



Engineering Staff College of India

Mining Division

3-Day Continuing Professional Development Programme

Trends in Drilling & Blasting Operations in Mining

11 – 13 June 2025



Mining Division

Engineering Staff College of India

An Autonomous Organ of The Institution of Engineers (India)
Hyderabad

Centre for Promotion of Professional Excellence

Introduction

Drilling & Blasting is still the most popular and predominant but challenging rock excavation technique in mining, civil projects even today, either to break ore/mineral or waste rock or for any civil infrastructure development. Thus, blasting technology is evolving continuously. The engineering of drilling & blasting operations needs clearly defined objectives, materials, skilled techniques, and understanding of the rock properties, explosive-rock interaction and fragmentation mechanism. It is important to achieve the desired degree of fragmentation commensurate to the excavation machines deployed and thus to reduce costs and unwanted side effects such as misfires, blasting fumes, fly rocks, noise, air & ground vibration, air-blast, oversized boulders, side-tear, back-break or formation of toe. Automation and Digitization solutions have the potential to improve productivity while enhancing workers' safety and addressing any social challenges.

Objectives

This programme is formulated to enable executives to understand good Drilling & Blasting Practices

- Fulfill the need to address some vital aspects of drilling & blasting which continues to be a long felt desire in the mining & civil projects.
- Understand the process of fragmentation, various techniques, design methods and applications including environmental aspects.
- Identify & mitigate related risks in blasting
- Incorporate best practices
- Integrate social, environmental, health, safety, security challenges to provide better solutions.
- Reduce the potential for accidents

Course Coverage

- Basics of Rock Geology related to Drilling and Blasting Applications
- Fundamentals and Optimization of Rock Blasting
- Smart Drilling & Blasting, Electronic Detonators
- Control Blasting Techniques
- Software for Design, Analysis and Assessment of Blasting Performance
- Application of IoT, Unmanned Aerial Vehicle & Drones in Blasting

Benefits to Participants

- Safe Blasting Procedures.
- Evaluation and Optimization of Blast Performance and Productivity
- Efficient blast design depending on site conditions and specifications.
- Avoidance of Dangerous Practices.
- Management of Fly –Rocks, Vibration Levels and other Hazards Associated with Blasting Operations
- Rules, Regulations, and other Statutory Restrictions.
- Environmental Effects and Techniques of Measuring and Alleviation of the Undesirable Side Effects

Methodology

- Lectures / presentations
- Interactive sessions
- Sharing of onsite experiences.

Resource Persons

The resource persons consist of experts from the Industry, Research Establishments and Academia besides in-house faculty of ESCI.

Target Participants

This programme would be useful to engineers, executives, managers, blasting personnel, contractors etc. in the field of mining engineering, civil engineering, geology, geo-physics.

Programme Dates & Timings

Dates : 11 –13 June 2025

Timings : 10.00 am to 5.30 pm each day

Course Fee

- **Residential** : **INR 24,000/-* (Rupees Twenty Four thousand only)** per participant which includes course kit, course material, twin-sharing/single AC accommodation, breakfast, lunch, dinner, tea and snacks during the actual days of training programme.
- **Non-Residential** : **INR 21,000/-* (Rupees Twenty One thousand only)** per participant which includes course kit, course material, lunch, tea and snacks during the actual days of training programme.

* Goods and Service Tax @ 18% is to be paid extra over and above the programme fee. **PAN Card No AAATT3439Q; GST No. 36AAATT3439Q1ZV. H.S. No. 999293** (Under commercial training or coaching services – clause 65(105) (ZZC) of Finance act – 1994).

- *Special concession of 10% in course fees to organization for 5 or more nominations and attendance.*
- ESCI provides complimentary boarding & lodging for the participants a day prior to the commencement of training programme and a day after the conclusion of the programme (check in & check out at 12:00 noon respectively).
- **Overstay charges will be charged as per ESCI norms.**
- **Spouses may be allowed to stay along with the delegates with prior intimation and on additional payment of nominal charges of INR 1000 per day including boarding & lodging.**

Programme fee is to be paid in favour of “**THE IE(I) – ENGINEERING STAFF COLLEGE OF INDIA**” in the form of Cheque / Demand Draft (DD) payable at Hyderabad. Alternatively, the payment may be made by Electronic Fund Transfer (EFT) to ESCI - **SB A/c No. 33705165550 with State Bank of India, Manikonda Branch, Door No.2-30/1, Indira Nagar, Gachibowli, Hyderabad – 500032, our NEFT/RTGS/IFSC Code No. SBIN0011076 – MICR No. 500002107.**

While using EFT method of payment, please ensure to communicate your company name, our Invoice reference and programme title.

Registration

To register, please send your nominations by providing name, designation, contact address, email address, mobile no, telephoner of the participant along with the details of mode of payment of fee, addressed to: mining@escihyd.org. After registration participants can have access to ESCI LMS platform for digital learning.

Certification

A **Certificate of Participation** will be awarded to each participant on conclusion of the programme.

