



प्रशिक्षण कार्यक्रम
TRAINING PROGRAMME
2006 – 2007



केन्द्रीय मृदा एवं सामग्री अनुसंधानशाला
Central Soil and Materials Research Station
जल संसाधन मंत्रालय
Ministry of Water Resources
नई दिल्ली
New Delhi

FOREWORD

The Central Soil and Materials Research Station (CSMRS), an attached office of the Ministry of Water Resources, is a premier Institute, which deals with field and laboratory investigations, basic and applied research on problems in geomechanics, concrete technology, construction materials and associated environmental issues, having direct bearing on the development of irrigation and power in the country and functions as an adviser and consultant in the above fields to various projects and organizations in India and abroad.

Broadly, the sphere of activities encompasses the followings:

- Soil Mechanics and Foundation Engineering
- Soil Dynamics
- Geosynthetics
- Rockfill Technology
- Soil Chemistry
- Rock Mechanics
- Instrumentation
- Engineering Geophysics
- Drilling Technology
- Concrete Technology
- Concrete Chemistry
- Electronics
- Information Technology
- Numerical Modelling in the field of Geotechnical engineering

CSMRS has undertaken geotechnical investigations for more than 1500 medium and major dams in the country in addition to foundation characterization for bridges, multi-storied buildings, thermal and nuclear power stations, off-shore structures etc. The research station has provided consultancy to Central Government/State Governments/Public Sector Undertakings in the field of Geomechanical and Construction Materials Characterization for various civil engineering structures. It has successfully completed and solved several basic and applied research problems. CSMRS serves as an information center and data base through its Library and Documentation Centre as well as through its information dissemination activities like organization of workshops, seminars, training courses, publishing literature, etc.

CSMRS is proud of its past performance and knowing its future responsibilities has armed itself with a team of about 150 dedicated engineers and scientists, many of them having been trained abroad under various UNDP assisted and Indo – Norwegian Institutional Cooperation programmes successfully completed during last 2 decades.

As a premier institute in the field of geomechanics, CSMRS is equipped with the state-of-art facilities and trained manpower. CSMRS can take up any challenging investigation work in respect of dams, bridges, multi-storied buildings, nuclear and thermal power stations besides safety evaluation of existing hydraulic and other civil engineering structures. The Central and State Government agencies and Public Sector Undertakings responsible for construction of multipurpose river valley projects form clients of CSMRS. Moreover, many major private industrial complexes, multi-storied buildings, thermal power stations, etc. are also recipients of consultancy from CSMRS.

CSMRS has been playing a vital role in sharing knowledge with engineers involved in planning, investigation, design and construction of water resources development projects all over the country by holding national level workshops and short-term courses under various UNDP, USAID and Indo – Norwegian Institutional co-operation programmes. The services of the UNDP and Institutional co-operation programme's international experts in addition to the experienced CSMRS staff have been utilized for such activities.

CSMRS also helps universities and other organizations in their programmes of teaching, training etc. Apart from this, a sizable number of engineers have been trained in the field of geomechanics. Regular training programmes are organised for practising engineers from government, private and public sector organisations.

CSMRS is proud to have its contribution towards guiding the Post Graduate students from various engineering colleges like IIT, Delhi, Delhi College of Engineering, etc. in the field of Geotechnical Engineering using the available Numerical Modelling Facilities. Summer training is also imparted to graduate and post graduate students by performing actual tests and lectures in the field of geomechanics.

CSMRS serves as a study centre to the students of Indira Gandhi Open University (IGNOU) for the technical courses of Bachelor of Technology in Construction Management (BTCM) and Bachelor of Technology in Water Resources (BTWRE). The officers of CSMRS counsel the students for different subjects.

CSMRS also organises tailor made training programmes at the request of interested organisations in its fields of expertise. Tailor made training programmes have been conducted on “Quality Assurance of Earth and Rockfill Dams” and “Material Testing Evaluation for Earth and Rockfill Dams” especially for the engineers of National Thermal Power Corporation.

The Research Station has maintained an excellent record of providing training and consultancy services with its highly qualified staff and excellent infrastructure facilities, library and hostel.

INTRODUCTION

Central Soil and Materials Research Station, New Delhi, the apex national-level institute handling geomechanical and construction materials characterisation for river valley projects is fully equipped with trained personnel and state-of-the-art testing facilities required for advanced field and laboratory investigations for river valley projects.

