BMA4723 VEHICLE DYNAMICS

Course Information

by
Mohamad Heerwan Bin Peeie
Faculty of Mechanical Engineering
mheerwan@ump.edu.my

Course Synopsis

- This course focuses on the fundamental of vehicle dynamics, vehicle acceleration and braking performance, mechanics of pneumatic tires, vehicle ride, cornering characteristics, suspension and steering system behaviour.
- By accomplish a series of laboratories such as car handling, acceleration, braking, double lane change and suspension performance, student are able to build up independent skill in design, conduct and validate experiment results.

Course Outcomes

By the end of the semester, students should be able to:

CO1: Analyse and formulate the fundamental of vehicle dynamics.

CO2: Evaluate the performance characteristics of vehicle dynamics topics under various driving circumferences.

CO3: Demonstrate the vehicle motion with active safety and stability control system.

CO4: Perform the on-road performance of test car via dynamic sensing technology and ability to compose professional documentation.

References

1. Masato Abe, Vehicle Handling Dynamics, Theory and Application, 2nd Edition, Butterworth-Heinemann (Elsevier), 2015
2. Hans Pajecka, Tire and Vehicle Dynamics, Butterworth-Heinemann (Elsevier), 2012
3. Martin Meywerk, Vehicle Dynamics, John Wiley and Sons, 2015
4. Reza N.Jazar, Vehicle Dynamics: Theory and Application, Springer, 2014
5. Thomas D. Gillespie, Fundamental of Vehicle Dynamics, Society of Automotive Engineers, 1992

Vehicle Dynamics

Course Outlines

Dr Mohamad Heerwan Bin Peeie