

Tire mechanics (basic theory - equations). Tire models (analytical, semi-analytical, Pacejka). Equations of vehicle motion in 3D space. Modeling of vehicle steering system, optimization. Calculation of vehicle stability (longitudinal, transverse). Modeling of vehicle suspension systems (passive, active, semi-active). Vehicle's handling. Ride comfort optimization. Dynamic behavior vehicle models (quarter / half / full car). Field measurements of characteristic quantities & estimation of the dynamic behavior of the vehicle. Introduction to traffic accident reconstruction. Use of dynamic simulation computer software. Applications - Case studies from the Greek construction industry of special vehicles (optimal design of dynamic behavior of a complete vehicle).