

A Report

on

TEQIP III Sponsored One week STTP

# “Recent Advances in Structural and Geotechnical Engineering”

During

(26<sup>th</sup> November-01<sup>st</sup> December, 2018)



Organized by

**Department of Structural Engineering**  
**Birla Vishvakarma Mahavidyalaya**

Engineering College, Vallabh Vidyanagar

[An Autonomous Institution]

Managed by Charutar Vidyamandal

## TEQIP-III Sponsored One week STTP “Recent Advances in Structural and Geotechnical Engineering” (26<sup>th</sup> November-01<sup>st</sup> December, 2018)

### About CVM

CVM is one of India's leading NGO and non-profitable charitable organization working in the field of education founded to cater education to the rural mass of Gujarat. In this age of the Global Village, when global interdependence and competition are upon us, CVM is trying to educate and train our youngsters to keep up and keep pace with the best and the brightest in the world. CVM is offering all the programmes of study appropriate to the modern age, and maintaining high standards of education. CVM is always supporting all the activities for Students and faculties' development.

### About BVM

Birla Vishvakarma Mahavidyalaya Engineering College (an Autonomous Institute under CVM) was established in 1948 from donations made by the Birla Education Trust on the behest of Sardar Vallabhbhai Patel, the first Home Minister of independent India. The college was inaugurated by Lord Mountbatten, the Governor General of India on 14th June 1948. It was one of the first few colleges in India that adopted the progressive credit system of relative grading in India. BVM College is first academic autonomous Engineering Institute of Gujarat State. The college has awarded degrees to over 20,000 graduates, and has its alumni spread across the globe. BVM is one of the 190 government institute selected under subcomponent 1.3 as mentor institute to participate in twinning arrangements for knowledge transfer, exchange of experience, optimizing the use of resources and developing long-term strategic partnerships with Government Engineering College –Banswara (Mentee institute).

### About Department

The Departments of Structural Engineering is one of the most efficient departments of BVM Engineering College and offer Ph.D, M.Tech and B.Tech programs. The departments has highly qualified, well experienced and dedicated faculty members. The department is equipped with advanced instruments and equipment for research facilities. Experts from leading industries and educational institutes are invited frequently for guest lectures on recent developments for the benefit of students and staff. The department is deeply involved in Testing and consultancy work besides quality research.

### About TEQIP-III

The Project, Third phase of Technical Education Quality Improvement Programme (referred to as TEQIP-III) is fully integrated with the Twelveth Five-year Plan objectives for Technical Education as a key component for improving the quality of Engineering Education in existing institutions with a special consideration for Low Income States and Special Category States (SCS) and support to strengthen few affiliated technical universities to improve their policy,

academic and management practices. Only the Government and Government aided AICTE approved engineering institutions/Engineering faculty/Engineering Teaching Department/Constituent Institutions of Universities/Deemed to be Universities and new centrally funded institutions in SCS will be the part of the project. An estimated 200 Government and Government funded Engineering institutions including Affiliating Technical Universities (ATUs) will be selected under different sub-components in one or two cycles.

Sub-component 1.3: Twinning Arrangements to Build Capacity and Improve Performance of Participating Institutions and ATUs. Birla Vishvakarma Mahavidyalaya (Engineering College) successfully completed the World Bank assisted Technical Education Quality Improvement Programme (TEQIP-II) and has been selected for the third phase of TEQIP (TEQIP-III). Birla Vishvakarma Mahavidyalaya(Engineering College) has been selected under subcomponent 1.3 as mentor institute to participate in twinning arrangements for knowledge transfer, exchange of experience, optimizing the use of resources and developing long-term strategic partnerships with Government Engineering College –Banswara(Mentee institute). To facilitate these goals, BVM has been allocated Rs. 7crores under this project in the span of three years (1st April 2017 to 31stMarch 2020).

### About STTP

In recent years with sharp increase in rapid development of infrastructures e.g. high rise structures with more number of basements, bridges for metro projects, fly over for roadways, BRTS etc. in metro cities made us aware of optimum usage of land and compelled the engineers to apply advanced solutions in context of Analysis and Design, Application of Earthquake and wind load on the structures, ground improvement, and earth retaining structures etc. An optimized design solutions can only be possible with in-depth knowledge of various advanced techniques and use of proper judgment. The aim of the short-term course would be to familiarize the participants with the concepts of Analysis, design and construction, for variety of structures. Basics that are essential to understand in the process of providing an acceptable design.

With the Support of TEQIP-III, Department of Structural Engineering, BVM engineering College had organized one week Short Term Training Programme on “Recent Advances in Structural and Geotechnical Engineering” during 26<sup>th</sup> November to 1<sup>st</sup> December, 2018 at Structural Engineering Department BVM College, Vallabh Vidyanagar.

