Dr. Rachana Desai

Associate Professor - Mathematics
Department of Science and Humanities,
K J Somaiya School of Engineering (KJSSE),
Somaiya Vidyavihar University (SVU), Mumbai, India-400077
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Education

2013 – 2018	**Ph.D.-Mathematics,** Sardar Vallabhbhai Institute of Technology, Gujarat, India Title of Ph.D. Thesis: Extension of Mittag-Leffler Functions and Their Properties
2002 – 2004	**M.Sc.-Mathematics,** South Gujarat University, Gujarat, India
1999 – 2002	**B.Sc.-Mathematics,** South Gujarat University, Gujarat, India

Additional Qualifications

2023	**Ing.Paed.IGIP, Austria (IGIP International Engineering Educator)**
2018 – 2019	**IIEECP**, IUCEE International Engineering Educator Certification Program, IUCEE & IGIP, Austria
2004 – 2005	**B.Ed.** (Bachelor of Education), Veer Narmad South Gujarat University, Gujarat, India

Awards and Achievements

2025	Recognition received "**Honorary member of IUCEE**" for the year 2025 by Indo Universal Collaboration for Engineering Education
2024	Award: The IUCEE Showcase Awards "**Leadership of Teaching and Learning Center Award**" by Indo Universal Collaboration for Engineering Education.
2024	Award: "**Best Paper Award**" in Eleventh International Conference on Transformation in Engineering Education
2023	Award: the IGIP Certificate and Title "**IGIP International Engineering Educator-Ing.Paed.IGIP**" by IGIP (International Society for Engineering Pedagogy), **Austria**.
2021	Award: **Excellence in Performance: Teaching Learning Center**, the Eighth International Conference on Transformations in Engineering Education (ICTIEE 2021), Indo Universal Collaboration for Engineering Education (IUCEE).
2021	Project guide for **first prize winning national project**, Engineering Mathematics Teacher's Society, India.
2019	Appreciation for **contributions in teaching for PWD** (Person with Deficiency) **students**
2018	Appreciation: **Excellent Student's Feedback**, KJSCE (Also received appreciation for 2015-16, 2016-17 & 2017-18)
2018	Award: **Excellence in Research,** Research and Development cell, KJSCE.
2017	Award: **IMS Prize for the Best Paper Presentation**, Indian Mathematical Society.
2016	Award: **Aruna Gupta Prize for Best Paper Presentation,** International Conference of Special Function and Applications (ICSFA-2016), Society of Special Functions (SSFA).
2016	Award: **Excellence in Research,** Research and Development cell, KJSCE.
2002	**Bronze Medal,** B.Sc. Mathematics, P. T. Science Sarvajanik College, India.
2002	Award: **Best Cadet**, National Service Scheme, Ministry of Youth Affairs & Sports, Government of India.
2001	**Gold Medal**, S.Y.B.Sc. Mathematics, P. T. Science Sarvajanik College, India.

2000 **First Prize**, F.Y.B.Sc. Mathematics, P. T. Science Sarvajanik College, India.

1995 **Limca Book of World Record** for mass aerobics

Experiences

01/07/2023 – Present	**Associate Professor,** Department of Science And Humanities, K J Somaiya school of Engineering, Somaiya Vidyavihar University, Vidyavihar, Mumbai-400077, India.
11/01/2007 – 01/07/2023	**Assistant Professor,** Department of Science And Humanities, K J Somaiya College of Engineering, Somaiya Vidyavihar University, Vidyavihar, Mumbai-400077, India.
	Courses Taught (Under Graduate level): Engineering Mathematics, Applied Mathematics, Computational Techniques etc.
04/01/2019 – 31/12/2025	**Chairman, Board of Studies-Mathematics**, Somaiya Vidyavihar University, Vidyavihar, Mumbai-400077, India
	Key responsibility: Programme Development, Curriculum Designing & approvals
13/01/2022 – 24/10/2023	**Visiting Faculty,** Department of Mathematics, S K Somaiya College, Somaiya Vidyavihar University, Mumbai, India.
	Courses Taught (Post Graduate Level): Integral Transforms, Numerical Methods, Complex Analysis
21/08/2006 - 08/01/2007	**Lecturer,** General Engineering Department, Terna College of Engineering, Mumbai, India. **Courses Taught (Under Graduate level):** Engineering Mathematics
18/11/2005 - 06/05/2006	**Teacher,** Lancer's Army School, Surat, Gujarat, India.
	Courses Taught: High school mathematics
04/07/2005 - 14/11/2005	**Lecturer,** General Engineering Department, Terna College of Engineering, Mumbai, India. **Courses Taught (Under Graduate level):** Engineering Mathematics, Discrete Mathematics

Research and Publications

Research Interests

Special Functions, Mathematics Education, Engineering education, Integral Transform

Research Projects

2018 – 2019 **Principal Investigator (PI)**, "Extended Generalized Wright Type Hypergeometric Functions", Mumbai University Minor Research Project

Peer Reviewed Journal Articles

2026 P Chavan, R Desai, P Mahadik, "Whittaker Transform of Generalized M-Series.", Palestine Journal of Mathematics 15, 127-131.

