




Dr. Vandana Khaitan

Title	Dr.	First Name	Vandana	Last Name	Khaitan (nee Gupta)	
Designation	Assistant Professor					
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Web-Page						
Educational Qualifications						
Degree	Institution			Year		
Ph.D in Mathematics	IIT Delhi			2011		
M.Sc in Applied Operational Research	University of Delhi, Delhi			2004		
B.Sc (Hons) Physics	University of Delhi, Delhi			2002		
Any other qualification	Nil					
Career Profile						
<p>August, 2011 – January, 2012: Assistant Professor Department of Applied Mathematics, DTU, Delhi.</p> <p>April 29, 2013 -Till date: Assistant Professor Department of Operational Research, University of Delhi, Delhi.</p>						
Administrative Assignments						
<ul style="list-style-type: none"> • Member, Admission Grievance Committee for PG courses, Dept. of Operational Research, 2016-17. • Member, Anti-Ragging Committee and Disciplinary Committee, Dept. of Operational Research, 2016-17. • Deputy Superintendent for Final Semester Examination, Dept. of Operational Research, 2017. • Convener, Committee for Maintenance of Stores Accounts and Physical Verification of Stores, Dept. of Operational Research, 2015-2016. • Member, Admission Committee to conduct Common Entrance Test for admission to M.Sc. Part I, Operational Research and M.A./M.Sc. Part I, Applied Operational Research for the Academic Session 2016-2017, Dept. of Operational Research. • Member, NAAC Committee, Dept. of Operational Research, 2016. 						

- Member, **Student's Activity Committee**, Dept. of Operational Research, 2016.
- **Deputy Superintendent** for Final Semester Examination, Dept. of Operational Research, 2016.
- Member, **M.Phil. Committee**, Dept. of Operational Research, 2015-17.
- Member, **Committee for preparing Ad-hoc Panel** for the appointment of Ad-hoc Assistant Professor(s), Dept. of Operational Research, 2015-17.
- Member, **Committee of Courses and Studies for Under-Graduate Studies**, Dept. of Operational Research, 2013-15.
- Member, **Committee of Courses for Post-Graduate and Research Studies**, Dept. of Operational Research, 2013-15.
- Member, **M.Phil Committee**, Dept. of Operational Research, 2013-15.
- Member, **Anti-Ragging Committee and Anti-Ragging Squad**, Dept. of Operational Research, 2013-14.
- **Deputy Superintendent** for Final Semester Examination, Dept. of Operational Research, 2013-14.
- Member, **Time Table Committee**, Dept. of Operational Research, 2013-14.
- Board Member, **Interview/Group Discussion** for admission to M.Sc. Part I, Operational Research and M.A./M.Sc. Part I, Applied Operational Research for the Academic Session 2013-2014.
- Member of various **Purchase Committees**, Dept. of Operational Research.

Areas of Interest / Specialization

Queueing Theory, Stochastic Modeling, Performance and Dependability Analysis of Computer and Communication Systems.

Subjects Taught

Post Graduate : M.Sc. (O.R.) and M.A/M.Sc (A.O.R.)

- Queueing System I
- Statistics I
- Reliability and Maintenance Theory
- Mathematical Programming I
- Mathematical Programming II
- Quality Management
- Queueing System II

M.Phil/Ph.D (OR): Queueing Systems

Research Guidance

M. Phil.

Rahul Kumar : Completed
Gulshan Chauhan: Ongoing

Ph.D.

