



CHANAKYATM
UNIVERSITY
Rooted in ideals • Ascending with ideas



Established under The Chanakya University Act 2021
(Karnataka Act No. 37 of 2021)
Recognized by the University
Grants Commission (UGC), New Delhi

School of Mathematics and Natural Sciences



From the Dean's Desk

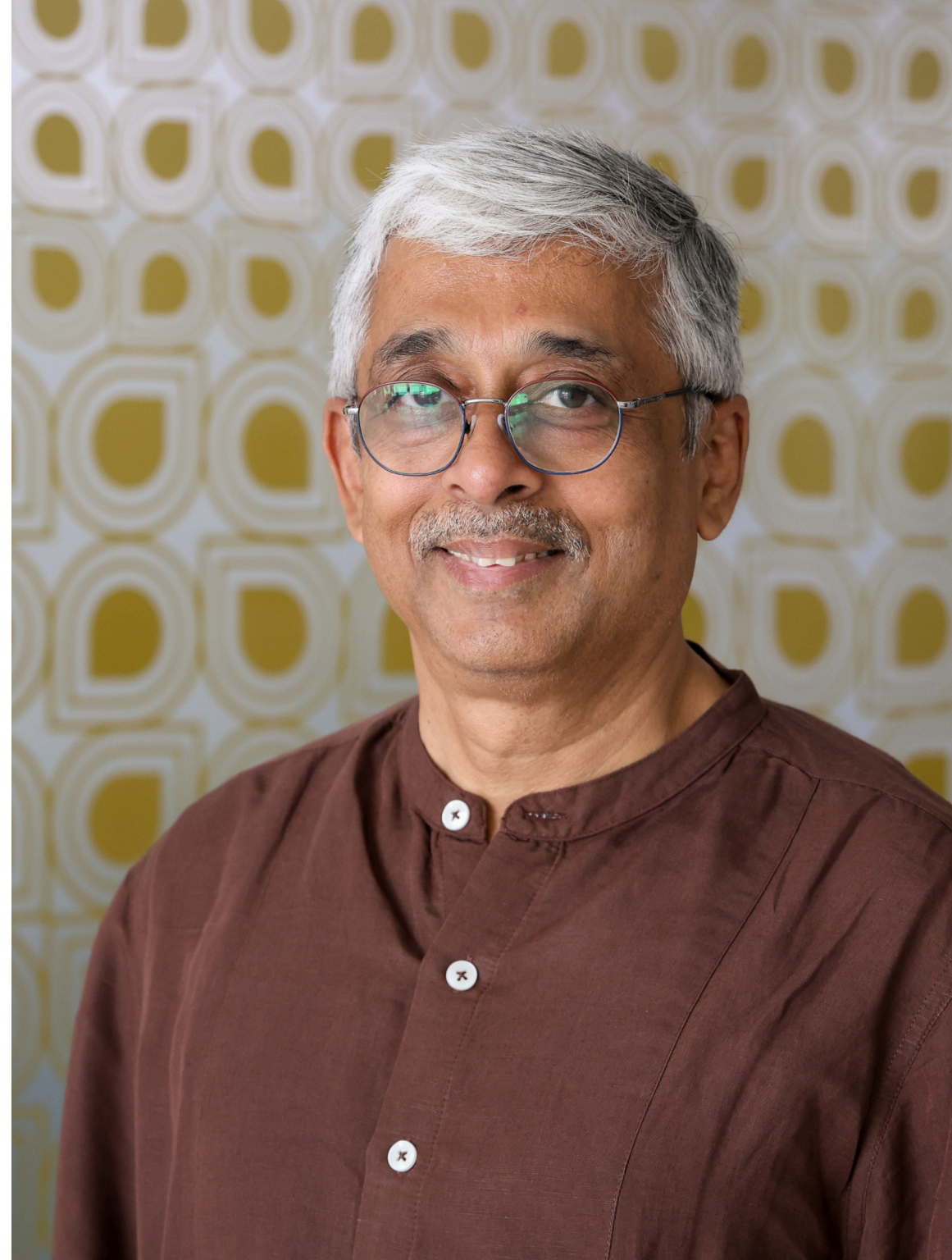
Welcome to the School of Mathematics and Natural Sciences. Our faculty members are internationally trained and leading experts in their respective fields, dedicated to mentoring and guiding students towards academic excellence and innovation. The school has access to state-of-the-art laboratory and research facilities.

