Acoustics deals with the production, control, transmission, reception, and effects of sound. Owing to acoustics being an interdisciplinary field, this book is intended to be equally accessible to readers from a range of backgrounds including electrical engineering, physics and mechanical engineering.

This book introduces the fundamentals of acoustic wave motion. It addresses in a clear and systematic way some of the most difficult parts of acoustics for beginners, such as the widely different approximations due to the wide frequency range, the apparently arbitrary choice between the use of analytical solutions to the wave equation with boundary conditions, and the fundamentally different energy-based considerations used in noise control. As a result, it provides readers with a self-contained source of information on acoustics which can be used for self-study or as a graduate course text.

Key features:

- Places an emphasis on detailed derivations based on the fundamental laws of physics and interpretations of the resulting formulas.

- Avoids, where possible, electrical and mechanical equivalent circuits, so as to make it accessible to readers with different backgrounds.

- Introduces duct acoustics, sound in enclosures, and sound radiation and scattering.
• Contains a set of appendices which includes material on signal analysis and processing as these tools are essential for the modern acoustician.

🔥 ABOUT THE AUTHOR

Finn Jacobsen, Department of Electrical Engineering, Technical University of Denmark (DTU)
Currently an Associate Professor in the Department of Electrical Engineering at DTU, Dr. Jacobsen has more than twenty-five years' experience of teaching acoustics at MSc level, and more than 15 years' experience of teaching fundamentals of acoustics at undergraduate level. He was Associate Editor of Acustica united with Acta Acustica from 1995 to 2003, and section leader of the Handbook of Signal Processing in Acoustics (Springer, 2008). He has also contributed 6 chapters in various handbooks on acoustics; published approx. 90 journal papers and more than 100 conference papers.

Peter Møller Juhl, Faculty of Engineering, University of Southern Denmark
Dr. Juhl is currently an Associate Professor at the Institute of Technology and Innovation, University of Southern Denmark. He teaches both undergraduate and postgraduate courses in the field of acoustics which range from quite elementary acoustics and signal analysis for students of audiology to basic and advanced acoustics for engineering students as well as courses on mechanical vibrations and numerical acoustics. He has also taught basic courses on physics for both engineers and physicists.

For additional product details, please visit https://www.wiley.com/en-gb