



4TH Italian System Dynamics

SUMMER SCHOOL

WHAT IS IT?

A **5-day intensive summer school** introducing participants to **Systems Thinking** and **System Dynamics** for understanding and modelling complex systems. The programme combines **lectures, hands-on modelling sessions and project work**, guiding participants from problem conceptualisation to simulation and policy analysis.

MAIN TOPICS

- **Systems Thinking for complex systems**
- **Causal Loop Diagrams (CLDs) and system archetypes**
- **Stock-and-flow modelling and simulation**
- **Applications to agricultural and food systems**
- **Dynamic behaviour (growth, oscillations, goal-seeking)**
- **Scenario analysis and policy design**
- **Sustainability, innovation and socio-environmental transitions**



SCHOLARSHIPS

Possibility to access to **2 scholarships** covering the registration fee for candidates who are student or PhD student of under 32 years of age.

WHERE?

**UNIVERSITÀ CATTOLICA
DEL SACRO CUORE**

Piacenza Campus - Via Emilia
Parmense 84 - Piacenza, Italy

WHEN?

**14-18
SEPTEMBER 2026**



KEY DATES

- Early registration deadline: **2 June 2026**



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AGENDA

14

MONDAY

Introduction & Systems Thinking

- Introduction to the Summer School
- Foundations of Systems Thinking
- Qualitative modelling: Causal Loop Diagrams
- Practical session on CLDs

15

TUESDAY

Foundations of System Dynamics

- Introduction to System Dynamics
- From CLDs to stock-and-flow models
- Understanding dynamic behaviour
- Mathematical foundations and model consistency

16

WEDNESDAY

Modelling Practice & Sustainability

- Hands-on implementation of SD models and archetypes
- Seminar on AI and SD integration
- Applications to sustainability and energy systems
- Project work: group formation and first modelling steps

17

THURSDAY

Applications & Project Development

- Applications in agricultural systems
- Applications in food systems
- Group modelling work and presentations
- Evening networking activity: Play with SD

18

FRIDAY

Project Work & Conclusions

- Final group work sessions
- Presentation and discussion of results
- Debriefing and closing session



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