2026 P Mahadik, R Desai, P Chavan, "Mellin Transform of Generalized K-Hypergeometric Function.", Palestine Journal of Mathematics 15, 124-126.

2026 Rachana Desai, Suren Patwardhan, "Tech based Motivational Design", Journal of Engineering Education Transformations, 38(Special Issue 2), 472-480.

2025 Shivangi Thakkar, Rachana Desai "Evolving Methods of Teaching and Learning in Engineering Education", Accepted for publication in International Journal of Continuing Engineering Education and Life-Long Learning

2025 Rachana Desai, Suren Patwardhan, "Bridging Motivation and Technology: Integrating ARCS Model in LMS", Journal of Engineering Education Transformations, 38(Special Issue 2), 518-528

2025 Suren Patwardhan, Rachana Desai, "Evaluation Reforms: Moving From Absolute to Relative Grading with Q-Factor Control", Journal of Engineering Education Transformations, Journal of Engineering Education Transformations, 38(Special Issue 2), 539-545

2024 Rachana Desai, "Using STAD as Assessment for Learning (AfL) in Mathematics", Journal of Engineering Education Transformations. 37, (Special Issue 3), 993-997.

2023 Rachana Desai, Nandini Rai and Jitendra Karekar "Optimum use of LMS for Dynamic Mathematics

Classrooms in Blended Mode", Journal of Engineering Education Transformations, 36 (special issue 2), 492-499.

2022 Rachana Desai, Nandini Rai, Jitendra Karekar, A.S. Desai, "Poster Presentation: A novel online assessment tool for motivation, relevance and foundation for research in Mathematics", Journal of Engineering Education Transformations, 35 (special issue 1), 168-174.

2021 Rachana Desai and A. K. Shukla , "Note on the pRq(α,β;Z) Function", The Journal of the Indian Mathematical Society, 88 (3-4), 288–297.

2020 Rachana Desai, I A Salehbhai and A K Shukla, "Integral equations involving generalized Mittag-Leffler function", Ukrainian Mathematical Journal, 72 (5), 620-627.

2020 "WEM: An AV tool for motivation in engineering mathematics", proceedings of epiETEME-8, TIFR, HBCSE, Mumbai, India, 370 – 377 ISBN No: 9788194156796

2019 Deepti Saxena & Rachana Desai, "Active Learning in Mathematics through Think-Pair-Share", IETE journal of Innovation and Research, 6 (1), 1-8. ISSN 2320-8961.

2019 P. K. Banerji, Rachana Desai, Deepali Saxena & A. K. Shukla, "Some properties of singular integral operator contains extended Mittag-Leffler Function", Palestine Journal of Mathematics, 8 (2), 137-145.

2017 Rachana Desai, P. K. Banerji & A. K. Shukla, "Singular Integral Equations Containing Extended Mittag-Leffler Function", Proceedings of the 16th Annual Conf. SSFA, 16 (1), 72-79.

2017 Rachana Desai and A. K. Shukla, Some results on the pRq(a,b,z) function, Journal of Mathematical Analysis and Applications, 448 (1), 187-197.

2016 Rachana Desai, I. A. Salehbhai and A. K. Shukla, "Note on Generalized Mittag-Leffler function", SpringerPlus, 5 (1), 1-8.

National and International Conference Papers presented

2026 Puja Chavan, Rachana Desai, "A new integral transform of Bessel's function", International Conference on Mathematics and its applications in Artificial Intelligence and Modelling Salesian College, siliguri in association with University of Technology and applied science, Oman, 28-30 May 2026

2026 Pallavi Mahadik, Rachana Desai, "A study of hypergeometric matrix function under the mellin transform", International Conference on Mathematics and its applications in Artificial Intelligence and Modelling Salesian College, siliguri in association with University of Technology and applied science, Oman, 28-30 May 2026

2026 Pinky Prajapati, Meghna Vyas, Rachana Desai, "A fractional Power Series analysis of noise cancellation in multi-term Caputo system", International Conference on Mathematics and its applications in Artificial Intelligence and Modelling Salesian College,siliguri in association with University of Technology and applied science, Oman, 28-30 May 2026

2026 Shivangi Thakkar, Abhijeet Karmarkar, Rajesh Pansare, Rachana Desai, Aniket Patil, "Novel Design and development of solar and wind hybrid tree with air filteration system", 3rd international conference on technologyies for Energy, Agriculture and Healthcare, K J Somaiya School of Engineering, Somaiya Vidyavihar University, Mumbai, India, 16-17 April, 2026

