Venue

Allianz MiCo North Wing | Entrance: Gate 6
Viale Scarampo/ Viale Teodorico corner - Milano Italy

How to register

Admission to the course is limited to max **60 participants**, with mandatory pre-registration. Online registrations should be submitted at the websites **www.smartonweb.org** and/ or **www.startpromotion.it**.

Deadline: May 12, 2026. Registrations will be accepted on a first-come first-served basis, depending on availability. Registration to the 37° SMART Meeting is not required.

Registration fees

Not coupled with SMART registration	€ 240
Coupled with SMART registration	€ 200
Residents	€ 120

Current Italian VAT is included.

Organizing Secretariat

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Unrestricted grant of werfen

Smart Educational Course

37° smart
Smart Meeting Anesthesia Resuscitation inTensive care

INTERACTIVE THEORETICAL-PRACTICAL COURSE

ACID-BASE EQUILIBRIUM: TO REMEMBER YOU NEED TO UNDERSTAND...

Course Director: **T. Langer**

Milano | May 26, 2026
Allianz MiCo North Wing

Rationale

The course reviews the theoretical basis of acid-base balance, taking into account both traditional approaches and the Stewart approach. Our goal is to provide participants, in the clearest and simplest way, with the tools to understand and interpret acid-base balance and its alterations in daily clinical practice. To this end, the clinical applications of the various interpretative models will be extensively discussed, considering the effects of fluid therapy and renal function on acid-base balance. Finally, a few interactive clinical cases (televoters) will be presented to allow immediate application of what has been learned during the course.

The Course includes an interactive discussion of clinical scenarios with voting. Interactive voting is possible through the app **Poll Everywhere** (https://www.polleverywhere.com/mobile) or by linking at https://pollev.com/thomaslanger673

Course Director

Thomas Langer, Milano (I)

Faculty

Serena Brusatori, Milano (I)

Pietro Caironi, Torino (I)

Davide Colombo, Milano (I)

Frantisek Duska, Prague, (CZ)

Lorenzo Giosa, London (UK)

Thomas Langer, Milano (I)

Niels Van Regenmortel, Antwerp (BE)

Francesco Zadek, Milano (I)

Program

8.30 REGISTRATION

8.40 **Opening greetings and presentation of the Course** - T. Langer

8.50 **Warm-up case** - S. Brusatori

9.00 **Gas exchange. Overall evaluation of oxygen and CO_2: similarities and differences** - L. Giosa

9.30 **Decoding Henderson-Hasselbalch: a classic acid-base perspective** - T. Langer

10.05 **Physicochemical approach to acid-base equilibrium: advantages and limitations** - N. Van Regenmortel

10.40 **Blood gas analysis: understanding the machine, the measurements, and the mistakes** - F. Duska

11.10 **Technological evolution in blood gas analysis** - D. Colombo

11.30 COFFEE BREAK

11.45 **Beyond the arterial sample: the added value of venous blood analysis** - S. Brusatori

12.05 **Base Excess: merits and pitfalls** - L. Giosa

12.25 **INTERACTIVE CLINICAL CASES** Part 1

13.25 LUNCH BREAK

14.15 **Metabolic acidosis: diagnosis and treatment with alkalinizing agents** - N. Van Regenmortel

14.35 **Metabolic alkalosis: what produces and what maintains it** - T. Langer

14.55 **Respiratory acidosis: when and how to correct it** - L. Giosa

15.15 **Boston rules revisited** - F. Zadek

15.35 **Acid-base alterations induced by intravenous fluid therapy** - F. Duska

15.55 BREAK

16.15 **Cerebrospinal fluid acid-base equilibrium** - F. Zadek

16.35 **Diuretics and acid-base** - P. Caironi

16.55 **INTERACTIVE CLINICAL CASES** Part 2

17.55 CLOSING REMARKS - T. Langer