Curriculum Vitae

Er. Jawahar Thakur

1. Personal Details:

Name	Er. Jawahar Thakur
Designation & Address	Associate Professor
	Department of Computer Science
	Himachal Pradesh University
	Summer-hill, Shimla-171005
	Phone: +91 177 2832569
	Mobile: +91 94184 53245
	Fax: +91 177 2830775
	E-mail: jawahar.hpu@gmail.com
	jawahar_hpu@yahoo.co.in
	jawahar.thakur@hpuniv.ac.in
	Home: http://www.hpucs.ac.in
Nationality	Indian
Date of Birth	24th February, 1972
Permanent Address	Village Manjhloo, Post Office Karyas
	Tehsil, Pangi, District, Chamba
	Himachal Prsdesh-1716323

2. Educational Qualifications:

Ph.D. in Computer Science (Pursuing)
Department of Computer Science
Himachal Pradesh University, summer hill Shimla, INDIA

M. Tech. In Computer Science & Engineering (June 2010)
National Institute of Technical Teacher's Training and Research,

Chandigarh-26, Punjab University, Chandigarh, INDIA

B. Tech. In Computer Science & Engineering (June 1996)
National Institute of Technology (*formerly REC*), Hamirpur,
Himachal Pradesh, INDIA

10+2, In Non – Medical (1990)
Himachal Pradesh Board of School Education Dhramshala (Kangra)

Qualifications	Board/University	Year
Ph.D. Computer Science	Himachal Pradesh University Shimla	Pursuing
M. Tech. Comp. Sc. & Engineering	NITTTR-Chandigarh (PU)	2010
B. Tech. Comp. Sc. & Engineering	NIT- Hamirpur (REC Hamirpur)	1996
10+2 (Non-Medical)	HP Board of Education Dharamshala	1990
10th	HP Board of Education Dharamshala	1987

3. Areas of Interest:

Wireless Sensor Network
Mobile Ad hoc Network
Computer Network
Data mining
System analysis and Design
Software Engineering
Research Guidance: M. Tech (12-Awarded, 03-ongoing), MCA (Above190-Completed),

4. Teaching and Research Experiences: 18+ Years:

June 2011 to till date   **Associate Professor**
                             Department of Computer Science
                             Himachal Pradesh University, Shimla

June 2008 to June 2011	**Lecturer (Selection Grade)**
	Department of Computer Science
	Himachal Pradesh University, Shimla
June 2003 to June 2008	**Lecturer (Senior Scale)**
	Department of Computer Science
	Himachal Pradesh University, Shimla
June 1997 to June 2003	**Lecturer**
	Department of Computer Science
	Himachal Pradesh University, Shimla

5. University Services:

University level

- Member,   Academic Council
- Member,   Faculty of Physical Sciences
- Member,   Inspection Committees as a subject expert
- Member,   SCA Election Counting Team
- Member,   Purchase committee Academic Staff college Shimla

Department level

- Member,   Board of Studies of Department
- Member,   MCA Admission committee
- Member,   M. Tech. Entrance test committee
- In charge,   Department IT-Lab
- Coordinator,   Training & Placement cell of Department
- Coordinator,   MCA Project (Year 2010)
- Member,   Software & Hardware Purchase Committee of Department
- Coordinator,   MCA Entrance Test (2011)
- Coordinator,   Training & Placement cell of Department (2011)
- Coordinator,   MCA Entrance Test (2012)

6. Extension/Outreach Activities:

- Expert, in the selection committees of various private and government colleges.
- Counselor for IGNOU various UG and PG courses.
- Paper setter/Evaluator for various universities; institute viz. GNDU Amritsar,

PU Chandigarh, Rajasthan Technical University, Jammu University, Himachal Technical University etc.

- Joint Secretary Alumni Association of NIT-Hamirpur for Shimla Chapter.
- Executive member of HPUTA.

