



**JAYPEE UNIVERSITY OF INFORMATION
TECHNOLOGY**
WAKNAGHAT, P.O. – WAKNAGHAT,
TEHSIL – KANDAGHAT, DISTRICT – SOLAN (H.P.)
PIN – 173234 (INDIA) Phone Number- +91-1792-257999
(Established by H.P. State Legislature vide Act No. 14 of 2002)



Three-Day Training Programme

Design Optimization of RCC Structures and Shear Walls using STAAD.Pro

28–30 July 2026

Department of Civil Engineering

Jaypee University of Information Technology (JUIT), Wagnaghat

1. Programme Overview

The Department of Civil Engineering, JUIT organized a three-day advanced training programme for 23 Design Engineers of Himachal Pradesh Public Works Department (HPPWD) including Executive, Assistant and Junior Engineers. The programme was designed for practicing engineers already familiar with the basics of STAAD.Pro and focused on advanced modelling, structural optimization, seismic-resistant design and practical implementation in government building projects.

2. Objectives

- Enhance competency in advanced STAAD.Pro modelling.
- Introduce optimization-based design philosophy.
- Develop expertise in shear wall and shear core systems.
- Improve understanding of seismic response, torsion and ductile detailing.
- Reduce modelling errors and improve engineering judgement.
- Strengthen JUIT-HPPWD collaboration.

3. Participants

A total of 23 engineers from HPPWD representing various circles/divisions participated, who were charged a fee of 8000/- rs per participant. The programme also witnessed participation of faculty members, research scholars and postgraduate students from the Department of Civil Engineering.

4. Inaugural Session

The inaugural function was held on 28 July 2026 at 10:00 AM in the DLC Hall, JUIT. The programme commenced with the welcome of dignitaries followed by the inaugural address.

The function was graced by Prof. (Dr.) R.K. Sharma, Vice Chancellor, Brig. (Dr.) R.K. Sharma, Registrar, Dean (Research & Innovation), Dean (Accreditation), faculty members, students and HPPWD participants.



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Dr. Tanmay Gupta, Training Coordinator, welcomed the guests and emphasized the need for such programmes in the Himalayan context. He explained that many RCC buildings suffer from inefficient modelling practices, poor structural configuration and uneconomical member sizing. He highlighted that proper structural optimization, scientific placement of shear walls and correct interpretation of STAAD.Pro outputs can significantly reduce reinforcement and concrete quantities, improve seismic performance and accelerate project implementation.

Prof. (Dr.) R.K. Sharma emphasized development of indigenous structural engineering software tools and encouraged embedding Machine Learning and Artificial Intelligence into Civil Engineering applications for smart infrastructure and decision support.

5. Technical Programme

Date/Time	Day 1 28/07/2026	Day 2 29/07/2026	Day 3 30/07/2026
10:00 AM to 10:30 AM	Registration & Inauguration	REPORTING	
10:30 AM to 11:45 AM	Design Optimization Concepts in RCC Structures, Review of IS 456, IS 13920 & IS 1893 Provisions	Seismic Analysis and Load Combinations as per IS 1893:2023	Design Validation, Interpretation of STAAD Output and Common Modelling Errors
11:45 AM to 12:00 PM	TEA BREAK	TEA BREAK	TEA BREAK
12:00 PM to 1:15 PM	Advanced Modelling Techniques in STAAD.Pro (Floor Loads, Member Offsets, Rigid Diaphragm, Meshing & Boundary Conditions)	Modelling, Analysis and Design of RCC Shear Walls in STAAD.Pro	Advanced Optimization Techniques for RCC Buildings and Shear Wall Systems
1:15 PM to 2:15 PM	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK
2:15 PM to 3:30 PM	Hands-on Exercise: Modelling and Design of	Hands-on Exercise: Optimization of RCC	Case Studies on HPPWD Building Projects – Design



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	Multi-storey RCC Building using STAAD.Pro	Building with Shear Walls and Performance Comparison	Optimization for Economy and Safety
3:30 PM to 3:45 PM	TEA BREAK	TEA BREAK	TEA BREAK
3:45 PM to 5.00 PM	Design Optimization using STAAD.Pro Parameters (Member Sizing, Reinforcement Optimization & Material Economy)	Practical Session: Shear Wall Placement, Drift Control and Torsional Behaviour	Valedictory Session, Post-training feedback

6. Expert Speakers

Day 1 featured an expert lecture by Prof. Himanshu Chawla, Department of Civil Engineering, Thapar Institute of Engineering & Technology (TIET), Patiala. He discussed advanced structural modelling, finite element applications and engineering judgement in design.

On Days 2 and 3, Mr. Anukool Kumar, Assistant Manager, Intercontinental Consultants and Technocrats Pvt. Ltd. (ICT), delivered industry-oriented sessions on advanced STAAD.Pro workflows, physical modeller, shear wall modelling, torsional behaviour, optimization strategies and consultancy best practices.

