

1. Record Nr.	UNISA996418444903316
Autore	Papachristou Costas J.
Titolo	Introduction to mechanics of particles and systems / / Costas J. Papachristou
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2020] ©2020
ISBN	3-030-54271-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (IX, 269 p. 197 illus.)
Disciplina	531
Soggetti	Mechanics Dynamics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Vectors -- Kinematics -- Dynamics of a particle -- Work and Energy -- Oscillations -- Systems of particles -- Rigid-body motion -- elementary fluid mechanics -- Appendices.
Sommario/riassunto	This book is based on the author's lecture notes for his Introductory Newtonian Mechanics course at the Hellenic Naval Academy. In order to familiarize students with the use of several basic mathematical tools, such as vectors, differential operators and differential equations, it first presents the elements of vector analysis that are needed in the subsequent chapters. Further, the Mathematical Supplement at the end of the book offers a brief introduction to the concepts of differential calculus mentioned. The main text is divided into three parts, the first of which presents the mechanics of a single particle from both the kinetic and the dynamical perspectives. The second part then focuses on the mechanics of more complex structures, such as systems of particles, rigid bodies and ideal fluids, while the third part consists of 60 fully solved problems. Though chiefly intended as a primary text for freshman-level physics courses, the book can also be used as a supplemental (tutorial) resource for introductory courses on classical mechanics for physicists and engineers.