

# **Analysis of Flexible Pavement using IIT PAVE and Economic Analysis**

## **MAJOR PROJECT**

Submitted in partial fulfilment of the  
requirements for the award of the degree of  
**Bachelor of Technology in Civil Engineering**

### **Submitted by**

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**SESSION 2023-2024**

# CERTIFICATE

This is to certify that the major project work entitled “**Analysis of Flexible Pavement using IIT PAVE and Economic Analysis**” presented by **Smita Vyas** (20102046), **Arja Srikar** (20102011), **Abing Lamnio** (20102004), students of B. Tech VIII semester, Department of Civil Engineering, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya, has been successfully and satisfactorily completed.

This project report is submitted in partial fulfilment of the requirement for the award of the Degree of Bachelor of Technology, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G).

We wish success in all future endeavours to graduating students.

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# ABSTRACT

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Flexible pavements are widely used in road construction due to their ability to withstand traffic loads and environmental stresses. However, the performance of these pavements depends on various factors such as material properties, design parameters, and construction techniques.

This project delves into the comprehensive analysis of flexible pavement structures employing the advanced software tool, IIT PAVE, coupled with an in-depth economic assessment. Flexible pavements are critical components of transportation infrastructure, and understanding their behaviour under varying conditions is essential for optimal design and maintenance. Through meticulous data collection and utilization of IIT PAVE, this study scrutinizes the response of flexible pavements to diverse loads and environmental factors, evaluating parameters like horizontal tensile strain and vertical compressive strain, which contributes to check fatigue cracking and rutting in flexible pavements.

Furthermore, an economic analysis is conducted to ascertain the cost-effectiveness of pavement design with use of different fillers like stone dust, glass powder and kota stone in different percentages in the surface course of flexible pavement.

By amalgamating engineering analysis with economic considerations, this project aims to furnish insights crucial for informed decision-making in pavement design and management, ultimately contributing to the development of sustainable and efficient transportation networks.