Elements of Mechanical Vibration

By R.N. Iyengar

I.K. International Publishing House Pvt. Ltd., 2010. Paperback. Book Condition: New. 14cm x 21cm. This is an entry level textbook to the subject of vibration of linear mechanical systems. All the topics prescribed by leading universities for study in undergraduate engineering courses are covered in the book in a graded manner. With minimum amount of mathematics, which is essential to understand the subject, theoretical aspects are described in each chapter. The theory is illustrated by several worked examples, which features will be found attractive by teachers and students alike. After a brief introduction to Fourier series in the first chapter, free and forced vibration of single degree-of-freedom systems with and without damping is developed in the next four chapters. Two degree-of-freedom systems including vibration absorbers are studied in chapter six. The seventh chapter generalises the previous results to multiple degree-of-freedom systems. Examples are wokred out in details to illustrate the orthogonality of mode shapes, the normal mode method and the method of matrix iteration. Analysis of continuous systems such as shafts, bars and beams is presented in chapter eight. Transformations to handle general time dependent boundary condition problems are described with examples. Torsional vibration of geared systems, shaft whirling and...

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