Our undergraduate programme provides students with a solid foundation in mathematics, theoretical sciences, practical applications, and advanced skills in emerging areas such as medical chemistry and physics, green initiatives, data science, and renewable materials. This interdisciplinary programme offers a range of minors to select from across the university, including biotechnology, entrepreneurship, engineering, and economics, preparing them for careers in academia, industry, and beyond. For those seeking to advance their studies at the postgraduate level, we offer a Master of Science in Data Science. Our PhD programme offers aspiring researchers the opportunity to pursue independent inquiry and contribute to the advancement of knowledge across a wide range of disciplines.

Join us at the School of Mathematics and Natural Sciences, where the pursuit of knowledge knows no limits. We invite you to explore the endless possibilities that await you and embark on a journey of intellectual discovery that will shape the future of science.

Prof. Dileep Prabhakar Jatkar

Dean
School of Mathematics and Natural Sciences



The School of Mathematics and Natural Sciences aims to equip the next generation of mathematicians and scientists with a broad foundation in Chemistry, Data Science, Mathematics, and Physics, along with a deep understanding of the fundamentals. The study pursued in this school has a long-term impact on the future of society, in terms of new opportunities and technologies.

The school's vision is to become a world-class centre for learning and research in Mathematics and Natural Sciences that nurtures a future generation of mathematicians, scientists, and transformative leaders. Our model for mathematics and science education integrates cutting-edge discoveries, innovative pedagogy, and real-world applications.

We offer undergraduate and postgraduate programmes designed to foster intellectual curiosity and critical thinking. These programmes provide students with a deep, fundamental knowledge of core subjects, offering a firm foundation as well as exposure to cutting-edge research. The curriculum is highly interdisciplinary and integrates transformative elements such as seminars, workshops, and research training, providing students with hands-on experience.

International Advisory Council

Guided by distinguished global thought leaders, drawn from a wide spectrum of Academic, Aesthetic, Industry, Professional and Socio-Cultural domains representing the idea of Bharat.

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Former Vice Chairman
University Grants Commission



Sri Alok Kshirsagar
Sr. Partner, McKinsey



Prof. Bhimaraya Metri
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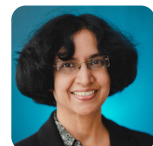
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Co-Founder
Centre for Film & Drama



Sri Anurag Behar
Chief Executive Officer
Azim Premji Foundation



Sri Ricky Kej
3X Grammy Award Winner &
Environmentalist



Dr. Lavanya Vemsani
Distinguished Professor,
History and Religious Studies,
Shawnee State University, Ohio, USA



Sri S.V. Ranganath
Former Chief Secretary
Government of Karnataka

Scientific Advisory Board



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JNCASR



Prof. Gadadhar Misra
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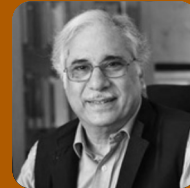
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Krea University



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IMSc, Chennai



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JNCASR, Bengaluru



Prof. Spenta Wadia
ICTS, Bengaluru



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SSC, IISc, Bengaluru

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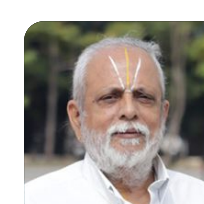
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Professor
IISc, Bangalore



