



**Report on  
1 Week Short Term Training Program (STTP) on  
RECENT RESEARCH TRENDS IN STRUCTURAL ENGINEERING-RRSE-15**

Date: 15<sup>th</sup> – 19<sup>th</sup> December, 2015 | Venue: MB 101 & MB 403

**Organised By:**

Civil Engineering Department  
Marwadi Education Foundation Group of Institutions (MEFGI)  
Gauridad, Rajkot-Morbi Highway  
Rajkot-360003

**CHIEF PATRONS**

**Shri Ketan H. Marwadi,**  
Chairman, MEFGI  
**Shri Jitendra A. Chandarana,**  
Vice-Chairman, MEFGI

**PATRONS**

**Dr. Y. P. Kosta,** Director,  
Technical Campus, MEFGI  
**Dr. R. B. Jadeja,** Dean, MEFGI  
**Dr. R.L Zala,** Deputy Dean, MEFGI  
**Dr. Sarang Pande,** Principal FOPG,  
MEFGI

**COORDINATORS**

**Dr. Siddharth G. Shah,**  
Head & Asso. Prof.Civil Engg Dept FOPG, MEFGI,  
Email id: siddharth. shah@marwadieducation.edu.in

**Dr. Yogesh U. Shah,**  
Associate Professor, MEFGI

**ORGANIZING COMMITTEE**

**Prof. Ankur Bhogayata,** Head FOE, MEFGI  
**Prof. Tarak Vora,** Head FOT, MEFGI  
**Prof. Mazhar Dhankot,** Asst. Prof., MEFGI

**Report Prepared By:** Dr. Siddharth G. Shah , & Dr. Yogesh U. Shah

No.: Engg/15/1



# STTP - “RECENT RESEARCH TRENDS IN STRUCTURE ENGINEERING”

## **ABOUT MEFGI**

The Technical Campus at Gauridad is the first of its kind Integrated Campus that is offering Professional technical education under the umbrella of MEFGI in the state of Gujarat at Rajkot. It is affiliated to Gujarat Technical University, approved by AICTE and is presently offering graduate and post-graduate courses in various disciplines of Engineering, Computer Applications (MCA) and Management (MBA + PGDM).

MEFGI is a State of Art campus with an excellent Infrastructure spreaded in 3 Acres of lush green land. Campus has more than 400 faculties.

## **ABOUT CIVIL ENGINEERING DEPARTMENT**

Civil Engineering Department is the one of the active departments of MEFGI and is imparting quality education since 2008. The department has well qualified and experienced faculties with excellent laboratories and offering research and consultancy services. The Department runs an under graduate programme and two post graduate programmes (M.E – Structures and Transportation).

The Department has ACI-India student chapter and is a member of Hydrological Data Usage Group of Govt of Gujarat.

## **ABOUT STTP**

The one week long STTP presents the recent researches in the field of Structure engineering. It discusses the latest research issues related to the same.

## **OBJECTIVES OF THE PROGRAMME**

Structure engineering applies scientific and technical knowledge to provide economical and efficient analysis, design & construction of various structure be it, residential, multi-storeyed buildings, hospitals, large span halls, off shore structures, bridges, chimney, silos & other uncountable structure that meets societal needs while maintaining compatibility with environmental, energy and safety goals. Structure engineering is broad branch of civil



engineering which has also concerned with Geotechnical engineering, Earthquake engineering, Material engineering, Mathematics & computer engineering too.

The primary goal of this short term course is to provide the participants with an in-depth understanding on recent trends of research & upcoming area of **Structural Engineering** and thereby this knowledge be imparted to the next level i.e. students community.

### **ABOUT PARTICIPANTS**

There were total 76 participants who constituted of 31 in-house civil department faculties, 7 outside participants and 29 PG students.