2026 Rachana Desai, "From assessment of learning to assessment for learning", International Conference on A Mathematical expedition: Ancient to modern era, Department of Mathematics, Veer Narmad South Gujarat University, Surat, India, 27-28 February, 2026

2026 Suren Patwardhan, Rachana Desai, "From Bit to Qubit: Pedagogical innovations in a Quantum computing course", International Conference on A Mathematical expedition: Ancient to modern era, Department of Mathematics, Veer Narmad South Gujarat University, Surat, India, 27-28 February, 2026

2026 Anushri Tambe, Rachana Desai, Amiya Bhowmick "Evolution of computational statistical inference", International Conference on A Mathematical expedition: Ancient to modern era, Department of Mathematics, Veer Narmad South Gujarat University, Surat, India, 27-28 February, 2026

2026 Pinky Prajapati, Meghna Vyas, Rachana Desai, "A fractional Power Series Approach to Drug absorption-elimination ModelingTech based Motivational Design", International Conference on A Mathematical expedition: Ancient to modern era, Department of Mathematics, Veer Narmad South Gujarat University, Surat, India, 27-28 February, 2026

2026 Rachana Desai, Suren Patwardhan, Shivangi Thakkar, Anushri Tambe "Tech based Motivational

Design", 13th International Conference on Transformations in Engineering Education GITAM Deemed to be University, Bengaluru Campus, Karnataka 7-10 January 2026

2025 Rachana Desai, Anushri Tambe, Deepti Saxena, "Transforming mathematics assessment : from traditional methods to innovative practices",91st Annual Conference of the Indian Mathematical Society (IMS) - An International meeting, Lucknow University, India, 26-29 December, 2025.

2025 Suren Patwardhan, Rachana Desai, "Innovations in teaching mathematics for quantum computing course", 91st Annual Conference of the Indian Mathematical Society (IMS) - An International meeting, Lucknow University, India, 26-29 December, 2025.

2025 Pallavi Mahadik **,** Rachana Desai, **"**Mellin Transform of incomplete exponential pRq function", 91st Annual Conference of the Indian Mathematical Society (IMS) - An International meeting, Lucknow University, India, 26-29 December, 2025.

2025 Puja Sapkal**,** Rachana Desai, **"**On differentiation of M-Series with respect to parameters", 91st Annual Conference of the Indian Mathematical Society (IMS) - An International meeting, Lucknow University, India, 26-29 December, 2025.

2025 Rachana Desai, Suren Patwardhan, "Bridging Motivation and Technology: Integrating ARCS Model in LMS", 12th International Conference on Transformations in Engineering Education, Vallurupalli Nageswara Rao Vignana Jyothi Institute of Engineering and Technology, Hyderabad, Telangana, India, 7-10 January 2025

2025 Suren Patwardhan, Rachana Desai, "Evaluation Reforms: Moving From Absolute to Relative Grading with Q-Factor Control", 12th International Conference on Transformations in Engineering Education, Vallurupalli Nageswara Rao Vignana Jyothi Institute of Engineering and Technology, Hyderabad, Telangana, India, 7-10 January 2025.

2024 Pallavi Mahadik **,** Rachana Desai, **"**Mellin Transform Of Generalized M-Series And K-Function", 90th Annual Conference of the Indian Mathematical Society (IMS) - an International meeting, MIT-World Peace University, Pune, India, 23 – 26 December, 2024.

2024 Puja Sapkal**,** Rachana Desai, **"**Whattikar Transform Of Special Functions", 90th Annual Conference of the Indian Mathematical Society (IMS) - an International meeting, MIT-World Peace University, Pune, India, 23 – 26 December, 2024.

2024 Anushri Tambe**,** Rachana Desai**, "**Algorithmic Insights in Ancient Indian Mathematics: Brahmagupta's Contribution**",** (accepted for presentation in) 90th Annual Conference of the Indian Mathematical Society (IMS) - an International meeting, MIT-World Peace University, Pune, India, 23 – 26 December, 2024.

2024 Puja Sapkal**,** Rachana Desai, "Whittaker Transform Of Generalised M-Series", International Conference on Special Functions & Applications (ICSFA-2024), Vivekananda Global University (VGU), Jaipur (Rajasthan), India during 28 – 30 November 2024

2024 Pallavi Mahadik **,** Rachana Desai, **"**Mellin Transform of Generalized k-Hypergeometric Function", International Conference on Special Functions & Applications (ICSFA-2024), Vivekananda Global University (VGU), Jaipur (Rajasthan), India during 28 – 30 November 2024.

