SOMAIYA
VIDYAVIHAR UNIVERSITY
Somaiya Institute for Research and Consultancy

Somaiya TRUST

Somaiya Institute for Research and Consultancy

Design your future in Pharma, Biotech & Research.

MSc Chemical Biology and Drug Design

8
Decades of Educational Legacy

50
Acre Campus in Mumbai

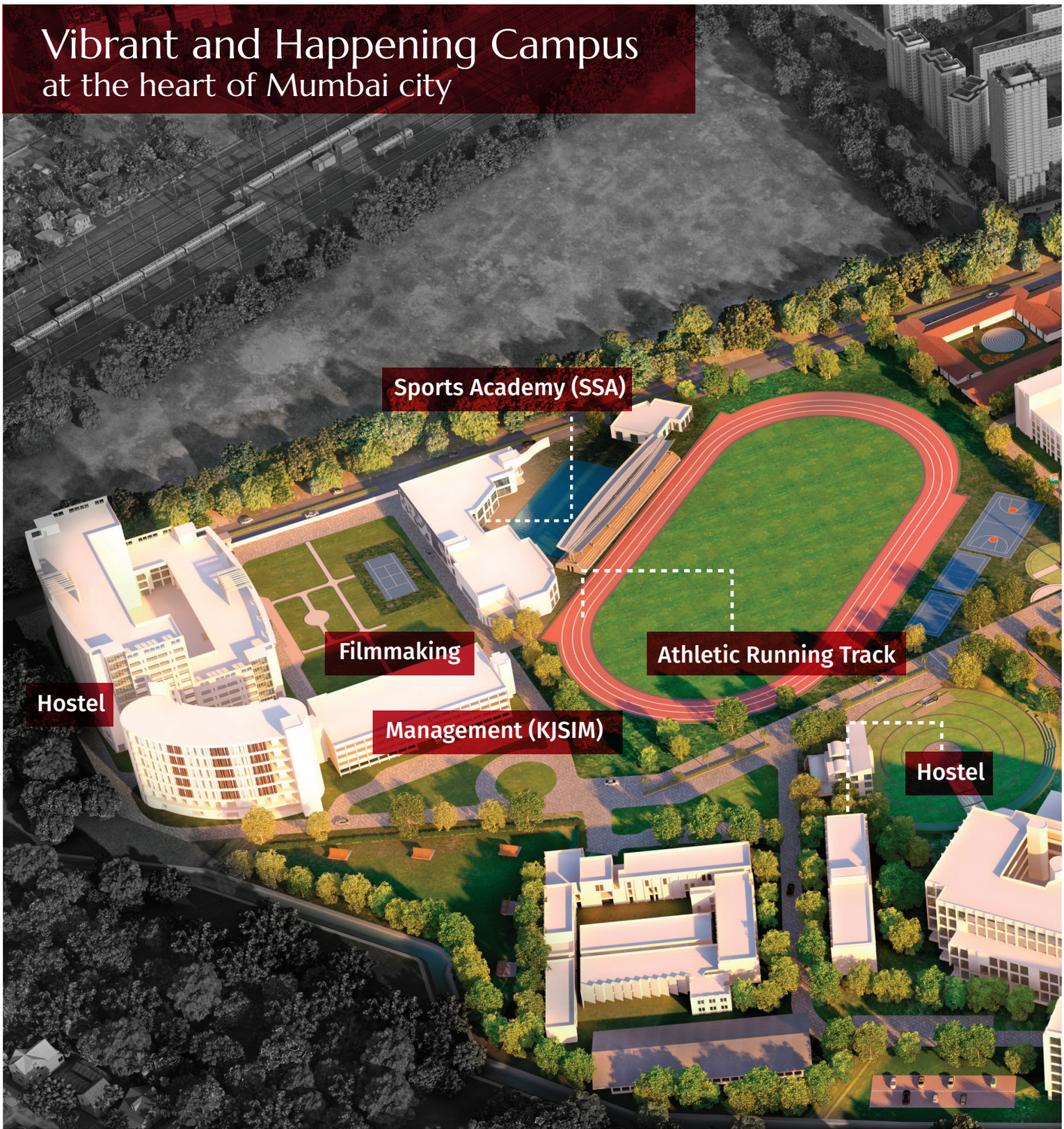
20
Sport Courts

UGC
Approved

40,000
Alumni

NAAC 'A'
Accredited 2025

Vibrant and Happening Campus
at the heart of Mumbai city



Live - Learn - Thrive

Celebrate life by experiencing a diverse environment of people! At Somaiya, we make sure students from all cultural backgrounds feel at home. The diversity of the students prepares you to make the world a better place. No matter what your culture is, Somaiya is committed to give you the best environment for your studies.