### **COURSE CONTENTS:**

#### **VARIOUS EXPERTS DELIVER THEIR KNOWLEDGE & SKILLS IN THE FOLLOWING BROAD AREAS:**

- Research Methodology
- Application of FEM in Structural Engg
- Earthquake Engg
- Soil Structure interaction
- Concrete Technology
- Advanced Computing techniques in Structural Engg
- Application of Nano technology in Civil/Structural Engg

### **EMINENT SPEAKERS**

1. Dr. H. S. Patil , SVNIT, Surat
2. Dr. C.D.Modhera ,SVNIT, Surat
3. Dr. B.J.Shah, GEC, Modasa
4. Dr. C.S. Sanghavi, GEC, Modasa
5. Dr. G.M.Tank, GEC, Morbi
6. Dr. Santosh G. Shah, ITM Universe Vadodara
7. Dr. M.K.Maroliya, M.S.Univeristy of Baroda,
8. Dr. D.P.Soni, SVIT, Vasad
9. Dr. Siddharth G.Shah, MEFGI, Rajkot
10. Dr. Chirag Patel MEFGI, Rajkot
11. Prof. A.C.Bhogayata. MEFGI, Rajkot
12. Prof. T.P.Vora, , MEFGI, Rajkot

## PROGRAM SCHEDULE

<b>Date</b> <b>Time</b>	<b>15/12/15</b> <b>(Tuesday)</b>	<b>16/12/15</b> <b>(Wednesday)</b>	<b>17/12/15</b> <b>(Thursday)</b>	<b>18/12/15</b> <b>(Friday)</b>	<b>19/12/15</b> <b>(Saturday)</b>
9:00 – 9:30	<b>Inauguration &amp; High-tea</b>				
9:30 - 11:00	<b>Dr. H. S. Patil</b> Research methodology	<b>Dr. Gopal N Tank</b> Displacement based seismic analysis of structures	<b>Dr. M. K. Maroliya</b> Causes & Remedies for cracks in concrete	<b>Dr. C.D. Modhera</b> Recycled Aggregate Concrete	<b>Dr. Santosh G. Shah</b> Application of Nano-Materials in Concrete
11:00 – 11:15	<b>Tea Break</b>				
11:15 - 12:30	<b>Dr. H. S. Patil</b> Applications of FEM in Structural Engg	<b>Dr. Gopal N Tank</b> Seismic Analysis	<b>Dr. M. K. Maroliya</b> Reactive powder Concrete	<b>Dr. C.D. Modhera</b> Self compacting Concrete	<b>Dr. Santosh G. Shah</b> Application of Nano-Materials in Concrete
12:30 – 1:30	<b>Lunch Break</b>				
1:30 - 2:45	<b>Dr. C. S. Sanghvi</b> Experimental Studies in Earthquake Engineering-I	<b>Dr. Siddharth Shah</b> Effect of Soil-Structure Interaction in Analysis of Cable Stayed Bridge Structure	<b>Dr. Chirag Patel</b> Analysis & Design of base-isolation devices	<b>Dr. D. P. Soni</b> Frequency Domain Analysis of Structures	<b>Dr. B. J. Shah</b> Advanced Computing Techniques in Structural Engg.
2:45 – 3:00	<b>Tea Break</b>				
3:00 - 4:15	<b>Dr. C. S. Sanghvi</b> Experimental Studies in Earthquake Engineering-II	<b>Prof. Ankur Bhogayata</b> Sustainability of Concrete – Review of Recent Research Trends	<b>Prof. Tarak Vora</b> Avenues of FRPs in Civil Engineering	<b>Dr. D. P. Soni</b> Introduction and Programming of Finite Element Method	<b>Dr. B. J. Shah</b> Advanced Computing Techniques in Structural Engg <b>Valedictory and High-tea</b>

No.: Engg/15/1

## **INAUGURAL SESSION**

The STTP was chaired by Chief Guest & Keynote Speaker, Dr. H.S.Patil Sir (Ex Dean Academics & Admin SVNIT Surat ), Dr. R. B. Jadeja (Guest of honour & Dean FOE, MEFGI), Dr. R. L. Jhala (Guest of honour & Principal FOT, MEFGI), Dr. Sarang Pande (Guest of honour & Principal FOPG, MEFGI), Shri Naresh Jadeja (Guest of honour & Registrar, MEFGI), Prof. Tarak Vora (Head FOT, Civil Engineering Department), Dr. Siddharth G. Shah (Head FOPG and STTP Co-ordinator) and Dr. Yogesh U. Shah (Associate Prof., CED and STTP Co-ordinator). Other heads of the dept & all the faculty and student participants were also present during the inauguration of STTP.

