

PhD courses Mathematics and Modelling

2024/25

COURSES:

- Variational methods in continuum mechanics (VM)
- Statistical mechanics of dimers (SM)
- Introduction to brace theory (BT)
- Perturbation Methods for the Stability Analysis of Dynamical Systems (PM)
- Conservation laws and traffic flow models (CL)
- Methods and algorithms of numerical optimization (NO)
- Introduction to Optimal Transport and Applications (OT)
- Introduction to Optimal Control (OC)
- Introduction to quantum computing (QC)
- Mathematical models for economic equilibria (EE)
- Introduction to symplectic geometry, Hamiltonian actions and Lagrangian fibrations (SG)
- Mathematics for Signal processing (SP)
- Dynamical low rank approximation: eigenvalues, PDEs and optimisation (LR)
(the second part of this course will be held after february 23 with a schedule that will be communicated later on)
- Poisson random measures and applications (RM)
- Lavrentiev phenomenon in the Calculus of Variations (LP)

SCHEDULE

All the lectures will be held in room **Ricamo A.1.1 (ex 1.1. di Coppito 1)**

Week 13-19 january:

Monday 10.00-12.00 (VM); 14.00-16.00 (LR); 16.00-18.00 (CL)
Tuesday 9.00-11.00 (LR); 11.00 13.00 (PM); 14.30-16.30 (CL)
Wednesday 9.00-11.00 (PM); 11.00 13.00 (BT); 14.30-16.30 (NO)
Thursday 9.00-11.00 (VM); 11.00 13.00 (CL); 14.30-16.30 (PM)
Friday 9.00-11.00 (NO); 11.00 13.00 (BT); 14.30-16.30 (SM)

Week 20-26 january:

Monday 10.00-12.00 (VM); 14.00-16.00 (CL); 16.00-18.00 (NO)
Tuesday 9.00-11.00 (); 11.00 13.00 (PM); 14.30-16.30 (QC)
Wednesday 9.00-11.00 (QC); 11.00 13.00 (LR); 14.30-16.30 (QC)
Thursday 9.00-11.00 (BT); 11.00 13.00 (CL); 14.30-16.30 (PM)
Friday 9.00-11.00 (BT); 11.00 13.00 (NO); 14.30-16.30 (SM)

Week 27 january-2 february:

Monday 10.00-12.00 (OT); 14.00-16.00 (LP); 16.00-18.00 (NO)
Tuesday 9.00-11.00 (LR); 11.00 13.00 (LP); 14.30-16.30 (OT)
Wednesday 9.00-11.00 (BT); 11.00 13.00 (LP); 14.30-16.30 (LR)
Thursday 9.00-11.00 (QC); 11.00 13.00 (LP); 14.30-16.30 (SG)
Friday 9.00-11.00 (SP); 11.00 13.00 (VM); 14.30-16.30 (LR)

Week 3-9 february:

Monday 10.00-12.00 (OC); 14.00-16.00 (EE); 16.00-18.00 (SG)
Tuesday 9.00-11.00 (OC); 11.00 13.00 (EE); 14.30-16.30 (OT)
Wednesday 9.00-11.00 (EE); 11.00 13.00 (OC); 14.30-16.30 (SP)
Thursday 9.00-11.00 (OT); 11.00 13.00 (SP); 14.30-16.30 (SM)
Friday 9.00-11.00 (); 11.00 13.00 (SP); 14.30-16.00 (SM)

Week 10-16 february:

Monday 10.00-12.00 (OC); 14.00-16.00 (EE); 16.00-18.00 (VM)
Tuesday 9.00-11.00 (OT); 11.00 13.00 (OC); 14.30-16.30 (SP)
Wednesday 9.00-11.00 (SP); 11.00 13.00 (OT); 14.30-17.30 (QC Laboratorio)
Thursday 9.00-11.00 (SG); 11.00 13.00 (SP); 14.30-17.30 (QC Laboratorio)
Friday 9.00-11.00 (SG); 11.00 13.00 (SM); 14.30-16.30 ()

Week 17-23 february:

Monday 10.00-12.00 (SP); 14.00-16.00 (OC); 16.00-18.00 (RM)
Tuesday 9.00-11.00 (RM); 11.00 13.00 (OT); 14.30-16.30 (EE)
Wednesday 9.00-11.00 (RM); 11.00 13.00 (OC); 14.30-16.30 ()
Thursday 9.00-11.00 (OC); 11.00 13.00 (RM); 14.30-16.30 (SG)
Friday 9.00-11.00 (); 11.00 13.00 (OT); 14.30-16.30 (RM)