Somaiya School of Basic and Applied Sciences

Faculty of Science

Somaiya Vidyavihar University, Mumbai

Admission Manual

PhD Programme /JRF – Polymer Science

AY 2026-27

Visit for Further Details: **https://www.somaiya.edu/en/phd/**

About Somaiya Vidyavihar University, Mumbai

On 26th August 2019, Somaiya Vidyavihar University, Mumbai became a reality!

After six decades of fostering a holistic teaching and learning experience and establishing reputed educational institutions, Somaiya Vidyavihar University, Mumbai, has achieved a significant milestone. It has become the first self-financed private university in Mumbai under the Maharashtra Self-Financed Universities (Establishment and Regulation) Act, 2013.

We aspire to build and support a world-class institution—one that is proudly Indian and excels in education, research, and service. Somaiya Vidyavihar University, Mumbai, will be a hub for preserving, disseminating, and creating knowledge. It will have a global impact through its ideas and a universal commitment to service. Here, students and faculty can embrace the "Freedom of Possibilities," pursue their passions, and, most importantly, discover themselves.

Our History and Vision

An all-round education must integrate Indian culture, values & morality into the curriculum.

Somaiya Vidyavihar was founded on September 9, 1959, by Shri K.J. Somaiya (1902–1999), a visionary leader with sharp business acumen, a balanced perspective, and a deep commitment to social progress. His dream of shaping young minds through quality education led him to establish the Somaiya Trust in 1953, acquiring a vast expanse of land in Ghatkopar—then a sparsely populated area.

Driven by his passion for education and inclusivity, he later founded the Girivanvasi Pragati Mandal, the K.J. Somaiya Medical Trust, and the Girivanvasi Education Trust, along with several sister institutions, to provide greater access to learning and opportunity. Inspired by Swami Vivekananda's words, *"We want that education by which character is formed, strength of mind is increased, the intellect expanded, and by which one can stand on one's own feet,"* he dedicated his life to fostering knowledge and empowerment.

Over the past six decades, Somaiya Vidyavihar has grown into a thriving educational ecosystem with 34 institutions across diverse fields, including Humanities & Social Sciences, Engineering, Medicine, Management, Education, Dharma Studies, Pure Sciences, and Commerce & Business Studies. Today, with a vibrant 50-acre campus, it is home to over 39,000 students and 3,000 faculty and staff, continuing its legacy of excellence in education and innovation.

With PhD programmes in various faculties, we provide an innovative platform for research aspirants to make a niche of their own to impact society and life.

About Somaiya School of Basic and Applied Sciences, SVU

The Somaiya School of Basic and Applied Sciences (SSBAS) is a newly established institution under the Faculty of Sciences at Somaiya Vidyavihar University, Mumbai. Initially it was a part of S K Somaiya College, SSBAS has grown into a center of academic and research excellence. With six departments, the school offers six undergraduate and eight postgraduate programs, along with a Doctor of Philosophy (Ph.D.) program in six disciplines. SSBAS is equipped with state-of-the-art research laboratories, advanced instrumentation, and cutting-edge software, fostering a seamless integration of science and technology research. The school has successfully secured ₹1 crore+ in research funding from various governmental agencies, reinforcing its commitment to advancing fundamental research for societal development.

2. **Eligibility criteria for PhD Admission**	
Subject to the conditions stipulated in the SVU PhD Regulations, the following candidates are eligible to seek admission to the PhD Programme	
1. Education Qualification	
i.	Master's degree (2 years or 1 year) or a professional degree declared equivalent to the Master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent as per UGC regulations.
ii.	Candidate seeking admission after a 4-year/8-semester bachelor's degree programme (B.Tech / B. E, B.Pharma, MBBS or BDS or BAMS or BHMS or B.Sc (Honors) should have a minimum of 75% marks in aggregate or its equivalent as per UGC regulations
iii.	A person whose Master's dissertation has been evaluated and the viva-voce is pending may be admitted to the PhD Programme but subject to completion of Master's degree before provisional admission to SVU PhD Programmes.
iv.	Candidates possessing a Degree considered equivalent to Master's Degree of an Indian Institution, from a Foreign Educational Institution accredited by an Assessment and Accreditation Agency which is approved, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country for the purpose of assessing, accrediting or assuring quality and standards of educational institutions, shall be eligible for admission to PhD Programme
v.	**MUST** have qualified the **Ph.D. Entrance Examination and interview of SVU** – mandatory eligibility criteria for all candidates.
vi	**Candidates exempted** from appearing for Ph.D. Entrance Examination of SVU **MUST fill the application form** as per the schedule displayed on website. The exempted candidates **need to pay** the **application processing fee**.
vii	A No Objection Certificate (NOC) from the employer in case of those who are working / employed for applying to Ph.D. Programme
viii	If candidate wants to apply more than one subject then should submit separate / another application and **need to pay** the **application processing fee** per subject.

About Research Center

The Department of Polymer Science offers a full-time doctoral program in Polymer Science, meticulously designed to meet the rigorous standards set by the University Grants Commission (UGC). The quality and content of the research is at par with any advanced educational institution/university in India or abroad. This Ph.D. program transcends the pursuit of an additional degree, instead of embodying a passion-driven journey to expand the boundaries of human knowledge. Ambitious researchers are invited to join our vibrant academic community through the prestigious SVU-JRF Fellowship Program, which offers financial assistance in accordance with UGC norms.

