

## **Dr. Tanmay Gupta**

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Registered Structural Engineer, Town and Country Planning Department, Himachal Pradesh, India (Reg id 32202100157)



### **Education**

**Ph.D.:** Structural Engineering, 2019

*Birla Institute of Technology and Science –Pilani, Rajasthan, India*

Thesis Title: Investigation on Influence of Skewness on Structural Response of Concrete Box-Girder Bridges

**M.E.(Hons.):** Structural Engineering, 2013

*Birla Institute of Technology and Science – Pilani, Rajasthan, India*

**B.E. (Hons.):** Civil Engineering, 2011

*Birla Institute of Technology and Science – Pilani, Rajasthan, India*

### **Research Interests**

Structural behaviour of reinforced concrete and composite bridges, Finite element analysis of concrete structures, Analysis of special geometrical layout for bridges, Seismic behaviour of concrete bridges, Low-cost material utilization in construction blocks, Performance based design for Multistorey building and dams, use of AI and ML in Civil Engineering, Landslide prediction and mitigation.

### **Work History**

**Assistant Professor, 08/2018 to present**

*Department of Civil Engineering Jaypee University of Information Technology (JUIT) Waknaghat, Solan, H.P*

- ❖ Teaching various Civil Engineering Design and Analysis courses & laboratory for undergraduates, postgraduates and PhD students.
- ❖ Guiding 3 PhD students.
- ❖ Responsible for various departmental committees related to managerial and academics issues, along with charge of Civil Engineering computation laboratories.
- ❖ Actively involved in conducting workshops, seminars, conferences in collaboration with national and international organizations.
- ❖ Founding member Centre of Excellence in Structural Engineering and Disaster Management.
- ❖ Coordinator for Centre of Excellence in Intelligent Evaluation and Rehabilitation of Structures.
- ❖ Liaison for Industry-Academic partnership.
- ❖ Besides teaching and research also engaged in Industry consultancy and site visits for clients such as public works department Himachal Pradesh, National Highway Authority of India, Moksh design studio, JW Marriott hotel etc.

### **Engineering Teacher, 08/2013 to 07/2018**

*Birla Institute of Technology and Science – Pilani, Rajasthan, India*

- ❖ Explored principles and concepts in courses like Engineering Graphics. Multi-storey building construction and Operation Research for Civil Engineers.

### **Head TA in Academic registration and counselling division, 08/2012 to 06/2013**

*Birla Institute of Technology and Science – Pilani, Rajasthan, India*

- ❖ Influential work in developing new registration software (ERP) for BITS in collaboration with people-soft.
- ❖ Leader of group of 6 Teaching Assistants to successfully manage registration process for all 4000 students on campus every semester.

### **Teaching Assistant in Math's department, 08/2011 to 05/2012**

*Birla Institute of Technology and Science – Pilani, Rajasthan, India*

- ❖ Worked as an assistant in Maths-3 differential equation and operation research courses.

### **Consultant intern Civil Engineer, 01/2011 to 06/2011**

*Development corporation pvt. Ltd - Vashi, Navi Mumbai, India*

- ❖ Review and comments on the design of thermal power plants & nuclear power plants, ongoing projects in the company.
- ❖ Design of various kinds of foundation such as isolated footings, Raft foundation, piling, Machine foundations.
- ❖ Design of boilers, chimneys, steam turbine gas building etc. using STAAD models according to the layout given by the vendor.
- ❖ Design of stairs, plinth beam, base plate etc.

## **Publications**

### **Book**

1. Hau K K, Chaudhary S, Gupta A, **Gupta T** (2022) Recent Advances in Structural Engineering and Construction Management, Volume 1. Lecture Notes in Civil Engineering Springer, Singapore (in press)

### **Book Chapters:**

1. **Gupta T.**, Kumar M. (2019) Reaction Response of Horizontally Curved and Skewed Concrete Box-Girder Bridges. In: Rao A., Ramanjaneyulu K. (eds) Recent Advances in Structural Engineering, Volume 1. Lecture Notes in Civil Engineering, vol 11. Springer, Singapore.
2. Kumar M., Gulhane N., **Gupta T.** (2019) Effect of Skewness on Shear Lag Effect in RC Box-Girder Bridges. In: Rao A., Ramanjaneyulu K. (eds) Recent Advances in Structural Engineering, Volume 1. Lecture Notes in Civil Engineering, vol 11. Springer, Singapore
3. Thakur A S and **Gupta T** (2022) Analytical Investigation of Moment Resisting Frame Structure – A case study on Performance-Based Capacity spectrum method. In: Gupta A.K., Shukla S.K., Azamathulla H. (eds) Advances in Construction Materials and Sustainable Environment, Lecture Notes in Civil Engineering, vol 196, pp 735-745, Springer, Singapore.