The Research Station has planned to organise nine training programmes during the year 2006 – 2007 for the engineers at the level of Junior Engineers, Assistant Engineers/ Assistant Directors and Executive Engineers/Deputy Directors. The officers from the following Organisations / Institutions are expected to participate in the training programme.

Border Roads Organisation
Brahmaputra Board, Guwahati
Bureau of Indian Standards, New Delhi
Central Water Commission
Central Electricity Authority, New Delhi
Central Water and Power Research Station, Pune
Central Road Research Institute
Central Public Works Department
Geological Survey of India
National Hydroelectric Power Corporation
National Thermal Power Corporation
National Water Development Agency
Public Works Department of States and Union Territories
Tala Hydro Electric Project, Bhutan
Water and Power Consultancy Services (India) Ltd.
State Government Research Laboratories
Public Sector Undertakings
Private Consultants and Individuals

The faculties from various educational institutions are also expected to participate in the training programme.

The contents of these training programmes are planned in accordance with the requirements and needs of the participants and user industry. The participants will be introduced to the well-equipped laboratories of CSMRS and will be encouraged to share their experiences/problems, thereby making the course interactive.

Besides, regular training programmes, tailor made short-term courses on demand are also organised to cater the needs of the user organisations.

ACTIVITIES AND FACULTY

CSMRS is fully equipped for evaluating engineering parameters of soil, rock and concrete. Broadly the sphere of activities encompasses the following disciplines:

Soil Mechanics and Foundation Engineering

Soil Mechanics and Foundation Engineering: Field and laboratory soil investigations viz. borrow area and foundation of various river valley projects and civil engineering structures are taken up for characterization of soil and construction/foundation materials.

Soil Dynamics: Characterization of soil under dynamic loading condition including evaluation of liquefaction potential.

Rock fill Technology: Strength and deformation characteristics of rock fill materials.

Geosynthetics: Evaluation of properties of polymeric materials under quality assurance.

Soil Chemistry: Evaluation of soil suitability as a construction material including dispersive characteristics.

Concrete Technology

Concrete Technology Discipline undertakes field and laboratory investigations of construction materials for major river valley projects in India and abroad. It has full fledged field and laboratory facilities for conducting standardized (BIS, ASTM etc.) and specialized testing and analysis of concrete, masonry, cement, steel and other construction materials for evaluating the material properties, their failure and performance problems. Field investigation facilities include deployment of non-destructive testing equipment by Ultrasonic Pulse Velocity method using PUNDIT in assessing the in-situ quality of the structure (concrete and masonry) in question.

Special testing facilities, housed in concrete laboratory, are utilized for studying the thermal properties of mass concrete, Alkali Aggregate Reaction in concrete, Abrasion Erosion Resistance, Permeability and Durability of concrete, Mix design of mass concrete as well as high performance concrete mixes, construction quality control of concrete in the field for major hydraulic structures, Disseminating knowledge on Roller Compacted Concrete for the construction of dams in the country. In addition to the above, this Discipline has the State of the Art equipment facilities for carrying out studies on 'Behaviour of Concrete under Multi-axial State of Stresses' and long term behaviour of concrete under Creep.

Rock Mechanics

Rock Mechanics Discipline of CSMRS comprises of Drilling, Instrumentation, Engineering Geophysics, and Laboratory and Field Rock Engineering divisions.

Main activities includes:

For detailed and controlled testing of responses of rock under different loading conditions, the Rock Engineering Laboratory is well-equipped to undertake the holistic assessment of rock. The institution has facility for determination of in-situ stress, deformation and shear strength parameters of Rock mass using different methods.

The Geophysics division helps scan large areas, and helps unravel the secrets of the hidden earth. Investigation facilities to detect the distress in concrete structures by scanning the upstream face of concrete dam using the Remote Operated Underwater Vehicle (ROV) are also available.

The instrumentation division is involved in monitoring and interpreting the data of various instruments installed at different river valley projects.

The Drilling division is equipped with deep drilling facilities. It also undertakes drilling required for in-situ investigations, including that for in-situ stress evaluation.

Concrete Chemistry

Main activities of the discipline are: Chemical investigation of water, Concrete durability, Chemical analysis of construction materials, Diagnostic investigation of old structures, Environmental related issues, Flyash mission related issues, Grouting technology, Resins for rock bolting etc.

