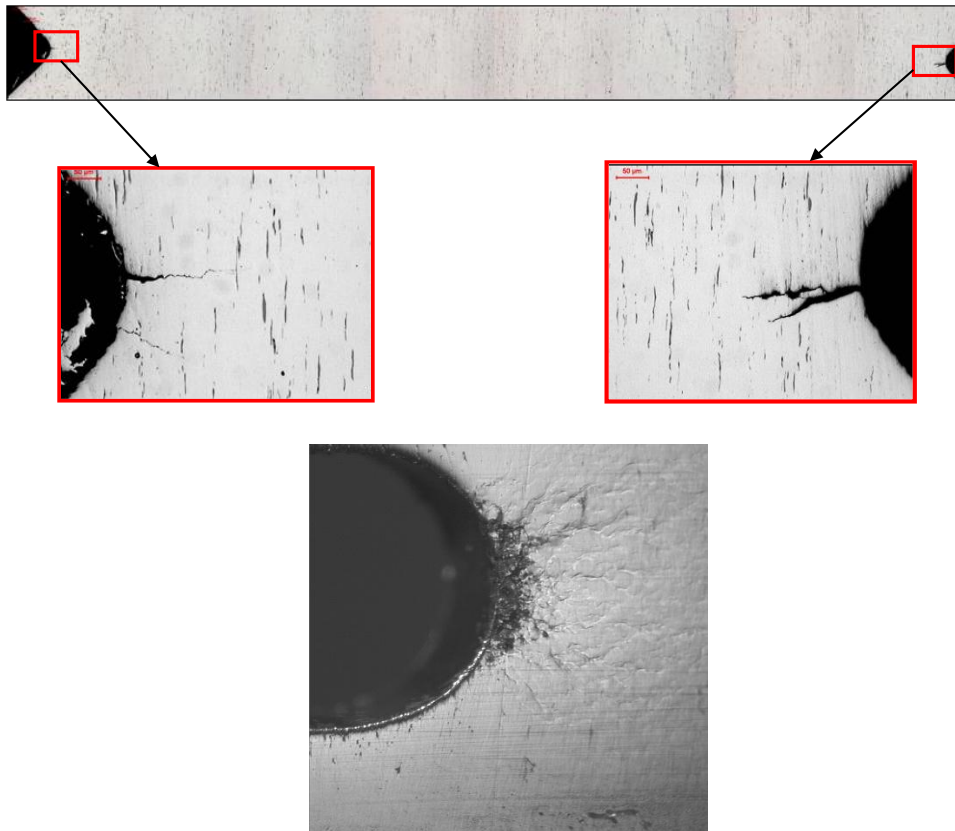


# First International Summer School on Notch Mechanics

## Fundamentals, Design & Applications

(13 – 17 July 2026)

Department of Management and Engineering, University of Padova – Vicenza Campus (Italy)



### Aims and Contents

The First International Summer School on Notch Mechanics will be held in the charming city of Vicenza (Italy) from 13 to 17 July 2026, hosted at the Department of Management and Engineering (University of Padova).

This first edition aims at becoming a reference event for young scientists, PhD students, industrial engineers, and researchers interested in the advanced design against static or fatigue of mechanical components, an area that remains central in modern structural applications across mechanical, aerospace, civil and materials engineering.

The School will offer participants a unique opportunity to learn from leading international experts about the fundamentals and the most advanced developments in notch mechanics, from theoretical bases to modern design criteria, from welded and bonded joints to fracture-

based and numerical approaches. This will also include a focus on the integration of Artificial Intelligence into the analysis, design and optimisation of notched structures, a rapidly emerging field with transformative potential.

The five-day program will include theoretical lectures, practical sessions, numerical activities, and industrial application cases presented by specialists from worldwide institutions. Continuous attention will be given to linking theory, modelling and practical design, fostering the ability to understand local stresses, predict structural integrity and design safe, efficient components.

This first edition of the Summer School is dedicated to the memory of Professor Paolo Lazzarin, an outstanding scientist and a brilliant mentor, whose pioneering contributions to notch mechanics were instrumental in shaping the field and have inspired generations of young researchers worldwide.

### Topics

The school will cover the following subjects:

- **Fundamentals of Notch Mechanics** Stress concentration, local stress/strain fields, notch sensitivity, multiaxiality, and failure initiation.
- **Advanced and Modern Design Criteria.** Local approaches, strain energy density methods, critical plane models, multiscale formulations.
- **Welded Joints: Local Approaches for Structural Integrity.** Fatigue design, fracture aspects, modelling of toe and root notches, real-case applications.
- **Bonded Joints: Fracture and Notch-Based Design Strategies.** Local stresses, cohesive models, surface preparation and defects, advanced design methods.
- **Practical Application of Fracture and Notch Mechanics.** Analytical, numerical and experimental tools; crack initiation and propagation; verification strategies.
- **Artificial Intelligence and Data-Driven Approaches in Notch Mechanics.** Surrogate modelling, machine learning for stress/strain fields, automated optimization for notched structures.

**Teaching Staff:** All lectures will be delivered by **professors, senior researchers and industry experts** from leading international institutions. The full list of invited speakers will be announced soon.

**School Coordinators:** *Michele Zappalorto* (University of Padova), Filippo Berto (Università Roma la Sapienza)

**Organizing Committee:** Filippo Berto, Paolo Ferro, Lucio Maragoni, Giovanni Meneghetti, Mauro Ricotta, Michele Zappalorto

**Participants.** The Summer School is designed for:

- **PhD students** in mechanical, materials, civil or aerospace engineering
- **Young researchers** from universities and research centres
- **Engineers from industry** working on structural design, fatigue, welded or bonded joints, fracture mechanics, composite and metallic structures

A basic background in solid mechanics is recommended.

Participants attending the full program and passing the final assessment will receive a **certificate of attendance**. The school will award **5 ECTS** to Ph.D. students, according to university regulations.

### Program

A detailed schedule with session times and speakers will soon be available on the School website.

The program will include:

- Theoretical lectures
- Hands-on sessions (analytical, numerical, AI-assisted tools)
- Industrial case histories
- Open discussion sessions with experts
- Round table on future trends in notch and fracture mechanics
- Social event and guided visit in the historical centre of Vicenza

### General Information and Registration Fees

The School will take place at the **Department of Management and Engineering, University of Padova – Vicenza Campus (Italy), 13–17 July 2026**

Registration fees:

- **Students:** 500 € + VAT
- **University staff:** 1000 € + VAT
- **Industry staff:** 1500 € + VAT

Fees include: full participation to all lectures and sessions, teaching material and digital notes, lunches and coffee breaks, social event dinner.

**Registration deadline:** *June 26th, 2026*

**Preregistration is now open.** All participants who complete their preregistration by February 28th will receive a 15% discount on the final registration fee. To pre-register [click here](#) or use the following QR code:



### Why Vicenza?

Beyond the scientific value, participants will enjoy the unique atmosphere of **Vicenza**, a UNESCO World Heritage site known for the masterpieces of **Andrea Palladio**, its vibrant cultural life, and outstanding food and wine.

The venue is conveniently located near Venice, Verona, and the Dolomites.