4 Hostels

11 Dining Options

20 Libraries

20 Acres Sports & Recreational Area

6 Clubs like Journal Club, SancharManch, Developer Cell, Kaizen Club, Business Club, IIEC, etc.

Events by students, for students like

- BioScope Annual Event
- Film Workshop
- Legal Journalism Workshop
- Moot Court
- Donation Drive
- Anahat Podcast
- Aura 23-24

Chancellor

Shri Samir Somaiya

Chairman of Godavari Biorefineries Ltd, Somaiya Trust,
Ex President, Indian Chamber of Commerce,
BSc, MBA, MS ChE Cornell, MPA Harvard

Vice-Chancellor

Prof Ajay Kapoor

Vice-Chancellor, Somaiya Vidyavihar University
IIT-BHU, PhD from Cambridge,
Pro Vice Chancellor at
Swinburne University (Australia),
Chaired the ASME UK & Ireland Chapter

Dean Faculty of Science

Prof Neetin Desai

Dean & Director,
Somaiya School of Basic and Applied Sciences
MSc, PhD, FMASc, FRSB (UK)

Director of SIRAC

Prof Arun Kumar Nayak

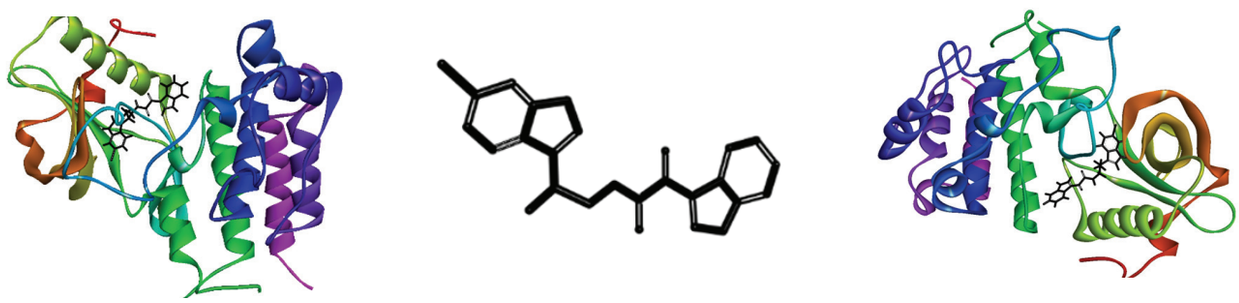
Director,
Somaiya Institute for Research &
Consultancy (SIRAC)
Dean Research, SVU

Centre for Drug Design and Discovery (CD3)

Where Science Meets Innovation in Drug Discovery

At CD3, we explore marine bioactive, neurodegenerative diseases, and cancer therapeutics to drive next-generation healthcare solutions. With cutting-edge research, advanced technologies, and strong industry integration, we empower students to innovate, discover, and lead in the world of drug design. Our mission is to nurture future-ready scientists and leaders equipped with the knowledge, skills, and vision to address complex global health challenges and make a meaningful impact in healthcare and research.

Binding of test compound with VEGFR-2 receptor



MSc in Chemical Biology and Drug Design (CBDD)

The MSc in Chemical Biology and Drug Design (CBDD) is a two-year interdisciplinary programme designed to provide a strong foundation in drug discovery, disease biology, and modern therapeutic development. The curriculum integrates core concepts of biology, chemistry, and computational sciences to equip students with the knowledge and skills required in contemporary pharmaceutical and biotech research. Students can step into the future of healthcare innovation and AI-driven technologies to shape the next generation of drug discovery experts. Designed for aspiring scientists, the programme offers hands-on training in advanced laboratories, real-world research exposure, and industry-relevant tools used in modern pharmaceutical and biotech sectors.

In the first year, students build a robust understanding of drug design, molecular diagnostics, disease pathophysiology, and emerging therapeutics, complemented by intensive wet and dry lab training. Advanced subjects such as bioorganic chemistry, computer-aided drug design, analytical techniques, disease modelling, and applications of AI/ML further enhance their technical expertise. From understanding disease mechanisms to designing next-generation therapeutics, students gain practical expertise through wet lab experiments, computational drug design, and AI/ML applications.

