

Course Code : ME 782

Course Title : Vehicle Design & Engineering

Credit Hours : 3

Course Description

An overview over Modern materials and vehicle design (The styling process & Aerodynamics), Advanced study for Chassis design and its analysis, noise, vibration, Basic Suspension systems, components and Control systems in vehicles, The theory of the design of engine characteristics for vehicle , transmissions ,driveline and braking systems.

Course Objectives

To provide the student with comprehensive and in depth information covering the latest techniques of vehicle body and chassis systems analysis and design.

Course Topics

- Week no. 1: An overview over Modern materials and vehicle design (The styling process & Aerodynamics)
- Week no. 2: An overview over Modern materials and vehicle design (The styling process & Aerodynamics)
- Week no. 3: An overview over Modern materials and vehicle design (The styling process & Aerodynamics)
- Week no. 4: Advanced study for Chassis design and its analysis, noise, vibration.
- Week no. 5: Advanced study for Chassis design and its analysis, noise, vibration.
- Week no. 6: Advanced study for Chassis design and its analysis, noise, vibration.
- Week no. 7: Advanced study for Chassis design and its analysis, noise, vibration. / 7th week evaluation.
- Week no. 8: Basic Suspension systems, components and Control systems in vehicles.
- Week no. 9: Basic Suspension systems, components and Control systems in vehicles.
- Week no. 10: Basic Suspension systems, components and Control systems in vehicles.
- Week no. 11: Basic Suspension systems, components and Control systems in vehicles.
- Week no. 12: The theory of the design of engine characteristics for vehicle , transmissions ,driveline and braking systems / 12th week evaluation
- Week no. 13: The theory of the design of engine characteristics for vehicle , transmissions ,driveline and braking systems
- Week no. 14: The theory of the design of engine characteristics for vehicle , transmissions ,driveline and braking systems

Week no. 15: The theory of the design of engine characteristics for vehicle , transmissions ,driveline and braking systems

Week no. 16: Final Examination

References

Heisler, H, Advanced Engine Technology, Butterworth-Heinemann, UK, 2001

Heisler, H, Advanced Vehicle Technology, 2nd ed., Butterworth-Heinemann, UK, 2001

Robert Bosch GmbH, Diesel-Engine Management, Automotive Technology, Germany, 2004.

Robert Bosch GmbH, Gasoline-Engine Management, Automotive Technology, Germany, 2004.

Stone, R and Ball, J, K, Automotive Engineering Fundamentals, SAE, USA, 2004

Erjavec, J, Automotive technology, 3rd Ed., Delmar Thomson, USA, 2000.

Robert Bosch GmbH, Automotive handbook, 6th edition, Germany, 2004.

Julian happian, Smith “An introduction to Modern Vehicle Design”, : JUL-2000,
BUTTERWORTH HEINEMANN

- Ron Hodkinson, John Fenton, “Light Weight Electric/ Hybrid Vehicle Design”