2024 Rachana Desai, "Using STAD as Assessment for Learning (AfL) in Mathematics", 11th International Conference on Transformations in Engineering Education, KLE Technological University, Vidyanagar, Hubballi, Karnataka, 2 – 4 January 2024

2023 Rachana Desai, Nandini Rai and Jitendra Karekar "Optimum use of LMS for Dynamic Mathematics Classrooms in Blended Mode", 10th International Conference on Transformations in Engineering Education, Vidyavardhaka College of Engineering, Mysuru, Karnataka, India , 5 – 8 January, 2023

2022 Rachana Desai, Nandini Rai, Jitendra Karekar, A.S. Desai, "Poster Presentation: A novel online assessment tool for motivation, relevance and foundation for research in Mathematics, International Conference on Transformations in Engineering Education, Virtual online mode, January 7-9, 2022

2018 Rachana Desai, "Mellin- Barnes Integral representation of the pRq(α,β;z) function", International conference on Mathematical modeling, Applied analysis and computation-2018" at JECRC university, Jaipur, India.

2018 Rachana Desai, "Some Transforms of pRq Function", International Meet of Indian Mathematical Society 2018, MATA Vaishno Devi University, Katra, India.

2017 Rachana Desai, "Singular Integral Equations Containing Extended Mittag-Leffler Function", International Conference of Special Function and Application (ICSFA 2017), College of Engineering & technology, Bikaner, India.

2017 Rachana Desai, "pRq(a,b;z) Function and Its Properties", Indian Mathematical Society-An International Meet at , Sri Venkateswara University, Tirupati, India.

2016 Rachana Desai, "Integral Equation and Generalized Mittag-Leffler Function", International Conference of Special Functions and Applications (ICSFA 2016), Jamia Millia Islamia University, Delhi, India

2016 Rachana Desai, "The Function pRq(a,b;z)", national Conference on Confluence of emerging Trends in multidisciplinary research areas to mathematics, Kirti college, Mumbai, India.

2015 Rachana Desai, "Mittag-Leffler operator and Fractional calculus", National Short Term Training Program on Fraction calculus, Integral Transforms, Special Functions and their Computations in Engineering and Sciences, SVNIT, Surat, India

Book Chapters

2022	'A Survey on $pRq(\alpha, \beta; z)$ Function and its applications' in the book titled Recent Advances in Mathematical Analysis and their Applications, Department of mathematics, Kerala University, India
2012 & all editions after 2012 till date	'SCILAB', Applied Mathematics-I for FE Semester I by G. V. Kumbhojkar, P. Jamnadas LLP publication
2012 & all editions after 2012 till date	'SCILAB', Applied Mathematics-II for FE Semester II by G. V. Kumbhojkar, P. Jamnadas LLP publication

Academic Services

National & International Services

Board of Studies

3) Member - Department of mathematics, Smt. Parmeshwaridevi Durgadutt Tibrewala college of Arts, Commerce & Science, 2026- till date.
2) Chairman-Mathematics, S K Somaiya College, Somaiya Vidyavihar University, Mumbai, 2019 - 2025
1) Member – Applied Science & Humanities (First year Engineering), St. John College of Engineering and Management, Mumbai, 2024 till date

Journal Reviewer

8) Proceedings of National Academy of Science, Physical Sciences (NASA)

7) Cognitive Insight in Education, Since January 2026

6) Scholar Journal of Humanities and Social Sciences, since January 2026

5) International Journal of Applied and Theoretical Mathematical Sciences, since November 2025

4) Complex Analysis and Operator Theory (Springer Nature Journal) Since October 2024

3) International Journal of Educational Research (Elsevier Journal) since August 2024

2) Journal of Effective Learning and Teaching Practices since July 2024

1) Journal of Engineering Education Transformation since 2019

Reviewer (Conference)

12) The Thirteenth International Conference on Transformations in Engineering Education, 2026

11) The Twelfth International Conference on Transformations in Engineering Education, 2025

10) 3rd International Conference on Integrated Intelligence and Communication Systems (ICIICS – 2024), November 2024

9) 2nd IEEE International Conference on Networks, Multimedia and Information Technology (NMITCON), August 2024

8) The Eleventh International Conference on Transformations in Engineering Education, 2024

7) The International Symposium on Green Technologies and Applications (ISGTA 2023) Morocco, 2023

6) AICTE Sponsored IEEE International Conference on Networks, Multimedia and Information Technology (NMITCON), 2023

5) IEEE International Conference on Data Science and network security, 2023

4) The Tenth International Conference on Transformations in Engineering Education, 2023

3) The Ninth International Conference on Transformations in Engineering Education, 2022

2) IEEE International Conference on Convergence to Digital World –Quo Vadis, 2019

1) The Eighth International Conference on Transformations in Engineering Education, 2021

Session Chair

3) The Eleventh International Conference on Transformations in Engineering Education, 2024

2) 4th National Conference in Applied Sciences and Humanities, Thakur

college, February 2019

1) 3rd National Conference in Applied Sciences and Humanities, Thakur college of Engineering and Technology, February 2018

Subject Expert

12) external committee member for Department Level Quality Assurance Cell (DQAC) at FCRIT, vashi Mumbai, 12th March 2026