Prof. Ashok Vudayagiri
Professor
University of Hyderabad



Dr. Ramesha
Former President
Technical, R. I. Fine Chem. Pvt.
Ltd., Bangalore

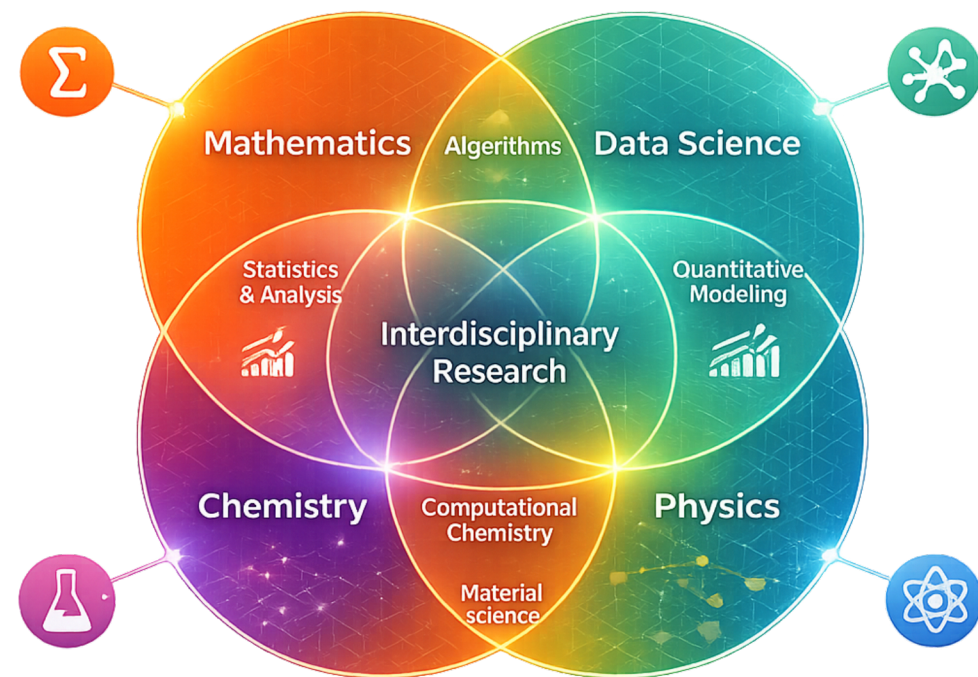


Prof. V. Kannan
Professor
SRM University, Andra Pradesh

Minors

Enhance your major with a minor in Biotechnology, Pharmaceutical Chemistry, Management or a wide variety of choices from across the institute

Interdisciplinarity of UG Courses



Potential Careers you may aspire to

The B.Sc. course in SMNS at Chanakya University is a unique blend of multidisciplinary training, which can appeal to a broader class of students. This includes those who are purists and want to pursue research in these fields as well as those who have a more commercial interests with core training in the basic sciences and ancillary training in applied disciplines like, Aeronautical Engineering, Biotechnology, Economics, etc.

This programme opens up a wide variety of job opportunities, for example, in institutions like ISRO (Physics Major and Aeronautics minor) in the energy generation and storage industry (Physics/Chemistry major and Chemistry/Physics minor) in the finance industry (Mathematics major and Economics minor) in the medical sciences field (Chemistry major and Biology/biotech minor) in the IT industry (Data Science Major and Chemistry/Computer Science/Mathematics/Physics Minor) in the field of fundamental research for those who have a long term vision of exploring scientific disciplines which feed into future innovations and technologies.



Thrust Research Domains

Number Theory, Algebraic Geometry, and Elliptic Curve Cryptography

Elliptic curve cryptography provides more efficient and secure alternatives to RSA-based protocols and underpins key technologies such as blockchain and cryptocurrencies. It offers direct applications of number theory and algebraic geometry to secure communication. Developing elliptic curve protocols resistant to quantum attacks remains a major open challenge.

Cryptography, Quantum Cryptography, and Post-Quantum Cryptography

Quantum computers threaten classical cryptographic systems by enabling faster decoding algorithms. Quantum and post-quantum cryptography aim to develop secure communication protocols resistant to such attacks. Mathematical approaches, including quantum curves, play an important role in shaping next-generation cryptographic systems.



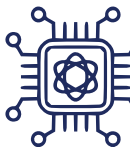
Renewable and Sustainable Energy Technologies

Climate change necessitates rapid development of green energy solutions such as solar power, green hydrogen, and advanced batteries. Existing solar technologies perform poorly at high temperatures typical of Indian climates. Research on new semiconductor materials for efficient high-temperature photovoltaics is therefore crucial.



AI-Accelerated Discovery in Two-Dimensional Materials

Artificial intelligence enables rapid screening and design of materials with targeted properties. AI-driven discovery of two-dimensional and semiconductor materials can significantly accelerate the development of efficient solar cells and other sustainable technologies, especially suited to local climatic conditions.



Quantum Computation Theory, Devices, and Sensors

Quantum computation offers new paradigms for solving classically intractable problems by exploiting quantum complexity. Research on quantum algorithms, devices, and sensors aligns closely with national priorities such as the National Quantum Mission and advances both computation and sensing technologies.



Theoretical and Computational Studies in Fundamental Physics

Studies of complexity and quantum dynamics in systems such as black holes, strongly correlated matter, and topological phases deepen our understanding of fundamental physics. This research connects areas including cosmology, gravitation, and condensed matter physics with emerging quantum technologies.

State of the art Infrastructure

The School is equipped with state-of-the-art infrastructure, including advanced spectrophotometers, well-equipped undergraduate laboratories, and high-performance computing facilities. These include a Dell PowerEdge R760 server and a Lenovo HPC system with DDR5 architecture, GPU acceleration, and 200 TB high-speed storage, supporting cutting-edge research and teaching.