Numerical Modelling

The sophisticated numerical modelling tools available at CSMRS to cater to the problems arising in the field of geomechanics are:

- UDEC - Distinct Element program for discontinuum analysis
- PLAXIS V8 - Finite Element program for geotechnical applications
- FLAC 2D - Finite Element program for continuum analysis
- SLIDE - 2D limit equilibrium program for slope stability analysis
- DIPS - For analysis of orientation based geological data
- UNWEDGE - For analyzing stability of underground wedges
- SWEDGE - For analyzing stability of surface wedges in rock slopes
- EasyNN Plus - Neural Network tool

FACULTY

The Research Station has highly qualified and experienced faculty to impart training. Faculty is also drawn from other professional organisations and educational institutes for sharing their hands on experience in their respective fields. The active research being undertaken on various aspects of Geotechnical Engineering and Material Science provides excellent input to the training courses.

TRAINING PROGRAMME

Regular training programmes are organised for practising engineers from government, private and public sector organisations in the field of Geomechanics. Highly qualified and experienced faculty from CSMRS, other professional organisations and educational institutes are involved in imparting training to share their experiences in their respective fields. CSMRS proposes to conduct a total of nine training programmes during the year 2006 – 2007. The bulletins of the individual training programmes are issued usually two months in advance. Brief details of the proposed training programmes are given below.

1. Durability of Concrete for Water Resources Structures

Durability of concrete is the ability of concrete to resist weathering action, chemical attack, abrasion and/or any other process of deterioration. Durable concrete will retain its original form, quality and serviceability when exposed to its environment. Factors responsible for aggravating or deterioration of concrete are: Freezing and thawing, Aggressive chemical exposure, Abrasion, Corrosion of metals and other materials embedded in concrete, Alkali aggregate reaction, High temperature and Poor workmanship.

Majority of the water resources projects are either coming up or in the process of consideration in the Himalayan belt. Geological surprises in this region are a known fact. In the last decade, numerous concrete dams have had to face adverse environmental conditions by way of hot water, thermal-springs, acidic water, sulphatic water. Another area namely, alkali aggregate reaction needs specific mention in our country's context. Each one of these problems have posed a challenge to engineers and scientists. Innovative remedial measures specifically suited for a particular problem had to be evolved.

Before arriving at any specific remedial measures, there is an urgent need to define the problem using tools specified in various National and International Codes and Practices. CSMRS has gained much experience in this area over the last two decades in not only appropriate characterization of the problem, but also in arriving at suitable remedial measures.

The course is intended to cover with specific reference to water resources sector - Durability of concrete under aggressive environment, Alkali-aggregate reaction, Corrosion of reinforcement, Concrete under acidic environment, Carbonation of concrete, National/International codes and practices, Role of blended cements, Concrete under geothermal environment, Use of geo-membrane in rehabilitation of structures, Remedial measures etc.

2. Water Quality and its Management

CSMRS in association with NIH, Roorkee propose to organize the training programme on water quality and its management. The purpose of the training course is to make the participants acquainted with different aspects of Water Quality like measurement of quality parameters, ground water quality, surface water quality management, water quality modelling and water quality monitoring. Some other subjects like eutrophication, environmental impact assessment w.r.t. water quality.& codes and practices would also be dealt with by prominent speakers of respective fields.

3. Special Concretes

This course is conducted mainly to cover the topics on Steel Fibre Reinforced Concrete, Roller Compacted Concrete, High Performance Concrete, Self Compacting Concrete, Design of High Performance Concrete, Blended Cements, Silicafume/Flyash Concrete, Alkali Aggregate & Alkali Carbonate Reaction in Concrete, etc.

4. Application of Rock Engineering in Hydropower Projects

Usually rock is regarded as the best bearing material for structural foundation or tunnelling inside a rock mass. Geological structure is a significant feature influencing the design and construction of rock foundations which undergo a significant change in environmental condition of dam sites where the previously dry rock in the sides of the valley becomes saturated. The loading condition of the dam foundations, underground structures, tunnels, shafts and other engineering structures located inside a rock mass are usually more severe than those of other structures. The service engineers at the time of execution of multipurpose water resources projects in complex geological conditions face varieties of problems. The knowledge of rock engineering will help to know the behaviour and parameters influencing the analysis and performance of engineering structures inside the rock mass.

