**SHORT TERM COURSE**
**ON**

# GEO-ENVIRONMENTAL ISSUES AND WASTE MANAGEMENT IN MINING INDUSTRIES

**August 23-26, 2010**

Mining of mineral deposits is an essential operation required for meeting the ever-increasing demands of the society. Keeping in pace with this, mineral production is continuously increasing along with the scale of mining operations. The issues confronting mining industry today are achieving the desired development for economic or social reasons on one hand and safeguarding the environment and maintaining good quality of life on the other. The developmental activities, if haphazard and uncontrolled, lead to overuse, congestion, incompatible land use and poor living conditions. Though there has been a continued attention on the geo-environmental components of mining activities viz, air, water and land, yet the ground realities show that these are inadequate in many cases. Moreover, the problems of environmental pollution due to mining are becoming more complex. There is also an urgent need to reclaim and restore mined out land for its productive use for sustainable development. This will not only mitigate environmental degradation, but would also enable mining companies to offer the restored land to the displaced families which would help in creating a more congenial environment for land acquisition in future. Thus, it calls for trained and well informed manpower in the areas of geo-environment to address these issues. This short term course is a step in that direction.

## ABOUT NIT ROURKELA

National Institute of Technology (NIT), Rourkela was founded as Regional Engineering College, Rourkela on 15$^{th}$ August 1961.The Institute was declared as National Institute of Technology with Deemed to be University status on 26th June 2002 and Institute of National Importance on 15$^{th}$ August 2007 by an act of Parliament. It is a highly prestigious institute with a reputation for excellence in research, consultancy and education at undergraduate, postgraduate and doctoral levels. The institute is striving to be known round the world for high academic standards and to be counted among the best technological institutes of India in terms of innovation, entrepreneurship and creation of intellectual wealth. The institute is spread over 262 hectares of lush green picturesque landscape, against a hilly backdrop, creating a tranquil environment within a completely residential campus for students and faculty.

The city of Rourkela is a bustling industrial town, cosmopolitan by nature and is well connected to all parts of the country by road and rail. It is en-route Howrah-Mumbai main line of South-Eastern Railway. NIT campus is approximately 7km from Rourkela railway station. Rourkela is also connected by Air via Ranchi and Kolkata.

## DEPARTMENT OF MINING ENGINEERING

The Department has been in the forefront of mining education, research and consultancy services in India. It is located in close proximity of many mineral and coal mines both opencast and underground. The Department has well qualified faculty and staff dedicated to applied research in the field of Mining Technology, Geomechanics, Mine Environment and Safety Engineering, Solid Fuels and Clean Coal Technology, Mining Geology and Mine Surveying. The Department has also excellent computing facilities with state-of-

the-art softwares like SURPAC, FLAC-2D & 3D, UDEC and LABVIEW etc. The academic curricula is continuously revised to keep abreast of the industry needs as well as vision and an all round development of the students is aimed at through practical training, field camps and study tours, seminars, project work, inter institute students technical meets and a host of extracurricular activities.

## SCOPE OF THE COURSE

The basic goal of the short term course is to update the knowledge of the participants regarding the geo-environmental risks of mining activities and their remedial measures, associated guidelines, legal requirements and waste management. It is expected that the participants from different mining industries, academic institutions, R&D organizations, as well as professional engineers will be highly benefited by the course.

## COURSE CONTENTS

- Controlled blasting and blast free mining
- Rock slope stability approaches
- Stability of dump slopes
- Subsidence prediction and mitigation of its impacts
- Impact of mining/ rock excavations on water regime, air, surrounding flora and fauna
- Environmental impact assessment and Environmental Management Plan
- Role of public hearing in EIA, EMP process
- Air quality modeling
- Management of workplace environment
- Assessment and classification of coal seams with respect to their spontaneous heating susceptibility
- Prediction and management of ground vibrations, fly rocks and air blasts
- Hazard identification and risk analysis in mining industries
- Reclamation and closure of mines
- Resettlement and rehabilitation planning
- Mine waste management

❖ Hands on practice on some latest softwares in the aforementioned areas will also be provided to the participants.

## FACULTY LIST

The course will be offered by the faculty members of NIT Rourkela. Experts from State Pollution Control Board, Orissa; IIT, Kharagpur; ISM, Dhanbad; R&D laboratories and industries will also be invited to deliver specialized lectures on different subjects. Each

session would be followed by interactive sessions on the subject matter.

**REGISTRATION & FEE PARTICULARS**

Applications in prescribed format and the course fee in the form of demand draft drawn in favor of "**Continuing Education, NIT, Rourkela**" payable at **SBI, NIT Branch, Rourkela-8 (Code-2109)** in Rourkela must reach the coordinator on or before **July 30, 2010.**

**COURSE FEE: Rs 6000.00 (Rupees Six thousand only)**

Boarding, lodging and travel expenses shall be borne by the participants. Accommodation will be provided in Institute Guest House(South/North Block) on Twin-sharing basis on prior request. The selected participants will be informed by **August 05, 2010.**

**COURSE COORDINATORS**

**Dr. H. B. Sahu**

**Dr. M. K. Mishra**

**Depart of Mining Engineering**

**National Institute of Technology, Rourkela – 769 008**

**SPONSORSHIP CERTIFICATE**

Dr./Mr./Ms…….……...….. is an employee of our institute/organization and his/her application is hereby sponsored. The applicant will be permitted to attend the short-term course at NIT, Rourkela during August 23-26, 2010 if selected.

**Signature with Date & Seal**

**The duly sponsored application should be mailed to**

**Dr. H. B. Sahu**
Associate Professor
Department of Mining Engineering
National Institute of Technology
Rourkela – 769 008

**Electronic Contacts**

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