K C Lalropuia : undergoing
Shivani Gupta : undergoing

Publications Profile

1. **Vandana Gupta** and Rahul Kumar, "An Optimal Rejuvenation Strategy for Increasing Service Reliability of a VOIP System with Multiple Components", **International Journal of Mathematical, Engineering and Management Sciences**, 2017. (IJMEMS)
2. **Vandana Khaitan**, "Operations Research in Data Science", **Evolution of Education System in Bharat**, CPDHE, University of Delhi, 2016. (New Delhi Publishers)
3. **Vandana Gupta**, S. Dharamaraja and Viswanathan Arunachalam, "Stochastic modeling for delay analysis of a VoIP network", **Annals of Operations Research**, 2015. (Springer)
4. **Vandana Gupta** and S. Dharamaraja, "Reliability and performance modeling of VoIP system with multiple component failure", **International Journal of Reliability and Safety**, 2013. (Inderscience)
5. **Vandana Gupta** and S. Dharamaraja, "Semi-Markov modeling of VoIP dependability in the presence of resource degradation and security attacks", **Reliability Engineering and System Safety**, 96, pp. 1627 – 1636, 2011. (Elsevier).
6. **Vandana Gupta**, Mingwei Gong, S. Dharamaraja and Carey Williamson, "Analytical modeling of bidirectional multi-channel IEEE 802.11 MAC protocols", **International Journal of Communication Systems**, 24(5), 647–665, 2011. (Wiley).
7. **Vandana Gupta**, S. Dharamaraja and Mingwei Gong, "Analytical modeling of TCP flow in wireless LANs", **Mathematical and Computer Modeling**, 53, 684-693, 2011. (Elsevier).
8. Viswanathan Arunachalam, **Vandana Gupta** and S. Dharamaraja, "A fluid queue modulated by two independent birth-death processes", **Computers and Mathematics with Applications**, 60, 2433-2444, 2010. (Elsevier).
9. **Vandana Gupta** and S. Dharamaraja, "An analytical framework of survivability model for VoIP", In web proceedings of **IEEE International Symposium on Software Reliability Engineering**, Nov 16-19, 2009, Bangaluru-Mysore, India.

Conference Organization/ Presentations (in the last three years)

1. **Organizing Secretary**, Workshop on Business Analytics and Intelligence, Dept. of Operational Research, February 24 -25, 2017.
2. "An optimal rejuvenation scheme for maximizing reliability of wireless sensor networks", **Vandana Gupta**, National Conference on Advances in Applied Mathematics and Statistics (NCAAMS-2017), Mata Sundari College, University of Delhi.
3. "Predicting attacker behavior in an attacked cyber-physical system based on stochastic game approach". K. C. Lalropuia and **Vandana Gupta**, National Conference on Advances in Applied Mathematics and Statistics (NCAAMS-2017), Mata Sundari College, University of Delhi.

4. “Modeling attacker behavior in an attack cyber-physical system based on stochastic game and continuous time Markov chain (CTMC)”, K. C. Lalropuia and **Vandana Gupta**, 2nd International Conference on Recent Advances in Mathematical Sciences and its Applications (RAMSA-2017), IIIT Noida.
5. “Dependability analysis of Internet of Things (IoT) under attack based on game theory and semi-Markov process”, K. C. Lalropuia and **Vandana Gupta**, International Symposium on Operations Research and Game theory: Modeling and Computation (ISORGT-2018), ISI Delhi.
6. “Reliability study of LTE-Vehicular technology (LTE-V)”, Shivani Gupta and **Vandana Gupta**, National Conference on Advances in Applied Mathematics and Statistics (NCAAMS-2017), Mata Sundari College, University of Delhi.
7. “Reliability and performance analysis of LTE for Vehicular networks (LTE-V)”, Shivani Gupta and **Vandana Gupta**, 2nd International Conference on Recent Advances in Mathematical Sciences and its Applications (RAMSA-2017), IIIT Noida.
8. On the reliability study of secured communication in vehicular ad-hoc networks”, Shivani Gupta and **Vandana Gupta**, International Symposium on Operations Research and Game Theory: Modeling and Computation (ISORGT- 2018).

Research Projects (Major Grants/Research Collaboration)

- **Principal Investigator**, Project on “**Analytical dependability analysis of future generation communication networks**” sponsored by Research and Development Scheme of University of Delhi, Delhi for the period October 2015-September 2016.

Awards and Distinctions

- Qualified Council for Scientific and Industrial Research (CSIR) **National Eligibility Test (NET) - Junior Research Fellowship (JRF)** of June 2005.
- Received **Junior Research Fellowship (JRF)**, CSIR India, July 2006 - July 2008.
- Received **Senior Research Fellowship (SRF)**, CSIR, India, August 2008 – July 2011.
- Awarded **NBHM Post-Doctoral fellowship**, 2011.

Association With Professional Bodies

- **Member of Editorial Review Board**, Amity Journal of Operations Management.
- **Reviewer**, KSII Transactions on Internet and Information Systems, (eISSN: 1976-7277)

Other Activities

- Attended **Refresher Course in Mathematical Sciences** (26th November, 2015 – 16th December, 2015) UGC – Sponsored at CPDHE, University of Delhi, Delhi – 110007.
- Attended **Orientation Programme OR- 84** (20th May, 2016 – 17th June, 2016) UGC – Sponsored at CPDHE, University of Delhi, Delhi – 110007.