This Training programme will highlight Field Geotechnical Investigation Techniques and Engineering Geophysical Investigation along with other field problems faced by engineers which are very crucial for determination of Strength and Deformability characteristics of Rock Mass. It gives the different design parameters to the designer for safe and economical design of engineering structures related to the rock mass.

The course content will mainly cover overview of Rock Mechanics, Engineering Geology for Rock Masses, Rock Mechanics and its principles in Engineering practice, Laboratory and Field Investigation of Rock, Geophysical Investigation for River Valley Projects, Rock Improvement Practice, Geotechnical Instrumentation, Recent Developments in Rock Mechanics and Tunnelling Technology, and Design of Underground Structures in Rock mass

5. Drilling Technology for Geotechnical Investigations

The purpose of the course is to impart training to the Junior and Middle level officers about the different aspects of diamond drilling works, conducting the tests on soil, collecting soil samples, evaluation of concrete structures by drilling out concrete cores, etc.

6. Preparation of DPR for Water Resources Sector Projects

CSMRS, in collaboration with CWC and CEA, proposes to organize a training course on the preparation of Detailed Project Report (DPR) for all types of Projects in the Water Resources Sector. The purpose of the training is to enable the officers to prepare DPRs in conformity with the latest requirements of different aspects.

The Training Course shall cover all the aspects – starting from the conceptualization stage to that of post-construction stage (monitoring and evaluation of cost-benefit). CSMRS shall also bring out a comprehensive volume, comprising the lectures delivered by specialists drawn from GSI, CWC, CEA and CSMRS and other organizations.

7. Numerical Modelling in Geotechnical Engineering

Numerical modelling is the simulation of problems that are difficult to be simulated by the physical modelling using mathematical tools. The behaviour of geological processes including deformation, fluid flow, heat transport and chemical reactions are explained with the mathematical formulae in most cases. These mathematical formulae when built into algorithms of softwares having varying degree of interaction to simulate how one process affects the other, results in a numerical modelling tool. This tool can be employed to simulate the actual problem and find a near solution. It can always be used to answer the highly complex questions in the Geo-mechanics.

Numerical modelling allows you to test a lot of theories reasonably quickly. It's not always going to give a yes or no answer, but it will point more towards one factor than another. Numerical Modelling is the most flexible and representative technique that can be routinely applied. It provides the possibility of obtaining approximate solutions to the behaviour of surface and/or underground excavations while considering a number of influencing factors. However, the selection of a particular numerical code depends on proper understanding of the case and the anticipated failure mechanisms.

Numerical modelling in 2D and 3D using boundary element, finite element and distinct element methods are used to study the stability problems in the geotechnical engineering. Back analysis can also be done using the numerical analysis to estimate

in-situ stresses, displacements and field rock properties. The user should know how to choose a particular model which can simulate his problem exactly to arrive at a solution. For this, a proper understanding of the numerical models and constitutive laws governing a particular problem is required.

The purpose of this training is to give an overview of Numerical Modelling methods in analyzing the stability of soils and rocks. Hands on practice session will also be organized to enable the trainees to work in the related softwares.

8. Soil Liquefaction and its Mitigation

Soil liquefaction is one of the main causes of failure of structures during earthquakes. In this phenomenon, the soil deposits under earthquake loading tends to behave as liquid with practically no shear strength and as such structures founded on such soils slump, tilt and become unsuitable for use. The course intends to apprise engineers of liquefaction causes, effects, evaluation and methods to mitigate its effects. Various methods of mitigating liquefaction will be covered with stress on dynamic deep compaction. A field visit to dynamic deep compaction site, if the work is on, is also proposed. Besides, exposure to evaluation of cyclic soil strength in the laboratory shall also be provided. The faculty will comprise of CSMRS officers and experts on soil improvement.

9. Landslide

Landslide is the most natural of geologic processes. A major challenge to effectively deal with landslide is that the speed and therefore the perceived significance of these failures are highly variable. A thorough investigation produces information that forms the basis for design decisions. The engineering approach to landslide studies has focused attention on analysis of individual slope failure and their remedial measures. The analysis and solution of landslide problems as well as prevention of landslides requires an understanding of geology, hydrology, seismology, geotechnical exploration and engineering, computerised analytical methods, and practical and constructible engineering solutions.