4. Sharma P and **Gupta T** (2022) Comparative Investigation on Mode Shapes and Natural Frequency of Low-Rise RC Frame Building In: Gupta A.K., Shukla S.K., Azamathulla H. (eds) Advances in Construction Materials and Sustainable Environment, Lecture Notes in Civil Engineering, vol 196, pp 885-898 Springer, Singapore.

### Journals:

1. **Gupta Tanmay** and Kumar Manoj (2017), ‘Structural Response of Concrete Skew Box-Girder Bridges – A State-of-the-Art Review’, International journal of Bridge Engg., Vol. 5, Issue 1 (Jan.- April 2017) (eSCI).
2. **Gupta Tanmay** and Kumar Manoj (2017), ‘Influence of Distributed Dead Loads on Vehicle Position for Maximum Moment in Simply Supported Bridges, Journal of the Institution of Engineers (India): Series A. Vol. 98, Issue 1-2, pp 201-210, June 2017. (Scopus)
3. S. B. Singh and **Tanmay Gupta** (2017), " Linear Response of Prestressed Concrete Skewed Box Beam Bridge Girder using CFRP Tendons," Journal of Structural Engineering, CSIR-SERC, 44(2), June-July, pp.1-8 (Scopus).
4. **Gupta Tanmay** and Manoj Kumar (2018), ‘Flexural Response of Skew-Curved Concrete Box-Girder Bridges’, Int. Journal of Engineering Structures, Elsevier, Vol. 163, May 2018, pp 358-372. (SCI)
5. Manoj Kumar and **Tanmay Gupta** (2019), ‘Effect of skewness on live load distribution in webs of concrete box-girder bridges’, International Journal of Technical Innovation in Modern Engineering & Science, Volume 5, Special Issue 02, pp 1-5.
6. Sandhu Dikshit and **Gupta Tanmay** (2020), ‘Free vibration analysis of bridges having combined skewness and curvature.’ Test Engineering and Management. 2020 March 12; Volume 83, pp 610 – 619. (Scopus)
7. Harsh Goel, Priyanshu Sharma, **Dr. Tanmay Gupta** (2021), ‘Hilly Road mapping and holistic management to visualize and plan construction: A case study in Himalayan region’, Turkish online journal of qualitative inquiry Volume 12, Issue 3, July 2021, pp 2691-2701. (Scopus)
8. **Gupta Tanmay** and Sandhu Dikshit (2022), ‘Seismic Response of Horizontally Curved Bridges in Combination with Skewed Abutments.’ Structures, Elsevier, Volume 36, February 2022, pp 864-878. (SCI)
9. Sandhu Dikshit and **Tanmay Gupta** (2022), ‘State of the art literature review upon seismic response of skew and curved bridges’, Frontiers of structural and civil engineering (Communicated).

### Conferences:

1. Aanchal Choudhary and **Tanmay Gupta** (2022), ‘Effect of Curvature on Seismic Response of Box Girder Bridge of Himachal’ 3<sup>rd</sup> international modern scientific research congress, May 06-08, 2022, Istanbul Gedik University, Istanbul, Turkey.
2. Aanchal Choudhary and **Tanmay Gupta** (2021), ‘Behaviour of a Himachal bridge due to earthquake excitation’ ISPEC 12<sup>th</sup> international conference on engineering and natural sciences, December 24-25, 2021, Bingol, Turkey.
3. **Tanmay Gupta** (2021), ‘Influence of skewness on deflection response of horizontally curved RC box-girder bridges,’ 1<sup>st</sup> International Conference on Structures, Material and Construction (ICSMC2021) November 12-13, 2021, Jaypee University of Information Technology, Wagnaghat, Solan, India.
4. Divyansh Sharma, Rajiv Ganguly, **Tanmay Gupta** (2021), ‘Air Quality assessment during festivities in Shimla City, India’, 1<sup>st</sup> International Conference on Structures, Material and Construction (ICSMC2021) November 12-13, 2021, Jaypee University of Information Technology, Wagnaghat, Solan, India.
5. Ajay Singh Thakur and **Tanmay Gupta** (2021), ‘Assessment of Response Reduction Factor for Ordinary RC Frames by IS Code and PBPD Method’, 1<sup>st</sup> International Conference on Structures,

Material and Construction (ICSMC2021) November 12-13, 2021, Jaypee University of Information Technology, Wagnaghat, Solan, India.

