

TERNA PUBLIC CHARITABLE TRUST'S
TERNA ENGINEERING COLLEGE

(Approved by AICTE & Affiliated to University of Mumbai)

Plot No. 12, Sector 22, Opposite Railway Station, Nerul (W), Navi Mumbai- 400706. Ph. +91 22 61115444, Fax No.+91 22 61115400
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Report on
Value Added Course - Basics of STAAD-Pro

Enrolled Students
T.E. Civil Engineering

Academic Year:
2023-2024

Conducted by
Dept. of Civil Engineering, TEC
In Association with

Department of Civil Engineering, Nerul, Navi Mumbai



&

Bentley Education, USA



2. About Institute

Terna Public Charitable Trust's Terna Engineering College is one of the well-known and premium technical institute. It is located at Nerul, Navi Mumbai on a beautiful 3 acre campus. The institute is affiliated to University of Mumbai, approved by AICTE and accredited by National Board of Accreditation (NBA). This institution offers 7 UG, 4 PG and 3 PhD courses. Highest quality education is catered with curriculum extension by means of exceptional offerings like Engineering Products and Innovation Center (EPIC), Remote centre of IIT Bombay which facilitates student / faculty members to interact with IIT professors through video conferencing, Industry Institute Interaction Cell, Electronics club (collaboration with 25 local electronics SMEs), e-Yantra Embedded Systems and Robotics Lab, Apple lab, Texas Instruments Lab. We are a diverse, talented community united by passion for learning and quest for more. Terna motivates students to make a difference in our campus, in the state, country and around the world.

2.1 About Department

The Department of Civil Engineering was established in the year 2017. The Mission of Department is to promote the disciplines of Planning, Design, Construction, Operation, Maintenance and Research. It offers students technical knowledge with technique for better utilization of available resources and greater standardization of construction processes required by construction industry. We intend to develop students by giving training to make use of innovative design methods, techniques and practical implementation. Highly qualified and dedicated faculty are recruited and they are always on their toes to guide the students, form the backbone of the department.

Key Features:

- Well Equipped Laboratories – Materials and Concrete Technology, Geotechnical Engineering, Environmental Engineering, Transportation Engineering, Engineering Geology, CAD Laboratory, Surveying Laboratory, Hydraulics and Fluid Mechanics Laboratories
- Consultancy Services Offered and Fully Equipped With Major Facilities Like Fully Automatic Compression Testing Machine 2000 kN (NABL Accredited), Fully Automatic Universal Testing Machine (UTM 1000 kN- NABL Accredited), Fully Automated Total Station for Professional Surveying
- Consultancy Services Offered for Non-Destructive Testing
- Faculties with Experience in Design and Execution of Residential, Commercial, Oil & Gas, Power Projects

- **Faculties with Experience in Research in the Field of Smart Materials & Smart Structures, Pavement Design & Analysis, Geotextile Materials for Soil Stabilization, Geotechnical Engineering, Remote Sensing & GIS**
- **Active Mentoring Processes for Continuous Assessment in Academics**
- **Learning Experience Through Active Consultancy Projects**
- **Industrial Visits-CIDCO, PWD, MMRDA, Rock Museum Nasik**
- **Internship for Students (With & Without Stipend)**
- **International Students Chapter Association & Merit Scholarships**
- **Expert Lectures by Industry Experts**
- **NPTEL Courses**
- **Skill Based, Project Based Learning, Interactive and Interest Based Core Domain Learning**
- **Patents, Designs and Copyright Development**
- **Achieved 100 % placement in AY 2022-23. Many students completed internship during winter vacations (2022) in renowned organizations like, Public Work Department (PWD), City and Industrial Development Corporation (CIDCO), and many more.**

3. About Course

An add on course of basic training of STAAD-Pro software has been introduced by the Department of Civil Engineering, Terna Engineering College, Navi Mumbai for S.E.(Civil) students. This course is beyond their regular syllabus. This will be beneficial to students for their project work and ready for industry. Duration of course will be 40 hrs.

About Instructors

This course will be conducted by Mr.Jamaluddin Maghrabi along with Mr.Pradeep Sonawane and Mr.Dharmesh Gangani

- **Mr.Jamaluddin ,faculty of TEC having 25 years of experience in Civil Structural Design Management of industrial and residential projects. He has handled Projects of high importance for Department of Space ISRO and Department of Atomic Energy BARC for Government of India. He has carried out Analysis and design of RCC and Steel Structures. for many Multidisciplinary EPC and EPCm projects related to Power Projects Chemical/Process Plants, , Oil and Gas and other Industrial Projects**
- **Mr.Pradeep Sonawane faculty of TEC having 7 years of teaching experience. He having 1 Year field experience in building construction work. He has carried out Planning, analysis & Design of different residential project work.**

- Mr.Dharmesh Gangani faculty of TEC having 6 years of teaching experience. He having 1 Year field experience in building construction work. He has carried out Planning, analysis & Design of different residential project work.

5. Course Scheme

The marking scheme of this course has been decided at the institute and the departmental level.

VALUE ADDED COURSE:-Basics of STAAD-Pro

Contact Hours: - 02 per week (Total 30)

Sem. : - V

6. Syllabus

Topic No.	Contents	Hours
1	Introduction to STAAD-Pro, Silent features , Menu of Preprocessor & Post processor	2
2	Modeling of structures with commands of Staad	2
3	Validation of Software with manual calculation for simply supported beam	4
4	Analysis of Beams with different types of loadings and support with exercises	4
5	Analysis of Plane Frame with different types of loadings and support with exercises	4
6	Analysis of Space Frame with floor loads, with exercises	4
7	Loads and load combinations as per IS codes	2
8	Modeling of G+2 residential building	8
	TOTAL	30

7. Course Objective and Course Outcome

After completion of course the student will be able to model, analyse and interpret the results from software

Course Objective

1. To provide basic knowledge of different Software in Civil Engineering.
2. To validate the software with manual calculations.
3. To understand and apply the basic functions of software.
4. To understand applications of codes in software.
5. To prepare the database and perform its statistical analysis using relevant software.