7. Professional Services and Achievements:

- *Coordinator* of UGC sponsored Refresher Course on *"Information Technology "*organized by Academic Staff College, Himachal Pradesh University, Shimla.
- Resource person for Refresher courses and Orientation courses organized by Academic Staff College, Himachal Pradesh University, Shimla.
- *Session Chair* in the **National Conference on Recent Trends in Information Technology and its Applications in Industry"** India, 25-26 September 2011, (Organized by PG Department of Computer Science and IT, Bhaderwah Campus of Jammu University).
- *Resource Person* in **National Seminar on "Web Based Technologies: Present & the Future" India,** April 30- May 1st 2015. (Organized by Department of Computer Science, St. Bede's College, Shimla).
- *Chairperson* in **National Seminar on "Web Based Technologies: Present & the Future" India,** April 30- May 1st 2015. (Organized by Department of Computer Science, St. Bede's College, Shimla).
- Resource person in **National conference on "Advacces inComputer Science, E-learning, Software Solutions, Information & Communication Technology, ACS-ICT-2016,** March 29, 2016, (organized by department of computer science and applications, Ch. Ishwar Singh Kanta Mahavidalaya, fatehapur- Pundri, Kethal, Haryana).
-

8. Participation in Activities:

- **Conferences/Refresher /Orientation/Workshops/Seminars**

1. National level seminar on **"Strategy for Sustainable Development of Himachal Pradesh with special emphasis on Industry, Tourism & IT "**. Shimla 6th & 7th November 2006.
2. Attended four week Orientation Program organized by Academic Staff College, H.P. University, Summerhill, Shimla from
3. Attended three week Refresher Course on Value Education, organized by Academic Staff College, H.P. University, Summerhill, Shimla from
4. UGC Sponsored Refresher Course on **" Information Technology "** organized by

Academic Staff College, Himachal Pradesh University, Shimla from 1st April 2006 to 21st April 2006.

5. UGC Sponsored Refresher Course on *"Information Technology- Awareness "*Academic Staff College, Himachal Pradesh University, Shimla from 4th April 2008 to 24th April 2008.

6. AICTE sponsored Faculty development programme on ' *Mobile Computing* ' organized by Department of Computer Science and Engineering, NIT-Hamirpur from 22nd June 2009 to 26th June 2009.

7. Attended AICTE/MHRD Sponsored Short Term Course on *"Internet Technologies (IT-09)"* Organized by Department of Computer Science and Engineering Department, National Institute of Technology, Hamirpur (H.P) from 21th December 2009 to 25th December 2009.

8. One day workshop on ' *National Mission on Education Through Information & Communication Technology (NMEICT)* ' organized by Himachal Pradesh University, Shimla on 26th September 2009

9. HEC sponsored National Seminar on *" Environment challenges: Sustainable Development"* organized by Department of Environment Sciences, Maharshi Dayanand University, Rohtak, Haryana Participated and presented a paper entitled *" E-Waste A Threat to the Environment "* from 29th March 2010

10. National Seminar on *" Sustainable Bio-fuel Development in Canada and India: Opportunities and Challenges "* organized by Centre for Canadian Studies development Programme, Himachal Pradesh University, Shimla collaboration with Shastri Indo- Canadian Institute, New Delhi, from 16th March to 18th March 2010.

11. **Jawahar Thakur,** Chander Shakher and Rajesh Kumar *"Energy- Efficient Data Aggregation in Cluster-Based Wireless Sensor Networks"* Proceeding of IEEE-MTTS 1st International Conference on Advance in Computing and Communication (ICAAC-2011), India, April 08-10, 2011, (Organized by National Institute of Technology, Hamirpur)

12. **Jawahar Thakur,** Chander Shakher and Rajesh Kumar *"Energy- Efficient Time Synchronization in Wireless Sensor Network"* Proceeding of IEEE-MTTS 1st International Conference on Advance in Computing and Communication (ICAAC-2011), India, April 08-10, 2011, (Organized by National Institute of Technology, Hamirpur)

13. Rajesh Lavania, **Jawahar Thakur** & Manu Pratap Singh (2011). *" Performance Analysis of Gradient Descent with Momentum & Adaptive Back Propagation and BFGS Quasi-Network Back Propagation of Multilayer Feed Forward Neural Networks for Hand Written Characters of SWARS"* Full paper Published in Proceeding of " National Conference on Next generation Computing & Information Security (Emerging Trends for Future Challenges), (NCNGCIS-2011), India, March 25th -26th 2011, (Organized by Department of

Information Technology, IMS.NOIDA).

14. Arvind Kalia & **Jawahar Thakur** (2011). *" Green Computing: Emerging Trends in Information & Communication Technology"* Full Paper Published in the Proceeding of " UGC Sponsored National Conference on Emerging Trends in Computing and Information Technology, (ETCIT-2011), India, 5th March, 2011, (Organized by P.G. Department of Computer Science & Information Technology, GGS Khalsa College, Punjab.

