



**VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**  
**DEPARTMENT OF CIVIL ENGINEERING**

Report on AICTE Sponsored Faculty Development Program on  
**“Computer Oriented Applications in Civil Engineering”**  
16<sup>th</sup> - 28<sup>th</sup> May 2016



The Faculty Development Program on “Computer Oriented Applications in Civil Engineering” was inaugurated by Dr. Ravande Kishore, Dean-Faculty of Engg., & Professor of Civil Engg., Osmania University, Hyderabad, T.S. He gave an overview of various widely used softwares for different applications in Civil Engineering. He emphasized the need of having strong fundamental concepts, theoretical background, assumptions and limitations before using any software. This is followed by an Introductory session on Structural Engineering software, ETABS.

Training on ETABS software is given by ARK info solutions Pvt. Ltd. Participants were trained on modeling of various building components, analysing the continuous beams, single storey and multi storey building frames. Computation of various types of loads such as Dead load, Live load etc. and load combinations were explained. They were taught how to see shear force and bending moment diagrams. Modal analysis of R.C. building frames, theoretical solution of eigen value problem for computing the time periods and frequencies was handled by Dr. B D V Chandra Mohan Rao, Prof. of Civil Engg., VNRVJIET, Hyderabad. Participants were trained on ETABS software for first three days.

Introduction to MATLAB and application to surface water quality modeling was handled by Dr. K. Ravi Kumar, Associate Prof. in Civil Engg., VNRVJIET, Hyderabad. Participants

were trained on doing matrix operations in MATLAB and then its application to handle civil engineering problems.

Training on Quantum GIS software is given by Sri T. Srinivasa Rao, Asst. Prof. in Civil Engg., VNRVJIET, Hyderabad. This software is a geographic information system application that provides data viewing, editing, and analysis. QGIS allows users to create maps with many layers using different map projections. This allows maps to be composed of raster or vector layers. The vector data is stored as either point, line or polygon feature. Different kinds of raster images are supported and the software can geo reference images.

Participants were trained on E-survey software on the last day of the first week by Sri B. V. Bharat Kumar, Technical expert from E-survey software. The salient features of the E-survey software were explained and participants were exposed to the design of road geometrics using this software.

The first three days of the second week are handled by ARK info solutions Pvt. Ltd. and the participants were trained ANSYS software. An overview of the Finite Element analysis, various types of elements in FEA, Plane stress and Plane strain problems were handled by Dr. A. Mallika, Prof. & Head of Civil Engg., VNRVJIET, Hyderabad. Participants were trained on Modeling Techniques, Meshing Techniques, Analysis of 2D & 3D Trusses, Analysis of 2D & 3D Solids, Analysis of axi-symmetric problems etc. They were taught how to see shear force, bending moment diagrams and stress contours.

The concepts of Water Shed Modeling were taught by Dr. B N Malleswara Rao, Prof. of Civil Engg. & Vice-Principal, VNRVJIET, Hyderabad. Training on WMS software is given by Aditi Infotech, Nagpur. This software supports a number of hydraulic and hydrologic models that can be used to create drainage basin simulations. It also supports river hydraulic and storm drain models, 2D hydrologic modeling of watersheds, and can be used to model both water quantity and water quality.

Training on VISSIM, a microscopic multi-modal traffic flow simulation software is given by Dr. A. Ramesh, Associate Prof. in Civil Engg., VNRVJIET, Hyderabad. Participants were exposed to simulating the various types of traffic such as Vehicles, Public transport, Cycles, Pedestrians, Rickshaws etc.

The last day of the FDP is handled by Sri K. Veerendra Gopi, Assistant Prof. in Civil Engg., VNRVJIET, Hyderabad on Storm Water Management Model. This is a dynamic rainfall – runoff – sub surface runoff simulation model used for single event to long term simulation of the surface / subsurface hydrology quantity and quality from primarily urban / suburban areas. The

FDP is concluded with an expert lecture and Valedictory by Dr. M. Murali Krishna, Professor of Civil Engg., Osmania University, Hyderabad, T.S.

**Benefits generated w.r.t. the Institution :** Fifty participants spreading across various states have registered for this Faculty Development Programme and the feedback taken from the participants revealed that the entire program was rated as Excellent. They were very much impressed with the institutional infrastructural facilities, equipment in various civil engg. laboratories and the strength of faculty. This brings name & fame and glory to the institute in general and in particular to the Civil Engg. Dept.

**Benefits generated w.r.t. the Faculty :** Many of the faculty participated in this FDP are teaching the various courses to UG / PG students. Some of the participants are pursuing their research work. As the course contents have been taught by eminent experts in the field having adequate teaching and research experience, it made them to understand the concepts thoroughly and paved the way to deliver the subject in a most effective way to the students in their institutes. This Programme has opened up several avenues for the research enthusiasts working as faculty members. Besides giving a detailed discussion on the basic principles, the program has provided hands on training on various civil engineering softwares and hence research scholars can speed up their work.

**Benefits generated w.r.t. the Students :** M.Tech. (Structural Engg., Highway Engg., and Geotechnical Engg.) students participated in this FDP. As they have few related subjects in their curriculum, they got benefited with this FDP. They can also carry out their mini projects and major projects using these softwares. The quality of work which they are about to pursue in future with the knowledge they acquired through this programme, would certainly reflect on the enhancement of students community.

**Benefits generated w.r.t. the Industry / Society :** Participants understood the theoretical background of the softwares, assumptions involved, limitations thoroughly. Hence they can physically interpret and use these softwares efficiently to solve various kinds of problems of industry / societal needs. This institution has envisioned bringing in research excellence to cater to the needs of ever demanding industry and the society as well.

On the whole, the FDP was successful in fulfilling the ambitions of various kinds of participants such as faculty, research scholars and students.



**VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**  
**DEPARTMENT OF CIVIL ENGINEERING**

**Report on AICTE Sponsored Faculty Development Program on  
“Finite Element Applications in Civil Engineering”  
03<sup>rd</sup> - 15<sup>th</sup> June 2013**



The Faculty Development Program on “Finite Element Applications in Civil Engineering” was inaugurated by Dr. N.V. Ramana Rao, Professor of Civil Engg. & Registrar, JNTUH, Hyderabad, A.P. He gave an inspiring and a very informative speech on Finite Element Applications in Civil, Mechanical and Aeronautical Engg. This is followed by an Introductory session on Theory of Elasticity and Finite Element Method by Dr. Godbole, General Manager (Rtd.), BHEL (R&D), Hyderabad. Next day, Dr. Pradeep Kumar, Ramancharla, Head of EERC, IIIT, Hyd. gave an inspiring talk on FE applications to Earthquake Engineering. An introduction to Vibratory motion, Dynamic analysis and FE applications was given by Dr. YVLN Murthy, General Manager (Rtd.), BHEL (R&D), Hyderabad.

Dr. B.Nageswara Rao, Associate Professor, IIT Madras is kind enough to deliver five sessions on various topics of FEM such as 1D & 2D FE analysis, FE in Structural Mechanics, Quadrilateral, Isoparametric Elements, Plane Stress & Plane Strain problems, Axisymmetric problems and 3D Elasticity problems. Dr. A. Raja Gopal, Asst. Professor, IIT, Hyderabad delivered a talk on FE analysis of Masonry & CFRP strengthened concrete.

Laboratory sessions were conducted by Sri J. Ravinder Rao, Innovent Engg. Sol. Pvt. Ltd., for three days and participants had hands on practice on ANSYS software. Participants were trained on Modeling Techniques, Meshing Techniques, Analysis of 2D & 3D Trusses, Analysis of 2D & 3D Solids, Analysis of Shells, Modal Analysis, Thermal Analysis and Ansys Parametric Design Language (APDL)

Dr. P.Ramesh Babu, Assoc. Prof., Osmania University delivered a talk on FE applications to Fracture Mechanics and Errors in FEM. Dr. BDVCM Rao, Professor, VNRVJIET gave a talk on FE analysis of Continuous beams & Portal frames. There was an inspiring and very informative lecture by Dr. Salman Abdul Moiz, Assoc. Professor, University of Hyderabad on Research Methodology & Publications. Approximate methods to Boundary Value Problems was discussed by Sri K.Ramujee, Assoc. Prof, VNRVJIET.

Dr. P. Ravinder Reddy, Professor, CBIT, Hyderabad shared his vast experience in FEM with the participants and discussed number of FE applications to Real Time Projects in Civil and Mechanical Engg. disciplines. Dr. A.Mallika, Assoc. Prof., VNRVJIET delivered a talk on Topology Optimization. Finally, Dr. BDVCM Rao delivered a lecture on Static, Dynamic analysis and optimization of various structures.

There was a lab session for one hour on every day conducted by the internal resource persons Dr. BDVCM Rao, Dr. A.Mallika and Sri K. Ramujee and participants got hands on practice on Modeling, Meshing and Analysis of various types of structures on ANSYS software. Local City Trip covering various important locations in Hyderabad was arranged for one day.

**Benefits generated w.r.t. the Institution :** Fifty Three participants spreading across various states i.e. Andhra Pradesh, Tamilnadu, Karnataka, West Bengal and Haryana have registered for this Faculty Development Programme and the feedback taken from the participants revealed that the entire program was rated as Excellent. They were verymuch impressed with the institutional infrastructural facilities, equipment in various civil engg. laboratories and the strength of faculty. This brings name & fame and glory to the institute in general and in particular to the Civil Engg. Dept.

**Benefits generated w.r.t. the Faculty :** Many of the faculty participated in this FDP are teaching the FEM course for UG / PG students. Some of the participants are pursuing their research work in the FEM area. This course made them to understand the concepts thoroughly and paved the way to deliver the subject in a most effective way to the students in their institutes. Research scholars can speed up their work as the theory was dealt elaborately by the experts from various institutes / industry personnel and also they had hands on practice in ANSYS.

**Benefits generated w.r.t. the Students :** Some of the M.Tech. students participated in this FDP. As they have this course in their curriculum, they got benefited with this FDP. They can also carry out their mini projects and major projects in FEM area.

**Benefits generated w.r.t. the Industry / Society :** Participants understood the theoretical background of the FEM thoroughly. Hence they can physically interpret and practically apply this method efficiently to solve various kinds of problems of industry / societal needs.

On the whole, the FDP was successful in fulfilling the ambitions of various kinds of participants such as faculty, research scholars and students.



**VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**  
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**Report on AICTE Sponsored Faculty Development Program on**  
**“Recent Advances In Concrete & Construction”**  
**30<sup>th</sup> April - 12<sup>th</sup> May 2012**





**Participants Along with Organisers**

AICTE Sponsored 2 weeks Faculty development programme was organised by Civil Engineering Department was inaugurated by Dr. H.S.Rao from JNTU, He gave an inspiring and a very informative speech on Advances In Concrete & Construction. Participants understood the Developments in the concrete field and sustainable materials .What are the material developments going on for the present scenario of constructions.

The participants were benefited by knowing the different construction Equipment and Technology developments .The different scheduling.

Many of the faculty participated in this FDP are teaching the C.T course for UG / PG students. Some of the participants are pursuing their research work in the C.T area. This course made them to understand the concepts thoroughly and paved the way to deliver the subject in a most effective way to the students in their institutes. Research scholars can speed up their work as the theory was dealt elaborately by the experts from various institutes / industry personnel .