

PHYSICS I:  
INTRODUCTION TO  
STATIC STRUCTURAL  
SYSTEMS AND  
MECHANICS OF  
MATERIALS

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**President University Press**

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# Synopsis

This book provides an introduction to engineering mechanics, especially in relation to the introduction of static structural systems and mechanics of materials. Broadly speaking, the material discussed in the introduction to structural systems is a system structure from solid materials which follows some of Newton's laws, unit systems in engineering mechanics, determination of displacement and reaction forces due to external forces which are noted as vectorial quantities, the basic concepts and operations of force as vectors, and the aspects of modelling structural systems. For the part an introduction to the mechanics of materials, several theories and supporting principles are discussed, flat surface properties, mechanical and physical properties of materials, and a discussion of strain and stress in axial and bending member components. This book is useful for civil engineering students or anyone who needs basic knowledge of static structural systems and mechanics of materials.



Prof. Binsar Hariandja was born in Pangaribuan on July 9, 1948. Prof. Hariandja has three degrees from three different countries: Indonesia, Thailand, and the USA. He received his bachelor's degree from Bandung Institute of Technology, his master's degree from the Asian Institute of Technology, Bangkok Thailand, and his Ph.D. degree from the University of Illinois, Urbana-Champaign, Illinois, USA. Prof. Hariandja was appointed as a Professor of Civil Engineering in 1999. Prof. Hariandja's main expertise is in the design of earthquake-resistant high-rise buildings. He is also active in research, especially in the precast concrete method. Currently, he is a lecturer in the Civil Engineering Department of President University.



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Penerbit:  
**President University Press**  
Lembaga Riset dan Pengabdian Masyarakat  
Jalan Ki Hajar Dewantara, Mekarmukti,  
Cikarang Utara, Bekasi, 17530  
Email: [publishing@president.ac.id](mailto:publishing@president.ac.id)

ISBN 978-623-6655-94-8

