



Faculty Details proforma for DU Web-site

Title	Dr.	First Name	C. S.	Last Name	Lalitha	Photograph
Designation		Professor				
Address		Department of Mathematics University of Delhi South Campus Benito Jaurez Road, New Delhi-110021				
Phone No	Office	27666658				
Residence						
Mobile						
Email		cslalitha1@gmail.com				
Web-Page						
Educational Qualifications						
Degree	Institution			Year		
Ph.D.	Department of Mathematics, University of Delhi			1996		
M.Phil.	Department of Mathematics, University of Delhi			1990		
M.Sc.	Hindu College, University of Delhi			1988		
B.Sc.	Sri Venkateswara College, University of Delhi			1986		
Career Profile						
Department	College/University	Designation			Duration	
Mathematics	University of Delhi South Campus	Professor			June 2009 till date	
Mathematics	Rajdhani College, University of Delhi	Reader/Associate Professor			1999-2009	
Mathematics	Rajdhani College, University of Delhi	Lecturer/Sr. Lecturer			1991-1999	
Administrative Assignments						
<ol style="list-style-type: none"> 1. Teacher-in-Charge of Department of Mathematics South Campus from June 2015 till date. 2. Deputy coordinator of UGC-DSA SAP in the Department of Mathematics, University of Delhi. 3. Teacher-in-Charge of Department of Mathematics South Campus during June 2009 to May 2012. 4. Deputy Superintend of Examination, Rajdhani College during 2007-2009. 						
Areas of Interest / Specialization						
1. Optimization Theory			2. Mathematical Programming			
Subjects Taught						
1. Convex and Non-smooth Analysis			5. Linear Programming and Theory of Games			
2. Mathematical Programming			6. Mechanics			
3. Optimization Techniques and Control Theory			7. Real Analysis			
4. Module Theory			8. Calculus			
Research Guidance						
Supervision of awarded Doctoral Thesis						
<ol style="list-style-type: none"> 1. Optimality and Duality for Some Vector Optimization Problems over Cones, by Pooja Louhan, 2017. 2. Stability and Well-Posedness in Vector Optimization, by Prashanto Chatterjee, 2015. 3. Well-posedness, Stability and Duality Aspects of Variational Inequality Problems, by Guneet Bhatia, 2011. 4. Set-Valued Optimization: Efficiency, Derivatives and Conjugate Duality by Ruchi Arora, 2010. 						