Programmes

B.Sc. with major in

- Chemistry
- Data Science
- Mathematics
- Physics.

The course is designed to provide multiple options to students to pursue a major in one topic and a minor in another (at least 32 credits points in the minor). The SMNS comprises Chemistry, Data Science, Mathematics and Physics subdisciplines. Students have the option of choosing any of one of these as a major and any other as a minor. More generally, they can select a minor from a different school as well, such as the School of Biosciences or the School of Engineering Sciences.

The B.Sc. course is designed in such a way that the student can pursue any option from a wide variety of possible combinations. For example, those interested in new energy storage solutions can take Chemistry major and Physics minor or those interested in quantum cryptography may select Data Science as major and Physics as minor. Similarly, students interested in pharmaceutical chemistry may find Chemistry major and Biology minor as a natural choice.



A background image showing several students in a computer lab. In the foreground, a young man with glasses and a pink shirt is looking at a computer screen, with his hand near his chin in a thoughtful pose. Other students are visible in the background, some working on computers.

M.Sc. (Data science).

It is a multidisciplinary, hands-on programme that combines principles and practices from the fields of mathematics, statistics, artificial intelligence, and computer engineering to enable students to study and analyze large amounts of data and extract meaningful insights for research and business.

Doctoral Program

The School offers a PhD programme in Mathematics, Chemistry, Physics, and Data Science, fostering interdisciplinary research across fundamental and applied sciences. Scholars work closely with faculty on cutting-edge problems supported by strong theoretical foundations and advanced experimental and computational facilities.



Our Educational Philosophy



We believe in understanding over rote learning and connect abstract concepts to real- world applications. We value both conceptual clarity and creative exploration.

We encourage inquiry-based learning, where students explore, question, and experiment to construct knowledge for themselves.

We inspire students not only to master concepts but to use them responsibly for solving real-world problems and advancing human understanding.

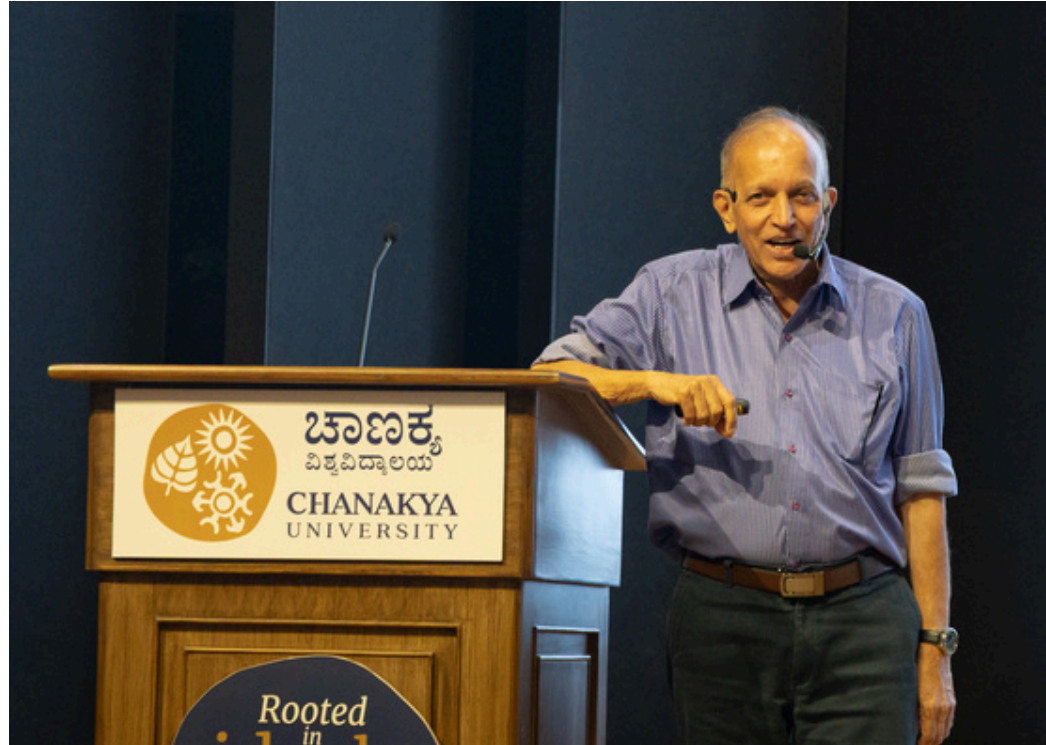
Interdisciplinary learning is key - seeing how mathematical reasoning supports physical laws, how chemistry underpins material and biological processes, and how data science connects all these domains through interpretation and prediction.

