

## Biodata

Prof. (Dr.) Hardeep Singh Rai  
Professor of Civil Engineering and Dean Testing & Consultancy  
Guru Nanak Dev Engineering College, Ludhana (141006) Punjab, India  
Geo – location: 30°51'29" N 75°51'30" E

### Educational Qualifications

Sr. No	Class / Degree	Branch / Specialisation	Division	Passing year	Board / University
1	Bachelor of Engineering	Civil	1st (Hons)	1987	TIET Patiala
2	Master of Engineering	Civil (Structures)	1st	1989	TIET Patiala
3	Ph.D.	Civil (CAD)	-	2003	IIT Roorkee

### Service record

Sr. No.	Employer	From	To	Capacity	Duties
1	GNDEC Ludhiana	01/08/04	continuing	Professor	Teaching, Administrative
2	GNDEC Ludhiana	01/01/96	01/08/04	Ass.Prof.	Teaching, Administrative
3	GZSCET Bathinda	01/10/89	01/01/96	Lecturer	Teaching, Lab development
4	TIET Patiala	01/01/89	01/10/89	Lecturer	Teaching

**Work Experience : 21 years**

### Technical Papers published / presented

1. "Design of a Concrete Water Tank by System Approach", Rai, H.S.; Gambhir, M.L., Journal of ASCE - IS, Vol. VIII No. 5, 1994.
2. "Earthquake Resistant Design of Brick Masonry Structures", Singh, H.; Rai, H.S., Proceedings of workshop on Disaster Reduction, Chandigarh, Oct. 1993.
3. "Computer Aided Contouring", Singh, N.; Rai, H.S., Proceedings National Seminar on Computer Application in Civil Engineering, Patiala, April 21-22, 1994.
4. "Non-linear Analysis of Circular Shell with Opening using Finite Element Method", Singh, H.; Rai, H.S., Proceedings National Seminar on Computer Application in Civil Engineering, Patiala, April 21-22, 1994.
5. "Safety Aspect of Masonry Building in the Context of Earthquake", Rai, H. S.; Singh, H.; Singh, S. K., Proceedings National Seminar on Safe Environment for 21st Century, Bathinda, April 12, 1995.
6. "New Technology for Construction Industry", Rai, H.S.; Singh, Sewa, Proceedings National Seminar on Infra-structure Development: Role of Construction Industry, Ludhiana, June 03, 1996.
7. "Prospect of ISO-9000 in Construction", Jha, J. N.; Lal, Roshan; Rai, H.S., Proceedings National Seminar on Infra-structure Development: Role of Construction Industry, Ludhiana, June 03, 1996.
8. "Effect of Noise in Parameter Estimation of the Muskingum Model", Rai, H.S.; Singh, V.P.; Ojha, C.S.P; Bhargava, P., Proceedings The International Conference on Water and Environment (WE-2003), Bhopal, December 15-18, 2003, pages 190209, Allied Publishers,

2003

9. "GPS and GIS in Transportation Engineering" H.S. Rai, Recent Advancement in Pavement Design including Low Volume Roads, Indian Society for Technical Education (ISTE) New Delhi, pages 76-87, Guru Nanak Dev Engineering College, Ludhiana - 141006 (Punjab) India, 2008
10. "Specifications for High Performance Concrete in India" B Bhattacharjee, A Misra and H S Rai, Concrete for High Performance Sustainable Infrastructure, Proceedings of the International UKIERI Concrete Congress, 2011
11. "Use of Recycled and Secondary Aggregates in Concrete: Engineering and Environmental Considerations" K A Paine, R K Dhir, J E Halliday, L Zheng, D Collery and H S Rai, Concrete for High Performance Sustainable Infrastructure, Proceedings of the International UKIERI Concrete Congress, 2011
12. "Mechanical Properties of Rice Husk Ash Based Self-Compacting Concrete" H S Rai, K S Bedi and H Singh, Concrete for High Performance Sustainable Infrastructure, Proceedings of the International UKIERI Concrete Congress, 2011
13. "Influence of Concrete Ingredients on Specific Heat – An Experimental Study", H S Rai, H Singh and J Singh, Concrete for High Performance Sustainable Infrastructure, Proceedings of the International UKIERI Concrete Congress, 2011