### Course Content

- ☐ Recent advances in Structural Engineering
- ☐ Recent advances in Earthquake Engineering
- ☐ Advances in Performance Monitoring and Prediction
- ☐ Advances in Strengthening Technologies
- ☐ Advances in prestressing method
- ☐ Analysis and design of structures
- ☐ Recent advances in Concrete Technology and Sustainable Construction Practices
- ☐ Application of Software



- ☐ Recent advances in Geotechnical Engineering
- ☐ Soil Improvement and Ground Modification including application of geosynthetics
- ☐ Site Visit

#### Programme outcomes

- ☐ Low Energy Materials
- ☐ Fundamentals of Structural Health Monitoring
- ☐ Fire Effects on Building Structures
- ☐ Structural capacity evaluation
- ☐ Structural strengthening techniques including External Post-tensioning
- ☐ Various Software application

#### Inaugural Session

The STTP had inaugurated by esteemed Chief Guest Prin. M. N. Patel (Vice Chancellor, Parul University), Prin. R. C. Talati (Hon. Jt. Secretary, Charutar Vidyamandal), Dr. Indrajit Patel (Principal BVM Engineering College), Dr. A. K. Verma (Head-Structural Engineering Department & Program Chair), Dr. S. D. Dhiman (TEQIP-III Coordinator).

43 participants from various polytechnics, Government and Self-financed Engineering colleges and P. G. Scholars across Gujarat, Heads of Different sections, Eminent expert speakers Dr. Tarak vora, HODs, TEQIP-III Core Committee, Faculty Members, PG Students, were remain present in the inaugural session. As per the Indian tradition, the STTP had inaugurated with Prayer and Lighting of the lamp.

Prof. (Dr.) Indrajit Patel, Principal had welcomed all and shared his view on this subject. He had given introduction of all Dignitaries on the dais and invited guests. He motivated all the participants by explaining the importance of such kind of programs and their significance.

Dr. A. K. Verma, Head, Structural Engineering Department had briefed all about the STTP and its importance. He briefed about different activities of TEQIP III . He explained various outcome of the program and primly focused in techniques in modern era. He had given brief outline of program and requested to all participants to enrich their knowledge from this STTP by effective participation. He thanked CVM for always supporting for faculties and students development programs.

Prin. R. C. Talati (Hon'ble Secretary, CVM shared his views for the program. He informed that CVM 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 Institute for organizing such a program which indirectly benefits to society.



Chief Guest Prin. M. N. Patel (Vive Chancellor, Parul University), shared his views for the program. He informed that through these kinds of faculty development programs the knowledge can be passed to students for their development in modern era. He congratulated Institute for organizing such a program which indirectly benefits to society.

Dr. Zankhana Shah thanked all dignitaries, Expert Speakers, invitees, organizing partners, Supporters and participants for their valuable inputs to the program.

All the technical sessions had delivered by experts from industries, professional and academicians from relevant fields. The different experts had covered the following areas:



## Technical Sessions:

All the technical sessions had been delivered by experts from academicians and professionals from relevant fields. The different experts covered the following areas:

### PROGRAMME SCHEDULE

(26<sup>th</sup> November-01<sup>st</sup> December, 2018)

Day 1, Date: 26/11/2018, Monday		
Duration	Expert	Topic
9:00 -- 10:00	Registration & TEA / BREAKFAST	
10:00 -- 11:00	Inaugural function (Auditorium, BVM College)	
11:00 -- 12:30	Dr. Tarak Vora, Associate Professor & Head - Civil Department (FOT)	Structural Health Monitoring
12:30 -- 01:30		LUNCH
01:30 -- 03:00	Dr. Kannan Iyer, Assistant Professor, IITRAM-Ahmedabad	Emerging Challenges in Geotechnical Engineering
03:30 -- 03:45	HIGH-TEA	
03:45 -- 05:15	Dr. Kannan Iyer, Assistant Professor, IITRAM-Ahmedabad	Role of Bio-remediation in Geotechnical Engineering
Day 2, Date: 27/11/2018, Tuesday		
Duration	Expert	Topic
09:30 -- 10:00	TEA / BREAKFAST	
10:00 -- 11:30	Dr. Mahesh Varma, Director, Nandadeep Designers and Valuers Pvt. Ltd. Aurangabad	Retrofitting, Restoration and Maintenance of Stone Masonry Heritage Structures.
11:30 -- 01:00		
01:00 -- 02:00		LUNCH
02:00 -- 03:30	Dr. Satyendra Mittal, Associate Professor, IIT Roorkee	Recent advances of ground improvements, Case studies & application of geosynthetics
03:30 -- 04:00	HIGH-TEA	
04:00 -- 05:30	Dr. Satyendra Mittal, Associate Professor, IIT Roorkee	"Soil nailing" and "Soil Dynamics"
Day 3, Date: 28/11/2018, Wednesday		
Duration	Expert	Topic
09:30 -- 10:00	TEA / BREAKFAST	
10:00 -- 11:30	Mr. Arun Sankhat, Engineering and Design, POST TENSION SERVICES (GUJARAT) LLP- Vadodara	Advances in prestressing method/ Technology/ Case Study
11:30 -- 01:00	Prof. Vishal B. Patel, Assistant Professor- BVM Engineering College	Computer aided Structural Analysis and Design

