Dr. Tarni Mandal, Professor

National Institute of Technology Jamshedpur

Designation	Professor
Date of Birth	08th Dec,1956
Residential Address	C-1, NIT Campus Jamshedpur -831014 Phone : 0652371271(R) Mobile: 9431752766
Email	tmandal.math@nitjsr.ac.in

Educational Qualifications:

S.No	Degree	Year	Institution/University	Subjects
1	M.Sc	1980	Bhagalpur University	Statistics
2	M.Sc	1995	Ranchi University	Mathematics
3	Ph.D	2001	Ranchi University	Operations Research,

Specializations: Probability & Statistics, Operations Research, Numerical Analysis and Computer Application with Industrial Recent Techniques, Simulation & Modeling.

Area of Research: Numerical Analysis/Operation Research/Probability & Statistic/Cryptography/Neural Networks.

FUTURE RESEARCH BAKGROUND:

➢ Dr. T. Mandal has actively engaged in current research work in the field of optimization. In this field both industrial and business application problems are being tackled. We plan to carry out further research in Fractional Programming Problems which are designed to solve many decision making problems involving ratio's of two different objectives, e.g. time and cost. Fractional Programming Problems gains significant stature since many of real world problems are often in counter in the following situations: return on investment, current ratio risk asset to capital, actual capital to require capital, foreign loans to total loans, residential mortgages to total mortgages in the field of finance or corporate planning etc.

➢ Dr. T. Mandal actively engaged in current research work in the field of Sequential and Sampling Plans and also sampling attribute Sampling Plans.

Teaching Experience:
➢ Presently working as **Professor** in "Department of Mathematics", National Institute of Technology Jamshedpur, from 16-05-2018 to till date.

- ➢ Worked as **Associate Professor** in "Department of Mathematics", National Institute of Technology Jamshedpur, from 26-03-2008 to 11-05-2018.
- ➢ Worked as **Assistant Professor** in "Department of Mathematics", National Institute of Technology Jamshedpur, from 26-03-2005 to 25-03-2008.
- ➢ Worked as **Sr. Lecture** in "Department of Mathematics", National Institute of Technology Jamshedpur, from 26-03-2001 to 25-03-2005.
- ➢ Worked as **Lecture** in "Department of Mathematics", National Institute of Technology Jamshedpur, from 26-03-1996 to 25-03-2001.
- ➢ Worked as **Ad-hoc Lecture** in "Department of Mathematics", Jamshedpur Cooperative College, Jamshedpur , from 18-11-1983 to 25-03-1996.
- ➢ Worked as **Lecture** in "Department of Mathematics", R.L.S.Y.College, Jhumri Telaiya Jharkhand, from 10-09-1981 to 18-10-1983.

LIST OF RECENT RESEARCH PAPERS PUBLISHED IN INTERNATIONAL REFEREED JOURNALS.

1. Tarni Mandal (With B. Mondal): A secure image encryption scheme based on genetic operations and a new hybrid pseudo random number generator, Multimedia Tools and Applications, 1-24, 2020, **(Springer Journal).**
2. Tarni Mandal (with S.Das, S.A.Edalatpanah): Application of linear fractional programming problem with fuzzy nature in industry sector. FILOMAT,2020.
3. Tarni Mandal (with Rajeev Prasad, S.K.Das, Jatindra Dash): A modified ranking function of linear programming problem directly approach to fuzzy environment, International Journal of Mathematics in Operation Research, 2020, **(Inderscience Publishing Journal).**
4. Tarni Mandal (With I.Maiti, S.Pramanik, S. Das): Solving multi-objective linear fractional programming problem based on Stanojevic's normalization technique under fuzzy environment, International Journal of Operational Researc,2019 **(Inderscience Publishers).**
5. Tarni Mandal (With I. Maiti, S. Pramanik): Neutrosophic goal programming strategy for multi-level multi-objective linear programming problem. Journal of Ambient Intelligence and Humanized Computing ,*2019,* **(Springer Publishers).**
6. Tarni Mandal (With S.Das, D.Behera): A new approach for solving fully fuzzy linear programming problem, International journal of mathematics in operational research 15 (3), 296-309, 2019, **(Inderscience Publisher).**
7. Tarni Mandal (With S.Das, S.A.Edalatpanah): A new method for solving linear fractional programming problem with absolute value functions, International Journal of Operation Research, 36(4), 455-466, 2019, **(Inderscience Publisher).**
8. Tarni Mandal (with B. Mondal, T. Choudhury, D.A. Khan): Use of'A light weight secure image encryption scheme based on chaos and DNA computing'for encrypted audio watermarking, International Journal of Advanced Intelligence Paradigms 13 (1-2), 67-79, 2019, **(Indersciences Publishers).**
9. Tarni Mandal (With B. Mondal, T. Choudhury, D.A. Khan): A Secure Biometric Image Encryption Scheme using Chaos and Wavelet Transformations. ,Recent Patents on Engineering, 11,5-14, 2018,**(Bentham Science) 10.2174/1872212111666170223165916.**
10. Tarni Mandal (With I. Maiti, S. Pramanik): A Taylor series based fuzzy mathematical approach for multi objective linear fractional programming problem with fuzzy parameters, International Journal of Computer Applications, 180,22-29, 2018,
11. Tarni Mandal (With S. Das, S.A. Edalatpanah): A proposed model for solving fuzzy linear fractional programming problem: Numerical Point of View, Journal of Computational Science 25, 367-375, 2018 **(Elsevier Publisher).**

