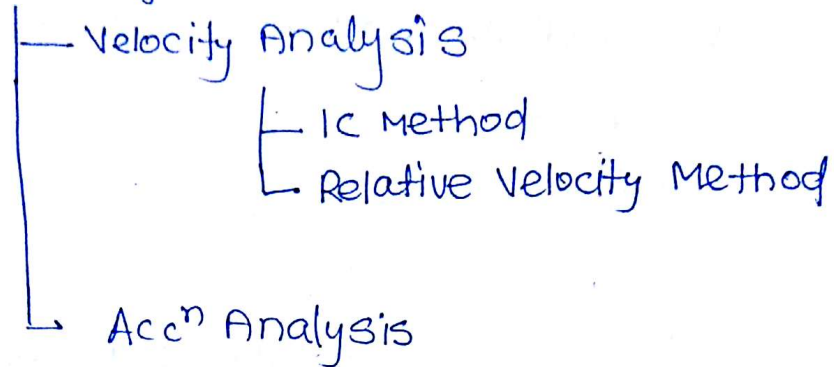


# Theory of Machines

↳ Simple mechanism

↳ Motion Analysis



↳ Gears

★↳ Gear trains

- Flywheel
- Clutch
- Balancing

★↳ Mechanical Vibration

- Cam and Followers
- Gyroscope

Mechanical engg.



Engg. of mechanics



Study of Motion

Study of motion  
without considering  
basic cause of motion  
i.e. force

Kinematics

$$\vec{v} = \frac{d\vec{s}}{dt}, \quad \vec{a} = \frac{d\vec{v}}{dt}$$

$$\vec{j} = \frac{d\vec{a}}{dt}$$

Study of motion with  
the consideration of the  
basic cause of motion  
i.e. force

Dynamics  
(Kinetics)

Newton's law

$$\vec{F}_{\text{ext}} = \frac{d}{dt}(m\vec{v})$$

eq dynamic viscosity

Pa-sec or  $\frac{\text{N}}{\text{m}^2} \text{ Sec.}$

kg that's why it called  
dynamic

kinematic viscosity:  $\text{m}^2/\text{s}$