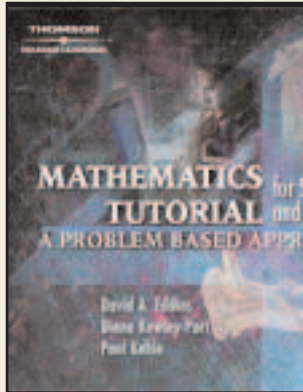


Mathematics and Physics for Speech and Hearing: A Problem-Based Approach CD-ROM



By *Eddins, David A., PhD; Kewley-Port, Diane, PhD; Kehle, Paul E., PhD*

The CD-ROM provides a problem-based approach to understanding math and physics as they apply to speech and hearing. Technical requirements are Microsoft Internet Explorer 4.0 or higher; browser capable of viewing frames, Java and JavaScript; Monitor resolution of 1024 x 768 (minimum 800 x 600); Microsoft Windows (98, 2000, NT); Adobe Acrobat Reader; Microsoft Excel (97, 2000); sound card and speakers; minimum 32 MB RAM.

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 CD-ROM

The material is well presented in this format as it allows demonstration of sounds, manipulation of variables, and demonstrations to be embedded. It also allows problems to be solved by the student via examples on Excel. This is a welcome product. The mathematical and physical aspects of speech and hearing are difficult for most students to grasp. The interactive nature of this CD-ROM makes the material more accessible.

According to the author, the intended audience includes freshmen and sophomores who have completed at least one college-level math course. This would be equally useful to graduate students in audiology who have limited knowledge of math and physics.

The course integrates math, physics, and speech and hearing in five topic areas or modules: simple sounds, decibels, and trigonometric functions; vowel synthesis and Fourier transforms; audition, amplification, and linear systems analysis; clinical decision making and probability theory; voice disorders and signal processing. Each module has a reading section, an assignment section, suggested labs and exercises. There are substantial projects to integrate math understanding, knowledge of speech and hearing concepts to realistic problem solving and Excel proficiency. There is generous use of graphics and sound to illustrate points. The CD-ROM is easy to install and use. It is clear and well-organized with an appropriate number of graphic illustrations. The exercises and projects are particularly helpful. The best feature of this product is the fact that math and physics are taught with speech and hearing examples. This makes the material relevant to the reader at all points. Although it is necessary to complete the exercises, there is a great deal of text to read on screen. It would also be helpful if the exercises were set up to give immediate feedback.

This CD-ROM is an excellent supplement to basic speech and hearing science courses. This format extends the traditional classroom/textbook format in that it offers multimedia-based assignments and laboratory exercises.

REVIEWED BY:

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 Doody's Review