12. Tarni Mandal (With S.Das): A MOLFP method for solving linear fractional programming under fuzzy environment, International Journal of Research in Industrial Engineering, 6(3), 202-213.

13. Tarni Mandal (With S.Das): A new model for solving fuzzy fuzzy linear fractional programming problem with ranking function. Journal of Applied Research on Industrial Engineering.4(2), 89-96.

14. **Tarni Mandal (with S.Das & S.A.Edalatpanah):** A mathematical model for solving fully fuzzy linear programming problem with trapezoidal fuzzy numbers, Applied Intelligence, 46, Issue 3, pp 509–519.**(Springer)**

15. **Tarni Mandal (with S.Das & S.A.Edalatpanah):** Erratum to: A mathematical model for solving fully fuzzy linear programming problem with trapezoidal fuzzy numbers, Applied Intelligence 46(3) 520-520, **(Springer)**

16. **Tarni Mandal (with S.Das & S.A.Edalatpanah):** A New Approach for Solving Fully Fuzzy Linear Fractional Programming Problems Using the Multi-Objective Linear Programming, RAIRO-Operation Research, 51 (2017) 285–297.

17. **Tarni Mandal (with S.Das & S.A.Edalatpanah):** A note on " A new method for solving fully fuzzy linear fractional programming with a triangular fuzzy numbers", App. Math. and Comp. Intel., Vol. 4 (1) (2015) 361–367.

18. **Tarni Mandal (with S.Das):** Solving linear fractional programming problems using a new Homotopy perturbation method, Operation Research and Applications: An International Journal, 3(2), 1-16.

19. **Tarni Mandal (with S.Das):** A single Stage Single Constraints Linear Fractional Programming Problem: An Approach, Operation Research and Applications: An International Journal, 2(1), 9-14.

20. **Tarni Mandal (with S.Das):** A general form of fuzzy linear fractional programs with trapezoidal fuzzy numbers, International Journal of Data Envelopment Analysis and *Operations Research*, Vol. 2(1) (2016), 16-19.

21. **Tarni Mandal (with S.Das and S.A. Edalatpanah):** A new method for solving fuzzy linear fractional programs with Triangular Fuzzy numbers, International Journal of Mathematical Engineering and Science (IJMES), Volume 4 Issue 3.2015.

22. **Tarni Mandal (with B. Mondal):** A Light Weight Secure Image Encryption Scheme Based on Chaos & DNA Computing, Journal of King Saud University - Computer and Information Sciences, 29,499-504,2016, **(Elsevier Journal).**

23. **Tarni Mandal (with B. Mondal):** A Nobel Chaos based Secure Image Encryption Algorithm, International Journal of Applied Engineering Research (IJAER), 11,3127-3135, 2016.

