



# **SNS COLLEGE OF TECHNOLOGY**

**(An Autonomous Institution)**

**COIMBATORE-35.**



Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A+’ Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

## **DEPARTMENT OF AUTOMOBILE ENGINEERING**

### **COURSE NAME : 16AU0302 - RECENT TRENDS IN AUTOMOBILES**

**III YEAR / VI SEMESTER**

**Unit 4 – Comfort Systems**

**Topic : Active Suspension System**

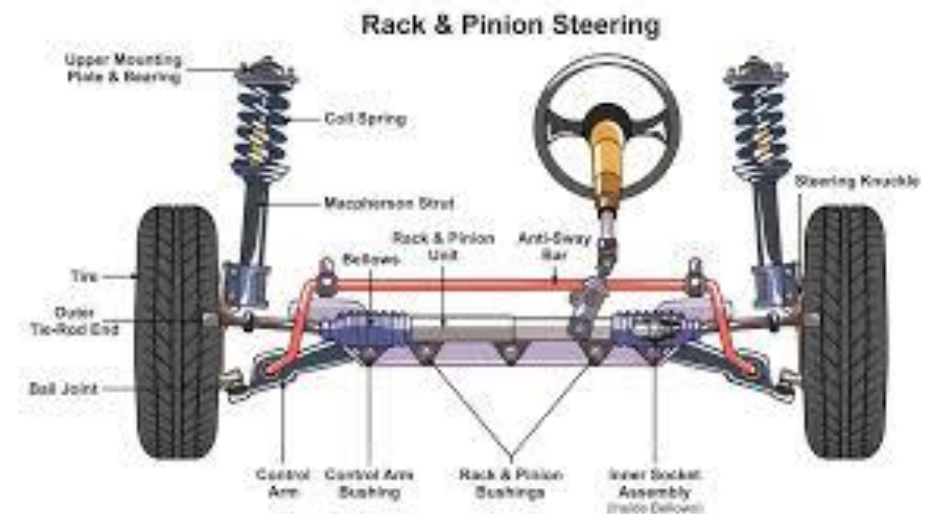
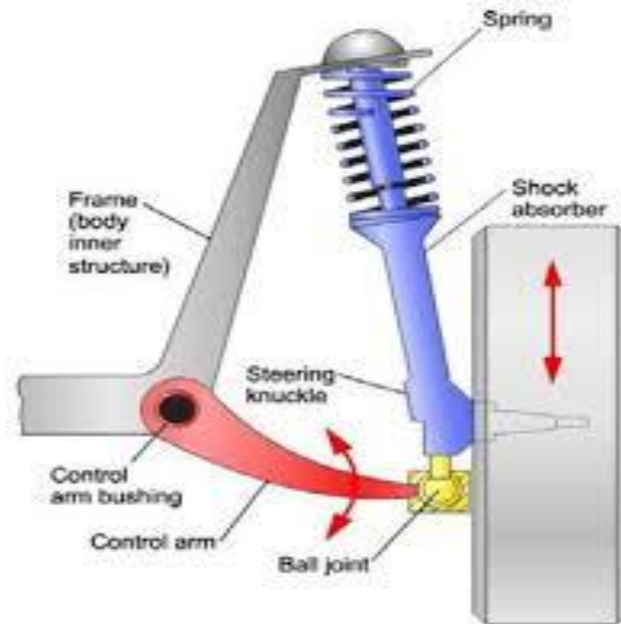
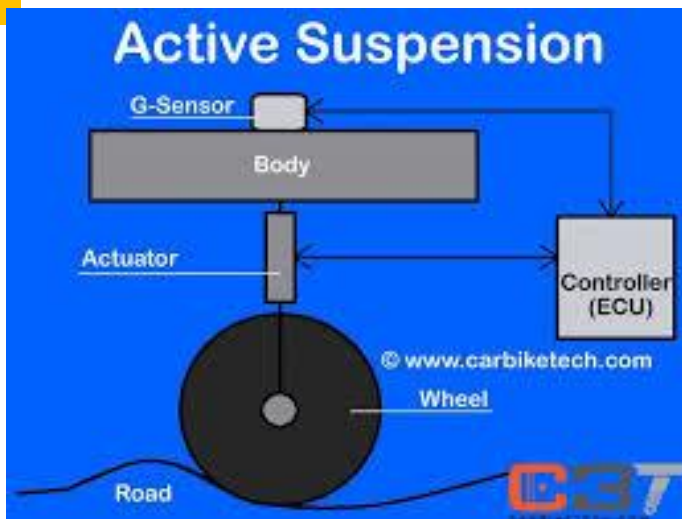


# Active Suspension System VS Traditional Suspension System

**Active suspension** systems differ from **traditional suspension systems** primarily in their ability to actively adjust and control the vehicle's suspension in real-time.