11) Screening cum evaluation committee member of CAS, at SVKM's NMIMS(Deemed to be University), Mumbai 16th February, 2026

10) Screening cum evaluation committee member of CAS, at SVKM's NMIMS(Deemed to be University), Mumbai 18th August, 2025

9) Interview for the position of Mathematics faculty at Mukesh Patel School of Technology Management & Engineering, NMIMS, Mumbai on 11th July 2025

8) Panel member of the Selection Committee for the interview of the post "Assistant Professor – Mathematics" at SVKM's Shri Bhagubhai Mafatlal Polytechnic & College of Engineering on 10th July 2025

7) Subject Expert for Career Advancement Scheme of faculty members of SVKM's D.J. Sanghvi College of Engineering on 2nd June 2025.

6) Subject Expert for the interview for the post of Assistant Professor – Mathematics at Fr. Conceicao Rodrigues College of Engineering held on 15th May, 2025

5) Screening Cum Evaluation Committee member of Career Advancement Scheme, SVKM'S NMIMS Deemed to be University, Mumbai on 26th March 2025.

4) Panel member of the Selection Committee for the Interview of "Assistant Professor - Mathematics" at SVKM's College of Engineering, Shirpur held on 18th February 2025.

3) Panel member of the Selection Committee for the Interview of "Assistant Professor – Mathematics" at SVKM's Institute of Technology, Dhule held on 16th November 2024.

2) Subject Expert nominated by chairperson of GBM and duly recommended by Vice-Chancellor on the selection committee of VESIT for the recruitment Interview held on 14th August 2024

1) Expert, Subject Advisory Board Vivekanand Education Society's Institute of Technology (VESIT), Mumbai, April 2022

Advisory and Planning Committee

2) International Conference on Transformations in Engineering Education 2023, January 2023

1) e-MAPCO 2020 (National Mathematics Project Competition), in association with Engineering mathematics teacher's society, India & SEAM, October 2020.

Workshop facilitator

3) 'Evaluation of Curriculum Revision-Model KJSCE', 10th edition of research in Engineering Education Symposium (REES)-2024 & Eleventh International Conference on Transformations in Engineering Education, January 2024

2) 'Implementation of aspects of NEP-2020 through Closed-Loop Education System: Model KJSCE', International Conference on Transformations in Engineering Education, January 2023

1) 'Transforming Mathematics education in engineering: Model KJSCE', International Conference on Transformations in Engineering Education, January 2022

Invited Talks

20) ' Mathematics: Shape your future with infinite career opportunities', B. K. Birla College, Kalyan January 2026

19) 'Mathematics beyond the books', K. J. Somaiya Institute of Technology, September 2025

18) 'Math Behind the screen: from Insta to xBox', Goodwill English School, Pune, November 2025

17) 'Research in Mathematics', Marathi vidnyan Parishad, May 2025,

16) 'Innovation Pedagogy', Somaiya Vidyavihar University, March 2025

15) 'Mathematics : The hidden code of life', Veer Narmad South Gujarat University, Surat, December 2024

14) 'Mathematics : The hidden code of life', P T Sarvajanik College of Science, Surat, December 2024

13) 'Implementing Innovative Pedagogy in classrooms', NMIMS, Mukesh Patel School of Technology Management & Engineering, Mumbai, November 2024

12) 'Creating Dynamic Classroom', NMIMS, Mukesh Patel School of Technology Management & Engineering, Mumbai, November 2024

11) 'Active Learning Strategies', NMIMS, Mukesh Patel School of Technology Management & Engineering, Mumbai, November 2024

10) 'Career Opportunities for Mathematicians", Gujarat Ganit Mandal, Amreli, November 2024.

9) 'Career Opportunities for Mathematicians", Veer Narmad South Gujarat University, February 2024.

8) 'Applications of Statistics', Vidyalankar School of Information Technology, Mumbai, January 2022.

7) 'Linear Algebra: Eigen values and Eigen vectors', Pillai College of engineering, Mumbai, March 2021.

6) 'Case study on KJSCE LMS', IUCEE TLC cluster meeting, November 2020

5) 'Quality Initiatives at KJSCE', IUCEE-KJSCE international webinar Series, December 2019.

4) 'LaTeX ', Short Term Training Program on Linear Algebra, Statistics and Mathematical Modeling : Hands On, KJSCE, January 2019.

3) 'Laplace Transform', Short Term Training Program on Research in Engineering, Sinhgad College of Engineering, October 2011.

2) 'Advanced Graphics',Workshop on Scilab-An Open Source platform for numerical computation by IITB under FOSSEE project at KJSCE, June 2011.

1) 'Mathematics using Scilab', FDP on Scilab, Sinhgad College of Engineering, Pune, India, January 2011.

Organizing committee member

4) Technical paper presentation committee, Twelfth International Conference on Transformations in Engineering Education 2025 to be held in January 2025.

