



ESD301 Home Theater Audio and Acoustics Part I

The purpose of this course is to explain the basic dimensions of sound, how they relate to sound propagation in rooms and to its perception by listeners. This course shows how scattering and diffusing devices, and absorbers work and how they interact with sounds radiated by loudspeakers. The basics of loudspeaker measurements are explained, and how they relate to listener preferences.

At the conclusion of this course, participants should be able to:

- Understand key sound fundamentals as they relate to the choice and placement of loudspeakers and acoustical materials for home theaters.
- Appreciate the differences between absorption and transmission loss as they relate to the different acoustical and structural materials.
- Analyze how the size and shape of a room (length, width, and height) affect bass sounds in terms of frequency response and seat-to-seat variations.
- Recognize that knowing about sound, sound propagation, acoustical materials and loudspeakers allows designers to substantially anticipate the quality of sound reproduction within a room or theater.