24. **Tarni Mandal (with GS Mahapatra, S Adak and S.** Pal): Inventory model for deteriorating items with time and reliability dependent demand and partial backorder, International Journal of Operational Research 29 (3), 344-359

25. Tarni Mandal (with D Kumar): Bi-objective virtual machine placement using hybrid of genetic algorithm and particle swarm optimization in cloud data center,International Journal of Applied Engineering Research 12 (22), 12044-12051

26. Tarni Mandal (with DA Khan & D Kumar): On Optimization of a Multi-Retailer Multi-Product VMI Model with Variable Replenishment Cycle,International Journal of Applied Engineering Research 12 (21), 11658-11667

27. Tarni Mandal (with D Kumar): Multi-Objective Virtual Machine Placement using Improved Teaching Learning Based Optimization in Cloud Data Centers, International Journal of Applied Engineering Research 12 (21), 10809-10815

28. Tarni Mandal (with DA Khan & D Kumar): A multi-vendor single integrated inventory model with shortages, International Journal of Management and Development Studies, 6, 5-16.

29. Tarni Mandal (with B Mondal & N Biswas): A comparative study on Cryptographic Image Scrambling, RICE, 261-268.

30. Tarni Mandal (with D. Kumar & B. Mondal): Security Challenges in Internet of Things (IoT), International Association of Scientific Innovation and Research (IASIR) Volume 13, Issue 1, Pages 8-12.

31. Tarni Mandal (with D. Kumar & B. Sahoo): Heuristic Task Consolidation Techniques for Energy Efficient Cloud Computing, IGI Global.

32. Tarni Mandal (with Ajit Ghosh): Reduced Multi Objective Linear Fractional Programming Problem, 1th Int. Conf. of International Academy Physical Sciences (CONIAPS XV) 9-13, Dec.2012.
33. Tarni Mandal: The Generalised Reduced Gradient Techniques for Linear Fractional Programming Problems, ACTA Ciencia Indica, Vol. XXVI M, No.3, 271 (2000).
34. Tarni Mandal: A Variable Reduction Method For Fractional Quadratic Programming Problem,Ranchi University Mathematical Journal, Vol. 32 (2001) (ISSN 0079- 9602) Released in January, 2004.
35. Tarni Mandal: Applications of Genetic Algorithms for Solving Multilevel Fractional Programming Problems,Turkish Journal of Fuzzy Systems (e1SSN:1309-1190), Vol No.1. pp.xxx.xxx. 2010).

CONFERENCE PAPERS PRESENTED

1. Tarni mandal (with I.Maiti & S. Pramanik): FGP approach based on Stanojevic's normalisation technique for multi-level multi-objective linear fractional programming problem with fuzzy parameters, 2nd International Conference on Information Technology and Applied Mathematics (07-09 March, 2019; Haldia, India).
2. Tarni Mandal (with I. Maiti): Goal programming approach for multi- objective Decentralized Bi-Level Linear Fractional Programming problem in fuzzy environment, International conference on Advances in physical Sciences Thailand-2019, AIT Conference center, Bangkok, Thailand.
3. Tarni Mandal (with S. Das): A Revised Method for solving Linear Programming Problem Under Fuzzy Circustances, IMRF, Bangkok, Thailand.
4. Tarni Mandal (with S.Das): A new mathematical approach for solving fuzzy linear fractional programming problem, The ICBTS 2015 International Business and Economic Research Conference at the University of Nevada, Las Vegas, USA, Sept. 15-18,2015.
5. Tarni Mandal (with S.Das): Solving fuzzy linear fractional programming problem under fuzzy circumstances, International Conference on Science & Technology, Goa, India, Nov 03-05,2016.
6. Tarni Mandal (with S. Das): Solving fuzzy linear fractional programs with Trapezoidal fuzzy numbers, IMRF World Research Congress Thailand 2015 May 25-26,2015.
7. Tarni Mandal (with S. Das): An approach for solving fuzzy linear fractional programming problem with symmetric trapezoidal fuzzy numbers, International Conference of Applied Mathematical Science (ICAMS) at Khalsa College Patiala, Punjab, India,March 19-21, 2015.
8. Tarni Mandal (with B. Mondal): Secure Partial Encryption Scheme Based on Bit Plane Manipulation, 7th International Symposium on Embedded Computing and System Design (IEEE).
9. Tarni Mandal (with B. Mondal & Neel Biswas): A Comparative study on Cryptographic Image Scrambling, Second International Conference on Research in Intelligent and Computing in Engineering (RICE'17).
10. Tarni Mandal (with B. Mondal, T. Choudhury & A. Bhowmik): A Key Agreement Scheme for Smart Cards Using, IEEE International Conference on Computing Communication and Automation (ICCCA2016).
11. Tarni Mandal (with B. Mondal & N. Sinha): A Secure Image Encryption Algorithm using LFSR and RC4 Key Stream Generator, Proc. of 3rd International Conference on Advanced Computing, Networking and Informatics.
12. Tarni Mandal (with B. Mondal): A secure image encryption scheme based on genetic operations and a new hybrid PRNG, Multimedia Tools and Applications, Springer.