5. Certain Aspects of Variational Inequality Problems in terms of Bifunctions by Monika Mehta, 2009.
Supervision of awarded M.Phil dissertations
1. Unified Optimal Solution Concepts in Vector Optimization by Vivek Kumar Sinha, 2016.
2. Scalarization Methods and Characterizations of Solution Sets in Vector Optimization by Shiva Kapoor, 2016'
3. Optimality and Connectedness in Set-Valued Optimization by Sweeti Yadav, 2015.
4. Optimality and Numerical Aspects of Bilevel Programming by Priyanka Sahni 2013.
5. Regularity and Optimality Conditions in Vector Optimization by Tamanna Yadav, 2013.
6. Optimization Reformulations and Computational Methods of Generalized Nash Equilibrium Problems by Khushboo, 2012.
7. Image Space Analysis for Constrained Extremum Problems and Applications by Deepti Kaur, 2011.
8. Weak Sharp Minima for Optimization and Variational Inequality Problems by Mansi Dhingra, 2011.
9. On Solution Sets in Vector Optimization Involving Quasiconvex and Related Functions by Monika Gupta, 2009.
10. A Study of Certain Aspects of Mathematical Programming Problem with Equilibrium Constraints by Ruchika Sethi, 2009.
11. A Study of Certain Aspects of Semidefinite and Second Order Cone Programming Problems by Tanu Gupta, 2008.
12. A Study of Lagrange Multiplier Theory for Constrained Optimization Problems by Neha Jain, 2007.
Publications Profile
<i>Books/Monographs (Edited)</i>
1. Q.H. Ansari, C.S. Lalitha and M. Mehta, Generalized Convexity, Nonsmooth Inequalities and Nonsmooth Optimization, Chapman and Hall / CRC Press, Taylor and Francis Group, Florida, USA, 2013, ISBN 9781439868201
2. Combinatorial Optimization: Some Aspects, A commemorative volume containing papers of Prof. M.C.Puri, published by Narosa Publishers, New Delhi, India, 2007, Editors R. Malhotra, C.S. Lalitha, P. Gupta, A. Mehra and Sonia, ISBN 978173198151, 8173198152.
<i>Research papers published in Refereed/Peer Reviewed Journals</i>
1. M. Dhingra and C.S. Lalitha, Approximate solutions and scalarizations in set optimization, Optimization, 2016, http://dx.doi.org/10.1080/02331934.2016.1271419 . [Impact Factor 0.822]
2. M. Dhingra and C.S. Lalitha, Set optimization using improvement sets, Accepted Yugosl. J. Oper. Res. 27 (2017), Number 2, 153–167
3. C.S. Lalitha and M. Dhingra, Approximate Lagrangian duality and saddle point optimality in set optimization, RAIRO-Oper. Res. DOI: 10.1051/ro/2016068. [Impact Factor 0.358]
4. M. Dhingra and C.S. Lalitha, Well-setness and scalarization in set optimization, Optim. Lett., 10(8)(2016) 1657-1667. [Impact Factor 1.019]
5. C.S. Lalitha and P. Chatterjee, Stability and scalarization in vector optimization using improvement sets, J. Optim. Theory Appl., 166(3)(2015) 825-843. [Impact Factor 1.160]
6. P. Chatterjee and C.S. Lalitha, Scalarization of Levitin-Polyak well-posedness in vector optimization problems using weak efficiency, Optim. Lett. 9(2)(2015) 329-343. [Impact Factor 1.019]
7. C.S. Lalitha and P. Chatterjee, Levitin-Polyak well-posedness for constrained quasiconvex vector optimization problems, J. Global Optim. 59(1)(2014) 191-205. [Impact Factor 1.219]
8. C. Charita, J. Dutta and C.S. Lalitha, Gap functions for vector variational inequalities, Optimization. 64(7)(2015) 1499-1520. [Impact Factor 0.822]
9. C.S. Lalitha and M. Dhingra, Optimization reformulations of the generalized Nash equilibrium problem using regularized indicator Nikaidô-Isoda function, J. Global Optim. 57(3)(2013) 843-861. [Impact Factor 1.219]
10. J. Dutta and C.S. Lalitha, Optimality conditions in convex optimization revisited, Optim. Lett. 7(2)(2013) 221-229. [Impact Factor 1.019]
11. C.S. Lalitha and Prashanto Chatterjee, Well-posedness and stability in vector optimization problem