3) Technical committee, Eleventh International Conference on Transformations in Engineering Education 2024, January 2024.

2) IUCEE National Mini-Symposium on Effective Practices in Teaching-Learning, April 2022.

1) e-MAPCO 2021 (National Mathematics Project Competition), in association with Engineering Mathematics Teacher's Society, India & SEAM, June 2021.

Guest lecturer	Course on Scilab, M.P.S.P.S.C. College of arts, commerce & science, Mumbai December 2011 to February 2012 & February 2013.
External Examiner/ Auditor	5) Auditor, Applied Mathematics-III, Fr. C. Rodrigues Institute of Technology (FCRIT), Vashi, August 2024, November 2024 4) External Examiner, Fr. C. Rodrigues Institute of Technology (FCRIT), Vashi August 2024 3) External Examiner, Vivekanand Education Society's Institute of Technology ESIT, October 2023 2) External Examiner, PhD, Department of Mathematics, Veer Narmad South Gujarat University, Surat, 2023 & 2025 1) External Examiner, M.P.S.P.S.C. College of arts, commerce & science, Mumbai February 2013
KJSCE Representative	IUCEE TLC monthly cluster meetings, every month since March 2019
Judge	National Mathematics project Competition, Engineering Mathematics Teachers' Society, India, December 2020 & June 2021

University and Institute Level Services

Chairman	Board of Studies-Mathematics, Somaiya Vidyavihar University (2019 – 2025)
Programme Coordinator	Integrated BS-MS programme, SVU (2022 – 2025)
Convener	Curriculum Designing Committee, Integrated BS-MS programme, SVU (2023-2025)
Secretary	University Minority Cell, SVU (2024 – Present)
Coordinator	The Teaching Learning Centre, KJSCE (2018 – Present)
	Department Event Organizing Committee, KJSCE (2021 – 2022)
Co-coordinator	Department Planning Committee, KJSCE (2022 – Present)
Point of Contact	Indo Universal Collaboration for Engineering Education (2019 – Present)
Curriculum designing	M.Sc. Mathematics, iBS-MS (integrated Bachelor of Science -Master of Science), PhD Coursework, Designed the framework, credit & examination scheme & outcome based courses to be offered in the above programmes
Course designing	Integral transforms, Special functions, Engineering Mathematics, Complex Analysis
Approved PhD Guide	Mathematics, Somaiya Vidyavihar University (2023 – Present)
Co-Guide	Final year B.Tech. students' project co-guide, Department of Electronics engineering, KJSCE
KJSCE representative	IUCEE-TLC cluster meetings (2019 – Present)
Faculty advisor	Student Association of Humanities and Sciences (2019 – 2021)
Faculty in-charge	Student Association of Humanities and Sciences (2010 – 2019)
Faculty coordinator	Emfinity – The Math Club of KJSCE (2019 – 2022)
Member	Academic Council, Somaiya Vidyavihar University (2019 – 2025)
	Board of Examination, Somaiya Vidyavihar University (2019 – 2025)
	Student Grievance Redressal cell, KJSCE (2014 – Present), Research Committee (2014 – 2022), Institute level Accreditation committees (NAAC & NBA), Admissions committee (2007 – 2019), Online Course committee (2010-2021), timetable committee (2007 – 2012), Student's cultural, sports and technical event committees etc.(2007 – Present), Emfinity (2022- till date)

Event Administration and Organization

Coordinator	**International Event**
	International expert talk on "A Lucid Introduction of Error Correcting Code" by Prof.

Michel Waldschmidt, Paris, December 2018

National Events

4) STTP on Quantum Computing: From Fundamentals to Applications (15-19 December 2025) member

3) FDP on Foundations of Quantum Computing (8–9 July 2025)

2) ISTE approved One week short term training programme on "Future of Education-Innovative Pedagogy, OBE & AI", (9-13 December 2024)

1) National webinar on "Challenges, Innovations and Adaptations of COVID-19: Science & Society Perspectives", (29-30 October 2021)

University level Events

6) Guest lecture on "Quantum Computing", April 2022

5) Workshop on "Lecture capturing solution", April 2022

4) Workshop on "Hands-On session on Tools for Interactive Online Teaching: Mentimeter and Quizizz", April 2021

3) Workshop on "MS Teams customized training sessions" February-March 2021

2) Two Phase training program on "Create your own MOOCs with handholding support", January 2021

1) Arranged three visits of "Museum On Wheels" in Somaiya Campus & kept it open for residents of local vicinity & local schools, Ghatkopar (E), 2018-2019

College level Events

7) Faculty conclave, July2024

6) Workshop on "Dos and Don't for Online Teaching", August 2020.

5) Four days training through email for "online education", July 2020.

