SIMULATION, ARE ADOPTED TO ILLUSTRATE THE PRESENTED METHODS.

### CLASS SCHEDULE:

MON 25/09 09:30 - 12:30  
TUE 26/09 09:30 - 12:30  
WED 27/09 09:30 - 12:30  
THU 28/09 09:30 - 12:30

CLASSROOM MT 12

LINK TEAMS: [HTTPS://TINYURL.COM/43J4JA8C](https://tinyurl.com/43j4ja8c)