

**EURAMET Training Course on Acoustics measurements (Sound in Air)**

10-14 June 2019; GUM, Warszawa, Poland

Agenda version 2019-05-07

**Monday, 10 June 2019 - Day 1**

- 08:45            **Registration**
- 09:00            **Welcome and Opening**  
Introductory Round  
Objectives of the Training Course and Workshop
- 09:30 – 16:00   **Acoustic measuring devices – requirements and calibration methods in the international standards, practical implementation at the GUM, uncertainty estimation (lecture):**
- Measurement microphones:
    - IEC 61094-1:2000 Specifications for laboratory standard microphones
    - IEC 61094-4:1995 Specifications for working standard microphones
    - IEC 61094-5:2016 Methods for pressure calibration of working standard microphones by comparison
    - IEC 61094-6:2004 Electrostatic actuators for determination of frequency response
  - Sound calibrators:
    - IEC 60942:2017 Sound calibrators
  - Presentation of the GUM set-up for primary pressure calibration of microphones by reciprocity method – visit in the Laboratory

**Tuesday, 11 June 2019 - Day 2**

- 09:00 – 16:00   **Acoustic measuring devices – requirements and calibration methods in the international standards, practical implementation at the GUM, uncertainty estimation (lecture):**
- Sound level meters:
    - IEC 61672-1:2013 Sound level meters - Part 1: Specifications
    - IEC 61672-3:2013 Sound level meters - Part 3: Periodic tests
  - Band-pass filters:
    - IEC 61260-1:2014 Octave-band and fractional-octave-band filters - Part 1: Specifications
    - IEC 61260-3:2016 Octave-band and fractional-octave-band filters - Part 3: Periodic tests
  - Personal sound exposure meters
    - IEC 61252:1993 Specifications for personal sound exposure meters

### **Wednesday, 12 June 2019 - Day 3**

- 09:00 – 16:00    **Laboratory Work:**
- Calibration of measurement microphone by pistonphone
  - Calibration of measurement microphone by comparison method
  - Determination of electrostatic actuator response of a microphone
  - Calibration of single frequency and multifrequency sound calibrators by calibrated microphone (part 1)

### **Thursday, 13 June 2019 - Day 4**

- 09:00 – 16:00    **Laboratory Work:**
- Calibration of single frequency and multifrequency sound calibrators by calibrated microphone (part 2)
  - Calibration of sound calibrators by comparison method
  - Calibration and testing of sound level meters (part 1)

### **Friday, 14 June 2019 - Day 5**

- 09:00 – 15:30    **Laboratory Work:**
- Calibration and testing of sound level meters (part 2)
  - Testing of 1-octave and 1/3-octave filters
  - Calibration and testing of personal sound exposure meters
- 15:30            **Closure of the Training Course**

Lunches and coffee breaks will be announced in the sessions.

The Agenda may be modified in accordance with the needs of participants.

#### **Lecturers**

- Danuta Dobrowolska, GUM, Poland

#### Note:

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