

# **FACULTY DEVELOPMENT PROGRAMME ORGANISED BY CIVIL ENGINEERING DEPARTMENT AT NARULA INSTITUTE OF TECHNOLOGY FROM 17/02/14 TO 21/02/14 AND 24/02/14 TO 28/02/14**

## **Aim of Faculty Development Programme**

To enrich the Knowledge of faculties through interaction with eminent personalities from industries and academics. The knowledge sharing will improve the teaching learning process to the students and benefit the society.



## **Welcome Address by Prof J.C Guha,(Head of the Civil Engineering Department)**

Prof J.C Guha explained the advantages of arranging faculty development program .Vis-a-vies interaction with industries and academics .He advised all faculties, T.As and P.G students of Civil Engineering Dept to attend all session to equip them with sufficient knowledge in emerging trend of C.E.

He specially thanked M.D and higher authorities for extending their help and guidance in conducting the program under TEQP phase II 1.1.He specially thanked all the dignitaries for taking their time off and deliver the lecture for benefits of all faculties of C.E Dept.



## **Professor Sunil Roy**

An eminent figure in Civil Engineering profession having vast experience in different Govt. organization at high level, appreciated the faculty development initiative taken by NIT Civil Engineering Department.

Civil Engineering is the oldest brunch of Engineering and formal education started about 150 years back and has undergone metamorphosis with the passage of time today .The role of civil engineer has increased many fold as it encompasses various specializations .It is not expected that a particular Civil Engineer should have in depth knowledge of each and every specialization but at the same time he should have average knowledge of all aspect to manage the things in a better way .To enhance knowledge in a particular domain short term Industry friendly course may be arranged .Civil Engineers draw out strategies for improvement of quality of life of people and economy of country.

Sri Roy stated that faculties must find out today's professional /educational gap and try to plug the gap effectively.

## **Mr. Satyajit Dey**

Mr. Satyajit Dey of M/s Hindcon highlighted innovative and practical aspects of fly ash mixed concrete in various Civil Engg. Projects including road, tunnel, dams, high rise buildings etc. Details of fly ash including physical and chemical, mix design, requirements of cement, coarse aggregates, fine aggregates, stone dust, micro slice, water, admixture, super plasticizers etc. were brought out for economic and high strength concrete.



Construction chemical products manufactured by the firm have been successfully used for “Tenchless Technology”, a latest development in Tunnel construction.

He also touched upon how these chemicals can be used for “Repair and Retrofitting of Structures”.



## **Mr. Sanjib Das**

Mr. Sanjib Das of M/s Bentley, a renowned software company, outlined various software's which can be effectively used for general buildings, Transportation Engg., power sector, manufacturing, water supply, waste water disposal etc. Structural dashboard V8i is a free total that can assist in managing data non

workflow of projects and include receiver/ online connector/ download product etc.

Staad-Pro includes analysis, modeling, concrete design, foundation design etc. Also analysis update including self weight, mass model etc. can be performed with the help of this software.

## **Mr. Amitava Ghosh**

Amitava Ghosh discussed about the System of Education required for the knowledge of Emerging Trends in Civil Engg. He was discussing about the requirement of industry institute interaction, industry oriented class in institute. For Mechanical Based Factory he was discussing about his experience and he was telling about that the lack of institutional knowledge for this type of area about factory. Materials Handling Plant related exposure is required for a student in institution level, according his discussion.



## **Professor Sankar Chakrabarty**

Professor Sankar Chakrabarti, Ex. Head of Civil Engineering Department, Jadavpur University



made a lucid presentation on “Soil Exploration”. Empirical equations dealing with various exploration parameters and the substructural design was tactfully covered. Deliberation on all the lab and field tests w.r.t. soil exploration was the prime part of discussion. Case studies with failure of buildings in Kolkata and bridge pier in Haldi River in Midnapore were also presented. Prof. Chakrabarti also

discussed compaction test, C.B.R. tests with reference to highway engineering. Based on his resourceful carrier in Highway sector (road projects in Assam under National Highway Authority of India, NHAI), Prof. Chakrabarti recapitulated many meaningful observations and steps taken during that mega project.

