SVKM'S NMIMS Deemed to be UNIVERSITY

SUNANDAN DIVATIA SCHOOL OF SCIENCE

Department of Biological Sciences

5 Year Integrated MSc in Biomedical Sciences

Placement Brochure

2019-2024

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SUNANDAN DIVATIA SCHOOL OF SCIENCE

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Dean's Message

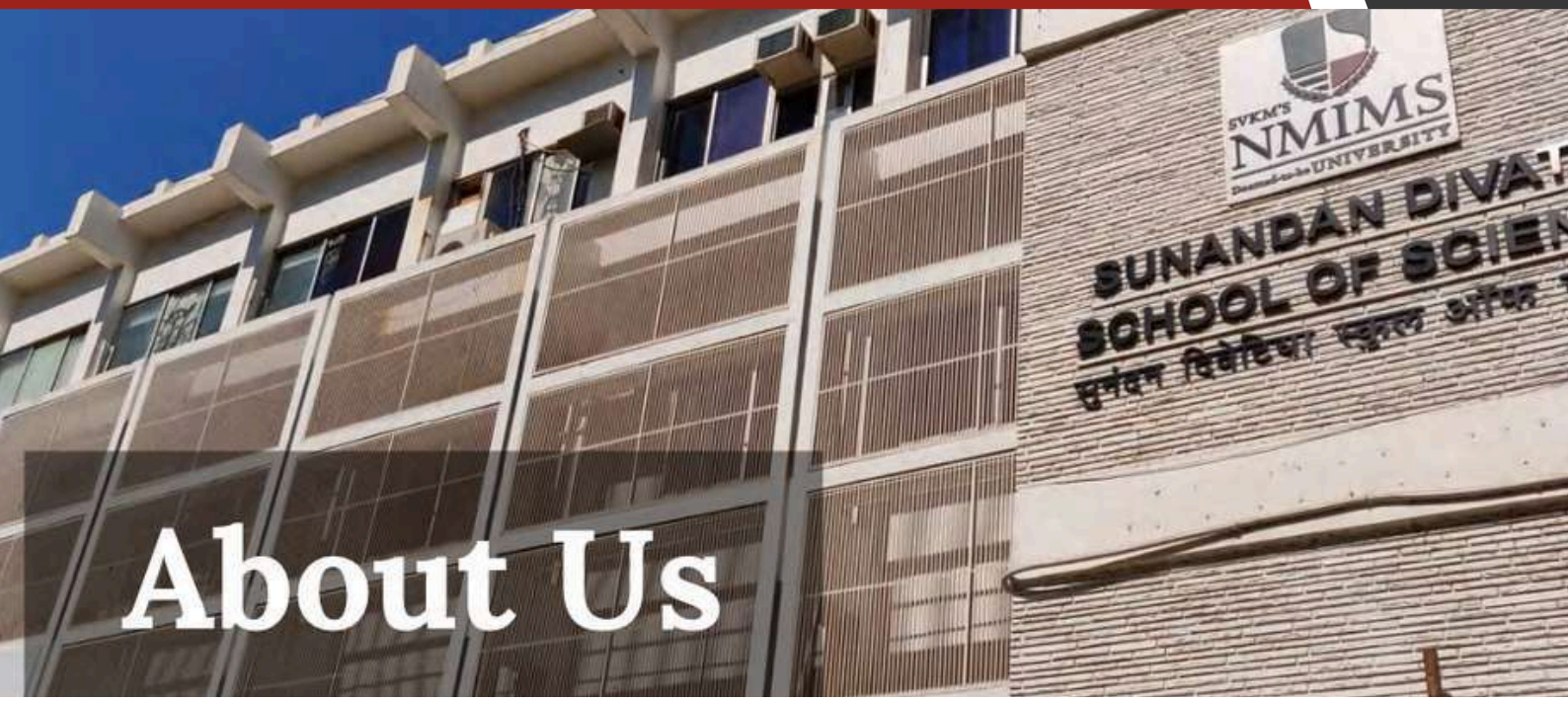
Dr. Jayakumar Singh Bondili

The SVKM's NMIMS Sunandan Divatia School of Science, was born out of the foresight of the University with a view to provide undergraduate and postgraduate students an opportunity to venture into the fascinating world of Science. The School aspires to be Centre of Excellence by creating a conducive student-centric environment that supports high quality teaching and research in niche areas of Science and Technology.

The UG and PG programs in Biomedical/Biological Sciences are designed to develop student's scientific, experimental, and analytical skills. Further, the research-intensive and laboratory-based curriculum covers contemporary subjects and is intended to meet the needs of the ever-evolving chemical & pharmaceutical industry, medical diagnostics industry, clinical research organizations, and research institutions. Our students have been trained by excellent faculty who have a strong academic research background. Besides, the students are exposed to state-of-the- art infrastructure and equipment to enhance their hands-on skills. Moreover, the compulsory research project as part of the curriculum, develops their technical skills and makes them ready to face the industry. To ensure the holistic development of the student, besides academics, students are a part of various committees/cells to hone their creative, social, cultural, and interpersonal skills.

