National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Conference Return Seminar: Impacts of Design Variables on Pavement Design: Sensitivity Analysis for Flexible Pavement
Speaker	: Malaya Kumar Sahu, Roll No – 523ce1002
Supervisor	: Dr. M. Gattu
Venue	: CE Seminar Hall
Date and Time	: 06 Jan 2025 (1100 am)
Abstract	: This study investigated the sensitivity of design inputs, namely, resilient modulus of asphalt layer and base layer and thickness of base layer on the performance of flexible pavement. A total of 15 pavement sections were considered in this study and the sensitivity analysis was conducted based on the horizontal tensile strain at the bottom of asphalt layer and fatigue life. Study findings revealed that when the modulus of asphalt mixture was lower than the target or design level, it resulted in higher horizontal tensile strain at the bottom of the asphalt layer. In addition, if the thickness of base layer is lower than the design thickness due to construction variability, the fatigue performance of the pavement system would be significantly reduced. Thus, any divergence in material properties and thickness of layer from the target or designed level would potentially alter the overall performance of flexible pavement system. Overall, it was envisioned that the findings from this study would help researchers, engineers, practitioners, and other stakeholders to quantify the change in design variables and determine its associated impacts on pavement performance.