15. **Jawahar Thakur** (2011) *"Role of ICT for Sustainable Socio-Economic & Political Development of India "*Paper presented in " International Seminar on Economic and Political Basis of Inter Regional Disparity: India and Canada " India, March 17th -18th 2011, (Organized by Centre for Canadian Studies Development Programme, Himachal Pradesh University, Shimla)

16. **Jawahar Thakur** (2011). *"Applications, Design and technology Challenges in the Wi-Fi Networks"* Paper presented in" UGC Sponsored National Seminar on Wi-Fi Networks",2nd to 3rd March 2011, (Organized by PG Department of Computer Science, Khalsa College for Women, Amritsar, INDIA

17. **Jawahar Thakur**, Pratiyush & Rajnder (2011). *"Cloud Computing: Resizable Computing Power"* full paper published in the proceedings of International Conference on Issues and Challenges in Networking, Intelligence and Computing Technologies" (ICICIT-2011), India, 2-3 September 2011, (Organized by Department of Computer Science and Engineering, KIET, Ghaziabad, UP).

18. Nagesh, **Jawahar Thakur** & Arvind Kalia (2011), *"Performance Analysis of Symmetric Key Cryptography Algorithm: DES,AES & BLOWFISH"* A Full paper published and presented in the National Conference on Recent Trends in Information Technology and its Applications in Industry" India, 25-26 September 2011, (Organized by PG Department of Computer Science and IT , Bhaderwah Campus of Jammu University).

19. Nayan, **Jawahar Thakur** & Arvind Kalia (2011), *"Management of Handover in Universal Mobile Technology System"* A Full paper published and presented in the National Conference on Recent Trends in Information Technology and its Applications in Industry" India, 25-26 September 2011, (Organized by PG Department of Computer Science and IT , Bhaderwah Campus of Jammu University).

20. Parul sharma , Arvind kalia and *Jawahar Thakur* (2012) *"Performance Analysis of AODV, DSR and DSDV Routing Protocols in Mobile Ad-hoc Network (MANET)"*a paper presented in the 2nd International Conference on Next Generation Communication and Computing Systems (ICNGC2S-11),(organized by Institute of Engineers Technocrats and Academicians Networks IETAN) on March 24-25, 2012, Chandigarh, INDIA.

21. Workshop attended on Wireless Networks and Network Simulator (WNNS-2012) on 9th to 10th July, 2012 organized by Department of computer Science

and Engineering, Jaypee University of Information Technology, Wakanaghat, Solan, INDIA.

22. Neeraj Sharma and *Jawahar Thakur* (2012) *" Routing Protocols used in VANET: A review"* a paper presented in the National Conference on Research & Development in Computational & Information Technology (NCRDCIT'12) organized by Department of Information Technology, SRM University, in association with Defence research & Development organization (DRDO) Ministry of Defence, Govt. of India on 7th & 8th September, 2012.

23. *Thakur Jawahar,* Kalia Arvind and Awasthi Lalit (2015) " **Check pointing based Rollback Recovery Techniques in Wireless Ad-hoc Networks"** Paper presented in International Conference organized by (CMAI) and in academic participation with HELP University of Malaysia in Kulalalumpur on January 23-26 2015, Kullalumpur, Malaysia.

24. *Thakur Jawahar,* Kalia Arvind and Awasthi Lalit (2015) " coordinated checkpointing in wireless ad-hoc network" Paper presented in the IEEE, International conference on image and information processing (ICIIP-15), organized by JPUIT, wakanaghat, Shimla, on 21th December 2015-to 24th December 2015, INDIA.

9. Research Publications:

1. **Jawahar Thakur,** Chander Shakher and Rajesh Kumar *"Energy- Efficient Time Synchronization in Wireless Sensor Network"* Proceeding of IEEE-MTTS 1st International Conference on Advance in Computing and Communication (ICAAC-2011), India, April 08-10, 2011, (Organized by National Institute of Technology, Hamirpur)

2. Rajesh Lavania, **Jawahar Thakur** & Manu Pratap Singh (2011). *" Performance Analysis of Gradient Descent with Momentum & Adaptive Back Propagation and BFGS Quasi-Network Back Propagation of Multilayer Feed Forward Neural Networks for Hand Written Characters of SWARS"* Full paper Published in Proceeding of " National Conference on Next generation Computing & Information Security (Emerging Trends for Future Challenges), (NCNGCIS-2011), India, March 25th -26th 2011, (Organized by Department of Information Technology, IMS.NOIDA).

