



METADATA

Title: Introduction to Mechanical Engineering

Other Titles: A Compass to Navigate the Forest of Mechanical Engineering

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Abstract

This book is intended to accompany "introductory" courses in Mechanical Engineering, which are frequently encountered in first year Mechanical Engineering curricula. In almost every Engineering department, the goal of the first years of study is to provide the necessary foundations, drawing heavily from mathematical and physical sciences. The experience is often disheartening for young students, who are eager to venture into the world of "real engineering". However, it is often the case that first year students are not aware of the essence of the disciplines that they are about to study or they perceive Mechanical Engineering as a pre-determined execution of procedures for the sizing, maintenance or repair of machines or installations. Although these are indeed some aspects of the Mechanical Engineering practice, the full range of the challenge of becoming a well-versed Mechanical Engineer emerges

only when one adds the elements of design and innovation. The purpose of this book is to provide students with a timely perspective of Mechanical Engineering, without going too far into matters that will be the subject of deeper and more extensive analysis in one or more courses later on in their studies. The Mechanical Engineering practice is presented within the general framework of technological progress while the importance of innovation is underlined. The student is introduced to an engineering approach to applied problems of analysis, design and even construction and the benefits are many: interest is aroused, useful methods of thought and approaches are introduced and experience is gained in the hands-on application of theories and ideas. Finally, the student obtains an holistic perspective of the role of Mechanical Engineering in the progress of technology and, ultimately, society.