We promote collaborative learning, use of technology, and experiential approaches such as simulations, projects, and research-based tasks.

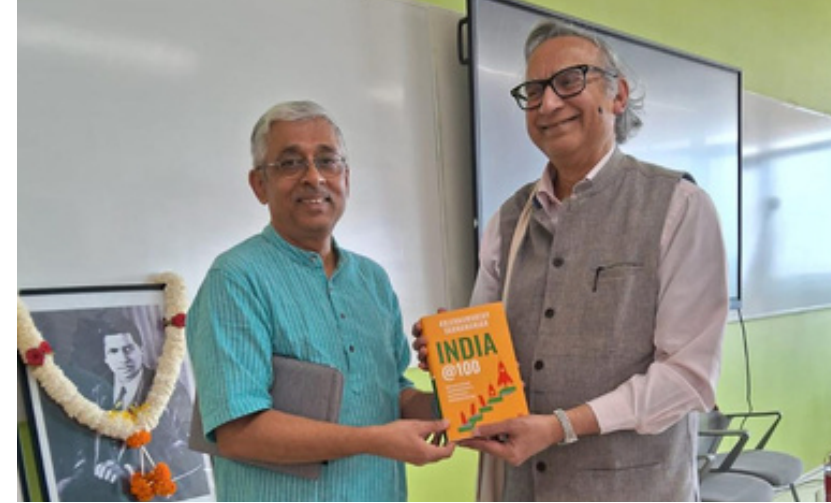


School Activities

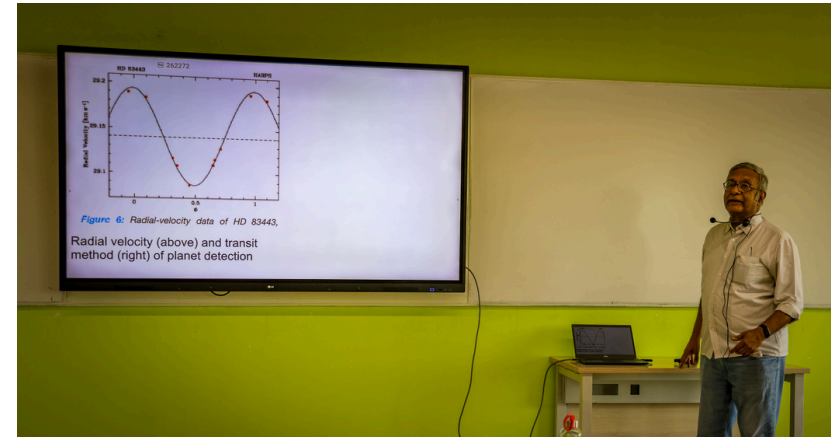
The School regularly organizes seminars, workshops, and invited talks by eminent academicians and industry experts to foster academic exchange. These events expose students and faculty to emerging research trends, interdisciplinary ideas, and real-world applications across the sciences.



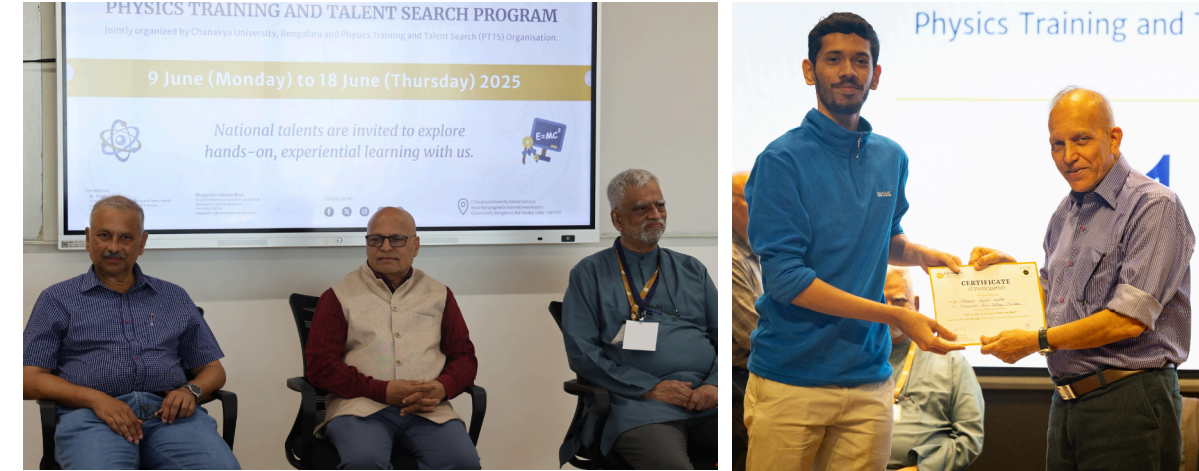
Prof Satishchandra Ogale
Director, RISE, TCG-CREST



