



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 : 19AUB204 – AUTOMOTIVE ELECTRICAL AND ELECTRONICS ENGINEERING

II YEAR / IV SEMESTER

Unit 5 – Electronics Systems

Topic : Warning System



COLLISION AVOIDANCE SYSTEM



- ❖ **Forward Collision Warning (FCW):** Uses radar and cameras to detect vehicles ahead and warn the driver of a potential collision.
- ❖ **Automatic Emergency Braking (AEB):** Engages the brakes if a collision is imminent and the driver does not react in time.
- ❖ **Blind Spot Detection:** Monitors the areas alongside and behind the vehicle and warns the driver of vehicles in their blind spot



LANE DEPARTURE WARNING SYSTEM



- ❖ Uses cameras to monitor lane markings and alerts the driver if the vehicle unintentionally drifts out of its lane.
- ❖ Some systems include Lane Keeping Assist (LKA), which can make minor steering adjustments to keep the vehicle within its lane.



DRIVER ATTENTION MONITORING



- ❖ Analyzes driving patterns and behavior, issuing alerts if signs of drowsiness or inattention are detected.
- ❖ Utilizes sensors and cameras to monitor driver actions such as steering input and eye movement.



TIRE PRESSURE MONITORING SYSTEM



- ❖ Monitors the air pressure in each tire and alerts the driver when the pressure is too low, which can prevent blowouts and improve fuel efficiency.

TRAFFIC SIGN RECOGNITION

- ❖ Uses cameras to detect and interpret traffic signs, displaying relevant information such as speed limits on the dashboard



ADAPTIVE CRUISE CONTROL



- ❖ Maintains a set speed while automatically adjusting the vehicle's speed to maintain a safe distance from the vehicle ahead.
- ❖ Uses radar and cameras to monitor traffic and adjust speed accordingly.



PARKING ASSISTANCE SYSTEM



- ❖ **Rearview Camera:** Provides a view of the area behind the vehicle to assist with reversing.
- ❖ **Parking Sensors:** Emit warning sounds if the vehicle is approaching an obstacle while parking.
- ❖ **Automated Parking Systems:** Assist or fully control the vehicle to park in tight spaces.



ELECTRONIC STABILITY CONTROL



- ❖ Helps prevent skidding and loss of control by automatically applying brakes to individual wheels if a loss of steering control is detected.



MAINTENANCE AND SYSTEM ALERTS



- ❖ **Engine Warning Lights:** Indicate issues with the engine or other critical systems (e.g., check engine light).
- ❖ **Battery Alerts:** Warn of low battery charge or potential charging system issues.
- ❖ **Oil Level and Pressure Warnings:** Alert the driver to low oil levels or oil pressure problems.



THANK YOU !!!