The course will give an overview of the entire range of technical issues surrounding assessment and management of all types of slope instability. The course content covers : Introduction to Landslides, Remote Sensing for Landslide Mapping, GIS for Landslide Hazard Assessment and Management, Landslide Risk and Hazard Assessment, Preparation of landslide susceptibility Maps, Warning Systems for Landslides, Soil slope stability, Rock Slope Stability, Geotechnical investigations for landslide, Use of Computational techniques for analysing the landslide problems, Risk assessment, Remedial measures, Stabilization, Maintenance and protection of Soil and Rock slopes, Instrumentation for landslide and Case Studies.

INFRASTRUCTURAL SUPPORT

The Research Station possesses documentation and library services where the library is equipped with all latest literatures and excellent DTP facilities. An Information Technology centre with LAN facilities connects all nodes across the Research station including the library.

DOCUMENTATION AND LIBRARY SERVICES

The Library and Documentation Centre of CSMRS was established in 1981 to support research and extension programs of the research station. It has a collection of 7750 books, 2477 standards, 1267 technical reports, 786 bound volumes of journals, 96 video cassettes/slides, 480 maps and 76 CD-ROM's as on date. The CSMRS L&D Centre is creating database with the help of NIC by using library software e-Granthalaya. The library has all the Bureau of Indian Standards of Civil Engineering, Water Resources and Chemical Engineering segments on Local Area Network (LAN) for use of CSMRS officials. It has also on-line access to important journals in the field of rock mechanics, soil mechanics and construction technology. Besides, the library is connected to Developing Library Network (DELNET) for utilizing all its services such as Inter-Library loan, on-line information services from DELNET databases etc. The L&D Centre at present is having membership of 8 National and 3 International organizations for exchange of information on different topics of interest beneficial to CSMRS. These library facilities are available to the trainees.

LECTURE HALL - The lecture hall is equipped with the latest audio - visual facilities. It is located at 3rd floor CSMRS main building and can accommodate 40 participants.

HOSTEL - The hostel building is conveniently located within the premises of CSMRS. There are about 32 Single bedded rooms, all air-conditioned. It has a canteen to cater to inmates on payment basis.

METHODOLOGY

- Lectures (In house and invited)
- Practical and Demonstrations
- Group discussions
- Field visits

WHO WILL BENEFIT?

- Engineers from Central and State Irrigation/Hydel Departments
- Public & Private Sector Undertakings connected with Water Resources Development Projects
- R&D personnel, faculty from engineering colleges/Universities/IITs
- Consultants/Supervisory agencies/Contractors
- Equipment Manufacturers
- Civil Engineering students

INFORMATION TO PARTICIPANTS

HOW TO APPLY

The detailed information on the training programmes is generally announced well in advance in the CSMRS website <http://csmrs.gov.in>. Information Bulletin for each course is sent to projects Central & State Govt, PSU, etc inviting nominations. Information can also be obtained from the Research Station by writing to the Director/Course coordinators. Application should be made only in the prescribed application form given in this booklet and a separate application form should be used for each training programme.

GENERAL ELIGIBILITY

Bachelor's degree or diploma in civil engineering with three years experience in the relevant field. Specific eligibility for the courses is given with the detailed information bulletin on each course.

COURSE FEE

The course fee per participant per day is Rs. 850/-. The course fee should be remitted in favour of "Branch Officer, CSMRS, New Delhi" by a cheque or demand draft. The fee includes course material, training kit, lunch and refreshments.

VENUE & LOCATION

All the training programmes will be held at the premises of the Central Soil and Materials Research Station, New Delhi – 110 016. The Research Station is located adjacent to IIT, Delhi on Olof Palme Marg. Annexure – 1 presents the location map.

COURSE TIMINGS

Usually, each course begins at 1000 hrs. The session will close at 1700 hrs each day.

ACCOMMODATION

Participants may avail the CSMRS hostel facilities. For trainees, the special rate for room is Rs.50/- per day. CSMRS hostel is located within the CSMRS campus and has single-seated rooms. Meals are also available on payment in the hostel.

NOMINATIONS

Nominations on the prescribed form duly sponsored by the appropriate authority may be sent to the Director, CSMRS or the concerned Course Coordinators.