While **traditional suspension** systems rely on mechanical components such as springs and dampers to absorb road shocks and maintain stability,

**active suspension** systems incorporate electronic sensors, actuators, and control algorithms to continuously monitor road conditions and vehicle dynamics, actively adjusting the suspension settings accordingly

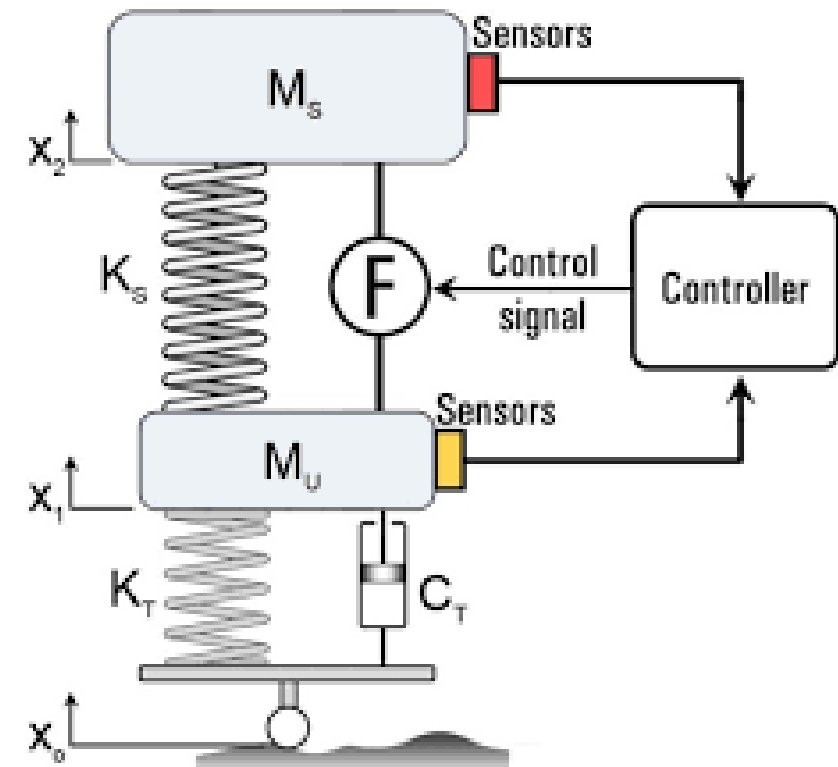




# Active Suspension System VS Traditional Suspension System



- Functionality-wise, active suspension systems offer a higher level of adaptability and responsiveness compared to passive systems. They can adjust damping rates, spring stiffness, and ride height dynamically based on factors such as road surface quality, vehicle speed, cornering forces and driver inputs. This allows for superior ride comfort, enhanced handling, and improved stability under varying driving conditions





# Active Suspension System VS Traditional Suspension System

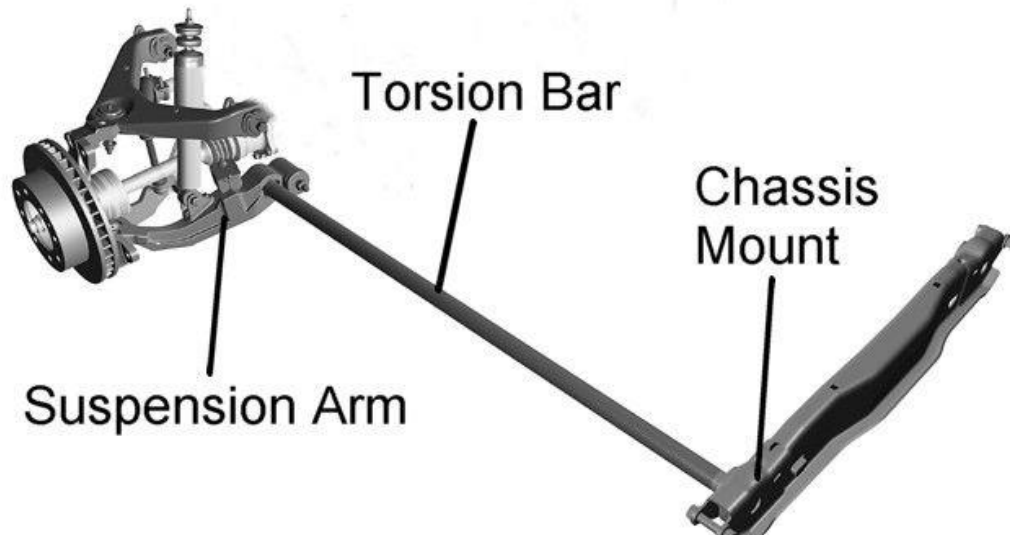


- In terms of performance, active suspension systems, offer improved vehicle stability by actively counteracting body roll, pitch, leading to enhanced handling and safety, especially during high-speed maneuvers or sudden maneuvers.
- Moreover, active suspension systems can mitigate the effects of road disturbances such as potholes or bumps by adjusting suspension settings in real-time, resulting in a smoother and more controlled ride experience.