- using Henig proper efficiency, *Optimization*. 62(1)(2013) 155-165. [Impact Factor 0.822]
12. C.S. Lalitha and P. Chatterjee, Stability and scalarization of weak efficient, efficient and Henig proper efficient sets using generalized quasiconvexities, *J. Optim. Theory Appl.* 155(3)(2012) 941-961. [Impact Factor 1.160]
 13. C.S. Lalitha and P. Chatterjee, Stability for properly quasiconvex vector optimization problem, *J. Optim. Theory Appl.* 155(2)(2012) 492-506. [Impact Factor 1.160]
 14. C.S. Lalitha and G. Bhatia, Levitin-Polyak well-posedness for parametric quasivariational inequality problem of the Minty type, *Positivity*. 16(3)(2012) 527-541.
 15. C.S. Lalitha and G. Bhatia, Stability of parametric quasivariational inequality of the Minty type, *J. Optim. Theory Appl.* 148(2)(2011) 281-300. [Impact Factor 1.160]
 16. C.S. Lalitha and G. Bhatia, Well-posedness for parametric quasi-variational inequality problems with set-valued maps and for optimization problems with parametric quasivariational inequality constraints, *Optimization*. 59(7)(2010) 997-101. [Impact Factor 0.822]
 17. C.S. Lalitha, A note on duality of generalized equilibrium problem, *Optim. Lett.* 4(1)(2010), 57-66. [Impact Factor 1.019]
 18. C.S. Lalitha, A new augmented Lagrangian approach to duality and exact penalization, *J. Global Optim.* 46(2)(2010), 223-245. [Impact Factor 1.219]
 19. C.S. Lalitha and R. Arora, Proper Clarke epiderivative in set-valued optimization, *Taiw. J. Math.*, 13(6A)(2009), 1695-1710. [Impact Factor 0.84]
 20. C.S. Lalitha and G. Bhatia, On well-posedness for variational inequality problems with generalized monotone set-valued maps, *Numer. Funct. Anal. Optim.* 30(5-6)(2009), 548-565. [Impact Factor 0.649]
 21. C.S. Lalitha and G. Bhatia, Duality in ϵ -variational inequality problems, *J. Math. Anal. Appl.* 356(1)(2009), 168-178. [Impact Factor 0.912]
 22. C.S. Lalitha and M. Mehta, Characterizations of solution sets of mathematical programs in terms of Lagrange multipliers, *Optimization*. 58(8)(2009) 885-1007. [Impact Factor 0.822]
 23. C.S. Lalitha and R. Arora, Weak Clarke epiderivative in set-valued optimization, *J. Math. Anal. Appl.* 342(1)(2008), 704-714. [Impact Factor 0.912]
 24. C.S. Lalitha and R. Arora, Conjugate maps, subgradients and conjugate duality in set-valued optimization, *Numer. Funct. Anal. Optim.* 28(7&8)(2007), 897-909. [Impact Factor 0.649]
 25. C.S. Lalitha and M. Mehta, Characterization of the solution sets of pseudolinear programs and pseudoaffine variational inequality problems, *J. Nonlinear Convex Anal.* 8(1)(2007), 87-98. [Impact Factor 0.691]
 26. C.S. Lalitha and M. Mehta, A note on pseudolinearity in terms of bifunctions, *Asia Pac. J. Oper. Res.* 24(1)(2007), 83-91. [Impact Factor 0.425]
 27. J. Dutta and C.S. Lalitha, Boundedness of the set of KKT multipliers in vector optimization, *J. Global Optim.* 36(3)(2006), 425-437. [Impact Factor 1.219]
 28. C.S. Lalitha and M. Mehta, On vector variational inequality problem in terms of bifunctions, *Aust. J. Math. Anal. Appl.* 3(2)(2006), Article 11, 1-11.
 29. C.S. Lalitha and M. Mehta, Vector variational inequalities with cone-pseudomonotone bifunctions, *Optimization*. 54(3)(2005) 327-338. [Impact Factor 0.822]
 30. C.S. Lalitha, P. Garg and S. Khurana, Duality for multiobjective fractional programming via linearization and scalarization approaches, *Opsearch*. 42(1)(2005) 37-54.
 31. C.S. Lalitha and R. Arora, Proper efficiency for minimization with respect to normal cones, *Bull. Aust. Math. Soc.* 75(2005) 215-224. [Impact Factor 0.566]
 32. R. Arora and C.S. Lalitha, Proximal proper efficiency in set-valued optimization, *Omega, Inter. J. Manag. Sc.* 33(5)(2005) 407-411. [Impact Factor 3.967]
 33. S. Chandra, J. Dutta and C.S. Lalitha, Regularity conditions and optimality in vector optimization, *Numer. Funct. Anal. Optim.* 25(5&6)(2004) 479-501 [Impact Factor 0.649]
 34. C.S. Lalitha, Strong efficiency in vector optimization of set-valued maps, *Asia Pac. J. Oper. Res.* 20(2)(2003) 231-240. [Impact Factor 0.425]
 35. C.S. Lalitha, J. Dutta and M.G. Govil, Optimality criteria in set-valued optimization, *J. Aust. Math. Soc.*,

75(2003) 1-11. [Impact Factor 0.443]