Profile of Resource Persons



Dr. P Balamadeswaran graduated in Mining Engineering (B.E) from the College of Engineering Guindy, Anna University, Chennai in 1991. He holds M. Tech in Opencast Mining and Ph.D. in Mining Engineering with special reference to 'Investigation of Blast Design Parameters on Rock Fragmentation and Ground Vibrations in Opencast Mines' obtained from the Indian Institute of Technology (ISM), Dhanbad. He is also a holder of First-Class Manager's Certificate of Competency and a Recognized Qualified Person (RQP). He worked in Hindustan Copper Limited, Malanjkhand, Madhya Pradesh for seven years and as Area Sales Manager in Tamil Nadu Industrial Explosives Limited. After a short stint in a MNC located in Indonesia, he joined M/s. Dempo & Co (P) Limited, Goa in 2006. Since December 2007, he is associated with the Department of Mining Engineering, Anna University, Chennai and presently working as Assistant Professor. His areas of specializations are Rock Blasting Engineering, Slope stability in Surface Mines, Surface Mine Planning & Design. He has presented and published more than 90 Technical & Research papers in the Journals, National and International Seminars. He received the prestigious 'Distinguished Mining Engineer' award for the year of 2018 from the 'Institution of Engineers (India)'. He is presently the National Council Member of Mining Engineer's Association of India (MEAI) and also served as a 'Co-opted Member' in the State Expert Appraisal Committee' in Tamil Nadu for the period of 2016-2018.



Dr. Karra Ram Chandar graduated in Mining Engineering from Kothagudem School of Mines- Kakatiya University, obtained M.Tech in Rock Mechanics from IIT-BHU, Ph.D in Rock Blasting from NITK-Surathkal and Post-Doctoral Fellowship from University of Illinois at Chicago- USA. He also holds MBA in degree in HR. He is presently serving in Dept. of Mining Engineering in NITK. He visited many universities/ countries for research interaction, presentation of research paper viz. South Dakota School of Mines- USA, Southern Illinois University- USA, Arizona State University- USA, University of Illinois at Chicago- USA, Monash University- Australia, Kagoshima University- Japan, Institute of Petroleum- Abu Dhabi, Monash University – Malaysia. University of Hong Kong.



Dr. H. Sarvothaman functioned in different scientific capacities in Geological Survey of India in many places of India before retiring as Deputy Director-General. He conducted Geological Mapping and Mineral Exploration for tungsten, graphite and limestone, besides other research activities of GSI.

He authored 4 (four) books. 1. WATER: Resource Augmentation, Management & Policies 2. Disaster Management: Engineering & Environmental Aspects 3. Environment Science—Issues & Solutions.4. Disasters and Hazards: Risk Reduction, Mitigation and Management).

Currently, he is (i) Visiting Faculty in the Earth Science Department of University of Hyderabad; (ii) Member, Training Quality Improvement in Centres for Agrarian Studies (CAS) and Natural Resources Management (CNRM), NIRD&PR, Hyderabad; (iii) Guest Faculty in GSI Training Institute, Hyderabad and Badruka College, Hyderabad;



Mr. G Gopinath is a Mining Engineer and he is pursuing his Ph.D. from Indian School of Mines, Dhanbad, India. He is well versed with opencast and underground blasting operations and has acquired expertise in the area of controlled blasting. He is having about 26 years field experience in opencast and construction industries. Currently he is working as Senior Scientist in National Institute of Rock Mechanics, India. As a professional he visited Australia, Bhutan, Sweden and Finland.



Dr N Sri Chandrahas did B.Tech from GIET and M.Tech from IIT (ISM) and obtained II Class Manager's Certificate of Competency (Unrestricted) and pursuing his PhD. He has 8 years of teaching experience and 3 research publications to his credit and his research interests are Drilling and Blasting, Mine Environmental Engineering including software applications. He conducted blasting studies deploying drones. Presently he is working as a consultant in GTS<CK Birla Group, Hyderabad.



Er K J Amarnath a Gold Medalist, in BE (Mining Engineering) from College of Engineering, Osmania University, Hyderabad. He retired as Chief General Manager from The Singareni Collieries Company Ltd. (A Government Company) after rendering a meritorious service of about 38 years in various capacities in Underground and Opencast Technology in Planning & Operations, Human Resource Development, Business Development, Education, Safety, Corporate Planning and Projects. Further, he was Director in NSGPVL, A Joint Venture Company of NTPC Ltd, A Central Government PSU and The Singareni Collieries Company Ltd, A Government Company.

He visited the United Kingdom, Spain, United States of America & Australia. He is also a holder of First Class Manager's Certificate of Competency.

He is a Fellow of Institution of Engineers (FIE) and Life Member of Institution of Engineers, MEAI (Mining Engineers' Association of India), Vice-Chairman MGMI(Mining, Geology, Metallurgical Association of India),Hyderabad Chapter and Vice-President of Alumni of Mining Engineers' Association (Osmania University)

Presently, he is working as Senior Faculty-Head, Mining Division, Engineering Staff College of India, Hyderabad.

Contact Persons

Er K J Amarnath, FIE
Course Director
Sr. Faculty & Head
Mining Division
mining@escihyd.org,
9491144022

Er L Krishna
Faculty
Mining Division
9553939316

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An Autonomous Organ of The Institution of Engineers (India)
(An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 50001:2018 &
ISO/IEC 17025:2017 Certified, AICTE & CEA Recognised Institution)

ESCI Road, Gachibowli, Hyderabad – 500032, Telangana, India

Phone: 040 – 66304100 (EPABX), 6630 4154 / 4167 (Direct), Fax: 040 – 66304103

Email: mining@escihyd.org

Web portal: www.escihyd.org