The second year emphasizes research and innovation, with extensive training in research methodology, biostatistics, scientific writing, and ethics. A major highlight of the programme is the hands-on research project spanning two semesters, enabling students to work on real-world scientific problems. Additional exposure through journal clubs, seminars, and electives like Intellectual Property Rights, Cancer Biology, and Regulatory Affairs prepares students for diverse career pathways.

Overall, the programme is structured to develop critical thinking, experimental proficiency, and translational research skills, preparing graduates for careers in drug discovery, pharmaceutical R&D, biotechnology, and academia.

Programme Structure

Industry-Ready Skills:
Learn drug discovery, molecular design & AI/ML applications

Hands-On Training:
Real lab work, live research projects

Career-Focused Learning:
Built for Pharma, Biotech & Research careers

Industry Exposure:
Guest lectures, internships & collaborations

Placement Support:
Career guidance and industry connections

Opportunity to work in an interdisciplinary research environment alongside CD3 PhD scholars, fostering collaboration, mentorship, and advanced scientific exposure

Career Outcomes

- **Drug Discovery Scientist**
- **Clinical Research Associate**
- **Bioinformatics Analyst**
- **Pharmaceutical R&D Executive**
- **Regulatory Affairs Specialist**

Skills

- **Drug Design & Discovery Techniques**
- **AI/ML in Chemical Biology**
- **Analytical & Spectroscopic Methods**
- **Disease Modelling**
- **Research & Scientific Communication**

PG Programmes

Programme Name	Fee Structure (RI) per annum (1st Year & 2nd Year)	Fee Structure (NRI|OCI|FN) per annum (1st Year & 2nd Year)
MSc in Chemical Biology and Drug Design	₹ 1,05,000	₹ 2,10,000
	₹ 1,18,400	₹ 2,36,800

Eligibility:

- Open to research-driven and collaborative learners passionate about science and innovation
- Bachelor's degree in Chemical sciences, Life Sciences, Pharmaceutical Sciences, or allied disciplines (e.g., Chemistry, Biotechnology, Biochemistry, Microbiology, Botany, Zoology, B. Tech Biotechnology, B. Pharm)
- Minimum 50% marks (merit-based admissions considered)
- CUET qualified candidates preferred (not mandatory)

Capacity : 20 students | Duration : 2 Years | Credits : 80

Semester 1	Semester 2	Semester 3	Semester 4
Building Knowledge Base		**Building Research Capacity**	
Fundamentals of Chemistry and Biological Processes	Understanding Analytical Techniques & Design Tools	Research Design	Research Execution
Fundamentals of Drug Design & Discovery	Bioorganic Chemistry	Research Methodology & Biostatistics	Research Project
Fundamentals of Molecular Diagnostics	Computer-aided Moleculer Design & Discovery	Research Publication & Ethics	
Pathphysiology of Metabolic & Immune Disorders	Modern Analytical Techniques	Research Project	
Pathology of Infectious Diseases	Disease Modelling		
Advances in Discovery of New-age Therapeutics	Applications of AI / ML in Chemical Biology		
Practical Sessions	Practical Sessions		
Journal Clubs / Industry Visit			
	Elective*	Elective*	

*Electives : Intellectual Property Rights / Cancer Biology / Regulatory Affairs / Financial Management / Entrepreneurship / NPTEL / MOOC Courses

Expert Faculty

Gain insights from experienced faculty with strong academic and industrial research backgrounds across chemistry, biology, biotechnology, and allied sciences, dedicated to mentoring the next generation of innovators.