## **Professional and administrative work**

1. Short Term Courses/ School Attended : 11
2. Seminars / Workshops / Conferences attended : 12
3. Seminars/ Conferences/ Courses Organised : 6
4. Administrative Responsibilities: Working as Dean Testing and Consultancy, worked as Principal, HoD ,Dean (Administration), Dean (Hostels), O/Ic Library, O/Ic Department of Computer Science and Computer Centre, member Board of Studies.
5. Handled a large number of development work, research projects, laboratories development

## **Short Term Courses / School Attended**

1. Three day Short term Programme on "Intellectual Property Rights and Patent System in India" organised by NITTT&R Chandigarh from 18.12.2006 to 20.12.2006 held at Guru Nanak Dev Engineering College, Ludhiana
2. Six week Ministry of Home Affairs (GoI) sponsored training course, under "National Programme for Capacity Building of Engineers in Earthquake Risk Management (NPCBEERM)" on "Earthquake Risk Management" from 03.01.2005 to 11.02.2005 organised by Department of Earthquake Engineering, IIT Roorkee.
3. One week AICTE-ISTE sponsored Short Term Training Programme (STTP) "BioInformatics: Principles, Methods & Applications for Healthcare" at GND Engg. College Ludhiana from 19.07.2004 to 23.07.2004.
4. One week course "Quality Assurance in Technical Education" at GND Engg. College Ludhiana from 28.06.2004 to 02.07.2004.
5. One week course "Human Values & Professional Ethics" at I.I.T Roorkee, from 18.03.2002 to 22.03.2002.
6. Three days course "System Administration and Networking" at Advanced Centre for Software Education and Training, I.I.T Kanpur, from 03.06.1999 to 05.06.1999.
7. Two weeks course "Computer Graphics and C++" at University of Roorkee (U.O.R.), Roorkee, from 20.06.1996 to 04.07.1996.
8. Two weeks course on "Application of Fracture Mechanics in Engineering Design" at I.I.Sc. Bangalore, from 16.08.1994 to 26.08.1994.
9. Two weeks course on "Application of Finite Element Method in Solution of Nonlinear Problems" at U.O.R. Roorkee, from 21.06.1994 to 05.07.1994.

10. Two weeks course on "Audio-visual Communication at I.I.T. Delhi, during July 1993.
11. Two weeks course on "Expert Systems and their Applications in Engineering at Punjab Engg. College Chandigarh, from 28.12.1992 to 08.01.1993.

## **Seminars / Workshops / Conferences attended**

1. International UKIERI Concrete Congress "CONCRETE FOR 21<sup>ST</sup> CENTURY CONSTRUCTION" from 08.03.2011 to 10.03.2011 held at Indian Institute of Technology Delhi, New Delhi. ( <http://ukiericoncretecongress.com/> )
2. The 3rd Annual International OpenStreetMap Conference "State of the Map 2009" from 10.07.2009 to 12.07.2009 organised by OpenStreetMap Foundation (U.K.) at Amsterdam, Netherlands
3. UKIERI Research Workshop from 16.02.2009 to 18.02.2009 held at BITS, Pilani
4. Workshop on "IS 800:2007 Indian Standard General Construction in Steel – Code of Practice (Third Revision) organised by Bureau of Indian Standards and Institute for Steel Development & Growth, Kolkata from 22.04.2009 to 23.04.2009 held at New Delhi"
5. The 7th International Congress "Concrete: Construction's Sustainable Option" from 08.07.2008 to 10.07.2008 organised by Concrete Technology Unit (CTU), University of Dundee, held in Dundee, Scotland, U.K.
6. Two day workshop on "Free Map", from 13.01.2007 to 14.01.2007 held at HBCSE Mumbai.
7. Seminar on "Integrated Concrete Modeling: Analysis Design and Detailing using Bentley solutions" on 08.12.2006 at New Delhi.
8. Expert talk on "Six-Sigma & Lean Manufacturing: Evolutionary Tools for World Class Manufacturing" on 12.07.2006, organised by Department of Mechanical and Production Engineering, Guru Nanak Dev Engineering College, Ludhana.
9. Workshop on "High Volume Fly Ash Concrete Technology on 24.08.2005, organised by Confederation of Indian Industry (supported by Canadian International Development Agency and Natural Resources Canada) held at Amritsar."
10. International Workshop on "Riverbank Filtration" (IWORBAFIL-04) at I.I.T Roorkee, from 01.03.2004 to 02.03.2004.
11. INDEST-AICTE Workshop on Electronic Resources at I.I.T Delhi, from 08.12.2003 to 09.12.2003.
12. Conference on "Human Values in Technical Education" at I.I.T Roorkee, on 11.03.2002.
13. Seminar on "Fifty Years of Building Industry in India – Retrospects and Visions Ahead at CII – Chandigarh, from 19.06.1997 to 20.06.1997.

