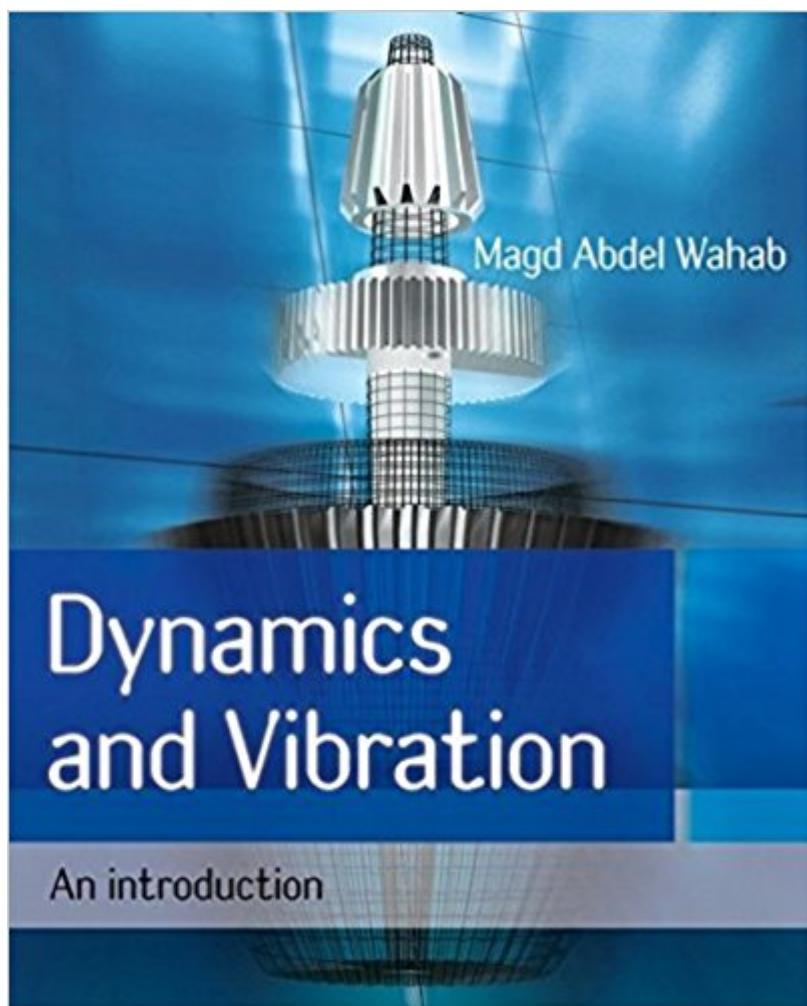


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# Dynamics And Vibration: An Introduction



## Synopsis

This book presents a new teaching methodology in Dynamics using E-learning, simulations and animation of mechanisms and mechanical vibrating systems. It covers Dynamics and Vibration modules that are taught at different undergraduate levels to the engineering students at Universities in the UK and worldwide. The content of the book is suitable for Level 1 Dynamics modules for Engineering students (Civil, Mechanical, Aerospace & Medical), as well as Level 2/3 Dynamics and Vibration Modules being taught to Mechanical, Aerospace & Medical Engineering students. In addition to the theory sections and the tutorial sheets provided after each chapter, software called DAMA, â ^Dynamic Analysis for Mechanical Applicationâ ™, in which simulations of mechanisms and vibrating systems are implemented, is provided via a website. The DAMA software is packaged with everything it needs to work immediately. The simulations it contains are used to enhance students understanding of the motion and vibration of mechanical systems. The simulations include motion of a single cylinder engine, four-bar linkage mechanisms, gears and sliding/rotating rigid bars along with many others. The simulations are fully interactive so that any change in the input parameters is immediately reflected in the animation, output plots and output parameters.

## Book Information

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## Customer Reviews

Dynamics and Vibration: An Introduction is a textbook to support Dynamics and Vibration modules across a wide range of undergraduate engineering courses from first year to final year including civil, mechanical, aerospace and medical engineering. The unique DAMA software, included as a

free online resource, generates computer simulations that provide students with a new way to visualise the motion of mechanisms and vibrating systems. By varying the input and output parameters of the simulations themselves, students can clearly see and understand the effects of system changes. *Dynamics and Vibration: An Introduction* is well structured and easy to understand, with a wealth of examples and tutorial questions. It offers lectures and student of Dynamics and Vibration a practical and concise resource specifically for their needs. Topics covered include: motion of particles and rigid bodies with and without reference to masses and forces (Kinematics and Kinetics) including motion of wheels, gears, linkages and mechanisms; balancing of machines including rotating masses and multi-cylinder engines; free and forced vibration of a single degree of freedom (mass, a spring and a damper) including damped, damped systems and vibration isolators; free and forced vibration of two-degree of freedom systems including vibration of bars and lateral vibration absorbers; vibration of continuous systems including lateral vibration of cables, longitudinal vibration of bars and lateral vibration of beams using analytical solution and Finite Element Method.

Magd Abdel Wahab is Professor of Applied Mechanics in the Department of Mechanical Construction and Production at Ghent University in Belgium. An experienced teacher, he has also published over 150 technical research publications.

Honestly, I don't like to review any book at their first edition because there are so many things they missed and/or need to improve. The book covers most of the topics in both dynamics and vibration, you might find that they are well-divided within the book itself. The theoretical content was great; however, the sample and problem content were poor. If you didn't do well in the first course of dynamics, you might find yourself struggling with this book. I'd recommend you learn the dynamics part from Hibbeler's *Mechanics of Materials*, and then learn the vibration part from this book. This book was used as 3000 level class for my undergraduate program. The fact that it is a soft-cover book makes it cheaper than any other engineering books with hard-cover. If you have to buy it for your class, then goodluck!; but, I'd not recommend this book if you are buying it for self-studying.

So far as substance, it's a good book. It's mostly succinct and well written, but seems lacking compared to other books out there. The examples are good enough, but not top-notch, in my opinion. It wasn't outrageously expensive, which is always nice, but I wouldn't expect anything outstanding out of this book. In a nutshell, it gets the job done.

Great book it made my dynamics class more easier to learn

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