LAST DATE FOR RECEIPT OF NOMINATIONS

The nominations shall reach at least seven days before the commencement of the training programme.

CUSTOMISED TRAINING PROGRAMMES

The training programmes described in this booklet are intended to meet the common training needs of the user organisations. Some organisations may also require special training programmes to cover topics of their exclusive interest. To cater to this, CSMRS can organise these programmes on demand and frame their course contents.

These courses can be conducted either at CSMRS or at the premises of the sponsor. It would be preferable to conduct such programme at CSMRS in order to take advantage of all the facilities available under one roof.

COURSE CONTENTS

The course contents for such tailor made programmes are finalised in consultation with and as per the clients' requirements.

COURSE FEE

The course fee for such programmes would be worked out based upon the duration, the number of trainees, quantum of work involved and the place at which the course is to be conducted.

For further information & sending nominations, contact:

**Director,
Central Soil and Materials Research Station,
Olof Palme Marg, Near IIT Hostels,
Hauz Khas, New Delhi - 110 016
Phone No. +91 11 26967985, 26961894
Fax: +91 11 26853108
Email: akd847@gmail.com
Web site: <http://csmrs.gov.in>**

NOMINATION PROFORMA

Course: _____

Duration: _____

Name of the candidate: _____

Designation: _____

Organization with complete address: _____

Address for Communication: _____

Phone: _____

E-mail: _____

Fax: _____

Educational Background: _____

Age: _____

Is accommodation required: Yes/No

Details of the payment * : _____

Date:

