

1. Record Nr.	UNINA9910141502303321
Titolo	Mechanical engineering education [[electronic resource] /] / edited by J. Paulo Davim
Pubbl/distr/stampa	London, : ISTE Hoboken, N.J., : Wiley, 2012
ISBN	1-118-56877-X 1-299-18684-X 1-118-56872-9 1-118-56870-2
Descrizione fisica	1 online resource (183 p.)
Collana	Mechanical engineering and solid mechanics series
Altri autori (Persone)	DavimJ. Paulo
Disciplina	621
Soggetti	Mechanical engineering - Study and teaching
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Mechanical Engineering Education; Title Page; Copyright Page; Table of Contents; Preface; Chapter 1. Quality Assurance in Greek HEIs: Convergence or Divergence with European Models?; 1.1. Introduction; 1.2. Definitions and fundamentals; 1.3. Quality management models in HE; 1.3.1. Overview; 1.3.2. Implementation of ISO 9001 in HEIs; 1.3.3. Implementation of EFQM model in HEIs; 1.4. European focus on quality in HE: a historical perspective; 1.4.1. Historical perspective; 1.4.1.1. Policy and procedures for quality assurance 1.4.1.2. Approval, monitoring and periodic review of programs and awards 1.4.1.3. Assessment of students; 1.4.1.4. Quality assurance of teaching staff; 1.4.1.5. Learning resources and student support; 1.4.1.6. Information systems; 1.4.1.7. Public information; 1.4.2. ESG standards versus typical quality systems; 1.4.3. Accreditation of engineering education; 1.5. Quality assurance in Greece: a long and winding road; 1.5.1. Higher education in Greece; 1.5.2. Greek HEI quality assurance system; 1.5.3. Accreditation of higher engineering education in Greece 1.5.4. Selected cases on QA applications in Greek (engineering) HEIs 6. Bibliography; Chapter 2. Mechatronics Education; 2.1. Introduction;

2.2. A brief history of mechatronics; 2.2.1. History of mechanical engineering; 2.2.2. History of electronics engineering; 2.2.3. Growth of mechatronics; 2.3. Definitions and scope of mechatronics; 2.4. Examples of mechatronic products; 2.5. Review of literature in the area of mechatronics education; 2.6. Common doubts regarding the discipline of mechatronics; 2.7. Characteristics of mechatronics education
2.8. Incorporating mechatronics in the course structure of undergraduate students
2.9. Mechatronics for postgraduate students;
2.10. Planning of a mechatronics program at postgraduate and undergraduate level; 2.11. Some examples of mechatronics projects;
2.11.1. Design and fabrication of a mechatronic wheelchair; 2.11.2. Automatic gear changing system for cars; 2.11.3. Design and fabrication of robots; 2.11.4. Design and fabrication of an electronic cam; 2.12. Conclusion; 2.13. Bibliography
Chapter 3. Mechatronics Educational System Using Multiple Mobile Robots with Behavior-Based Control Approach
3.1. Introduction; 3.2. Mechatronics education subsystem I; 3.2.1. Hardware of mechatronics educational subsystem I; 3.2.2. Basic dialog for students' experiment;
3.3. Mechatronics educational subsystem II; 3.3.1. Hardware of mechatronics educational subsystem II; 3.3.2. Basic dialog for students' experiment;
3.4. Mechatronics educational subsystem III; 3.4.1. Mobile robot with three wheels; 3.4.2. Network-based multiple mobile robot system
3.4.3. Subsumption control architecture implemented on supervisory server

Sommario/riassunto

Mechanical Engineering is defined nowadays as a discipline "which involves the application of principles of physics, design, manufacturing and maintenance of mechanical systems". Recently, mechanical engineering has also focused on some cutting-edge subjects such as nanomechanics and nanotechnology, mechatronics and robotics, computational mechanics, biomechanics, alternative energies, as well as aspects related to sustainable mechanical engineering. This book covers mechanical engineering higher education with a particular emphasis on quality assurance and the improvement of academic