Dr Maushmi Kumar
Associate Professor and Programme Coordinator,
MSc-CBDD

- 20+ years of experience in drug discovery and life sciences
- Expertise in chemical biology, drug discovery, and interdisciplinary research
- Research focus on marine-derived bioactives, cancer therapeutics, neuroactive compounds, and AI-guided drug discovery
- Head – Centre for Drug Design and Discovery (CD3), leading translational and collaborative research initiatives
- Extensive experience in mentoring postgraduate and PhD scholars, with strong academic leadership
- Proven track record in securing and executing government-funded research projects (DST, DBT, SERB, ANRF, RGSTC)
- Globally recognized among the World's Top 2% Scientists (Stanford University)
- Actively bridges academia and industry through collaborations, consultancy projects and applied research.
- Prior industry experience in pharmaceutical process development and engineering at Alembic Ltd

Dr Sandip Balwe
Assistant professor

- Interdisciplinary expertise in medicinal chemistry, drug discovery, and nanomedicine
- Focus on next-generation therapeutics and nanocarrier-based drug delivery systems
- Research areas include metabolic disorders, infectious diseases, and pain management
- Former Research Professor at Seoul National University, South Korea
- Industry experience as Scientist at Advinus Therapeutics Ltd

Dr Hetal Shah
Assistant professor

- PhD in Cancer Genomics and Computational Modelling
- 10+ years of teaching experience
- Expertise in bioinformatics, biochemistry, and cancer research
- Specialization in biostatistics and Immunotechnology
- Extensive experience in in silico and in vitro anti-cancer drug studies
- Research experience at IISc Bengaluru and Charles Darwin University, Australia
- CSIR–HRDG Senior Research Fellowship (SRF) awardee

Industry & Research Exposure

- Industry visits
- Exposure to real-world drug development challenges
- Guest lecture by industry experts and entrepreneurs
- Opportunities to work on research projects

Research Projects

Name of the student	Organization	Project title
Mr Joel Thirvayaraj	P D Hinduja National Hospital and Medical Research centre	Computational Model for Cycloserine and First Line Drugs for TB
Ms Yashashree Surve	National Facility for Biopharmaceuticals	Characterization of secondary metabolites of fungal isolates
Ms Dhanashree Bhamare	UPL Limited	Computational Identification of Natural Androgen Receptor Inhibitors for Triple-Negative Breast Cancer
Ms Reshma R	Bhabha Atomic Research Centre	Development of tumor microenvironment targeting radiolabeled peptide for targeting cancer
Ms Shreya Karkate	Bhabha Atomic Research Centre	Characterization of key enzymes of one carbon metabolism
Ms Kahkashan Mirza	Bhabha Atomic Research Centre	Structural and Mechanistic Studies of SARS-CoV-2 PLpro and Its Mutants

Internships at Pharmaceuticals, Life Sciences companies, Government research organizations & Multi specialty hospitals.

Facility at SIRAC

Advanced Laboratory Facilities

- Fully equipped wet labs for microbiology, molecular biology, and biotechnology
- Dedicated dry labs & computational facilities for data analysis and drug design
- High-performance CAD workstations for molecular modelling and simulations

Cell Culture & Molecular Biology Facility

- CO_2 incubators with hypoxic conditioning
- Biosafety cabinets and laminar airflow systems
- PCR (Thermal Cycler) and electrophoresis systems
- Inverted microscopy for cell-based studies

Analytical & Characterization Instruments

- GC-MS/MS, ICP-MS, FTIR, UV-Vis Spectrophotometer
- Thermal analyzers (DSC, TGA/DTA)
- Advanced chromatography and spectroscopic systems

Core Research Equipment

- Rotary evaporator, lyophilizer (freeze dryer), centrifuges
- ELISA reader, gel documentation system
- Incubators, water bath shaker, ultra-low temperature freezers (-86°C)

Testimonials

"Extensive hands-on lab training prepared me for real-world research challenges."

Reshma R, Research Intern – Bhabha Atomic Research Centre

"The programme's research-driven approach enhanced my analytical and problem-solving skills."

Kahkashan Mirza, Research Trainee – Bhabha Atomic Research Centre

"We got exposure to industry-relevant tools and software used in modern drug discovery."

Dhanashree Bhamare, Research Trainee – UPL Limited, R & D Centre

"Seminars and journal clubs significantly improved my presentation skills and scientific communication."

Shreya Karkate, MSc CBDD (Batch 2024–26)

"An interdisciplinary program blending chemical biology with computational and AI-driven approaches - equipping you with the skills to thrive in the future of healthcare."

Esheita Indulkar , MSc CBDD (Batch 2025-27)

"This program provides a concise understanding of disease mechanisms at the molecular level and the science behind drug development - from modeling disease progression to key pre-clinical stages."

Deep Dholu , MSc CBDD (Batch 2025-27)

Success stories begin at Somaiya Vidyavihar University

Happy to Guide

Scan to apply

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