4) Workshops on "Project Based Learning" and "engineering Ethics" by Dr. Claire, USA in December 2019

3) IUCEE International Engineering Educator Certification Program, December 2018 to November 2019

2) Faculty Conclave, KJSCE, July 2019

1) Workshop on "Are teachers redundant? A teacher's view" & "How to write effective research paper on engineering education" by Dr. Sridhar Iyer, April 2019

Department level events

3) Workshop on "Self-healing for stress relief using chakra system", March 2022

2) Guest lecture on "Fiber Optic Sensors and Applications", February 2022

1) Guest lecture on "Nondestructive Testing Methods and Sensors", February 2022

Faculty Mentor

Workshop on "How to write research paper on Engineering Education Research (EER), August 2019

Coordinator Student Association of Humanities and Sciences

4) Arranged and accompanied students for field trips like Echo Ethno Trek, beach cleanup drives etc. (2014-2019)

3) Organized several Industrial visits in industries like Parle, Nilkamal, Tarapur Atomic Research Centre, JSW etc. & accompanied students (2010-2019)

2) Offered workshops on 'Vedic Mathematics' & Organized several other workshops and trainings like 'Mathematical modeling and simulation' , 'FE credit and grading system', 'Microsoft windows 8', 'Evaluation system', 'Vipasyana Meditation' etc. (2010-2019)

1) Social initiatives for students: An awareness programme on "Echo-Friendly Ganesha", Varsova beach cleanup drive, NGO visits (HIV kids) etc. (2010-2019)

Workshops/ Trainings Attended

2026

46) 'Going Digital: Designing & Creating MOOCs', Faculty & Staff Development Center, Somaiya Vidyavihar University, February 2026

45) 'Quantum Computing: From Fundamentals to Applications', One-week ISTE approved Short Term Training Programme 15 th December to 19th December 2025, KJSCE

2025 44) '91st Annual Conference of the Indian Mathematical Society (IMS) - An International meeting', Lucknow University, December 2025.

43) 'Quantum Computing : From Fundamentals to applications', December 2025

42) 'Business Intelligence', K J Somaiya School of Engineering, June 2025

41) 'IUCEE Felder Brent Effective Teaching and Learning Course 2024-25' , IUCEE, July 2024 – June 2025

40) 'Twelvth International Conference on Transformations in Engineering Education', IUCEE & VNR Vignana Jyothi Institute of Engineering and Technology, January 2025

2024 39) 'Research in Engineering Education Symposium, REES 2024', Research in Engineering Education Network & KLE Technical University, January 2024

38) 'Eleventh International Conference on Transformations in Engineering Education', IUCEE & KLE Technical University, January 2024

2023 37) Academic visit to IISER, Pune to get inputs for better planning & implementation of integrated BS-MS programme, February 2023

36) 'Tenth International Conference on Transformations in Engineering Education', IUCEE, January 2023

2022 35) Conference on 'Implementation of NEP-2020 in the State of Maharashtra', jointly organized by Somaiya Vidyavihar University & PERA, on 30 March 2022

34) Academic visit to IISER, Pune to get inputs for curriculum designing for proposed BS MS programme, March 2022

33) 'Ninth International Conference on Transformations in Engineering Education', IUCEE, January 2022

2021 32) One week online short term training programme on 'Mathematical Tools and Techniques for students and engineers (MTTSE 2021)', SVNIT, Surat, December 2021

31) MATLAB Onramp course organized by MathWorks Training Services on 1 September 2021

30) MATLAB IUCEE RVCE MathWorks Symposium on 'Engineering Mathematics with MATLAB', jointly organized by IUCEE and RVCE college in collaboration with Mathworks, September 2021

29) '36th Annual Conference of Ramanujan Mathematical Society', Amrita Vishwa Vidyapeetham, Coimbatore, August 2021

28) 'Eighth International Conference on Transformations in Engineering Education (ICTIEE-2021)', IUCEE, January 2021

2020 27) One Week Online Short Term Training Programme on 'Fractional Calculus: Foundations to Frontiers' (FCFF 2020), SVNIT, Surat, December 2020-January 2021

26) 'MTA Second (Online) Annual Conference – 2020', September 2020

25) Online course on 'Online Teaching', IUCEE, July-September 2020

24) 'Eighth International Conference to Review Research in Science, Technology and Mathematics Education (epiSTEME 8)', HCSE, TIFR, Mumbai, January 2020

2019 23) Workshop on 'Train The Trainer Workshop-Developing Co-creative mindset applying Design and Systemic Approaches for Innovation in Educational Institutions', jointly organized by DBIT, PILLET & PARTNERS and LIIGHT, Switzerland & PrePearl, September, 2019

22) 'Regional workshop of Indian Women and mathematics on research and opportunities', HBCSE, TIFR, February 2019

21) 'An Inaugural Conference of Mathematics Teacher's Association', HBCSE, TIFR, Mumbai, January 2019