3. Arvind Kalia & **Jawahar Thakur** (2011). *" Green Computing: Emerging Trends in Information & Communication Technology"* Full Paper Published in the Proceeding of " UGC Sponsored National Conference on Emerging Trends in Computing and Information Technology, (ETCIT-2011), India, 5th March, 2011, (Organized by P.G. Department of Computer Science & Information Technology, GGS Khalsa College, Punjab.

4. **Jawahar Thakur** (2011) *"Role of ICT for Sustainable Socio-Economic & Political Development of India "*Paper presented in " International Seminar on Economic and Political Basis of Inter Regional Disparity: India and Canada " India, March 17th -18th 2011, (Organized by Centre for Canadian Studies Development Programme, Himachal Pradesh University, Shimla)

5. **Jawahar Thakur**, Pratiyush & Rajnder (2011). *"Cloud Computing: Resizable Computing Power"* full paper published in the proceedings of International Conference on Issues and Challenges in Networking, Intelligence and Computing Technologies" (ICICIT-2011), India, 2-3 September 2011, (Organized by Department of Computer Science and Engineering, KIET, Ghaziabad, UP).

6. Nagesh, **Jawahar Thakur** & Arvind Kalia (2011), *"Performance Analysis of Symmetric Key Cryptography Algorithm: DES, AES & BLOWFISH"* A Full paper published in the Peer Reviewed & Referred Journal "Research Cell: An International Journal of Engineering Sciences" special Issues September 2011, Volume-4, Page 28-37.

7. Nayan, **Jawahar Thakur** & Arvind Kalia (2011), *"Management of Handover in Universal Mobile Technology System"* A Full paper published in the Peer Reviewed & Referred Journal "Research Cell: An International Journal of Engineering Sciences" special Issues September 2011, Volume-4, Page 151-159.

8. *Jawahar Thakur* (2011), *"Network Security: History, Importance and Security"* a full paper submitted in Himachal Pradesh University Journal issue December 2011. ISSN 2277-1425(Print), 2277-1433(Online)

9. *Jawahar Thakur* & Nagesh Kumar (2011*), "DES, AES and Blowfish: Symmetric Key Cryptography Algorithms Simulation Based Performance Analysis"* A Full paper published in the Peer Reviewed, Indexed & Referred "International Journal of Emerging Technology & Advanced Engineering", ISSN 2250–2459 December 2011.

10. Parul sharma , Arvind kalia and *Jawahar Thakur* (2012) *"Performance Analysis of AODV, DSR and DSDV Routing Protocols in Mobile Ad-hoc Network (MANET)"*a full paper published in the Journal of Information systems and Communication ISSN: 0976-8742 & e-ISSN: 0976-8750, Volume 3, Issue, 2012, pp,-322-326. *Having Impact Factor value 4.57*

11. Priyanka Rahi, *Jawahar Thakur* (2012*)"Business Intelligence: A Rapidly Growing Option through Web Mining"* a full paper published in the IOSR Journal of Computer Engineering (IOSRJCE) ISSN: 2278-0661, ISBN: 2278-8727 Volume 6, Issue 1, PP 22-29. Sep-Oct. 2012.

12. Sanyoghtya, *Jawahar Thakur* (2012*) "Comparison of Load Balancing Algorithms in Cloud Computing"* a full paper published in the International journal of Computer Science & Technology (IJCST)-Vol III Issue IV, Ver. 2, , ISSN: 0976-8491(Online) ISSN:2229-4333(Print) With *Impact Factor 5.09*. December, 2012.

13. Neeraj Kumar, *Jawahar Thakur* (2013) *"Performance analysis of AODV & GPSR Routing Protocol in VANET"* a full paper published in the International Journal of Computer Science & Engineering Technology (IJCSET) Vol. No. 4 , ISSN: 2229-3345 (Online). Feb 2013.

14. Susheel Thakur, Arvind kalia, *Jawahar Thakur* (2013) *"Server Consolidation Algorithms for Cloud Computing Environment: A Review"* a full paper published in the International journal of advanced research in computer Science and Software Engineering (IJARCSSE) Vol. No. 3, Issue 9, September 2013, ISSN: 2277128X(Online).

15. Vikash Kumar, *Jawahar Thakur* (2013) *" Multi-Channel Mac Protocols in Wireless Sensor Networks: A Review"* a full paper published in International journal of advanced research in computer Science and Software Engineering (IJARCSSE) Vol. No. 3, Issue 10, , ISSN: 2277128X(Online).,October 2013.

