

Mechanical Engineering Education

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Edited by
J. Paulo Davim

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Preface

Mechanical engineering is currently being defined (nowadays) as a discipline “which involves the application of principles of physics, design, manufacturing and maintenance of mechanical systems”. Recently, the field of mechatronics has gained importance in mechanical engineering as well as in other modern disciplines. This book on mechanical engineering lays special emphasis on quality assurance and the improvement of higher education institutions, mechatronics education, and transfer of knowledge between university and industry. Chapter 1 discusses the quality assurance schemes applied to Greek Higher Education Institutions (GHEIs) in accordance with the specifications laid down by the European Higher Education Area (EHEA) and the European Standards and Guidelines. Chapter 2 covers mechatronics education. Chapter 3 contains information on the system of mechatronics education using multiple mobile robots with a behavior-based control approach. Finally, in Chapter 4, the transfer of knowledge between university and industry is discussed, which has the potential to bring great benefits to both partners; for example, in designing innovative solutions, in the optimal allocation of resources, in motivating students to new challenging tasks, and finally in integrating multidisciplinary teams from both university and industry.

This book can be used as course material for final-year undergraduate engineering students or for study as a discipline for mechanical engineering at the postgraduate level. It can also serve as a useful reference for academics, mechatronics researchers, mechanical and mechatronics engineers and professionals connected with mechatronics education.

The subject matter of this book should prove to be of interest to many institutes and universities throughout the world.

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