01:00 -- 02:00	LUNCH	
02:00 -- 03:30	Dr. Bimal Shah, Head and Professor MSU- Vadodara	Computer Implementation of Structural Analysis and Design
03:30 -- 04:00	HIGH-TEA	
04:00 -- 05:30	Dr. Bimal Shah, Head and Professor MSU- Vadodara	Introduction of Pushover Analysis
Day 4, Date: 29/11/2018, Thursday		
Duration	Expert	Topic
09:30 -- 10:00	TEA / BREAKFAST	
10:00 -- 11:30	Dr. V. A. Arekar/ Prof. V. V. Agrawal, Assistant Professor- BVM Engineering College	Modelling and Analysis in Ansys
11:30 -- 01:00	Dr. S. V. Mavada, Assistant Professor- BVM Engineering College	Structural Control Systems
01:00 -- 02:00	LUNCH	
02:00 -- 03:30	Dr. Rutvik K. Sheth, Assistant Professor, Faculty of Technology, DDU-Nadiad	Perormance Evaluation of Steel MRF by Nonlinear Static and Dynamic Analysis
03:30 -- 04:00	HIGH-TEA	
04:00 -- 05:30	Prof. Sumant B. Patel, Associate Professor- BVM Engineering College	Case-studies of Critical Structures
Day 5, Date: 30/11/2018, Friday		
Duration	Expert	Topic
09:30 -- 10:00	TEA / BREAKFAST	
10:00 -- 11:30	Er. Snehal Patel, President and CEO SATT Engineering-Super Cell India	Bi-directional Load test on Pile
11:30 -- 01:00	Dr. A. K. Verma, Head BVM Engineering College	Ground improvement Techniques
01:00 -- 02:00	LUNCH	
02:00 -- 03:30	Dr. C. S. Sanghavi, Professor, L. D. College College of Engineering, Ahmedabad	Structural Dynamics
03:30 -- 04:00	HIGH-TEA	
04:00 -- 05:30	Dr. C. S. Sanghavi, Professor, L. D. College College of Engineering, Ahmedabad	Study and Comparison of New Codes
Day 6, Date: 01/12/2018, Saturday		
Duration	Expert	Topic

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09:30 -- 10:00	TEA / BREAKFAST	
10:00 -- 11:30	Prof (Dr) Chandrakant Solanki Professor and Head, SVNIT, Surat	Prediction of foundation settlement
11:30 -- 01:00	Dr. I. N. Patel, Principal- BVM Engineering College	Advances in Concrete Technology and Sustainable Construction Practices
01:00 -- 02:00	LUNCH	
02:00 -- 03:00	Valedictory function	
Venue	Lecture Sessions Room No. C231, Seminar Hall-Civil Engineering Department	

### Glimpse of the Various Expert lectures









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### Valedictory Session:

The STTP was concluded with valedictory session with the Certificate distribution to all the participants. In the Valedictory session, Chief Guest Shri Prin. Shivilal (Principal, GEC-Banswara), Dr. I. N. Patel (Principal, BVM College), Dr. A. K. Verma (Head, Structural Engineering Department) and Dr. Keyur Brahmbhatt (Head, IT Department) were remain present.

The concluding remarks were given by Dr. A. K. Verma, Program Chair. He highlighted the immense contribution of the various sponsors and organizers and special thanks to CVM for the massive support for the STTP. Academicians and professionals also shared their feedback about the program. Dr. A. K. Verma shared his views for the STTP and outcome of the Programme. He shared his view for such STTP which need to be taken more with great enthusiasm and congratulated to the department and Organizing team for organizing the STTP successfully.

Hon'ble Chief Guest Prin. Shivilal (Principal, GEC-Banswara) shared his experience and demand of this types of training courses for Education and Society. His speech was very inspiring for all the participants. He congratulated to all students, Participants, Experts as well as faculties to build strong nation by enriching the education.

Prof. Vimlesh V. Agrawal, Program Co-ordinator thanked all the participants, organizers, supporting partners, CVM, all the faculty members and all who directly or indirectly supported the STTP for successful completion.

The Valedictory function is organized and Anchored by Prof. Krupali Shah (Assistant Professor, IT Department) and Prof. Vimlesh V. Agrawal (Assistant Professor, Structural Engineering Department).

The valedictory session ended with the national anthem.

### Glimpse of the Valedictory Session





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On behalf of organizers  
**RASCGE'18**

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