16. Priyanka Bansal, *Jawahar Thakur* (2013) *"Performance Evaluation of DSR, AODV and CGSR based on average energy consumption: A Review"* a full paper published in Journal of Computer technology & applications (JoCTA), 2013, 21-27 © STM Journals 2013. ISSN: 2229-6964(online), 2013.

17. Ankit Sharma, *Jawahar Thakur* (2013) *"An energy efficient network life time enhancement proposed clustering algorithm for Wireless Sensor Networks"* a full paper published in International Journal of Enhanced Research in Management & Computer Applications, ISSN: 2319-7471 Vol. 2 Issue 7, July-2013, (online).

18. Thakur Susheel, Kalia Arvind and *Thakur Jawahar* (2014) *"Performance Analysis of Server Consolidation Algorithms in Virtualized Cloud Environment with Idle VMs",* International Journal of Advanced Research in Computer Science and Management Studies, vol 2, issue 3, ISSN: 2321-7782. March 2014.

19. Thakur Susheel, Kalia Arvind and *Thakur Jawahar* (2014) *"Performance Evaluation of Server Consolidation Algorithms in virtualized Cloud Environment with Constant Load",* International Journal of Advance Research in Computer Science and Software Engineering, vol 4, issue 3, , ISSN:2277 128. March 2014.

20. Thakur Susheel, Kalia Arvind and *Thakur Jawahar* (2014) *"Server Consolidation Algorithms for Virtualized Cloud Environment with variable workloads: A Performance Evaluation",* International Journal of Advance Research in Computer Science, vol 5, issue 3, ISSN: 0976-5697. March-April 2014.

21. Thakur Susheel, Kalia Arvind and *Thakur Jawahar* (2014) *"A Study on Energy Efficient Server Consolidation Heuristics for Virtualized Cloud Environment",* International Journal of Advanced Research in Computer Engineering and

Technology, vol 3, issue 4, , ISSN: 2278-1323**,** April 2014

22. Sharma Kunal, Thakur Susheel, Kalia Arvind, *Thakur Jawahar* and Kumar Sunil (2014) *"Emerging Cloud Computing Paradigm: Vision, Research Challenges and Development Trends",* International Journal of Research in Engineering and Technology, Vol 3, issue 5, ISSN: 2321-7308, May 2014.

23. Katoch Swati and *Thakur Jawahar* (2014)*"Load balancing Algorithm in Cloud Computing Environment: A Review"* International Journal on Recent and Innovation Trends in Computing and Communication ISSN: 2321-8169, 2151 – 2156Volume: 2 Issue: 8, August 2014.

24. Chauhan Divya and *Thakur Jawahar* (2014)*" Data Mining Techniques for Weather Prediction: A Review"* International Journal on Recent and Innovation Trends in Computing and Communication ISSN: 2321-8169, 2151 – 2156Volume: 2 Issue: 8, August 2014.

25. Chauhan Divya and *Thakur Jawahar* (2014*) "Boosting Decision tree Algorithm for Weather Prediction"* Journal of Advanced Database Management & systems (JoADMS) STM Journals ISSN: 2393-8730(online) Vol. 1 Issue 3.

26. Sushant Patial and Jawahar Thakur (2014) "**Fault Tolerance with Checkpointing and Rollback Recovery in MANETs: A Review**" International Journal of Advance networking and applications Volume: 6 Issue: 3 Pages: 2308-2313 (2014) ISSN: 0975-0290.

27. Katoch Swati and *Thakur Jawahar* (2015) *"Quantitative Analysis of Static Load Balancing Algorithms in Cloud Computing Environment"* Current Trends in Information Technology STM Journals ISSN: 2249-4707(online), ISSN: 2348-7895(print) Volume 5, Issue 1.

28. *Jawahar Thakur*, Arvind Kalia and Lalit K. Awasthi (2015) *"Checkpointing and Roll back Recovery Protocols in Wireless Ad hoc Networks: A Review"* International Journal of Next-Generation Computing (IJNGC) Vol. 6, No. 1, March 2015.

29. *Thakur Jawahar,* Kalia Arvind and Awasthi Lalit (2015) *" coordinated checkpointing in wireless ad-hoc network"* in proceeding of the IEEE, International conference on image and information processing (ICIIP-15), organized by JPUIT, wakanaghat, Shimla, on 21th December 2015-to 24th December 2015, INDIA.

30. Rekha rao, and *Jawahar Thakur* (2015) *'coordinated checkpointing algorithms: A comparative analysis"* Current Trends in Information Technology STM Journals ISSN: 2249-4707(online), ISSN: 2348-7895(print) Volume 5, Issue 3, pp-14-20, 2015.