## **Professor (Dr.) Sudip Roy**

Prof. (Dr.) Sudip Roy discussed in detail regarding road safety. Annual occurrence of number of accidents in India is increasing at an alarming rate.

Road Engg., Traffic Engg, lack of enforcement, lack of education, inadequate road safety measures etc. are mainly responsible Engg. Issues are road section/sight distance/ radius of curvature/ super elevation/ vertical gradient & curve/ medians/ safety fence/ shoulders/ intersection/ visibility/ signal timing/ road sign & marking etc. Human factors also play a major role. Accidental parameters like severity index, fatality rates, fatality risks etc. are analyzed for prediction of accidents based on different variable models.



## **Mr. Anindya Guha**

Shri Anindya Guha spoke on detailed analysis of rural roads. Rural road construction procedure was depicted in detail with field photographs, preparation of sub grade, roller compaction etc. were highlighted and in case of granular sub base using different available local materials like laterite, moorum, jhamabats, brick-bats, river bed materials etc. and how these are mixed with sands of different densities, complete field picture that has been shown. In case of WBM layers of size of stones, their compaction, rolling, spreading, screening etc. were the part of discussion. In case of wearing course, bitumen binder – type of construction was discussed. Besides these, hard shoulder, soft shoulder, embankment construction was discussed in detail.



## **Professor (Dr.) B.C. Chattopadhyay**

Prof. B.C Chattopadhyay discussed about soil structure related emerging trends. First soil formation in site, model developed for that, was the part of discussion. Some problematic soil type such as collapsible, pit, organic soil, marine soil, expansive soil have been discussed by Prof. Chattopadhyay. Possible construction process, temporary soil improvement techniques, permanent soil improvement with addition of any material (or with materials) – all these items was analyzed. Current practice for the design of treatment methods for ground improvement of problematic soils are discussed in brief.

## **Professor (Dr.) M. Chakraborty**

Dr. M. Chakraborty, Ex. Director of NITTTR, Kolkata had highlighted the significance of Non-destructive testing of concrete. In his speech, Dr. Chakraborty stressed upon the relationships between NDT parameters like USPV, rebound indices and insitu characteristics of concrete. This topic constitutes M.Tech as well as B.Tech course curriculum thereby was proved immensely helpful for faculties. All basic features of rebound hammer and ultrasonic tests were explained in detail. Prof. Chakraborti also attempted to enlighten the students in taking up higher studies and research works in their prospective future.



## **Mr.Sailendra Bhattacharya**

Mr. Bhattacharya told about the topic related with emerging trends in construction sector. He was talking about type of scaffolding, type of construction materials, reinforcement, rods etc. in latest level. He also showed several pictures regarding structures built over water. He came to an opinion that more construction over water bodies can reduce problem of land required for construction. Besides this he was discussing about the marketing of the construction industry. Latest things such as Green building, Solar building or several items are that but marketing should be done properly – in his view.

## **Mr. Subhabrata Ghosh**

Subhabrata Ghosh at first discussed about the history of survey. Components of Total station, its use, application, mode of application has been discussed. Methodologies for traversing, leveling were discussed in detail. How GPS functions via satellite, the components of GPS were discussed. Also function of GPS was mentioned precisely.

## **Mrs. Sumita Dey**

Mrs. Sumita Dey discussed about new thoughts, innovations and techniques are first replacing age old practices and traditional methods of construction. Modern software analysis has become a major base for design of multi storied buildings. AAC blocks, steel floor plates, RC load bearing walls are used in construction from economic consideration. High grade construction materials are quite common these days. The Rail Climbing system has helped to increase the speed of construction manifold. In another system of staging, the props are left in place and only shutters are removed. Use of couplers instead of lapping of bars has helped reduce congestion and wastage.



## **Professor (Dr.) Kalyan Bhar**



Kalyan Bhar analysed about the Disaster of Flood and Flood Control System. He showed several pictures regarding Distar happened in Uttarakhand, as well as different major floods scenarios (such as flood happened from Brahmaputra River) . Requirement of awareness among villagers at the grass root level about the disaster of flood was discussed. Emerging trend in this areas about controlling of flood was discussed. How Losses during flood can be minimized he discussed.