Prof. Ram Murty A.V. Douglas
Distinguished University Professor & Queen's Research Chair



Prof Rajaram Nityananda
ICTS, TIFR, Bangalore



The Physics Training and Talent Search 2025

This programme was conducted in Chanakya University collaboration with the Physics Training and Talent Search (PTTS). It was inaugurated by our Hon'ble Vice Chancellor, Prof. Yashwantha Dongre, and was guided by the vision of Prof. H. S. Subramanya (Pro Vice Chancellor). The programme was efficiently coordinated by Prof. M. Sivakumar, the Chief Coordinator of PTTS and Dr. Bhagyashree Bhat, the Local coordinator.

Out of 220 applicants, 34 students were selected through a rigorous screening process, representing diverse geographical regions and maintaining equitable gender representation. The participants received instruction in the Special Theory of Relativity, Physical Mathematics, and hands-on experimental laboratory sessions.

An inspiring lecture was delivered by Prof. Rajaram Nityananda (ICTS) on recent developments in astronomy. In addition, faculty members from the School of Mathematics and Natural Sciences and the School of Biosciences delivered lectures.

The programme concluded with a valedictory address by Prof. Satishchandra Ogale (Director, RISE, TCG-CREST, Kolkata) on "Biomimetics: Learning Science from Nature." He also presented certificates to all the participants.

Collaborative and Field Visits



Visit of B.Sc. and BCA students to Raman Research institute



Visit by Faculty to Indian Institute of Astrophysics to discuss collaborations and astronomy club formation



Students of M.Sc Data Science secured prizes in the Geeks for Geeks competition.



This at mit supercomputing india 2025 from MSc Data Science i participated



Showcasing student participation at SAP Inside Track Bengaluru 2025 (#sitBLR). A platform where leaders and innovators explored the future of Business AI.

Meet your Faculty Mentors!



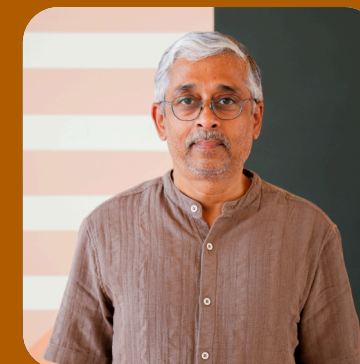
Dr. M Sivakumar

Sivakumar works broadly in theoretical physics, with the current focus on elucidating quantum geometry in mesoscopic quantum systems. He is also interested in modernizing physics pedagogy at the University level in both theory and laboratory courses.



Dr Satyavolu Srinivas Rau

Dr Satyavolu Srinivas Rau (PhD, Hyderabad University) Rau works in Analytic Number Theory and Geometric Physics. In Analytic Number Theory, he investigates asymptotic behaviour of Arithmetical functions related to the Divisor function and is interested in estimating the average prime divisor of numbers (inspired by work of Erdos et al on average divisor). In Geometric Physics he investigates algebraic structures Lie algebroids, Leibniz algebroids etc and their cohomologies building on SERB Project with T. Shreecharan.



Dr Dileep Prabhakar Jatkar

Dr Dileep Prabhakar Jatkar (PhD, Institute of Physics, Bhubaneswar) Dileep's research interests are in theoretical physics. In particular, the study of quantum gravity from a string theory perspective.

He has been exploring entanglement entropy within the AdS/CFT context. He has also been using the spinor helicity formalism to study scattering amplitudes in SYM theories across various phases. He is studying 4D $N=2$ super-Yang-Mills theory and its relationship with 2D CFTs, higher groups, and defects in CFTs. He has been applying methods, like exact WKB and Resurgence, to study extended objects in string and field theories.



Dr Uma Bidarahalli

Uma works in Algebraic Number Theory and has been interested and working in Arithmetic functions. Presently she works also in the field of Elliptic Curves and is more drawn by the questions on Rational points of elliptic curves over finite fields



Dr. Hariprasad Manjunath Hegde

Hari's research focuses on fast numerical linear algebra algorithms, with particular emphasis on the structure and behaviour of eigenvalues in special classes of matrices. He is also interested in applying these methods to problems in graph and network analysis, as well as emerging applications in machine learning and large language models (LLMs).



