

*10-Weeks CERTIFICATE COURSE ON*

# **“MINE GEOTECHNICS FOR UNDERGROUND METALLIFEROUS MINES” FOR EXECUTIVES OF HINDUSTAN ZINC LIMITED**

“2nd Phase – 27th, May - 28th, June; 2024”



Prepared For  
**Hindustan Zinc Limited**



राष्ट्रीय प्रौद्योगिकी संस्थान राउरकेला  
**National Institute of Technology Rourkela**  
An Institute of National Importance

## About the Institute

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NIT Rourkela is one of the premier national level institutions for technical education in the country and is funded by the Government of India. NIT Rourkela was established as Regional Engineering College (REC) Rourkela on 15 August 1961. In 2002, the Government of India was granted autonomy in 2002 and now functions independently under the Ministry of Human Resource Development, thus becoming one of the National Institutes of Technology.

The main objective of the Institute is to produce quality Engineers and Scientists in Graduate and Post-Graduate levels across various branches of Engineering and Science. The Institute is managed by the Board of Governors of National Institute of Technology (Rourkela) Society and vested with a significant degree of administrative and financial autonomy. The Government of India has recognized the Institute as a premier institution of repute and have developed it as a centre of excellence under plan funding.

NIT Rourkela was ranked 1001–1200 in the world by the Times Higher Education World University Rankings of 2023 and 251-300 in Asia for 2022. In India it was ranked 15 among engineering colleges by the MHRD by the National Institutional Ranking Framework (NIRF) in 2022 and 39 overall.

The campus of the Institute consisting of the Institute buildings, halls of residence and staff colony is situated at the eastern end of Rourkela steel city, with over an area of 262 hectares of land provided by the Government of Orissa. The Rourkela Steel City is a medium-sized metropolis, located on the Howrah-Mumbai and Ranchi-Bhubaneswar main railway routes, and well connected to all parts of the country by road and rail. The institute is about 7 km from the railway station. Since 2023, Rourkela Airport is functional with regional connectivity between Bhubaneswar–Rourkela, whereas Jharsuguda Airport with major connectivity is located at a distance of 130 kilometres from the city.

## About the Department

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The Department of Mining Engineering at NIT Rourkela was established in 1979 in the midst of coal and mineral belt with a vision to become a leader of higher learning in the field of eco-friendly exploitation and utilisation of mineral resources and be a preferred destination for undergraduate and graduate studies. It boasts modern and sophisticated equipment for physical experimentation viz. DTA, AAS, Computer Controlled Compression Testing Machine, Ultrasonic Testing Machine, Rheometer, Gas Chromatograph, Digital Bomb Calorimeter, UV-visible Spectrophotometer, GPS, Total Station etc. It also has the latest computing facilities with state-of-the-art software like Surpac, Whittle, RocScience Suite (16 softwares), Flac 2D, GoldSim, Galena, Labview, Ventsim, Petrasim, ArcGIS, etc. The Department specialises in Mining Technology, Geomechanics and Strata Control, Mine Environment and Safety Engineering, Clean Coal Technology, Application of GIS and Remote Sensing in Mining, Computer Application in Mining, Mine Planning, Mine Surveying, Mine Waste & Tailings Management, etc. The Department regularly offers technical solutions through Research & Development (R&D), industry specific consultancy services to resolve various problems faced by them and imparts Continuing Education and Executive Development Programmes, Workshops, and Conferences for the benefit of the mining stakeholders.

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## About the Course

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One of the legacy challenges faced by the mining industry is associated with the understanding of the complex rock mass materials, the geology and assessing their behaviour for optimised extraction of resources. On the other hand, the industry is also facing a scarcity of on job skills required by the young mining engineers and geologists. Starting from stages of geological exploration, geological modelling, to rock mass characterization, mine design and optimization to mine closure, a proper understanding of the rock mass behaviour has been a crucial step in effective resource utilisation with keeping a balance on profitability and industry standard safety practices. Keeping in mind the necessity of current day industry demand, this Certificate course on “MINE GEOTECHNICS FOR UNDERGROUND METALLIFEROUS MINING” for the Executive of HZL is being planned. Renowned Subject-Matter-Experts from the Department of Mining Engineering, NIT Rourkela and other industry experts are going to share their knowledge in this Training programme.

## Organising Team

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### Patron

Prof. K. Umamaheshwar Rao  
Director, NIT Rourkela

### Chairman

Prof. Amit Kumar Gorai  
HOD-Department of Mining Engineering  
NIT Rourkela

### Convenor/Co-ordinator

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Department of Mining Engineering  
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