

ACADEMIC PROFILE



DR. JAYANTA SEN

Associate Professor in Mathematics (W.B.E.S.)

M.Sc., Ph.D.

Email: jayanta.wbes@gmail.com

- **Specialization:** Mathematical Logic
- **Date of joining in this college:** 06.10.2020
- **Total teaching experience in college level:** 24 years
- **Area of research:** Mathematical Logic (Linear logic, Many-valued logic, Algebraic logic, Rough set theory), Algebra.

- **Title of Ph.D. thesis:** Some Embeddings in Linear Logic and Related Issues

- **Research guidance:**
 1. Associate Supervisor of a Ph. D. student in University of Calcutta (completed)
 2. Joint Supervisor of a Ph. D. student in University of Calcutta (completed)
 3. Joint Supervisor of a Ph. D. student in University of Calcutta (ongoing)

- **Research projects [completed / ongoing]:** Completed : 3
 1. *Studies in linear logic and Many-valued logic*, sponsored by University Grants Commission, duration 2 years.
 2. *Generalizations of Many-valued algebra and fuzzy logic*, sponsored by University Grants Commission, duration 2 years.
 3. *Applications of fuzzy logics on affine classical linear algebra and extended many-valued algebra*, sponsored by Department of Higher Education, Science & Technology and Biotechnology, Government Of West Bengal, duration 3 years.

➤ **List of publications:**

A. Published papers in Journals:

1. M.K. Chakraborty and **Jayanta Sen** : *MV-algebras embedded in a CL-algebra*, International Journal of Approximate Reasoning, 18, 217-229 (1998). [https://doi.org/10.1016/S0888-613X\(98\)00007-3](https://doi.org/10.1016/S0888-613X(98)00007-3)
2. **Jayanta Sen** and M.K. Chakraborty : *Linear logic and Lukasiewicz κ_0 – valued logic : a logico-algebraic study*, Journal of Applied Non-Classical Logic, 11, 313-329 (2001). <https://doi.org/10.3166/jancl.11.313-329>
3. **Jayanta Sen** and M.K. Chakraborty : *A study of interconnections between rough and 3-valued Lukasiewicz logics*. Fundamenta Informaticae, 51, 311-324 (2002).
4. **Jayanta Sen** and M.K. Chakraborty : *Logic and truth : Some logics without theorems*, Special issue on TRUTH of Studia Philosophica Estonica, 1.1, 104 - 117 (2008).
5. **Jayanta Sen** : *On algebraic structure of soft sets*, Annals of Fuzzy Mathematics and Informatics, 7, 1013-1020 (2014).
6. A. Saha, **Jayanta Sen** and M. K. Chakraborty : *Algebraic structures in the vicinity of pre-rough algebra and their logics*, Information Sciences, 282, 296-320 (2014). <https://doi.org/10.1016/j.ins.2014.06.004>
7. A. Saha, **Jayanta Sen** and M. K. Chakraborty : *Algebraic structures in the vicinity of pre-rough algebra and their logics II*, Information Sciences, 333, 44-60 (2016). <https://doi.org/10.1016/j.ins.2015.11.018>
8. A. Saha, **Jayanta Sen** : *An implication based study on Łukasiewicz (Monteiro) 3-valued algebra and pre-rough algebra*, Information Sciences 518, 157-167, (2020). <https://doi.org/10.1016/j.ins.2020.01.011>
9. S. Islam, A. Sanyal and **Jayanta Sen** : *Filter theory of IL-algebras*, Jr Cal Math Soc 16(2),113-126, (2020).
10. S. Islam, A. Sanyal and **Jayanta Sen** : *Fuzzy Filters of IL-algebras*, Soft Computing, 26, 7017-7027, (2022). <https://doi.org/10.1007/s00500-022-06985-1>
11. S. Islam, A. Sanyal and **Jayanta Sen** : *Topological IL-algebras*, Soft Computing, 26, 8335–8349, (2022). <https://doi.org/10.1007/s00500-022-07258-7>
12. S. Islam, A. Sanyal and **Jayanta Sen** : *Comparison of two topologies on IL-algebra*, Soft Computing, 27(10), 6085-6094, (2023). <https://doi.org/10.1007/s00500-023-07908-4>
13. A. Saha, M.K. Chakraborty and **Jayanta Sen** : *A study of rough inclusion on algebras with quasi-Boolean base*, International Journal of Approximate Reasoning, 169, 109170 (2024). <https://doi.org/10.1016/j.ijar.2024.109170>