36. C.S. Lalitha and S. Davar, A note on quasiconvex set-valued maps, *Opsearch*. 40(1)(2003) 52-61.
37. C.S. Lalitha, S.K. Suneja and S. Khurana, Symmetric duality involving invexity in multiobjective fractional programming, *Asia Pac. J. Oper. Res.* 20(1)(2003) 57-72 [Impact Factor 0.425]
38. S.K. Suneja, C.S. Lalitha and S. Khurana, Second order symmetric duality in multiobjective programming, *Eur. J. Oper. Res.* 144(3)(2003) 492-500. [Impact Factor 2.679]
39. S.K. Suneja, C.S. Lalitha and M.G. Govil, Generalized E-convex functions in nonlinear programming, *Ind. J. Math.* 45(2)(2003) 223-240.
40. S.K. Suneja, C.S. Lalitha and M.G. Govil, E-convex and related functions, *Inter. J. Manag. Syst.* 18(2)(2002) 193-206.
41. R.N. Kaul and C.S. Lalitha, Convexity and arcwise connectedness approach to inequalities, *Ind. J. Pure Appl. Math.* 33(7)(2002), 1087-1095. [Impact Factor 0.233]
42. S.K. Suneja, C.S. Lalitha and S. Khurana, Saddle point type optimality criteria and duality relation for generalized fractional programming, *Opsearch*. 38(2)(2001), 183-196.
43. R.N. Kaul and C.S. Lalitha, A note on arcwise connected and related functions, *Ind. J. Pure Appl. Math.* 31(11)(2000), 1443-1454. [Impact Factor 0.233]
44. S.K. Suneja, C.S. Lalitha and S. Khurana, Optimality and duality theorems for nonsmooth multiobjective fractional programs, *Ind. J. Pure Appl. Math.* 30(3)(1999), 243-257. [Impact Factor 0.233]
45. C.S. Lalitha, Generalized nonsmooth invexity in multiobjective programming, *Inter. J. Manag. Sys.* 11(2)(1995), 183-198.
46. R.N. Kaul, S.K. Suneja and C.S. Lalitha, Generalized nonsmooth invexity, *J. Inf. Optim. Sc.* 15(1)(1994), 1-17.
47. R.N. Kaul, S.K. Suneja and C.S. Lalitha, Duality in pseudolinear multiobjective fractional programming, *Ind. J. Pure Appl. Math.* 24(5)(1993), 279-290. [Impact Factor 0.233]
48. S.K. Suneja and C.S. Lalitha, Multiobjective fractional programming involving ρ -invex and related functions, *Opsearch*. 30(1)(1993), 1-14.
49. C.R. Bector, S.K. Suneja and C.S. Lalitha, Generalized B-vex functions and generalized B-vex programming, *J. Optim. Theory Appl.* 76(1993), 561-576. [Impact Factor 1.160]

Chapters in Books

1. C.S. Lalitha and R. Arora, Proximal proper saddle points in set-valued optimization, *Topics in Nonconvex Optimization Springer Optimization and its Applications* (Ed.) S. K. Mishra, 2011, Vol. 50, 87-100.
2. M. Govil and C.S. Lalitha, Cone preinvex vector valued optimization, *Operational Research and its Applications: Recent Trends (APORS-2003)*, Editors M.R. Rao and M.C. Puri, Allied Publishers, Vol.1, 110-117.

Research papers Published in Conference Proceedings

S.N	Year	Title of the Paper	Conference	Authors
1.	1993	Multiobjective programming involving generalized B-vex programming	Proceedings of First Annual Conference of Indian Society of Industrial and Applied Mathematics, Roorkee, February 4-7, 1993	Suneja, S. K. Lalitha, C. S.
2.	1991	Generalized B-vex functions	Proceedings of the Administrative Sciences Association of Canada held at Niagara Falls, Canada, June 1991	Bector, C. R. Suneja, S. K. Lalitha, C. S.

Conference Organization/ Presentations (in the last three years)

Organization of a Conference/Training Programme (in the last three years)

1. Organised International Conference on Recent Advances in Optimization Theory and Applications, University of Delhi, January 30-31, 2016.