BOOK CHAPTER:

1. Tarni Mandal (with I. Maiti & S. Pramanik): FGP Approach Based on Stanojevic's Normalization Technique for Multi-level Multi-objective Linear Fractional Programming Problem with Fuzzy Parameters, *Studies in Computational Intelligence series*, Volume 863 (**2020**) (scopus indexed).

INVITED/SEMINAR TALKS

1. Talk on **"Emerging Trends and Future Challenges in Power System Operation and Control (ETFCPSOC)"** at Department of Dept. Electrical & Electronics Engineering on June 24,2016.
2. Talk on **"A Secure Image Encryption Algorithm Using LFSR and RC4 Key Stream Generator"** at 3rd International Conference on Advanced Computing, Networking and Informatics, Orissa, India on October 8, 2015.
3. Talk on "Regulation and Policy for Power Sector Reforms in India" at Dept. Electrical & Electronics Engineering on June 13, 2014.
4. Talk on **"NMEICT East Zone Conference"** at Kolkata Feb., 11, 2011.
5. Talk on "Interactive Fuzzy Programming Approach in Decision Making" at International Conference on CAMIST, NIT Rourkela on June 13, 2010.
6. Talk on **"Probability Distribution & its Applications with Expression"** at 11th International Conference of the Int. Academic of Physical Sciences, University of Allahabad. On Feb., 22, 2010.
7. Talk on "Application of Genetic Algorithms for Solving Multilevel Fractional Programming Problems " at Int. Conf. on ORSI-2010-ORURD Madurai, India, 15-17, 2010 Conducted by ORSI-2010.
8. Tal on "**Modeling and Simulation in Heat Transfer and Fluid Flow**" at Department of Electrical Engineering, NIT Jamshedpur on July 10, 2010.
9. Talk on "**Applicable Mathematics Past and Present (AMPP 2001)**" at Department of Mathematics, IIT kharagpur on March 24, 2001.
10. Talk on "**Operation Research XXX annual conventions**" at Department of Mathematics, NIT Jamshedpur on December 24, 1997.

➢ Participation as Session Chair in International Conferences/Symposia Participation as Session Chair in International Multi Conference of Engineers and Computer Scientists 2008 Hong Kong, 19-21 March, 2008 Conducted by International Association of Engineers.

➢ Participated as chaired/ served as a Rapporteur in the International Conference on Advance in Physical Sciences at Assian Institute of Technology Bangkok, Thailand, May 27-28, 2019.

➢ Delivered and chaired the session/ presented a paper entitled " Probability distribution and its application with various expression" in the International Conference ,Department of Mathematics, Magadh University , Bodh-Gaya, during September1 8-19, 2018.

REVIEWER OF INTERNATIONAL JOURNALS:

1. Alexander Engineering
2. Engineering with Computers
3. Network: Computation in Neural Systems
4. Neural Computing and Applications
5. Sadhana
6. International Journal of fuzzy system and application
7. International Journal of Research in Industrial Engineering
8. Applied Mathematical Modelling
9. International Journal of Fuzzy Systems
10. Soft Computing

ADVISING DOCTORAL STUDENTS:

S.No.	Name of the Student	Thesis Title
i)	Sapan Kumar Das	Development and Assessment of Optimization methods for solving linear fractional programming and its applications, **Ph.D. Degree awarded in 2017.**
ii)	Dilip Kumar	Development and Analysis of Mata-Heuristic Optimization Techniques for virtual machine placement in cloud data centres,**Ph.D Degree awarded in 2018.**
iii)	Bhaskar Mondal	Light Weight Image Encryption Techniques: Design and Analysis" **Ph.D Degree Awarded in 2018.**
iv)	Devashish	Integrated Inventory model for buyer-vendor under the different situation". **Ph.D Degree Awarded in 2019**
v)	Indrani Maiti	"Multi-objective Programming Problem in uncertain environment" Thesis submitted
vi)	Rajiv Ranjan Suman	Work under progress
vii)	Rajeev Kumar	Work under progress
viii)	Puna Kumar Rajak	Work under progress

ADMINISTRATIVE EXPERIENCE:

- Dean (Student Welfare), 14th May, 2020 to continued.
- Head, Department of Computer Science Engineering, NIT Jamshedpur, India (14th May, 2019 to 13th December, 2019).
- Head, Department of Mathematics, NIT, Jamshedpur (14th May 2018 to 13th May 2020).
- Head, Computer Center, NIT, Jamshedpur (07th July 2008 to 13th May 2018).
- Co-ordinator, Sub-committee to review PG Ordinance. Dated: 8th February 2019.
- PG admission in-charge, NIT Jamshedpur(2019-2020)
- Member of ACoFAR committee 2018, IIIT Ranchi.
- Appointed to set the question paper of Mathematics for Entrance Examination 2018 of the three years certificate course of Tata steel under continuing education programme.
- Prof.-In-Charge, Institute Time Table, (27 June,2018)
- Appointed as a member of Board of examiners for Ph. D Thesis (24 April, 2018)
- Chairman, Institute Publication cell, 2018, NIT Jamshedpur.
- Head, Computer Center, NIT, Jamshedpur (07th July 2008 to 13th May 2018)
- Convener, Venue Preparation committee of 7th convocation, 2018, NIT Jamshedpur
- PG admission in-charge, NIT Jamshedpur(2019-2020).
- Associate Dean (Digital Campus) NIT, Jamshedpur (13th May 2015 to Continued).
- Member of P.G. admission committee 2015, NIT, Jamshedpur.
- Member of P.G. admission committee 2016, NIT, Jamshedpur.
- Coordinator, Computer Centre, N.I.T. Jamshedpur. (27-01-2009 to 12-05-2013).
- P/I, Student Council Centre, N.I.T. Jamshedpur. (Since 28-01-2010)
- Member, website, Web-Server of the Institute. (Since 05-02-2010)
- Member, DSC of various Departments
- Member, Convener, UG Admission Committee – 2011.
- Member & Nodal Officer, Institute Level Committee for NMEICT, N.I.T. Jamshedpur (since 05-10-2010).
- Member, UG Admission Committee – 2010.
- Member, MCA Admission Committee – 2010-11
- Member, UG Admission Committee – 2009.
- Member (Nominated), Unfair means Committee of the Institute. (Since 26-10-2010)
- Member, Board of Studies for MCA Program.
- Ex-members of vehicle committee in R.I.T., Jamshedpur (Presently, N.I.T., Jamshedpur)
- Tabulation work of engineering in third year (all branches) in R.I.T., Jamshedpur (Presently, N.I.T., Jamshedpur)
- Appointed as a committee member for procurement and installation of LAN in the Hostels in N.I.T. Jamshedpur.
- Appointed as a member of UG Admission Committee for the session 2007-2008 in N.I.T. Jamshedpur
- Chairman, Departmental Purchase Committee (Mathematics Department)

- Warden of Hall of Residence in N.I.T. Jamshedpur (30-9-2005- 06-07-2008).
- Asst. Warden of hostel in R.I.T., Jamshedpur (1996-2004)
- Member, for Preparation of Identity Cards for Institute Employee (2004)
- P/I, Computing, Data Centre, Bandwidth & Networking(20-08-2013 to 22-08-2015)

MEMBERSHIP OF THE PROFESSIONAL SOCIETIES:

