DEPARTMENT OF CIVIL ENGINEERING

TEQIP Phase II Sponsored One Day Workshop on

“FINITE ELEMENT ANALYSIS FOR STRUCTURAL BUILDING DESIGN AND USE OF ANSYS SOFTWARE”

Wednesday, 6th August, 2014

ABOUT THE WORKSHOP ORGANIZED

The program will feature investigating the critical shear strength of reinforced concrete (RC) which is very significant when this value is used in practical design. Therefore, this modeling of shear crack is predicted by using Finite Element Analysis in this purpose. In this aim, ANSYS, which is Finite Element Software, is applied to confirm and verify that RC members can be achieved.

The Workshop will be extremely beneficial to personnel who are students, preparing for higher studies, research scholars and those who require updating in analysis area. All participants and accompanying persons are cordially invited to quench the thirst of knowledge.

OBJECTIVE OBTAINED IN THE WORKSHOP

This workshop provides hands on experience to the participants in finite element analysis and the professional commands used for structural design using ANSYS. It also provides a platform for the students to know the various aspects of the software based structural analysis. Participants will be made to understand and solve various industry grade case studies and engineering problems.
SESSION DETAILS

Registration:

Registration was done between 8.30 AM and 9.30AM. Faculties and students from various colleges in Coimbatore were registered. The venue of registration desk was in the Auditorium.

Inauguration function:

Inauguration function was successfully held in the auditorium hall at 9.30AM . The dice members was Chief Guest Ar.D.SURESH KUMAR, Director, Tamilnadu School of Architecture, Combatore, Dr. K. SUBRAMANIAN Professor and Head of Civil Engineering Department, CIT, Dr. V.Selladurai Princial CIT Istitutions. Dr. N. MURUGAN, TEQIP Co-ordinator, C.I.T

Technical Session Details

10:30-11.30 am
1. Introduction to FEA & ANSYS
2. Application of ANSYS to civil engineering applications
   - Blast, explosion and impact
   - Fire and smoke propagation
   - Design for HVAC
   - Ventilation and comfort modeling
   - Wind engineering
   - Structural building
3. ANSYS application for structural engineering application
4. Modeling structural elements
   - Reinforced concrete beams, Reinforced concrete shear walls, Steel beams, Cables, Masonry
5. Nonlinear Material Models for Steel, Concrete, Soil and Soil-structure Interaction

Real time projects of structural engineering design and analysis using ANSYS
11:30 Am – 12:30 pm
Detailed explanation given on
1. ANSYS classification
2. Non linear dynamic analysis
   Modeling of (Bridges, Dam, Tunnel)
   Masonry Modeling (Micro-Macro-cohesive)
   Concrete & Steel Building Modeling
   Fluid Structure Interaction
   FRP Composite Modeling
   Fracture Mechanics
   Blast Modeling and Analysis
   Damage Analysis
   Contact Technology
   Nonlinear Buckling Analysis
   Nonlinear Seismic Analysis
   Thermal & Fire Engineering Analysis
   Modeling of Tank and Pressure Vessel

1:30 – 2.45 pm
Detailed explanation given on
Working Procedure on ANSYS (Pre processing, solution and post processing)

3.00- 5.00Pm
Hands on problem solved on reinforced concrete Beam to validate the flexural Strength  and viewing the concrete plot for crack pattern