

CONTENTS Vol. 1

Lect. n. 1 :	Physical quantities and their measure	pag. 6
Lect. n. 2 :	Scalar and vector quantities	8
Lect. n. 3 :	Vector sum and subtraction	10
Lect. n. 4 :	Not concurrent vectors	14
Lect. n. 5 :	Vector resolution	16
Lect. n. 6 :	Introduction to the kinematics. Distance and displacement	18
Lect. n. 7 :	Length and time interval measure	22
Lect. n. 8 :	Scalar velocity	24
Lect. n. 9 :	Uniform straight motion	28
Lect. n. 10 :	Instantaneous velocity	32
Lect. n. 11 :	Vector velocity	34
Lect. n. 12 :	Scalar acceleration	36
Lect. n. 13 :	Uniformly accelerated straight motion	40
Lect. n. 14 :	Free fall	46
Lect. n. 15 :	Vector acceleration	48
Lect. n. 16 :	Uniform circular motion	50
Lect. n. 17 :	Tangential velocity	56
Lect. n. 18 :	Centripetal acceleration	62
Lect. n. 19 :	Harmonic motion	68
Lect. n. 20 :	Reference systems	72
Lect. n. 21 :	Introduction to the dynamics. Force. First principle of the dynamics	76
Lect. n. 22 :	Second principle of the dynamics	78
Lect. n. 23 :	Weight force	82
Lect. n. 24 :	Third principle of the dynamics	84

Lect. n. 25 :	Forces acting in a circular motion	86
Lect. n. 26 :	Impulse and momentum	90
Lect. n. 27 :	Momentum conservation	98
Lect. n. 28 :	Force work	100
Lect. n. 29 :	Power	110
Lect. n. 30 :	Kinetic energy	114
Lect. n. 31 :	Kinetic energy theorem	120
Lect. n. 32 :	Preservative forces	128
Lect. n. 33 :	Potential energy	132
Lect. n. 34 :	Mechanical energy	139
Lect. n. 35 :	Wide bodies. Wide bodies movements	146
Lect. n. 36 :	Friction	148
Lect. n. 37 :	Torque of a force as regards to a point and to a straight line	150
Lect. n. 38 :	Pair of forces and its torque	154
Lect. n. 39 :	Bonds. Pressure	156
Lect. n. 40 :	Statics	158
Lect. n. 41 :	Inertia moment of a body as regard to an axis	162
Lect. n. 42 :	Waves	164
Lect. n. 43 :	Waves propagation velocity	166
Lect. n. 44 :	Waves resultant	168
Lect. n. 45 :	Waves phase	170
Lect. n. 46 :	Sound. Music	172
Lect. n. 47 :	Temperature. Thermometric scales	174
Lect. n. 48 :	Heat	178
Lect. n. 49 :	Specific heat	180
Lect. n. 50 :	Mechanical equivalent of the heat	182
Lect. n. 51 :	Matter aggregation states. Gas transformations and first thermodynamic principle	184
Lect. n. 52 :	Carnot cycle	186
Lect. n. 53 :	Second thermodynamic principle. Third thermodynamic principle	188