

Physics

<-> Solid Mechanics, Dynamics, Fluid Mechanics, Thermodynamics

* Take off ? Steady state ? Landing ?

Wind, Fish ,구름에 달 가듯이 ?

천리길도 한걸음부터 !

뱀새가 황새 흉내 낸다 ? : Practice !

개천에서 용난다 ?

○ 하는 일 없이 힘들다 ? : Dimension~ Work(?) - Force (?)

Vector Mechanics *for* Engineers

: Dynamics 11 Edition

Beer, Johnston *etc*

Vector (magnitude & direction ~ Figure !): ~ Scalar (energy : V,.. etc, Figure ?)

Mechanics : Dynamics(mass) + Statics(spring) (Solid mechanics) ~>
flexibility !! – Real system

- Newton's Law of Motion — 1st to 3rd laws ??

: $F \sim a$ -> Experiments -> $F=ma$

Free body diagram ~ Vector mechanics

~ 3 Exam. + For each Chapter: 8 Problem sets : Text !

TA : 301-1411(880-7393) 임정수

- Space-fixed coordinate system :
- Body-fixed coordinate system :

Dynamics : Particle, System of Particles(Milky Way, Galaxy), Rigid-body

Solid Mechanics (~Springs, Deformation)+Dynamics**(~Mass, Motion)**

= Spring + Mass : Response ~> Vibration

볼놀이

태양 - 지구 - 달 :

태풍

지하철

별

Newton's Law ~ Theory ?

Kinematics(Geometry) – Kinetics (Motion)

: Translation, Rotation ; Particle ? Rigid body ?

Overview of the Text

<u>Kinematics</u> of Particles	3 DOF
Kinetics of Particles : Newton's Second Law	3 DOF
Kinetics of Particles : Energy and Momentum Methods	<u>3 DOF(??)</u>
Systems of Particles	3 n DOF
<u>Kinematics</u> of Rigid Bodies	6 DOF
<u>Plane Motion</u> of Rigid Bodies : Forces and Accelerations	3 DOF
<u>Plane Motion</u> of Rigid Bodies : Energy and Momentum Methods	3 DOF
Kinetics of Rigid Bodies in <u>3 Dimensions</u>	6 DOF

Preface

Objectives – **Simple and logical manner, well understood basic principles**

General Approach

Practical Applications: Particles & Rigid bodies

**Dynamics-Force, mass & accelerations: work & energy:
energy & momentum**

New Concepts : Potential energy – conservative force, 2 D motion...

Fundamental Principle : Deductive science !