Ritwik Pal

Ritwik's research interest lies in the theory of modular forms, theory of automorphic forms and Analytic number theory, especially on the automorphic L-functions associated with the automorphic forms. In the past, he established new properties of certain differential operators that maps the space of Jacobi forms to a direct sum of elliptic modular forms. He also worked on the asymptotic distribution of positive and negative Hecke eigenvalues and Linnik-type problems on the location of the first negative Hecke eigenvalue for various modular forms. For non-Saito-Kurokawa lifts, he showed the existence of large Hecke eigenvalues and thereby established the optimum Omega-result for those eigenvalues. More recently, he showed the unique determination of a



Dr. Mahesh Krishna

Mahesh's research focuses on the development of noncommutative analogues of classical Hilbert space theory, with particular emphasis on frames and Riesz bases. Recognizing the central role of Hilbert space theory in Physics, Mahesh investigates noncommutative analogues of foundational results, such as uncertainty principles, to extend their applicability within mathematical physics. Mahesh's research in quaternionic harmonic analysis is devoted to establishing quaternionic analogues of results traditionally studied in complex Hilbert spaces, with a particular emphasis on matrix theory over quaternions. His work seeks to identify applications that parallel classical Hilbert space results, thereby broadening the scope of harmonic analysis into the quaternionic domain.



Dr Bhagyashri Devaru Bhat

Bhagyashri's research focuses on computational condensed matter physics, with an emphasis on first principles (DFTbased) simulations to understand and design novel quantum and functional materials. Her work explores magnetism, electronic structure, and interfacial phenomena in lowdimensional material systems, aiming to connect fundamental theory with materials for next-generation electronic, spintronic and energy applications



Dr. Madhuri Mukhopadhyay

Madhuri has experience in characterizing quantum coherence through the ultrafast coherent spectroscopy techniques. Her recent research interest is optimizing quantum coherence and exciton transport in quantum systems. She is also interested in mapping quantum behavior with computational intelligence.



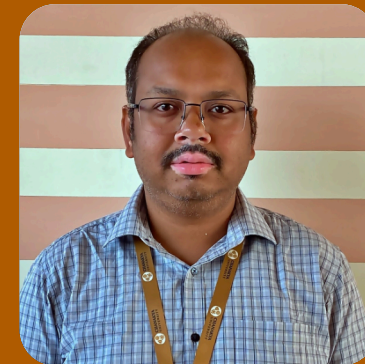
Dr. Sirshendu Ghosh

Dr Ghosh is a materials chemist and electrochemist working on electrocatalysis, CO₂ conversion, biomass/waste valorisation, and sustainable energy materials, with a strong focus on green chemical processes and carbon-neutral technologies.



Dr. Raisa DSouza

Raisa's research focus is on Algebraic Topology and Spectral Graph Theory. In Algebraic Topology, she focuses on the topology of Toric Manifolds. In Spectral Graphs Theory, she is interested in the properties of graphs that can be modelled using linear algebra and is interested in various combinatorial questions that arise while studying these aspects of graphs.



Dr. Krishnendu Das

Krishnendu works at the dynamic interface of chemistry and biology, with a particular focus on designing active and adaptive soft materials. His research explores how principles from living systems can be translated into bio-inspired functional materials capable of responding, adapting, and performing tasks in complex environments. He is also interested in engineering systems capable of autonomous or guided motion at the nanoscale, with the long-term goal of building intelligent drug-delivery vehicles that can navigate biological environments with precision.



Library



Moot Court



Classroom



Basketball Court



Student Residences



Gymnasium



Food Court



Auditorium



Cricket Ground

Infrastructure that makes Learning Comfortable

Thoughtfully designed academic spaces, residential facilities, and campus amenities that support wellbeing and an engaging learning experience



Eligibility

A B.Sc. (Hons.)

- Duration: 4-year/ 3-year Under Graduate program
- Total credits: 160/120
- Pass the (10+2) examination from State Board / CBSE / NIOS / IGCSE/ IB / ICSE recognized by the State or Central Government.
- 60% aggregate marks in the pre-university examination

A M.Sc. Data Sciences

- Duration: 2-year Master program
- Total credits: 80
- Passed BCA/ Bachelor Degree in Computer Science Engineering or equivalent Degree. OR passed B.Sc./ B.Com./ B.A. with Mathematics at 10+2 Level or at Graduation Level (with additional bridge courses as per the norms of the concerned University).
- Need to clear the CUPP entrance exam with above 50% score.
- 60% aggregate marks in the undergraduate examinations.