## **Organisation Seminars/ Conferences/ Courses**

1. Worked as Joint Organising Secretary for the National Seminar on Safe Environment for 21st Century, held at College of Engg. & Tech., Bathinda, on April 12, 1995.
2. Worked as Co-ordinator for National Seminar on Infra-structure Development: Role of Construction Industry held at GND Engg. College, Ludhiana, on June 03, 1996.
3. Worked as Co-ordinator for Two Week Short Term Course on "Low Cost Housing" held at GND Engg. College, Ludhiana, from 03.07.2002 to 14.07.2002.
4. Co-ordinator for Two Week Short Term Course on "Structural and Geo-technical Aspects of Earthquake Resistance Design" held at GND Engg. College, Ludhiana, from 20.12.2004 to 31.12.2004.
5. Patron for one day workshop (AICTE sponsored and in collaboration with Waterfalls Institute of Technology Transfer WITT) on "Intellectual Property Rights and Patenting" held on 03.03.2006 at GND Engg. College, Ludhiana.
6. Worked as Chairman for the DST (GoI) sponsored National Seminar "Civil Engineering: Meeting the challenges of tomorrow", from 24.11.2006 to 25.11.2006,

held at Guru Nanak Dev Engineering College, Ludhiana.

## **Administrative Responsibilities**

1. Worked as officiating Principal during Jan. 2008.
2. In the absence of Principal, performing duties of Principal since 2005.
3. Worked as Head of the Department from 2005 to 2010
4. Worked as Dean (Administration) from Aug. 2003 to June 2005.
5. Worked as Dean (Hostels) from Dec. 2004 to Nov. 2006
6. Working as O/IC Library since August 2003 to June 2005.
7. Worked as O/IC Department of Computer Science and Computer Centre from February 1999 to July 2000.
8. Remained member Board of Studies in Civil Engineering of Punjabi University, Patiala.
9. Presently member Board of Studies in Civil Engineering of Punjab Technical University, Jalandhar.
10. Presently (01/04/2009 to 31/03/2011) member Board of Studies in Construction Technology and Management of Panjab University, Chandigarh.
11. Working as Dean Testing & Consultancy since Jan 2010

## **Development Work**

1. Developed Surveying Lab and Computer Centre at College of Engg. & Tech. Bathinda.
2. Developed Computer Centre at Guru Nanak Dev Engg. College, Ludhiana.
3. Implemented Campus-wide Computer Networking at Guru Nanak Dev Engg. College, Ludhiana, under AICTE-MODROB scheme entitled "LAN – Scheme for the Institute".
4. Got AICTE - MODROB grant worth Rs. 15 Lacs for Upgradation of Computer Centre for Guru Nanak Dev Engg. College, Ludhiana.
5. Involved in Consultancy work as Structural Designer.
6. Got AICTE – MODROB grant worth Rs. 10 Lacs for Modernisation of Geotechnical Lab.
7. Got AICTE – RPS grant worth of Rs. 8.4 lakh for research project "Flexural behaviour of flexible beam supported reinforced rectangular slab".
8. Got AICTE – RPS grant worth of Rs. 7.4 lakh for research project "Prediction of Collapse Load for RC Skew-slab Bridges".