Course Outcome

On completion of this course, the students will be able to:

- CO1-** To understand the functions involved in various software related to civil engineering field.
- CO2-** To understand the various commands of software
- CO3-** To analyse the different types of structural members.
- CO4-** To understand loads and load combinations to be applied to the structure
- CO5-** To Provide hands-on training on analysis, modeling and design of R. C. C. framed structures.

Program Outcome

- PO 1:** -Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO 2:** - Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
- PO 3:** - Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO 4:** - Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO 5:** - Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO 6:** - The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8: - Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9: - Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10: - Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11: - Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12: - Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcome

PSO 1: - Graduates will be able to plan, analyse, design and drawing and estimate for residential, commercial, industrial and infrastructure projects. They will be able to work on site for supervision of various construction activities.

PSO 2: - Graduates will be able to use different software related to Civil Engineering for developing skills required by the industry.

8. Mapping CO, PO and POS

Practical No.	Name of Experiment	CO	PO	PSO
1	Introduction to STAAD-Pro, Silent features , Menu of Pre-processor & Post processor	1	1,3,5,8,9,12	2
2	Modelling of structures with commands of Staad	2	1,2,3,5,8,9,12	2
3	Validation of Software with manual calculation for simply supported beam	2	1,2,3,5,8,9,12	2
4	Analysis of Beams with different types of loadings and support with exercises	3	1,2,3,5,8,9	2
5	Analysis of Plane Frame with different types of loadings and support with exercises	3	1,2,3,5,8,9	2
6	Analysis of Space Frame with floor loads, with exercises	3	1,2,3,5,8,9	2
7	Loads and load combinations as per IS codes	4	1,2,3,5,8,9	2
8	Modeling of G+2 residential building	5	1,2,3,5,8,9	2

TPCT's TERNA ENGINEERING COLLEGE

DEPARTMENT OF CIVIL ENGINEERING

Academic Time Table 2023-24V (SH-23)

CLASS:TE (CIVIL) SEM: V (R0)

Day/Time	9:00-10:00	10:00-11:00	11:15-12:15	12:15-1:15	1:15-1:45	1:45-2:45	2:45-3:45	3:45-4:45
MON	TRCS A1 PS R-308 AOC A2 JSM R-206 GE A3 DG R-210		TRE RT R 211	AH VK R 211	B R E A K	PCE A1 R-308 TRE A2 RT R-207 AH A3 VK R-04		
TUE	TRE A1 RT R-207 GE A2 DG R-210 TRCS A3 PVS R-209		GE A1 DG R-210 PCE A2 R-308 TRE A3 RT R-207			AH VK R 211	BSR JSM R 211	TRCS PVS R 211
WED	GE-1 DG R 211	AH VK R 211	AH A1 VK R-04 TRCS A2 PS R-308 AOC A3 DG R-206			TRCS PVS R 203	TRE RT R 203	
THU	GE-1 DG R 211	BSR JSM R 211	TRCS PVS R 211	PCE R 211		TRE RT R 211	AOC A1 PS R-206 AH A2 VK R-04 PCE A3 R-308	
FRI	PCE R 203	BSR JSM R 211	TRE RT R 211	GE-1 DG R 203		MINI PROJECT		

BATCH A1- ROLL 1 TO 24

BATCH A2- ROLL 25 TO 48

BATCH A3- ROLL 49 TO 74

ABBR	COURSE
TRCS	THEORY OF REINFORCED CONCRETE STRUCTURES
GE-1	GEOTECHNICAL ENGG II
TRE	TRANSPORTATION ENGG
PCE	PROFESSIONAL COMMUNICATION & ETHICS
AH	APPLIED HYDRAULICS
BSR	BUILDING SERVICES & REPAIRS
AOC	ADD ON COURSE -STAAD PRO

ABBR	TEACHER
RT	RITESH TANDEKAR
SB	SONALI BAVISKAR
PVS	DR. PRIYANKA SALLUNKHE
VK	VAISHALI KISHAN
JSM	JAMALUDDIN MAGHARBI
AJK	AGARWAL KAWALE
PS	PRADDEEP SONAWANE

DEPT. TT
I/C

DEAN ACADEMICS

PRINCIPAL

7/7

10. List of Students:

Sr. no.	Roll No.	Student Name
1	A1	Tambde Kshitij
2	A2	Mhatre Jatin
3	A3	Chikane Atharva
4	A4	Shinde Mayur Baburav
5	A6	Shinde Aaditya
6	A7	Kolte Priyesh
7	A8	Chinarathod Vinod
8	A9	Ghonge Viraj

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TERNA ENGINEERING COLLEGE

DEPARTMENT OF CIVIL ENGINEERING

CERTIFICATE



This is to certify that Mr. /Ms. **RANSHUR SAKSHI RAJU**

Student of second year has satisfactory completed Value Added Course on Basics of STAAD Pro in semester -V during academic year 2023-24 in association with Bentley.

This certificate has been issued to him/her after qualifying the exam.

Course In charge

HOD

Principal

 Bentley

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TERNA ENGINEERING COLLEGE

DEPARTMENT OF CIVIL ENGINEERING

CERTIFICATE



This is to certify that Mr. /Ms. **MANELE MANAY**

Student of second year has satisfactory completed Value Added Course on Basics of STAAD Pro in semester -V during academic year 2023-24 in association with Bentley.

This certificate has been issued to him/her after qualifying the exam.

Course In charge

HOD

Principal

 Bentley