7. Major Topics Covered

- Advanced STAAD.Pro modelling
- Physical Modeller
- Analytical model verification
- Load generation
- Response Spectrum Analysis
- P-Delta Analysis
- Design optimization
- Shear wall and shear core modelling
- Plate meshing



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- Centre of Rigidity
- Torsional behaviour
- Storey drift
- Ductile detailing as per IS 13920
- Output interpretation
- Troubleshooting
- Engineering case studies

8. Valedictory Session

The valedictory function was organized on 30 July 2026. Certificates were distributed to all 23 participants. Prof. Ashish Kumar, Head, Department of Civil Engineering, thanked HPPWD for sustaining the long-standing collaboration with JUIT and expressed the department's commitment to organize more advanced programmes in emerging domains of Civil Engineering.

9. Outcomes

Participants reported improved confidence in advanced modelling, optimization, seismic design and interpretation of software results. The programme is expected to contribute to safer, economical and faster delivery of government infrastructure projects in Himachal Pradesh while strengthening the academia-industry partnership between JUIT and HPPWD.

10. New clips

<https://crazynewsindia.com/juit-trains-hppwd-engineers-in-advanced-rcc-design-using-staad-pro/>

<https://asarnewz.com/?p=63556>

जयपुरी में इंजीनियर्स को मिला उन्नत स्ट्रक्चरल डिजाइन का प्रशिक्षण

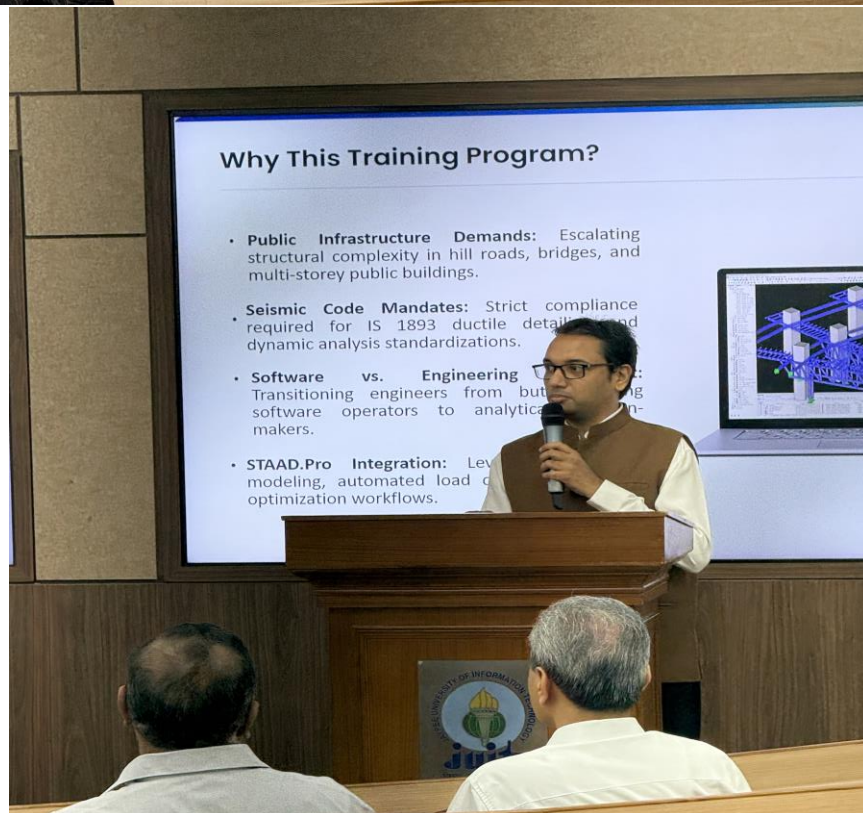
जयपुरी में इंजीनियर्स को मिला उन्नत स्ट्रक्चरल डिजाइन का प्रशिक्षण। जयपुरी में इंजीनियर्स को मिला उन्नत स्ट्रक्चरल डिजाइन का प्रशिक्षण। जयपुरी में इंजीनियर्स को मिला उन्नत स्ट्रक्चरल डिजाइन का प्रशिक्षण।

जयपुरी में एचपीडीआईटी अभियंताओं के लिए प्रशिक्षण कार्यक्रम का समापन

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Why This Training Program?

- **Public Infrastructure Demands:** Escalating structural complexity in hill roads, bridges, and multi-storey public buildings.
- **Seismic Code Mandates:** Strict compliance required for IS 1893 ductile detailing and dynamic analysis standardizations.
- **Software vs. Engineering:** Transitioning engineers from but software operators to analytical decision-makers.
- **STAAD.Pro Integration:** Level modeling, automated load optimization workflows.



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