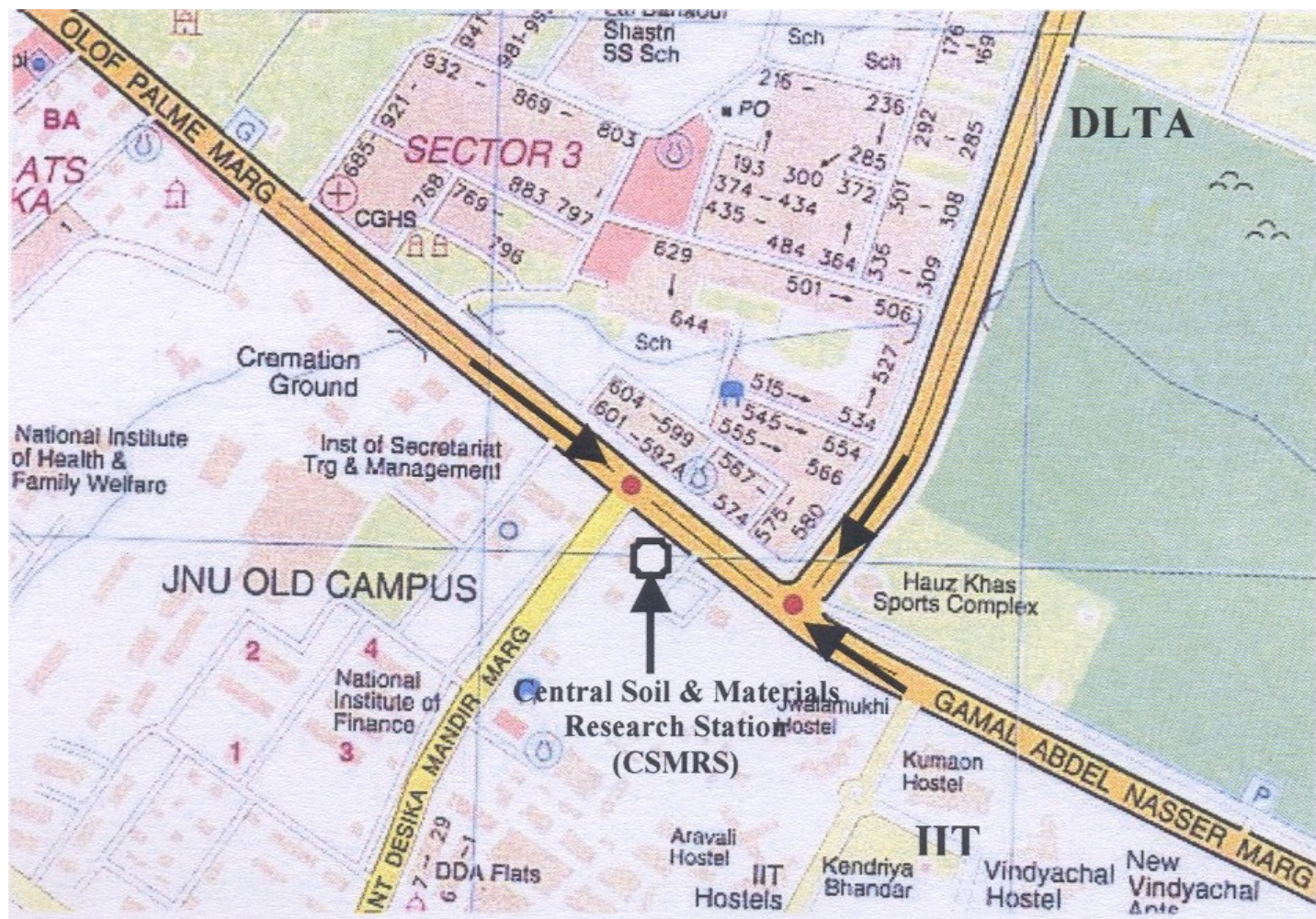
Signature of the Candidate

Note:

- *One form to be filled per delegate, photocopy of this form may be used for additional copies requirement*
- *No. of participants is limited to 25 on first arrival basis*

* In favour of "Branch Officer, CSMRS" by crossed Cheque/draft Payable at New Delhi

LOCATION MAP OF CSMRS



NOTE:

- Nearest Bus Stand for CSMRS Hostel is Ber Sarai
- Nearest Bus Stand for main CSMRS Campus is IIT Hostel
- Approximately 8 Kms from Domestic Airport
- Approximately 13 Kms from New Delhi Railway Station

CSMRS Training Calendar for the year 2006 – 2007

Sl. No.	Title of the Course	Course Coordinator	Venue	Duration	Apr 06	May 06	Jun 06	Jul 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	Jan 07	Feb 07	Mar 07
1	Durability of Concrete for Water Resources Structures	Mr.Murari Ratnam, JD	CSMRS	3 days	26-28											
2	Water Quality and its Management	Dr. K.K.S. Bhatia, NIH Mr.Murari Ratnam, CSMRS Dr. V.K. Choubey, NIH	CSMRS	5 days		22-26										
3	Special Concretes	Mr.P. K. Jha, SRO	CSMRS	3 days				26-28								
4	Application of Rock Engineering in Hydro Power Projects	Mr.R. B. Shivali, SRO	CSMRS	4 days						18-21						
5	Drilling Technology for Geotechnical Investigations	Mr.N. Chandrasekaran	CSMRS	3 days							11-13					
6	Preparation of DPR for Water Resources Sector Projects	Mr.Hassan Abdullah, SRO	CSMRS	4 days							17-20					
7	Numerical Modelling in Geotechnical Engineering	Ms.R. Chitra, SRO Mr.Manish Gupta, SRO	CSMRS	3 days								8-10				
8	Soil Liquefaction and its Mitigation	Mr.Nakul Dev, SRO	CSMRS	2 days										18-19		
9	Landslides	Ms.R. Chitra, SRO Mr.Manish Gupta, SRO	CSMRS	4 days											5 - 8	

A course fee of Rs. 850/- will be charged per participant per day. (except for course at S. No 2)

In addition to the above, CSMRS also organises Customized Tailor made training programmes as per the client's requirements.

For further information & sending nominations contact:

Ms.R.Chitra & Mr.Manish Gupta,
Senior Research Officer,
Phone No. +91 11 26581763
rchitra@nic.in & manishgupta@nic.in

Central Soil and Materials Research Station,
Olof Palme Marg, Near IIT Hostels,
Hauz Khas, New Delhi - 110 016
Fax: +91 11 26853108
Website: <http://csmrs.gov.in>

Director,
Phone No. +91 11 26967985,
+91 11 26961894
akd847@gmail.com

Training at CSMRS



Address for Correspondence

Director
Central Soil and Materials Research Station

Ministry of Water Resources
Olof Palme Marg
Outer Ring Road, Near IIT Hostel
Hauz Khas, New Delhi-110 016

☎ +91 11 26967985, 26961894

Fax: +91 11 26853108

✉ akd847@gmail.com

🌐 <http://csmrs.gov.in>