6. Ajay Singh Thakur and **Tanmay Gupta** (2021), 'Analytical Investigation of Moment Resisting Frame Structure – A case study on Performance-Based Capacity spectrum method', 1<sup>st</sup> International Conference on Construction Materials and Environment (ICCME2021) June 03-04, 2021, Jaypee University of Information Technology, Wagnaghat, Solan, India.
7. Pushkar Sharma and **Tanmay Gupta** (2021), 'Comparative Investigation on Mode Shapes and Natural Frequency of Low-Rise RC Frame Building', 1<sup>st</sup> International Conference on Construction Materials and Environment (ICCME2021) June 03-04, 2021, Jaypee University of Information Technology, Wagnaghat, Solan, India.
8. **Tanmay Gupta** and Dikshit Sandhu (2020), 'Seismic Behaviour of Skew-Curved Bridges under longitudinal excitation'. 3<sup>rd</sup> international conference on trends and recent advances in civil engineering (TRACES 2020), 20-21 August 2020, Amity University Uttar Pradesh Noida, India.
9. Dikshit Sandhu and **Tanmay Gupta** (2020), 'Modal analysis of Reinforced Concrete Skew-Curve Box-Girder Bridges', 8th International Conference on Advancements in Engineering and Technology. 20th and 21st March 2020. Bhai Gurdas Institute of Engineering, Sangrur, Punjab, India.
10. Dikshit Sandhu and **Tanmay Gupta** (2020), 'Free vibration analysis of bridges having combined skewness and Curvature.' International conference on recent trends and innovations in multidisciplinary research ICRTIMR 14th March 2020. IEC university, Baddi, Himachal Pradesh, India.
11. Manoj Kumar and **Tanmay Gupta** (2019), 'Effect of skewness on live load distribution in webs of concrete box-girder bridges', International Conference on Modern Trends in Civil Engineering (ICMTCE-2019) (Towards Sustainable Development Goals) SRM Lucknow, 1-3 March 2019. (Awarded Best Paper)
12. **Tanmay Gupta** and Manoj Kumar (2018), 'Impact of support bearing orientation upon skewed concrete box-girder bridges'. Structural Engineering Convention (SEC-2018), Jadhavpur University, Jadhavpur 19-21 December 2018.
13. **Tanmay Gupta** and Manoj Kumar (2018), 'Structural Response of Skew-Curved Concrete Box-Girder Bridges under Eccentric Vehicular Loading'. Engineering the Developing World IABSE Kuala Lumpur April 25<sup>th</sup>-27<sup>th</sup> 2018.
14. **Tanmay Gupta**, Manoj Kumar (2016), 'Reaction Response of Horizontally Curved and Skewed Concrete Box-Girder Bridges', Structural Engineering Convention (SEC-2016) CSIR-SERC, Chennai 21<sup>st</sup>-23<sup>rd</sup> December 2016.
15. Manoj Kumar, Nitin Gulhane, **Tanmay Gupta** (2016), 'Effect of skewness on shear lag effect in RC box-girder bridges', Structural Engineering Convention (SEC-2016) CSIR-SERC, Chennai 21<sup>st</sup>-23<sup>rd</sup> December 2016.
16. **Tanmay Gupta**, Manoj Kumar (2015), 'A Finite Element Approach to Study the Structural Response of Skew Box Girder Bridges" 4th Int. Conference on Advance Trends in Eng. & Tech. and Research, BKIT Kota, 18<sup>th</sup>-20<sup>th</sup> June 2015 [Awarded Best Paper].
17. **Tanmay Gupta**, Manoj Kumar (2015), "Determination of Best Suited Cross Section Shape for Skewed Concrete Box-Girder Bridges", Structural Engineers World Congress SEWC-2015, Singapore, Oct19<sup>th</sup>-22<sup>nd</sup>, 2015.
18. Aishwarya Gupta, Priyamvada Agarwal, **Tanmay Gupta**. (2015) "Nan particles- Synthesis and Application in water treatment system - A review", 2nd International conference on Science Engineering and Technology, REDSET- 2015, Gurgaon India, 30<sup>th</sup>-31<sup>st</sup> October 2015.