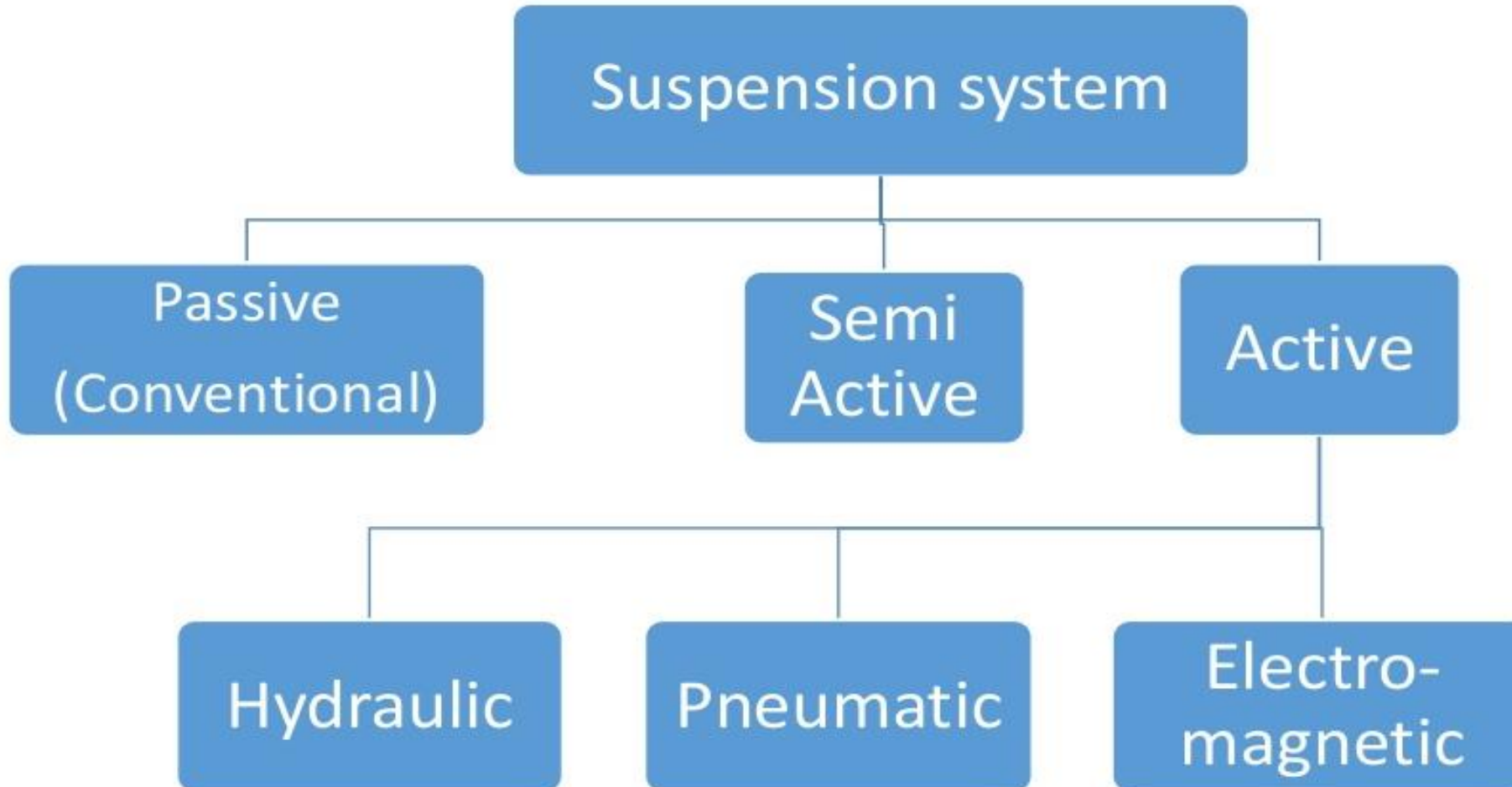


# TYPES OF SUSPENSION SYSTEM





# SUSPENSION SYSTEM TYPES





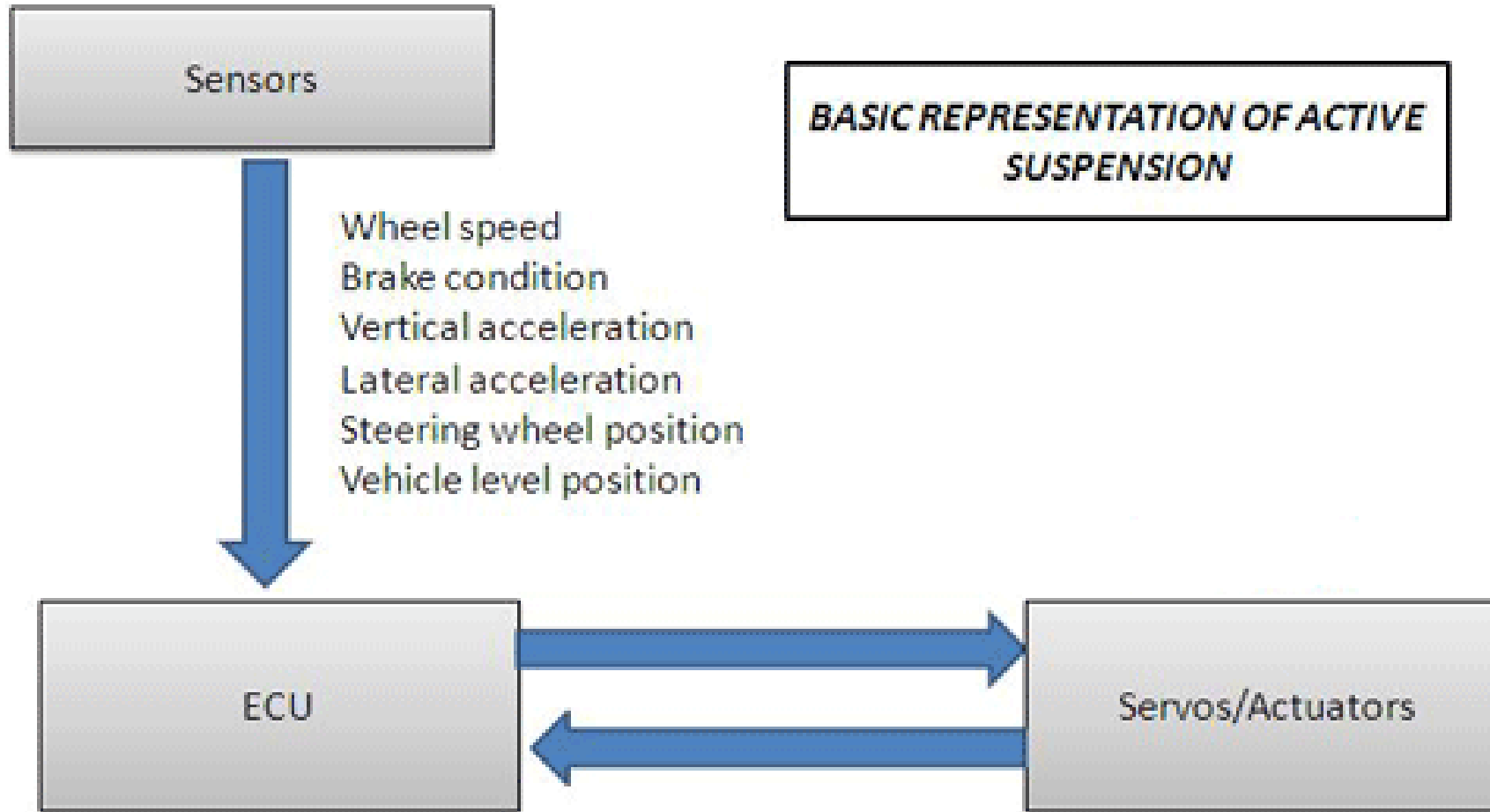
# ACTIVE SUSPENSION SYSTEM



- An active suspension is a type of automotive suspension on a vehicle.
- It uses an onboard system to control the vertical movement of the vehicle's wheels relative to the chassis or vehicle body.
- These technologies allow car manufacturers to achieve a greater degree of ride quality and car handling.



# BLOCK DIAGRAM







# TYPES OF ACTIVE SUSPENSION



- Hydraulic Actuation
- Electronic Actuation
- Electromagnetic type





# ADVANTAGES



- These technologies allow car manufacturers to achieve a greater degree of ride quality and car handling.
- The system virtually eliminates body roll and pitch variation in many driving situations including cornering, accelerating, and braking.

**ADVANTAGES**



## REFERENCE



- [https://en.wikipedia.org/wiki/Active\\_suspension](https://en.wikipedia.org/wiki/Active_suspension)



THANK YOU !!!