## **Professor (Dr.) Ramendu Bikas Sahu**

Dr. Ramendu Bikas Sahu, Professor of Jadavpur University had delivered on “Behaviour of Soft Subgrade Reinforced with Jute Geotextile under Cyclic Loading”. Details of an investigation on behavior of soft subgrade reinforced with jute geotextile under cyclic loading highlighting the effect of ageing with the help of laboratory and prototype field tests was presented in a very systematic manner. Most of the widely used tests like compaction, C.B.R., cycling loading on lab specimens as well as prototype models were deliberated. The investigation was a part of Govt. sponsored research project.

## **Professor (Dr.) Santanu Bhanja**



Dr. Santanu Bhanja of NITTTR, Kolkata had enlightened the participants with very informative speech on “Philosophy of Design of Reinforced Concrete”. In the said lecture, historical development of R.C.C. design was lucidly explained. Basic design concepts of working stress, ultimate load method and limit state method with all its fundamental considerations drew attention of all the faculties of the department. How limit state of design has outdated all other methods due to its more practical and scientific approach was dealt in a fruitful manner. Apart from these characteristics of reinforced bars and concrete were discussed.

## **Professor. (Dr.) Subrata Chakraborty**

Prof. (Dr.) Subrata Chakraborty discussed about loss due to earthquake with photos. Not only earthquake design but also for vulnerability assessment of existing structures are required. SVA is expected damage of an existing structure as a function of the ground motion. Two key elements are structural capacity and seismic demand. SVA objective is to improve assessment of seismic hazard, combine the results to elaborate risk scenarios. Risk assessment is related with Hazard analysis and damage loss assessment, vulnerability analysis etc. Level I, Level II, Level III are three different levels of SVA. For building RVS data's are important to design seismic risk management programs to plan post earthquake building safety efforts. There are different approaches for assessment for each individual element for assessments linear and non linear method are there. Seismic risk analysis, seismic fragility analysis was discussed with help of mathematical and graphical data's.



## **Dr. Tapas Gupta**

Dr. Tapas Gupta, Chief Engineer of Pollution Control Board, West Bengal attended our Faculty Development Programme on 28th Feb., 2014. He obtained his PHD (Engineer) from Jadavpur University, Kolkata and Master of Engineering(Public Health) from Calcutta University, Bachelor of Civil Engineering with Hons. from J.U. He is working in P.C.B last twenty seven years for implementation of the Environmental status throughout the states, Assessment and Management of Environmental impact of all project proposals which require Environmental clearance. He described very nicely the Air act, water act & Noise Pollution Act .Industries have to follow the Act imposed. Controlling of Air Pollution mainly from vehicles, thermal power project, sponge from manufacturing unit is very high which is detrimental to human health and environmental pollution. Controlling of water pollution with from Industries and discharging to water bodies with efficient controlling with effluent treatment plant in each industry. Human society is facing acute problems of environmental pollution for extending Industries, townships, high rise building without maintain the Environmental act. No. of N.G.O.s are deployed to short out the problems and collect the data. Mr. Gupta also described the EIA in detail. This is a process and protective planning tools providing a major meeting project between development decision and environmental management. He also emphasized on Environment challenges and probable responses and recent approaches in environmental problems and to be solved.

Mr. Gupta ended with his valuable speech which encourages our faculty to their teaching learning knowledge in Environmental Engineering.

## **Professor (Dr.) Arun Chakraborty**

Prof. (Dr.) Arun Chakraborty delivered his lecture on “Emerging Trend in Concrete Technology”. Effect of silica fume in OPC which includes XRD, DTA/TG & SEM analysis to explain different aspects those are- Magnification, Peaks identification, loss of weight due to dislocation of different compounds, identification of crystallographic structures etc. An another topic was presented by Dr. Chakraborty regarding the innovative building approach to make it intelligent and sustainable. In this discussion, he explained the details of a number of high rise buildings which have a variety of function.

According to the function, those building are classified as – Green Building, Intelligent Building, Sustainable Building, Secure Building, Rotating Building, Bionic Building etc.