Life member of the following Societies:
1. Member of the BoG Netaji Subhas Unversity(2019-2021)
2. Member of the BoG NIT Jamshedpur.
3. Indian Mathematical Society (IMS)
4. Ramanujan Mathematical Society (RMS)
5. Indian Society of Industrial & Applied Mathematics (ISIAM)
6. The National Academy of Sciences India (NASI).
7. Member of ISTE; Member of International Academy of Physical Sciences (Life Membership No. – N1083 dated 21-02-2010);

WORKSHOPS/CONFERENCES ORGANIZED:

- Organized a Short term course on LaTeX Programming under TEQIP- III as Chairman at the department of Mathematics, NIT Jamshedpur.
- Organized a Short term training program on the topics ''Numerical Methods" from 26th December to 31st December 2006. Under TEQIP at NIT Jamshedpur.

- Attend the seminar and present the keynote address, in Department of Mechanical Engineering in the institute of Advanced Computer & Research at Raigada from 31st March to 1st April 2007

- Organized a National Workshop on "Multivariate Analysis and Statistical Inference" from 22-12-2008 to 26-12-2008 under TEQIP at NIT Jamshedpur.

- **Organized a National Workshop on "Advanced Computational Mathematics" from 23-06-2014 to 27-06-2014 under TEQIP II at NIT Jamshedpur.**

M.SC DISSERTATION GUIDED AT NIT JAMSHEDPUR:

S.No.	Name of the Student	Title of Dissertation
i)	Sumanta Kumar Sahu (2018PGMHMH07)	Implementation of Green Supply Chain A Comparative Analysis between small Industries in India **(2010)**
ii)	Yashasvi Kathuria (2015PGMHMH07)	Linar programming problem solved by graphical and simplex method
iii)	Gaurisha Singh (2017PGMHMH03)	Linear programming problems (graphical and simplex method) & Analysis of variance (Two-way classification)

Ph.D. THESIS EXAMINATION (Other University):

- Ms. Deepa Khurana, Optimal control of some inventory models with stock dependent demand and shortages at Department of Mathematics & Statistics, Banasthali Vidyapith, Rajasthan, India, 2016.

- Ms. Vandana, Optimum policies for multi-echelon inventory systems for decaying items at Department of Mathematics & Statistics, Banasthali Vidyapith, Rajasthan, India, 2018.

- Pinky Saxena, Development of some integrated inventory models for deteriorating items at Department of Mathematics & Statistics, Banasthali Vidyapith, Rajasthan, India, .

- Himanshu Rathore, Methamatical modeling on inventory control for deteriorating items incorporating some different aspects at Department of Mathematics & Statistics, Banasthali Vidyapith, Rajasthan, India, 2016.

- Kavita Devi, Some inventory systems for decaying items with inflation and shortages at Department of Mathematics & Statistics, Banasthali Vidyapith, Rajasthan, India, .

- Vikas Sharma, Decision making models for time dependent decaying items at Department of Mathematics & Statistics, Banasthali Vidyapith, Rajasthan, India, .

- Anjali Gaur, Replenishment and pricing policies for deteriorating items with trade credits and shortages at Department of Mathematics & Statistics, Banasthali Vidyapith, Rajasthan, India, 2019.

- Maria Irudhaya Aspin Chitra, Studies in graph labeling and its related topics in graph theory, Department of Mathematics, Manonmanilam Sundaranar University, Tirunelveli, 2018.

- Shalley Gupta, Development of some inventory models for decaying items under supply chains environment, Department of Mathematical Sciences, Banasthali University, 2013.

- Amit Kumar Attri, Two levels of storage models for deteriorating items with stock dependent demand and shortages, Department of Mathematics, Ch. Charan Singh University, Meerut, 2017.

- P. Sharma, Consistency of various time-to-event models, Department of Mathematics, Ch. Charan Singh University, Meerut, 2013.

- M. Pal, Decesion making modeling in inventory systems with shortages, Department of Mathematics, Shri Venkateshwara University, Uttar Pradesh, 2015.