The department fosters a strong research culture, where students actively contribute to innovative research. With a growing number of publications, the department is at the forefront of advancements in diverse areas, including polymeric waste recycling and sustainable polymers, light-emitting and conducting polymers, renewable resources, high-performance polymers, natural products and textiles, computational and Quantum chemistry, electron-induced chemistry and polymerization, and Astro chemically relevant polymeric materials. Through its dynamic research environment, the department continues to drive scientific progress and innovation in polymer science.

Highlights:

- All the faculties of the departments are recognized as PhD guides.
- Interactive classrooms and state-of-the-art laboratories, they engaged in cutting-edge research, gaining proficiency in analytical techniques and computational modeling.
- Research collaboration with research institutes/Govt agencies/Industries like Bhabha Atomic Research Centre (BARC), Tata Institute of Fundamental Research (TIFR), and Atomki Hungary.
- Strategic partnerships with renowned polymer industries provide students with invaluable opportunities for real-world learning, including hands-on experiences, live projects, and industry-relevant case studies that bridge the gap between theory and practice.
- Designed to align with industry needs and scientific advancements, the program offers specializations in various polymer fields. Students gain hands-on experience with the latest technologies, enhancing their skills for industrial roles or higher education.

Eligibility at UG/PG Degree	
Branch of study at UG	Bachelor of Science degree in Chemistry/Polymer science/Polymer chemistry/Physics/Geology/Life Sciences/Biotechnology or Bachelor of Technology / Engineering
Branch of study at PG	Master of Science / Technology/ Engineering degree in any branch of Chemistry/Physics /Polymer Chemistry/ Polymer Science/ Paints/ Surface Coating / Rubbers/Elastomers/ Textiles /Fiber Science/ Material science/ Materials science and Engineering.

Exemption Criteria for SVU Ph.D. Entrance Examination

Candidates who hold a JRF Fellowship with CSIR/UGC/ICAR/ ICMR and DBT examinations are exempted from appearing for Ph.D. entrance examination of SVU.

For further details about exemption and category of students refer PhD regulation - Link

However, the candidates who fulfil the above criteria MUST fill the application form as per the schedule displayed on the website along with necessary fees.

Pattern and syllabus of SVU Ph.D. Entrance Examination

The Ph.D and JRF Entrance examination will be common and will be at Somaiya Vidyavihar Campus, SVU, Vidyavihar, Mumbai -77

Pattern of entrance examination will be notified separately in due course of time

Syllabus for Entrance Examination in Polymer Science

Syllabus for Entrance Examination

Unit I –Polymer Science

a. Development of polymer science as a discipline. History of polymers. Fundamental terms. Macromolecular hypothesis. Why polymers? Today's marketplace of polymers.
b. Polymerisation processes. Step-reaction or condensation polymerisation. Chain-reaction or addition polymerisation. Ionic polymerisation. Cationic and anionic polymerisations. Co-ordination polymerisation. Bulk, solution, suspension and emulsion polymerisations.
c. Polymer molecular weight and its determination. Number-Average and weight-average molecular weight. Molecular weight distribution Polydispersity index.
d. Molecular weight determination by end-group analysis. Solution viscosity and molecular size. Gel Permeation Chromatography-GPC. Fractionation of polymers. Light-scattering photometry. Ultracentrifugation. Mass spectrometry.
e. Functionality of monomers and its role in deciding polymer's structure (linear, branched and cross-linked); IUPAC names, trade or commercial names, source based and structure-based names of various polymers, classification of polymers, different copolymers, random, alternating, block and graft copolymers, geometry and stereo regularity of polymers.

Unit II – General Chemistry

a. Colligative properties of Dilute Solutions.

b. Molecular Symmetry: Symmetry elements and Symmetry operations, Concept of a Point Group.

c. Chemical Bonding, Structure and bonding in homo- and heteronuclear molecules, including shapes of molecules.

d. Mechanism of Organic Reactions - Thermodynamic and Kinetic control of organic reactions: Nucleophilicity / electrophilicity Vs Basicity / acidity.

e. Mechanism of reactions of carbonyl compounds with nucleophiles: Reaction of aldehydes and ketones with primary and secondary amines, Acyl nucleophilic substitution (tetrahedral mechanism): Acid catalyzed esterification of carboxylic acids and base promoted hydrolysis of esters.

f. Structure determination of organic compounds by IR, UV-Vis, 1H & 13C NMR and Mass spectroscopic techniques, Chromatography and separation techniques.

Unit III – Research Methodology

a. Meaning of Research, Objectives of Research, Motivation in Research, Types of Research, Research Approaches, Significance of Research, Research Methods versus Methodology, Research and Scientific Method Research Design.

b. Importance of Knowing How Research is Done, Research Process, Criteria of Good Research Ethical issues: Plagiarism, Restriction to Plagiarism, concept of patents and trademarks.

Documents Required
1. UG Degree or equivalent Mark List 2. UG Degree certificate 3. PG Degree or equivalent Mark List 4. PG Degree or equivalent certificate 5. AADHAR card 6. Degree equivalence / eligibility certificate – wherever is applicable 7. Migration certificate 8. Two colour passport size Photograph 9. If appearing the PG degree examination – bonafide certificate 10. If employed, then No Objection from the employer

Important Links
Tentative Timeline / Steps adapted for Ph.D. Programme - **Link** Fee Structure of Ph.D. Programme - **Link** Guidelines for Payment of Fees a Refund – **Link** About course work - **Link**

Process of getting the documents submitted return
After verifications of documents, within 7 days, documents will be returned back to students.

Contact

Ph.D Coordinator

Dr. Nilesh Wagh

nilesh.wagh@somaiya.edu