PHD COURSES MATHEMATICS AND MODELING 2023/24 – Schedule

ALL THE LECTURES WILL BE HELD IN THE CLASSROOM 1.1 IN THE BUILDING COPPITO 1.

All the lectures are in slots 9:00-11:00; 11:00-13:00; 15:00-17:00; apart from a few that appear in **bold** and will take place in computational laboratory of DSFC, first floor Coppito 1.

Other non mandatory courses will take place after February 23 and will be announced later on.

- Week 15–19 January

  Monday

  Tuesday 11:00-13:00 [A]; 14:00-16:00 [E];

  Wednesday 9:00-11:00 [e]; 11:00-13:00 [c]; 14:00-16:00 [A];

  Thursday 9:00-11:00 [e]; 11:00-13:00 [c]; 14:00-16:00 [E];

  Friday

- Week 22–26 January

  Monday 14:00-16:00 [A];

  Tuesday 9:00-11:00 [A]; 11:00-13:00 [g]; 14:00-16:00 [D];

  Wednesday 9:00-11:00 [e]; 11:00-13:00 [g]; 14:00-16:00 [D];

  Thursday 9:00-11:00 [c]; 11:00-13:00 [g]; 14:00-16:00 [D];

  Friday 9:00-11:00 [D]; 11:00-13:00 [c];

- Week 29 January–2 February

  Monday 11:00-13:00 [e]; 14:00-16:00 [h]; 16:00-18:00 [f]

  Tuesday 9:00-11:00 [e]; 11:00-13:00 [f]; 14:00-16:00 [h]; 16:00-18:00 [E]

  Wednesday 9:00-11:00 [c]; 11:00-13:00 [j]; 14:00-16:00 [h]; 16:00-18:00 [E]

  Thursday 9:00-11:00 [A]; 11:00-13:00 [j]; 14:00-16:00 [h]; 16:00-18:00 [E]

  Friday 9:00-11:00 [h]; 11:00-13:00 [g];

- Week 5–9 February

  Monday 11:00-13:00 [g]; 14:00-16:00 [b];

  Tuesday 11:00-13:00 [j]; 14:00-16:00 [b]; 16.00-18.00 [e]

  Wednesday 9:00-11:00 [i]; 11:00-13:00 [f]; 14:00-16:00 [d];

  Thursday 9:00-11:00 [d]; 11:00-13:00 [i]; 14:00-16:00 [e];

  Friday ~~9:00-11:00 [e]~~;

- Week 12–16 February

  Monday 11:00-13:00 [i]; 14:00-16:00 [b]

  Tuesday 9:00-11:00 [d]; 11:00-13:00 [a]; 14:00-16:00 [f]; 16:00-18:00 [b]

  Wednesday 11:00-13:00 [a]; 14:30-17:30 **[f]**;

  Thursday 9:00-11:00 [e]; 11:00-13:00 [j]; 14:30-17:30 **[f]**;

  Friday ~~9:00-11:00 [i]~~;

- Week 19–23 February

  Monday 9:00-11:00 [i]; 11:00-13:00 [B]; 14:00-16:00 [d];

  Tuesday 9:00-11:00 [B]; 11:00-13:00 [a]; 14:00-16:00 [b];

  Wednesday 11:00-13:00 [a]; 14:00-16:00 [d];

  Thursday11:00-13:00 [j]; 14:00-16:00 [B];

List of courses

Mandatory:

a) Perturbation Methods for the Stability Analysis of Dynamical Systems, 8 hours; Simona di Nino

b) On the theory of polynomial identities in algebra, 10 hours; Antonio Ioppolo

c) Mathematical models for economic equilibria, 10 hours; Massimiliano Giuli

d) Introduction to the Finite Element Method for Partial Differential Equations, 10 hours; Carmela Scalone

e) An introduction to geometric inequalities and constant mean curvature hypersurfaces, 16 hours; Mario Santilli

f) Introduction to quantum computing, 14 hours; Leonardo Guidoni

g) Variational methods in continuum mechanics, 10 hours; Alessandro Ciallella e Francesco dell'Isola

h) Fluctuation Relations and Response Theory in Nonequilibrium Statistical Mechanics, 10 hours; Lamberto Rondoni e Matteo Colangeli

i) Introduction to Hyperbolic systems in several space dimensions, 8 hours; Debora Amadori

j) On the Smoluchowski Coagulation Equation: a stochastic particle system approximation, 10 hours; Alessia Nota

Non mandatory:

A) Conservation laws and traffic flow models, 10 hours; Felisia Chiarello

B) Geometric structures in incompressible fluids: vortex and magnetic reconnection, 6 hours; Gennaro Ciampa

C) Introduction to differential inclusions of Curl-free and Div-free type, 8 hours; Mariapia Palombaro (This course will take place after february 23 with a schedule that will be communicated later on)

D) An introduction to Mathematical Theory of Control, 8 hours; Vasile Staicu

E) Direct methods in Calculus of Variations, 10 hours, Emanuela Radici