External (Examiner/Expert/Member):

i) Participation as session chair in International Multi Conference of Engineers and Computer Scientists 2008, Hong Kong

ii) As a Member of Expert Committee in the area of Mathematics, to evaluate the work in the form of Poster of Research Scholars and also delivered a Talk on "Exact Sampling Distribution", on 22nd to 23rd December, 2011 at Dept. of Mathematics, I.I.T. Kharagpur.

iii)	External Examiner for Assessing the Project Dissertation and conducting the Viva-voce Examination of Final Year M.Sc. (5 Year Integrated) in mathematics and Computing in year 2011-2012 in Dept. of Mathematics, I.I.T. Kharagpur.

iv)	External Examiner for Assessing the Project Dissertation and conducting the Viva-voce Examination of Final Year M.Sc. (5 Year Integrated) in mathematics and Computing in May, 2011 in Dept. of Mathematics, I.I.T. Kharagpur.

v)	As a External Examiner to conduct the B.A./B.Sc.(Statistics) Hons. + Subsidiary + General at Jamshedpur Co-operative College & The Graduate School College for Women

vi)	As a External Examiner to conduct Viva Examination of M.Sc. (Math) at PG Center Jamshedpur Co-operative College, Jamshedpur.

vii)	Appointed as an Examiner and Paper setter of various Universities/ Institutions like as Ranchi University, Ranchi. Vnoba Bhave University, Hazaribag. Indra Gandhi National Open University, Birsa Institute of Technology, Sindri. R.P.Sharma Institute of Technology, Patna.

viii)	External Examiner for Assessing the Project Dissertation and conducting the Viva-voce Examination of Final Year M.Sc. (5 Year Integrated) in mathematics and Computing in year 29, April, 2013 in Dept. of Mathematics, I.I.T. Kharagpur.

viii)	As an Expert in Govt Polytechnic College, Jamshedpur.

ix)	Member of Technical Expert Committee Nominated by AIADA, Saraikella- kharsawan, 2014

x)	Appointed as a examiner to examine Ph.D Thesis of Ms Kavita Devi on the topic " Some Inventory Systems for Decaying Items with Inflation and Shortages" 23-07-2014 at Banasthali Vidyapith, Banasthali University, Rajasthan.

xi)	Appointed as a examiner to conduct the PhD viva-voice of Ms Kavita Devi & Ms. Shalley Gupta on 13-08-2015 at Banasthali Vidyapith, Banasthali University, Rajasthan.

xii)	Appointed as expert in panel of the review of the faculty members for transition from 3-tier faculty structure pay level 13A1 (associate professor) and 14 (professor) to the 4-tier faculty structure pay level 13A2 and 14A , NIT Rourkela.

xiii)	Appointed as expert in panel of the interview committee for interviewing the candidates for the post of Post Graduate Teacher (Math) on 11-4-2017, AECS, Jaduguda, Jamshedpur.

xiv)	Appointed as a examiner to examine Ph.D Thesis of Mrs Vandana on the topic " Optimum Policies for Multi-Echelon Inventory Systems for Decaying Items" 14-03-2018 at Banasthali Vidyapith, Banasthali University, Rajasthan.

xv)	Appointed as expert in panel for selection of the best nominees under the Dept. of Atomic Energy, GoI , 20/11/2018

xvi)	Chaired/ served as a Rapporteur in the international conference Thailand- 2018 at Asian Institute of Technology Conference Center. Bangkok,Thailand, Nov 19-20, 2018.

xvii)	Participated and presented in the international conference Thailand- 2018 with paper titled "A Revised Method for solving linear programming problem under fuzzy circumstances at Asian

Institute of Technology Conference Center. Bangkok,Thailand, Nov 19-20, 2018.

xviii) Appointed as a subject expert in Selection Board constituted for Faculty Recruitment in Mathematics, SARLAL BIRLA UNIVERSITY, Ranchi, Jharkhand. July 2018

xix) Appointed as a examiner to examine Ph.D Thesis on the topic " Two Levels of Storage Models for Deteriorating Items with Stock Department Demand and Shortages" 06-10-2018 at Ch. CHARAN SINGH UNIVERSITY, MEERUT.

xx) Appointed as expert to the selection board constituted for faculty recruitment in Mathematics (Assistant Professor, Associate Professor & Professor) school of Mathematics & Computer Applications, Sarala Birla University, Ranchi. 30th June 2019.

xxi) Paper Setter of Mathematics, Kolhan University,Chaibasa. 9th December 2016.

xxii) Member of ACoFAR Committee, IIIT Ranchi. 20th Aug 2018.

xxiii) Appointed as expert to recruit 'Temporary Faculty' in the Dept. of CSE, IIIT Ranchi.

