



# **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 : 19AUB202 – AUTOMOTIVE SYSTEMS**

**II YEAR / III SEMESTER**

**Unit 5 – Braking System**

**Topic : Wheels and Rims**



# WHEELS



- ❖ A wheel is a circular device that rotates around an axle and is typically used for facilitating movement or transportation.
- ❖ It is one of the fundamental components of a vehicle or machinery, allowing them to roll or turn.
- ❖ The wheel, along with an axle, enables smoother and more efficient motion compared to sliding or dragging.
- ❖ The wheels transmit the engine driving torque and the braking torque to the tyres while driving and braking.



# REQUIREMENT OF WHEELS



- ❖ Strong enough to withstand weight of the vehicle
- ❖ Flexible to absorb the road shocks
- ❖ Able to grip the road surface
- ❖ Perfectly balanced dynamically & statically
- ❖ Possible to remove or mount the wheel easily



# PARTS IN A WHEEL



- ❖ Rim
- ❖ Hub
- ❖ Spoke
- ❖ Valve Stem
- ❖ Center Bore
- ❖ Bolt Pattern



# PASSENGER VEHICLE



❖ **Type:** Alloy Wheels

❖ **Parts:**

❖ **Rim:** Outer edge of the wheel where the tire is mounted.

❖ **Hub:** Central portion that connects to the axle.

❖ **Construction:** Typically constructed from aluminum alloy for a balance of strength and weight reduction.



# HEAVY DUTY TRUCK AND COMMERCIAL VEHICLE



❖ **Type:** Steel Wheels, Alloy Wheels

❖ **Parts:**

❖ **Rim:** The outer edge supporting the tire.

❖ **Hub:** The central portion connecting to the axle.

❖ **Construction:** Steel wheels for durability; alloy wheels for weight reduction in certain applications



# MOTOR CYCLE



❖ **Type:** Spoked Wheels, Alloy Wheels

❖ **Parts:**

❖ **Rim:** The outer edge supporting the tire.

❖ **Hub:** The central portion connecting to the axle.

❖ **Spokes:** Structural components connecting the rim to the hub in spoked wheels.

❖ **Construction:** Alloy wheels for modern motorcycles; spoked wheels for classic or off-road bikes.



# MOTORSPORTS VEHICLE



❖ **Type:** Forged Wheels

❖ **Parts:**

❖ **Rim:** The outer portion supporting the tire.

❖ **Hub:** The central portion connecting to the axle.

❖ **Construction:** Forged from a single piece of aluminum alloy for strength and reduced weight.





# OFFROAD VEHICLES



❖ **Type:** Beadlock Wheels

❖ **Parts:**

❖ **Outer Ring:** Locks the tire bead in place to prevent it from coming off during low-pressure conditions.

❖ **Inner Ring:** Sandwiches the tire bead against the outer ring.

❖ **Construction:** Typically constructed from steel for durability and off-road use.



THANK YOU !!!