31.

10. Research Project:

❖ Co-Investigator "Green Computing for Optimal Utilization of Electronic Resources with Special Reference to Cloud Computing in Higher Education System - A Study of Himachal Pradesh University and its Affiliated Colleges" Submitted to UGC in October 2011.

11. Invited Talks:

1. Invited Speaker National Seminar on " Wi-Fi Networks" Khalsa College for Women, Amritsar On 2nd March 2011, Wireless Sensor Networks: Applications and Challenges.

Invited Lectures at Academic Staff College of Himachal Pradesh University, Shimla during the claimed Assessment Period

2. On 29th Nov. 2008," Exploring Power Point Presentations for Academician, (RC.199.2008), (Chemistry)
3. On 11th Nov. 2008 " Historical Background and feature of Power Point (RC.197.2008), (Gender Studies)
4. On 22nd Dec. 2008 "Communications Networks concepts" (RC.IT-201.2008), (Information Technology)
5. On 22nd Dec. 2008 "Network Security" (RC.IT-201.2008), (Information Technology)
6. On 24th Dec. 2008 "Living With Computers "   (RC.IT-201.2008), (Information Technology)
7. On 15th June. 2009 " Historical Background and feature of Power Point (OP-92)
8. On 17th July 2009, " Power Point 2007 for Educator" (RC-209.2009), (Environmental)
9. On 04th Sept. 2009 " Historical Background and feature of Power Point 2007 (OP-93)
10. On 14th Dec. 2009, " Power Point 2007 for Educator" (RC-209.2009), (Chemistry)
11. On 6th March 2010 "Power Point 2007 for Educator" (OP-94.2009)
12. On 9th March. 2010, "Historical Background and feature of Power Point 2007(RC-207.2010) (Human Value)
13. On 18th March. 2010, " Internet Technology and its Applications" (RC-207.2010) (Human Value)
14. On 9th April 2010, "Historical Background, feature and Exploring Power Point 2010 (OP-95)
15. On 13th April. 2010, " Internetworking and effective Web Browsing" (RC-218.2010) (Information Technology)
16. On 2n September. 2010, " Exploring Word Processing 2010 ' (OP-98)
17. On 12th June. 2010, " Internetwork9ng Technology" (RC-221.2010) (Geography)
18. On 29th June. 2010, "Networking and Internet Technology" (RC-222.2010) (English)

19. On 3rd August. 2010, "" Exploring latest features of Word Processing 2010" (RC-224.2010) (Human Values & Indian Ethos)
20. On 13th November. 2010, " Applications of Information Technology in Bio-Sciences" (RC-230.2010) (Bio-Sciences)
21. On 4th December. 2010, " Exploring the Advanced Features of Power point Version 2010 (RC-231.2010) (Chemistry)
22. On 7th March 2011, " Exploring word Processing 2010" (OP-99, 2011)
23. On 12th March. 2011, " Exploring the Advanced Features of Power point Version 2010 (RC-232.2011) (Political Science)
24. On 14th April 2011, " Exploring the New feature of word Processor 2010" (OP-100, 2011)
25. On 21th April 2011, ' Electronic Waste" (RC 233,2011), (Information Technology)
26. On 14th May 2011, " Exploring the Advanced Feature of Word Processor 2010" (OP-101, 2011)

Invited Lectures at State Council of Educational Research and Training (SCERT), Solan, Himachal Pradesh

27. On 8th November. 2010, " Computer Fundamentals" (Information and Communication Technology)
28. On 8th November. 2010, " Computer Operating System" (Information and Communication Technology)
29. On 22nd November. 2010, " Computer Networking" " (Information and Communication Technology)
30. On 22nd November. 2010, " Exploring Word Processing Version 2010" " (Information and Communication Technology)
31. On 13th December. 2010, " Internet Technology" (Information and Communication Technology)
32. On 13th December. 2010, " Exploring the Feature of Power Point 2010 for Educator" (Information and Communication Technology)
33. On 6th April. 2011, " Computer Fundamental" (Information and Communication Technology)
34. On 6th April. 2011, " Operating Systems" (Information and Communication Technology)

Invited Lectures at Govt. Post Graduate Degree College Chamba (HP)

35. Role of Information and Communication Technology in Education
36. Internetworking
37. Future Networking

Invited Lectures at National Institute of Technology, Hamirpur, (HP)

38. Internet Technology and Future Networking