LIST OF SHORT TERM COURSE ATTENDED/PRESENTED:

Sl. No.	Title of the Short Term Course	Duration	Venue
1.	Modeling and Simulation of Renewable Energy Systems	18-22, June, 2012	Organized Under Technical Education Quality Improvement Program (TEQIP-II), Conducted by Dept. Mechanical Engg. at NIT Jamshedpur
2.	Computational Fluid Dynamics	24-12-2012 to 28-12-2012	Department of Mechanical Engg., N.I.T. Jamshedpur
3.	Workshop on Pedagogy for Engineering Education	09-01-2009 to 11-01-2009	TEQIP, N.I.T. Rourkela, Orissa
4.	National Workshop on Multivariate Analysis & Statistical Inference	22-12-2008 to 26-12-2008	Department of Mathematics, N.I.T. Jamshedpur
5.	Effective Teaching and Learning	10-04-2008 to 14-04-2008	Department of Mechanical Engg., N.I.T.Jamshedpur
6.	Human Resources Training: Challenges and Opportunities	From 9-10 February, 2008.	Department of Humanities, N.I.T.Jamshedpur
7.	'CFD A approach on Fluid Flow, Heat and Mass Transfer'	From 12th – 14th April,2007	Department of Mathematics I.I.T.Roorkee,INDIA
8.	Interpersonal Effectiveness (Level II)	10-07-2006 to 14-07-2006	IIT Kharagpur
9.	Numerical Methods	26-12-2006 to 31-12-2006	Department of Mathematics N.I.T.Jamshedpur
10.	Heat Transfer	18-12-2006 to 19-12-2006	Mechanical Engg. Department N.I.T.Jamshedpur
11.	Workshop on Metrology	17-07-2006 to	Department of Physics,

Sl. No.	Title of the Short Term Course	Duration	Venue
		19-07-2006	N.I.T.Jamshedpur
12.	Modular Training Program on Interpersonal Effectiveness(Level II)	10-07-2006 to 14-07-2006	Department of Humanities, N.I.T.Jamshedpur
13.	Finite Elements Method and its Application	27-06-2005 to 08-07-2005	Under TEQIP in N.I.T. Jamshedpur.
14.	Topology, Engine Technology and Fuel Economy	March 15th to 26th, 2004	Department of Production Engineering & Management, N.I.T., Jamshedpur.
15.	Industrial Productivity Improvement Through Innovation Technique	June 17th to 30th June 2002	Department of Mechanical Engg., N.I.T., Jamshedpur (Formerly RIT, Jamshedpur)
16.	Modern Mathematical Technique for Computer Science Communication and IT.	20-31 May, 2002	I.I.T., Kharagpur
17.	Some Aspects of Modelling and Simulation of Electrical Systems	24th Dec. 2001 to 6th Jan. 2002	Department of Electrical Engg., N.I.T., Jamshedpur (Formerly RIT, Jamshedpur)
18.	"Geo-Mining Applications in Mining and Allied Areas"	29th Oct. 2001 to 10th Nov. 2001	Department of Mining Engg. & Geology, B.I.T., Sindri
19.	Teacher's Role in Engineering Education	25th Dec. 2000 to 13th Jan. 2001	Department of Mechanical Engg., N.I.T., Jamshedpur (Formerly RIT, Jamshedpur)
20.	Team Building and Performance Management	June, 5-16, 2000	Department of Mathematics and Humanities NIT, Warangal (Formerly REC, Warangal)
21.	ADAMS Completion and Co completion	Dec. 18-31, 1999	Department of Mathematics NIT, Rourkela (Formerly REC, Rourkela)
22.	Mathematical Theory of Fluid Film Lubrication with Special Emphasis on Non-Newtonian Fluid	Jan. 1-16, 1999	Department of Mathematics NIT, Silchar (Formerly REC, Silchar)
23.	Non Conventional Energy Sources and Application	May 12-24, 1997	Department of Mechanical Engg., N.I.T., Jamshedpur (Formerly RIT, Jamshedpur)

(Dr. Tarni Mandal)