GOVERNMENT GENERAL DEGREE COLLEGE, SINGUR

14. A. Saha, **Jayanta Sen** : *Modality-free pre-rough logic*, Journal of Applied Non-Classical Logics, 34(2-3), 429-451, (2024).
<https://doi.org/10.1080/11663081.2024.2336873>
15. S. Islam, A. Sanyal and **Jayanta Sen** : *CL-algebras with complete topology*, Jr Cal Math Soc 20(3), 393-407, (2024).
16. A. Saha, M.K. Chakraborty and **Jayanta Sen** : *Further studies on abstract rough inclusion properties*, International Journal of Approximate Reasoning, 178, 109356 (2025). <https://doi.org/10.1016/j.ijar.2024.109356>
17. S. Islam, D. Mandal and **Jayanta Sen** : *Generalization of topological IL-algebras*, Transactions on Fuzzy Sets and Systems, 6(1), 177-191, (2027)
<https://doi.org/10.71602/tfss.2027.121985>
18. A. Sanyal, T.K. Samanta and **Jayanta Sen** : *On n-dimensional fuzzy filters of IL-algebras*, accepted for publication in Transactions on Fuzzy Sets and Systems (2026).

B. Published papers in Seminars/Symposia/Conferences:

1. **Jayanta Sen** and M.K. Chakraborty : Logic on extended MV-algebra. Proceedings of CODIS 2004, Jadavpur University, Kolkata, 594-596 (2004).

C. Published Books / Chapters in Books:

1. **Jayanta Sen** and M.K. Chakraborty : Fuzzy logic on affine CL-algebra, in: Fuzzy Logic and its Applications in technology and management, D. Chakraborty, S. Nanda and D. Dutta Majumder (eds.), Narosa Pub. House, India, 9-14 (2007).

D. Invited talk/Session chair in Seminars/Symposia/Conferences/Workshops:

1. Invited lecture in the UGC sponsored regional level Seminar on *Interface of Mathematics and Computer Science* organized by Department of Mathematics and Computer Science, Bethune College, Kolkata at Centenary Hall, Kadambini Bhavan, Bethune College, Kolkata on 30.10.2005.
2. Enrichment Lecture at JBNSTS Teacher's Training Program for Middle School Mathematics teachers on May 29, 2009 at the Jagadish Bose Center of Excellence, JBNSTS, Kolkata.

GOVERNMENT GENERAL DEGREE COLLEGE, SINGUR

3. Invited talk on *Introduction to Mathematical Logic* at the UGC sponsored national level conference LOGIC – FROM PHILOSOPHY TO COMPUTER SCIENCE THROUGH MATHEMATICS on 11 December, 2010 at Vivekenada College for Women, Kolkata.
4. Invited talk on *Rough sets* at the Conference RECENT TREND IN FUZZY SET THEORY, ROUGH SET THEORY & SOFT SET THEORY on September 23, 2011 organized by at Department of Mathematics, Uluberia College, Howrah with Department of Mathematics, City College, Kolkata.
5. Chaired the afternoon session, 2012 at the Seminar LOGIC AND ITS APPLICATIONS CELEBRATING THE ALAN TURING YEAR organized by Calcutta Logic Circle in collaboration with School of Cognitive Science, Jadavpur University and Indian Institute of Bio-Social Research and Development.
6. Invited talk on *Connection between linear logic and rough logic* on November 01, 2013 at the SEMINAR ON LOGIC AND COGNITION celebrating 25 years of Calcutta Logic Circle organized by Calcutta Logic Circle & School of Cognitive Science, Jadavpur University.
7. Invited lecture on *Some logics without theorems* in the Seminar on LOGIC, ETHICS AND EPICS: HOMAGE TO LATE PROFESSOR BIMAL KRISHNA MATILA on 29th December 2016 organized by the ICPR Center for Buddhist Studies, Department of Philosophy, Jadavpur University.
8. Invited lecture on *Algebraic logic* in the Workshop on Logic and Automata : Cultivating the Roots of Computing on June 01-05, 2026, Organized by Department of Information Technology, Indian Institute of Engineering Science and Technology, Shibpur.

➤ **Membership of Learned Societies/ Editorial Boards, etc. (if any):**

1. Indian Statistical Institute, Kolkata as life member.
2. Calcutta Logic Circle (an informal group) as active member.
3. Association for Logic in India.

➤ **Patents (if any): Nil**

GOVERNMENT GENERAL DEGREE COLLEGE, SINGUR

➤ **Awards (if any):**

1. Won University Gold Medal for securing 1st position in M. Sc. (Pure Mathematics) Examination 1993 from University of Calcutta.
2. Qualified GATE – 1994 in Mathematics.
3. Qualified SLET – 1997 in Mathematical Sciences.
4. Senior Research Fellowship EXTENDED (after submission of Ph. D. thesis), Year of award – 2001. Awarding authority – CSIR. (However, the award was not accepted as Dr. Sen was in service.)

➤ **Other notable activities (if any):** Nil
