GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Semester: III

Civil (Transportation Engineering)

Subject name: **Pavement Management System (Major Elective - IV)**

Sr.No	Course content
1.	Pavement Maintenance & Management Process: Application of system concepts to pavement management, pavement management levels-Network & Project level, functions - Data needs, Pavement life cycle, assessment of pavement performance, evaluation of pavement structural capacity, distress & safety, combined measures of pavement quality, data management.
2.	Determining Present and Future Needs: Establishing criteria – development of models for pavement deterioration – determining the future needs – rehabilitation and maintenance strategies – developing combined programmes for maintenance & rehabilitation.
3.	Project Level Design: Framework for pavement design, characterization of physical design inputs, basic structural response models – variability, reliability and risk – generating alternate design strategies, rehabilitation design procedures, Overlay design, economic evaluation of alternate pavement design strategies – selection of optimal design strategy.
4.	Implementation: Major steps in implementing PMS – pavement construction management & pavement maintenance management – information, research needs – cost and benefit of pavement management – future directions and need for innovations in pavement management, HDM applications.

Practical:

1. Benkelman beam deflection study.
2. Pavement unevenness measurement by Bump Integrator.
3. Traffic volume count for EWLF.
4. O-D survey on the highway.
5. Forecasting of traffic.
6. Design for overlay.
7. Economic evaluation of pavement management.
8. Computer applications for the above problems**.**

References Books:

1. Haas R. C. G., Hudson W. Ronald, Zaniewski John P., Modern Pavement Management, Krieger Publishing Company, 1994
2. Oecd, Pavement Management Systems, O E C D 1987.
3. Shahin M. Y., Pavement management for airport, roads and parking lots, Chapman and hall 1994
4. Susan Brown, Pavement Management Systems, Transportation Research Board, 1993.