

| | |
|-------------------------|--|
| 1. Record Nr. | UNINA9910865236803321 |
| Autore | Ghosh Amitabha |
| Titolo | Introduction to Analytical Mechanics |
| Pubbl/distr/stampa | Singapore : , : Springer, , 2024 ©2024 |
| ISBN | 9789819724840 9789819724833 |
| Edizione | [1st ed.] |
| Descrizione fisica | 1 online resource (137 pages) |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Intro -- Preface -- Contents -- About the Author -- List of Figures -- List of Tables -- 1 Introduction -- 1.1 Introduction -- 1.2 Principle of Least Action -- 1.3 Comparison of Vectorial and Variational Approaches -- 2 Basic Concepts in Analytical Mechanics -- 2.1 Degrees of Freedom and Generalized Coordinates -- 2.2 Constraints and Configuration Space -- 2.3 Virtual Displacement -- 2.4 Virtual Work and the Principle of Virtual Work -- 2.5 D'Alembert's Principle and Force of Inertia -- 2.6 Exercise Problems -- 3 Lagrange's Equation -- 3.1 Lagrange's Equation -- 3.2 Understanding the Difference Between Actual and Virtual ... -- 3.3 Technique of Lagrange Undetermined Multiplier -- 3.4 Application of Lagrange's Multiplier Technique-Determination ... -- 3.5 Lagrange Multiplier Technique for Non-holonomic Systems -- 3.6 Review of Lagrange's Equation -- 3.7 Exercise Problems -- 4 Action Concept and Hamilton's Principle -- 4.1 Principle of Least Action and Hamilton's Principle -- 4.2 Calculus of Variation -- 4.3 Exercise Problems -- 5 Hamiltonian Mechanics -- 5.1 Hamiltonian Mechanics and Hamilton's Equations -- 5.2 Ignorable Coordinates, Conservation Principle and the Routhian Function -- 5.3 Concept of Phase Space, Phase Fluid and Liouville's Theorem -- 5.4 Canonical Transformations, Poisson Bracket and Hamilton-Jacobi Equation -- 5.5 Exercise Problems -- Appendix Answers to Selected Exercise Problems -- Appendix Further Reading -- Index. |

