Odeon Webinar

(Advanced modelling with ODEON)

For ODEON Auditorium & Combined - 3 sessions (2 hours each)

First session

1st Part (app. 1 hour)
- Latest updates for importing models from SketchUp and other CAD programs (ODEON 17 & ODEON 18)(demonstrations in ODEON).
  - Create SketchUp files from ODEON files with the SU2Odeon plugin (ver. 17)
  - Import BIM projects (from Revit and Archicad) directly into ODEON (ver. 18).
- Calculation Principles in ODEON (PowerPoint presentations).
  - Early and late reflections
  - Diffraction
  - Scattering coefficient.

2nd Part (app. 1 hour)

- **Optimization of materials in a Sports Hall (Hands-on)**
  - Scattering coefficient settings.
  - Brief overview of the measuring system.
  - Load existing measurements for selected source-receiver positions (multi-point resp.).
  - Run a Genetic Material Optimization to match measurements with simulations (JNDs).
- Discuss quality of results:
  - Inspect the decay curves and reflection density.
  - Determine the number of rays.
  - Find the proper Transition Order in the *Investigate Simulation Parameters*.

Second session

1st Part (app. 1 hour)
- Introduction to the *Lombard effect* and acoustic capacity (application note).
- **Acoustic capacity in a cafeteria using dynamic surface sources (Hands-on)**
  - Define a multi-surface source.
  - Define and calculate grids.
  - Use calculation process for ambient noise and acoustic capacity with an excel sheet.

2nd Part (app. 1 hour)
- **Create an auralisation of conversations in the cafeteria (crowd simulation) (Hands-on)**
  - Define sources from grids.
  - Make bulk modifications in the Source-group editor.
  - Use the Audio Effects to create variations of audio input files.
  - Define multi-source auralisations in the auralisations mixer.
- Export auralisations in the *Soundscape App* (new feature in ver. 18). Make use of *Material Archive* for exporting different scenarios.

Third session

1st Part (app. 0.5 hour)
- Room acoustic parameters in ODEON (Power point presentation)
  - Sound strength (intendent for performance spaces).
  - STI parameters.
  - Clarity parameters (intendent for performance spaces).
  - Open-plan office parameters.

2nd Part (app. 1 hour)
- **Echo and focusing (Hands-on)**
  - Room preparation.
  - Use the *grid response* and the *single-point response* to detect echoes.
- Application cases:

  -Detecting flutter echoes and treatment (brief demo of a real case).

  -Level of detail in model (audience seats vs audience box -brief demo of a real case).

3rd Part (app. 0.5 hour) – if time allows. Otherwise discussion on final questions.
- **Define new materials in ODEON (introduced in ver. 17) (Hands-on)**
  - Define materials from a datasheet.
  - Using the material calculator.
  - Construct your own material in front of a rigid wall.