<ol style="list-style-type: none"> 2. Organised a scientific meeting on Indian Women and Mathematics 2015 at University of Delhi South Campus, April 2-4, 2015.
<p><i>Talks Delivered in Conference (in the last three years)</i></p>
<ol style="list-style-type: none"> 1. Stability Aspects in Set Optimization, 32nd Annual Conference of Ramanujan Mathematical Society, Rani Channamma University, Belagavi, June 23-25, 2017. 2. Mathematics of CT Scans, National Seminar on Recent Developments in Mathematics, Kalindi College, January 12-13, 2017. 3. Can Mathematics Save Life?, PGDAV(E) College, University of Delhi, September 21, 2016. 4. Well-Posedness in Set Optimization from a Different Viewpoint, Conference on Game Theory and Optimization, IIT Madras, June 9-10, 2016. 5. Mathematics of Tomography, State Level Seminar, Mathematics and Its Applications, Kamla Nehru College, University of Delhi, March 4, 2016. 6. Set-Criterion for Set-Valued Problems, National Conference on Analysis and Applications, Banaras Hindu University, February 5-7, 2016. 7. Well-Posedness in Set Optimization, International Conference on Recent Advances in Mathematical Biology, Analysis and Applications, Aligarh Muslim University, June 4-6, 2015. 8. On Set-Valued Optimization, National Conference on Optimization Modelling and Machine Learning Technique, Panjab University, Chandigarh, March 20-21, 2015. 9. Henig Proper Subdifferential of Set-Valued Maps, International Conference on Modeling, Simulation and Optimizing Techniques, DAV College, Jalandhar, Punjab, February 12-14, 2015. 10. Optimality Conditions in Convex Optimization, National Seminar on Optimization and its Applications, Lakshmi Bai College, University of Delhi, January 15-16, 2015. 11. Approximate Solutions in Set-Valued Optimization, International Conference on Operational Research in conjunction with 47th Convention of Annual Operational Research Society of India held at Tirupati, December 1-3, 2014.
<p><i>Resource Person in Workshop (in the last three years)</i></p>
<ol style="list-style-type: none"> 1. A lecture on Minimization and the Fundamental Theorem of Algebra, in the Refresher Course in Centre for Professional Development in Higher Education, University of Delhi on September 7, 2016. 2. A lecture on Stability Aspects in Vector Optimization in the Workshop on Game Theory and Optimization, IIT Madras, June 6-8, 2016. 3. A lecture on Scalar and Vector Optimization in Refresher Course in Mathematics, Panjab University, Chandigarh on March 21, 2015. 4. A lecture on Solution Concepts in Vector and Set Optimization, in the Workshop on Applied Optimization Models and Computation, Indian Statistical Institute, Delhi during January 28-30, 2015.
<p><i>Research Projects (Major Grants/Research Collaboration)</i></p>
<ol style="list-style-type: none"> 1. R&D Research Development Grant to University Faculty, University of Delhi 2015, Scalarization in Set-Valued Optimization. 2. R&D Research Development Grant to University Faculty, University of Delhi 2014, On Set-Valued Optimization. 3. R&D Research Development Grant to University Faculty, University of Delhi 2013, Scalarization and Optimality of Vector-Valued Optimization. 4. R&D Research Development Grant to University Faculty, University of Delhi 2012, Reformulations for Generalized Nash Equilibrium Problems. 5. R&D Research Development Grant to University Faculty, University of Delhi 2011, Stability and Well-Posedness in Vector Optimization. 6. R&D Research Development Grant to University Faculty, University of Delhi 2010, Nonsmoothness and Well-Posedness in Optimization. 7. R&D Research Development Grant to University Faculty, University of Delhi 2009, Optimality and Well-Posedness Aspects of Vector Optimization Problems.

8. Minor Research Project to college teachers sponsored by University Grants Commission titled Optimisation and Nonsmooth Analysis during 2001-2003.
Awards and Distinctions
<ol style="list-style-type: none"> 1. INSA Teacher Award in 2016 2. Junior Research Fellowship (CSIR) in 1988 3. Senior Research Fellowship (CSIR) in 1990 4. National Scholarship by Delhi Administration for meritorious candidates of Delhi Sec. School Examination, 1981.
Association With Professional Bodies
<i>Reviewing</i>
Review articles in many international journals.
<i>Memberships</i>
International <ol style="list-style-type: none"> 1. Member of the American Mathematical Society. 2. Member of the Pacific Optimization Group in Pacific Region. 3. Representative member of Optimization Research Bridge (ORB) in 2002, an electronic newsletter of Pacific Optimization Research Activity Group, for reporting and promoting research activities in Optimization from India. 4. Member of International Working Group of Generalized Convexity. National <ol style="list-style-type: none"> 1. Life member of the Operational Research Society of India. 2. Life member of Indian Mathematical Society. 3. Life member of the Society of Mathematical Sciences. 4. Life member of Ramanujan Mathematical Society. 5. Life member of the Society of Mathematical Sciences, Delhi.
Other Activities
<ol style="list-style-type: none"> 1. Visiting Professor, Department of Economics, Università degli Studi dell' Insubria, Varese, Italy during November 7-20, 2016. 2. Involved in the structuring of the syllabus of courses for the Four Year Graduation Program of University of Delhi. 3. Involved in the structuring of the syllabus of the paper Linear Programming and Theory of Games under the semester scheme for B.Sc. (H) Mathematics III yr. 4. Involved in the structuring of the syllabus for the papers Mathematical Programming and Optimization Techniques and Control Theory under the semester scheme for M.A./M.Sc. Mathematics II yr course. 5. Involved in organising a series of Mathematica workshops for college teachers. 6. Attended summer School on Generalized Convex Analysis: Advanced Theory and Applications held at Kaohsiung, Taiwan during July 15-19, 2008. 7. Presented papers in conferences held at Singapore, Vietnam, Italy and Taiwan. 8. Attended instructional workshop on Convex Analysis, Optimization and Application held at Indian Institute of Technology, Kanpur during December 5-21, 2005.