### **Sponsored Research Projects**

- ❖ “Geological Hazards mitigation using stone concrete block retaining walls and helical soil nailing” (Primary Investigator) under Hazard Specific Mitigation Measures, State Disaster Management Authority, Himachal Pradesh. Research grant worth 25 Lakhs ₹.

- ❖ “Development of Landslide prediction sensors and Landslide Mitigation Technique” under the Centre of Excellence for Intelligent Evaluation and Rehabilitation of Structures, funded by Directorate of Innovation, Research and Development Jaypee Group worth 150 Lakhs ₹.

### **Workshops/Conference Organized**

- ❖ Three days Training Programme on Abacus Software, 24-26 April 2019, JUIT Waknaghat
- ❖ Six Day Workshop on “Mix-Design methodology for Concrete and Bitumen” for HP-PWD officials Phase-I 10-15 June 2019, Phase-II 24-29 June 2019, Phase-III 02-07 September 2019, Phase-IV 23-28 September 2019, JUIT Waknaghat
- ❖ 2 Days Training program of master trainers under the scheme of training of masons for hazard resistant construction 30-31 January 2020, JUIT Waknaghat.
- ❖ One Week Workshop on “Sustainable Construction Practices for Civil Engineers” for HPPWD officials from 03-08 August 2020, JUIT Waknaghat.
- ❖ One Week Workshop on “Sustainable Highway Infrastructure” for HPPWD officials from 17-23 November 2020, JUIT Waknaghat.
- ❖ One day Webinar on Lean construction techniques on 12th July 2021 in collaboration with IGBC.
- ❖ First International conference on Structures, construction and Materials ICSMC2021 for national and international participants on 12-13 November 2021.
- ❖ Virtual Session on Various Aspects of Green Building Design on 25th January 2022 in collaboration with IGBC.

### **Leadership & Honours**

- ❖ Nvidia Jetsons Grant 2021 holder.
- ❖ Bridge survey inspector for HPPWD for PMGSY bridges of Himachal Pradesh under world bank funding.
- ❖ Conference Chair for 1<sup>st</sup> International conference on Structures Materials and Construction (ICSMC 2021).
- ❖ Overall Coordinator and Faculty Mentor IGBC (Indian Green Building Council) student chapter at Jaypee University of Information Technology, Waknaghat
- ❖ Chairperson Disaster Management Research Cell at Jaypee University of Information Technology, Waknaghat.
- ❖ Coordinator Centre of Excellence in Structural Engineering and Disaster Management & Centre of Excellence for Intelligent Evaluation and Rehabilitation of Structures at Jaypee University of Information Technology, Waknaghat.
- ❖ Session Chair, 1<sup>st</sup> International conference on Construction Materials and Environment (ICCME2021).
- ❖ AutoCAD Certified Professional.
- ❖ ASCE Student Member, also acting as reviewer for ASCE journals. Reviewer for Techno-Press, Elsevier Structures, JAMME, ICE,IEI.

- ❖ Member International Association of Engineers (IAENG).
- ❖ Certified Invigilator for IIT Bombay Spoken Tutorial Program.
- ❖ MCN scholarship holder at BITS-PILANI.

### **Courses and Laboratory Taught at JUIT**

- ❖ Civil Engineering Software Engineering Lab
- ❖ Engineering Graphics Lab
- ❖ Concrete Structures Lab
- ❖ Computer Aided Planning and Costing Lab
- ❖ Computer Aided Civil Engineering Drawing Lab
- ❖ Workshop Practice
- ❖ Sustainable Development and Construction
- ❖ Modelling, Simulation and Computer Applications
- ❖ Research Methodology
- ❖ Earthquake Resistant Design of Structures
- ❖ Structural Dynamics
- ❖ Design of Concrete Structures
- ❖ Concrete Technology