

Sensors and Measurement

Subject area: Electrical Engineering

University:	CTU
Level:	BA3, BA4, MA all years
Teaching mode:	blended: mostly online, but presence on campus required in certain period
Instructor(s):	Doc. Ing. Mattia Butta, Ph.D.

Short description

The first half of the course is focused on electrical measurements from the basics to the most advanced techniques to perform a measurement of measurement of an electric quantity including its digitalization. The second part of the course deals with sensors of different physical quantities: sensors of temperature (contact and contact-less), force, flow, velocity, position, acceleration...

Full description

<https://fel.cvut.cz/cz/education/bk/predmety/43/57/p4357606.html>

Learning outcomes

At the end of the course a successful student will be independent in designing and assembling a measurement circuit to measure a specific quantity, knowing how to avoid possible artifacts and will have a basic experience on how to select and use the main sensors.

General information

Contact hours per week:	6
Total workload:	150 (in student hours for the whole course)
ECTS credits:	6
Language:	English
Course start date:	19 September 2022
Course end date:	15 January 2023

Add. info about start date: Start course date refers to start of the semester at CTU. Schedules will be available 1-2 weeks before semester starts. Lectures are taken place from 19.9.2022 until 15.1.2023. Examination period from 16.1.2023 until 19.2.2023.

Weekly teaching day/time:

Time zone: CET (Denmark, Germany, France, Netherlands, Switzerland, Czech Republic)

Further information: Lessons are recorded and available on YouTube.

IMPORTANT: students will be required to visit our Faculty in Prague for an intensive in-person 4 day training in the laboratory, where the students will perform all the laboratory tasks prescribed by the syllabus (see link above).

These labs are mandatory and must be attended in order to obtain the assessment necessary to take part to the final exam.

Prerequisites: The student should know very well the basics of electric circuits and have strong foundations of physics.

Activities and methods: Lectures, Lab-work, Exercises

Presence on campus: students will be required to visit our Faculty in Prague for an intensive in-person 4 day training in the laboratory, where the students will perform all the laboratory tasks prescribed by the syllabus (see link above). These labs are mandatory and must be attended in order to obtain the assessment necessary to take part to the final exam.

Final examination

Form: oral

Date:

Location/format: on campus of home institution and, in special cases, online

Re-sit possibility: yes

Transcript available: end of semester

Add. info/requirements: Lessons are recorded and available on YouTube.

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Registration

To register for this course, follow the registration requirements of your **home university** as specified here: www.euroteq.eu/courses-registration.

Administration

Number of places:	8
Minimum participants:	5
Internal course code:	BE5B38SME
Contact:	buttamat@fel.cvut.cz

This course is part of the EuroTeQ Engineering University joint course catalogue 2022/2023. This is a collaborative activity of the partner universities DTU, L'X, TU/e, TalTech, CTU, TUM as well as Technion. Students from these universities can participate in the offered courses. It is the responsibility of the student to check if you fulfil the requirements to participate in a specific course. Students are also advised to check with their home institution how to get recognition of the ECTS credits gained in courses of the EuroTeQ course catalogue. For further information about EuroTeQ Engineering University, visit www.euroteq.eu or get in touch with the above-mentioned point of contact.