Course Structure

Program USPs	Key Subjects covered
• Integrates multidisciplinary data analysis and science of analytics, and computational technologies to build robust and scalable solutions. • Comprehensive training in mathematics (probability, linear algebra, calculus), data structures, algorithms, and database management to build core analytical and computational skills. • Practical exposure to statistical analysis using R, along with industry-relevant visualisation tools like Tableau and Power BI for effective data storytelling. • Training in modern technologies like Hadoop, Apache Spark, Apache Flink, Google Cloud, and Amazon Kinesis for handling large-scale and streaming data. • Full-semester internship providing real-world exposure and enhancing employability through hands-on experience.	• Mathematics for Data Science • Data Visualization • Machine Learning • Deep Learning • Realtime Analytics • Big Data Systems • Data Structures & Algorithms • Database Management Systems



Industry Internships

Students Successfully Placed in Global Organisations for paid Internships with Stipends up to ₹30,000*

Vocalabs

FIDROX



CULTYVATE



Voice of the Alumini

My experience at Chanakya University has been nothing short of incredible. The campus is beautiful, and the faculty are genuinely knowledgeable. What stood out most to me was the curriculum. There's a strong emphasis on practical application, which I think makes a real difference. It's not just theory. Overall, it's been an invaluable experience. An experience I'll carry with me.



Ashwin Hebbar
Data Scientist,
London Stock Exchange Group (LSEG)



Shivam S
AI Engineer,
Imagine company

I am delighted to be a part of Chanakya University for my Master's program. The faculty provided me with a strong academic foundation that greatly helped me during my internship-cum-research experience at ISRO. The curriculum is industry-oriented, diverse, and enriched with industry mentorship. Advanced courses taught by industry experts helped me grasp concepts beyond conventional classroom learning. The supportive culture and vibrant learning environment at Chanakya University continue to inspire confidence and bring a smile to my face.

Voices of the Future

I am currently pursuing my M.Sc in Data Science at Chanakya University, and my experience so far has been truly enriching. The program offers a strong balance between theoretical concepts and practical learning, which has helped me understand real-world applications of data science.

I have also had the opportunity to engage in research work and gain valuable exposure through workshops, seminars, and academic interactions, which enhanced my analytical and problem solving skills.

The faculty members are highly knowledgeable and supportive, creating a motivating learning environment. Overall, my journey here has strengthened my confidence and prepared me well for a career in data science



Akshatha R V



HITANSHI KAWAR

The B.Sc. Mathematics programme gave me a strong foundation in core areas of mathematics, along with hands-on experience in programming languages and computational tools, where I could witness the magic of mathematics and gain exposure to the opportunities ahead. The evaluation system, consisting of regular assignments, seminars, and presentations throughout the semester, helped me build soft skills and confidence.

It focuses on consistent effort and understanding rather than evaluating students solely through a three-hour exam at the end. And honestly, the academic excellence and achievements of our teachers are enough to leave anyone impressed.



HARSHVARDHAN MANAVALAN
MSc Data Science | Batch: 2024-26

My journey at Chanakya University has been transformative, equipping me with strong analytical and problem-solving skills in Data Science. During my course, I completed internships under a doctorate mentor, at Madura Coats in data management and analytics (₹25,000/month), and as a Data Scientist/AI Engineer Intern at Wordwise Language Labs (₹60,000/month).

Beyond academics, I actively participated in workshops and conferences and ventured into entrepreneurship by founding MM Dry Grapes and Juices under MM Organic Delights. Mentorship from Bharath Setturu Sir and Ajan Sir played a key role in shaping my professional and entrepreneurial journey. I am currently serving as a Research Assistant at Chanakya University and remain deeply grateful for its supportive ecosystem.

Engage in Research

Through seven dedicated Centres of Excellence and two endowed Chairs, the University fosters a robust research ecosystem that advances interdisciplinary inquiry, policy-relevant scholarship, and knowledge creation with national and global impact.



Centre for the Study of Indian Languages



Centre for Social Impact



Dr Ramdas Pai Chair on Education



Centre for Sustainability



Centre for Integral Economics



Subhas Chandra Bose Chair on International Relations



Centre for Indian Knowledge Systems



Centre for Integrated Public Health



Centre for Conscious Entrepreneurship

Campus Life



*Learning that goes
beyond classroom*

Chanakya University Global Campus

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Near Kempegowda International Airport
Devanahalli, Bengaluru - 562165

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