As per the Indian tradition, the STTP was inaugurated with Prayer and Lighting of the lamp. Dr. Yogesh Shah, STTP Coordinator had welcomed all. He had given introduction of all Dignitaries on the dais and invited guests.

Dr. R.B.jadeja, Dean, FOE, MEFGI Engineering Campus shared his views for the program. He informed that MEFGI always supports these kinds of faculty development programs through which the knowledge can be passed to students for their development in modern era. He congratulated the Department for organizing such a program which indirectly benefits to society.

Prof. Tarak vora, Head, FOT, CED, introduced all about the department and its activities.

Dr. Siddharth Shah, Head FOPG, CED, had briefed all about the STTP and its importance. He explained various outcome of the program. He had given brief outline of program and requested to all participants to enrich their knowledge from this STTP by effective participation.

Dr. H.S.Patil, Chief Guest & Key note speaker, gave the inaugural address explaining the need for the research and what skills a research scholar must possess. He gave best wishes to the Department for successful completion of the STTP.

All the technical sessions were delivered then after as per the schedule by experts from relevant fields.

**Glimpses of Inaugural function of STTP RRSE-15 on 14.12.2015 are given below:**

No.: Engg/15/1





**DIGNITARIES ON THE DIAS**



**LIGHTENING OF LAMP & PRAYER**



**DR. R. B. JADEJA SPEECH ON ABOUT MEFGI**



**Prof. Tarak Vora,**  
Head, Civil engg Dept, FOT, MEFGI  
Speech: about Civil Engg  
dept.



**Dr. Siddharth G. Shah**  
Head, Civil engg Dept, FOPG, MEFGI & STTP  
Coordinator  
Giving speech on about STTP



**Dr. H.S. Patil,**  
Ex Dean & Head, Applied Mech Dept, SVNIT Surat &  
Chief Guest of inaugural function  
Giving inaugural speech



AUDINACE: OUT SIDE PARTICIPANTS, FACULTIES OF MEFGI, PG STUDENTS OF 'ME-STRUCTURE'.