2018 20) 'IUCEE International Engineering Educator Workshop Phase I', KJSCE, IUCEE, December 2018

19) 'Indian Mathematical Society-An International Meet', Sri Mata Vaishnodevi University, Katra, Jammu, November 2018

18) Online course on 'University Teaching', Hong-Kong University, July-October 2018

17) 'International Conference on Mathematical modeling, Applied analysis and computation-2018', JECRC University, Jaipur, July 2018

2017 16) 'International conference of Indian Mathematical Society-An International Meet', Sri Venkateswara University, Tirupati in December 2017

15) 'International Conference of Special Function and Application-2017',College of Engineering & technology, Bikaner, November 2017

14) 'Introduction to Complex Analysis', Wesleyan University, Coursera, September 2017

2016 13) National Conference on 'Confluence of emerging Trends in multidisciplinary research areas to mathematics', Kirti college, Dadar, Mumbai, December 2016.

12) 'International conference on Special Functions and Applications', Delhi, September 2016.

11) 'Hands-on training on LaTeX', Loakmanya Tilak College of Engineering, Navi Mumbai, February 2016.

2015 10) One Day workshop on 'How to publish a Technical paper with IEEE', August 2015, Don Bosco Institute of Technology, Mumbai.

9) One week STTP on 'Fractional Calculus, Integral Transforms, Special functions and their computations in engineering and sciences', SVNIT, Surat, September-October 2015.

2013 8) One week STTP on 'significant role of mathematical analysis in applied sciences and engineering' SVNIT, Surat in September-October 2013

7) One week STTP on 'Current trends in computational methods for PDEs and fluid mechanics', SVNIT, Surat, August 2013

6) One week STTP on 'Tools and Techniques for Effective Technical Writing', KJSCE, May 2013

2012 5) Two weeks mega workshop at KJSCE on 'Introduction to Research Methodology', IITB, June-July 2012

4) One week Short Term Training Program on 'Advanced Engineering Optimization Through Intelligent Technique', SVNIT, Surat, January 2012.

2011 3) One week Faculty Development Program on 'Scilab', Sinhgad College of Engineering, Pune, January 2011

2) One week workshop on 'Scilab-An Open Source Platform for Numerical Computation', KJSCE, Vidyavihar, June 2011

2009 1) One week Short Term Training Program on `Mathematical Modeling and Simulation', SVNIT, Surat, December 2009

Creating Dynamic Mathematics Classrooms

Innovation in Teaching-Learning

- Use of Active learning strategies for large and small classrooms: Think-Pair-Share, Four Corners, Stump your partner, TAPPS (Think aloud pair problem share), Round Robin, minute paper, flipped classrooms, jigsaw etc.
- Course Information Sheet (CIS)
- Motivational techniques & application oriented approach for real world connections
- Beyond syllabus activities, self-learning & peer learning
- Developed "WEM" : An innovative Audio Visual Tool For Motivation In Engineering Mathematics

Harnessing technology & Online education

- Use of LMS (moodle, coursera, Teams, Google classroom)
- Gamification tools (Menti, Quizzies, Moodle games, Kahoot, Plicker)
- Online platform for virtual class (zoom, MS Teams, Google Meet)
- Online pedagogy: Avocations, word cloud, polls, chats, use of social media,

youtube, guest lectures, interactive classrooms, recorded lectures, breaking classrooms

- Use of Social media and mobile apps

Innovations in assessments

- Collaborative learning assessments : STAD (Student Team Achievement Division) , TGT (Team Game Tournament), Group discussions & brain storming
- Research based assessments: Poster presentation, Report writing, presentation on literature survey
- Adoption of Bloom's taxonomy & setting question papers covering all levels of Bloom's taxonomy
- Variety of quiz, MCQs with one correct option, multiple correct options, objective type questions,
- Gamification
- Application oriented assessment
- Variations in Assignments: activity based, rubrics, application oriented, open book assignments, quizzes etc.

Respect diversity & inclusion

- Special attention and different strategies for PWD (Person With Deficiency) students
- Remedial lectures for NRI students, slow learners & direct second year students
- Gender equality & need based education to cater diversity & different learning styles
- Faculty mentor for award winning projects in national competitions
- Dedicated office hours for one to one interactions

Professional Membership

- Society for Special Functions and Application (SSFA)
- Indian Mathematical Society (IMS)
- Mathematics Teacher's Association (MTA)
- Gujarat Ganit Mandal

Google scholar: https://scholar.google.co.in/citations?user=7qXyNjMAAAAJ&hl=en
LinkedIn : https://www.linkedin.com/in/dr-rachana-desai-72307746/?originalSubdomain=in
Website: https://www.somaiya.edu/en/view-member/160634?type=faculty
OrchidID: https://orcid.org/0000-0002-8206-1442
Scopus ID: 57189906665
Web of Science ResearcherID: JNE-4403-2023
Vidwan ID: 477802