

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
JNANA SANGAMA, BELGAVI – 590018, KARNATAKA, INDIA



PROJECT REPORT ON
“ANALYSIS OF ROAD NETWORK, LAND COVER AND
TEMPERATURE VARIATION OF MANGALORE CITY
USING QGIS & REMOTE SENSING”

Submitted to the Visvesvaraya Technological University, Belagavi in partial
fulfillment of the requirement for the award of degree of

BACHELOR OF ENGINEERING
IN
CIVIL ENGINEERING

Submitted By

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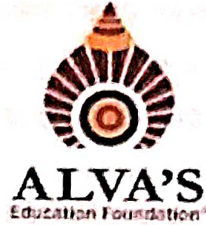
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Certificate

This is to certify that

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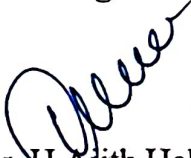
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Have submitted Project Report on "ANALYSIS OF ROAD NETWORK, LANDCOVER AND TEMPERATURE VARIATION OF MANGALORE CITY USING QGIS & REMOTE SENSING" for 8th semester B.E in Civil Engineering during the academic year 2022 - 23. The Project has been approved as it satisfies the academic requirements in report of Project work prescribed by Visvesvaraya Technological University for the award of degree in Bachelor of Engineering Degree.


Prof. Shankargiri K S
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ABSTRACT

In this study, the road network, temperature variation, vegetation cover and land cover of Mangalore City are analyzed using QGIS and remote sensing techniques. The study classified the city's land use and land cover using 2004, 2014, 2023 Landsat 8 satellite imagery and supervised classification. According to the findings, the city's urban area makes up 26.7% of its total area, while agricultural regions and wooded areas make up 31.3% and 40%, respectively. The study also examined the city's road network, determining that it had a 1.73 km/km² road density.

Additionally, to examine temperature variance around the city, the study employed temperature information from MODIS satellite images. The findings indicated that urban regions experience warmer temperatures than forested areas. The NDVI values used in the study to analyse the vegetation cover revealed that wooded areas have higher vegetation cover than urban and agricultural areas.

Overall, the study emphasizes the value of utilizing GIS and remote sensing methods to examine city land use, land cover, temperature fluctuation, and vegetation cover. The study's conclusions can be applied to Mangalore city's urban planning and administration as well as to encourage environmentally conscious growth.

The analysis's findings showed a significant relationship between Mangalore city's road density and temperature variance. When compared to rural areas with low road density, urban areas with high road density showed higher temperatures. The study also discovered that a number of variables, including geography, land cover, and human activity, had an impact on temperature variation.

The study also demonstrated the viability of using remote sensing and GIS techniques to analyse the association between road density and temperature variance in metropolitan regions. The study's conclusions can be used to urban planning and development plans that include how roads and other infrastructure affect the weather and other environmental conditions.