## ABOUT THE EMINENT SPEAKERS AND THEIR EXPERT TALKS

**Dr. H.S.Patil**, Ex. Dean Academics, Professor & Ex HOD applied Mechanics dept, SVNIT Surat.

**Topic:** (i) Research Methodology (How to start, create & proceed for Research problem in Ph D)

(ii) Application of FEM in Structural Engg



**Dr. C.S.Sanghavi**, Associate Professor

Govt Engg College ,Modasa

**Topic:** Experimental Earthquake Engg

**Dr. G.M.Tank**, Associate Professor, Govt Engg College, **Morbi**

**Topic:** (i) Displacement based analysis or performance based analysis of the structure; earthquake Engg.



**Dr. Siddharth G. Shah**, Head & Asso. Prof, Civil engg dept, MEFGI, Rajkot & Coordinator of the STTP

**Topic:** (i) Seismic Analysis of Structures including Soil-structure interaction

**Prof. A.C.Bhogayata.**, Head & Asso. Prof., Civil Engineering Department, FOE, MEFGI, Rajkot

**Topic:** Sustainable Concrete



**Dr. M.K.Maroliya**, Associate Professor, Applied Mechanics Dept, M.S.University of Baroda

**Topic:** Reactive powder Concrete.



**Dr. C.D.Modhera**, Head & Professor, Applied Mechanics Department, SVNIT, Surat.

**Topic:** (i) Recycled Aggregate concrete: mechanism & design  
(ii) Self compacting concrete



**Prof. T.P.Vora**, Head & Asso. Prof., Civil Engineering Department, FOT, MEFGI, Rajkot  
-. SVIT Vasad.

**Topic:** Strengthening of structural members by Fibre Reinforced polymers

**Dr. Chirag Patel**, Professor, Civil Engineering Department FOPG, MEFGI, Rajkot

**Topic:** Analysis & Design of Base Isolation device for a structure



**Prof. D.P. Soni**, Head & Prof., Civil Engineering Department, -. SVIT Vasad.

**Topic:** (i) Demonstration of Frequency domain analysis on Matlab  
(ii) Frequency domain analysis by FEM



**Dr. Santosh G. Shah**, Dean R & D , ITM Universe Vadodra

**Topic:** (i) History of Nano Technology & Nature  
(ii) Application of Nano Technology in Civil Engg & Concrete



**Dr. B.J.Shah**, ex Principal GEC, Modasa

**Topic:** Advanced computing techniques in structural engineering

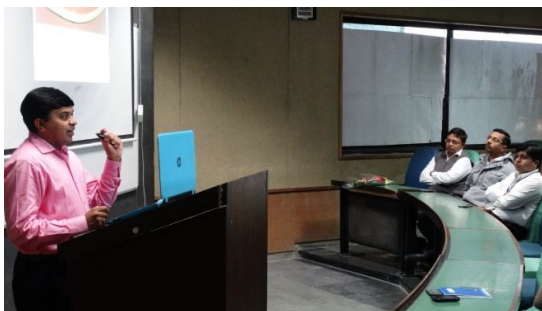
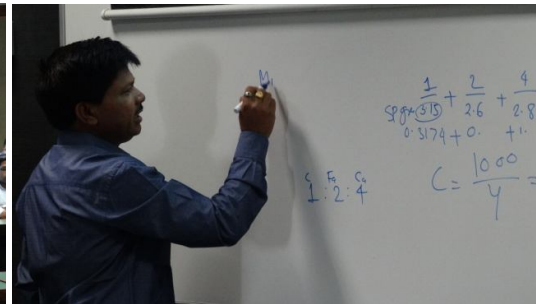
## GLIMPSE OF THE 1 WEEK STTP













### VALEDICTORY SESSION:



The STTP was concluded with valedictory function on 19.012.2015. In the Valedictory function, Experts of the day, Dr. B. J. Shah, GEC, Modasa , Dr. R.L.Zala , principal FOE, Dr. Sarang Pande, Principal, FOT , heads of the civil engineering department Dr. S. G. Shah, Prof. Tarak Vora were remained present.

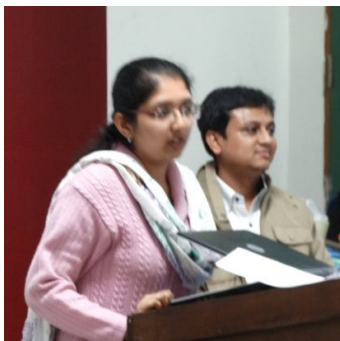


The concluding remarks were given by Dr. Siddharth Shah, STTP Coordinator. He explained the success of the STTP by the tremendous number of participants 76, 12 Experts & 30 hrs. Of intensive course teaching.



All the participants were distributed with the certificates on successful completion of one-week STTP by dignitaries on the dais.

#### **FEED BACK BY PARTICIPANT:**



Most of participant rated the STTP very good /excellent as a whole. As per their feedback course contents, facilities and food were excellent. They also cited the need for arranging Experiment/software related training programme/demonstration and field visits in future.





The

Vote of thanks was given by Dr. Yogesh Shah, STTP Coordinator. He highlighted the immense contribution of the various sponsors and organizers and special thanks to Shri Ketanbhai Marwadi Sir Chairman and Shri Jitubhai Chandarana Sir Vice-Chairman of MEFGI Campus for their constant support for the STTP. The valedictory session ended with High Tea.

#### **GROUP PHOTO OF PARTICIPANTS AT RRTTGE-14**



**THANK YOU ALL .....**  
**COORDINATORS**

Dr. Siddharth G. Shah, Associate Prof., Head FOPG, MEFGI, Rajkot

Dr. Yogesh U. Shah, Associate Professor, MEFGI, Rajkot