I take pleasure in inviting companies to our school, for placements. Our effort is to enable interaction between students and companies to find the best match between their aspirations and requirements.

Happy Reading!



About Us

Sunandan Divatia School of Science (SDSOS), NMIMS started in 2007 with the aim to develop technically skilled manpower for Industry. In the past years, this institution has not only established itself as an apex Research Centre but has also provided training to graduate students for posts in the Pharmaceutical industry, in Para-Medical fields and more recently in Clinical Research organisations.

The main motto of this institute is to bestow its constant endeavour towards excellence in the Science and Technology field and nurture the future by providing quality education and research benefits.

Vision

To groom and develop emerging professionals and scientific scholars for the global education and research sectors in the emerging fields of Basic and Applied Sciences.

Mission

- **To offer a broad, thorough and intellectually challenging approach in the areas of Science**
- **To achieve academic excellence combined with industry and career oriented training through extensive lab based practical modules to facilitate contemporary research in specialized areas of Science**
- **To promote holistic development of students with overall personal development**

Courses Offered

Department of Biological Sciences

The courses offered by the Department are:

B.Sc. Biomedical Science

M.Sc. Biological Sciences

Ph.D. Biological Sciences

About the Course

The curriculum framework of the course is uniquely crafted to impart contemporary knowledge in the core domain of Life Sciences through value-added education and also hone the dry lab skills of each individual.

The course stands unequivocal in its amalgamation of enhancing the skills of the individuals through the hands-on practice of a plethora of techniques (cell culture, HPLC, etc.) assisted by the state-of-the-art infrastructure.

The interpersonal qualities of communication, teamwork, and leadership are instilled in each individual in coherence with societal awareness and sensitivity through the social involvement program, thereby imparting holistic growth.

The diverse theoretical understanding acquired through interdisciplinary domains such as bioinformatics and biostatistics along with the appropriate electives tailor the individual for the Biomedical industry and related fields of Biotechnology, Pharmaceutical/Biotech, Clinical Data Management, Molecular Diagnostics, etc.

Industrial training (both summer and six-month-long projects) not only aids in translating the theory to action but also assesses the student with contemporary standards.

Course Structure

HEALTH SCIENCES AND DISEASE

- Immunology
- Neurobiology and Clinical Psychology
- Developmental Biology
- Pathology
- Pharmacology and Toxicology
- Clinical Nutrition
- Pharmaceutical Industry and Clinical Research
- Cancer Biology

CELL AND MOLECULAR BIOLOGY

- Cell biology
- Molecular Biology: DNA and Replication
- Molecular Biology: Transciption and Translation
- Genetics
- Recombinant DNA Technology
- Omics
- Stem Cell Biology
- Molecular Neurobiology

MICROBIOLOGY

- Microbial Physiology
- Bioprocess Technology
- Parasitology and Virology
- Medical Microbiology

ECOLOGY

- Evolution and Adaptation
- Environmental Science
- Systematics and Diversity
- Environmental Biotechnology

INTERDISCIPLINARY COURSES

- Mathematics for Biologists
- Biophysics
- Organic and Inorganic Chemistry
- Biochemistry: Biomolecules and Metabolism
- Clinical Biochemistry
- Biostatistics
- Bioinformatics
- Data Analysis in Genome Biology

SOFT SKILLS

- R in Biology
- Introduction to Python
- Research Methodology
- Effective Communication Skills
- Leadership building skills
- Project management skills
- Research Seminar
- IPR and Patenting

Skills Developed in Undergraduate Studies

Semester I

- Microbiology Techniques
- Communication skills
- Physical and Bioanalytical chemistry techniques
- Mathematical skills for biologists

Semester II

- Biochemistry techniques
- Microbial physiology techniques
- Leadership skills
- Genetics
- Biophysical methods, spectrometric techniques

Semester III

- Industrial Microbiology techniques
- Cell biology techniques
- Inorganic and Organic Chemistry techniques
- Biostatistical analysis

Semester IV

- Immunological techniques
- Biochemistry techniques
- Excel and R programming

Semester V

- Molecular biology techniques
- Scientific poster, Review paper and SOP writing.

Semester VI

- Medical microbiology techniques
- Bioinformatics skills

Skills Developed in Post-graduate Studies

Semester VII

- R programming applications in biology
- Recombinant DNA technology, cloning and gene expression studies.
- Journal article presentation

Semester IX

- Cancer biology techniques
- Analysis of genomic data
- Python programming
- Journal article presentation

Semester VIII

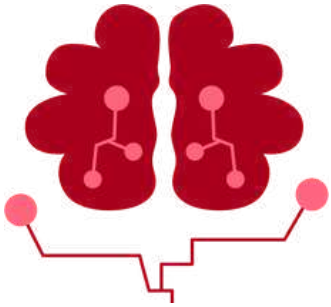
- Tools and techniques in research
- Animal tissue culture techniques
- Journal article presentation

Semester X

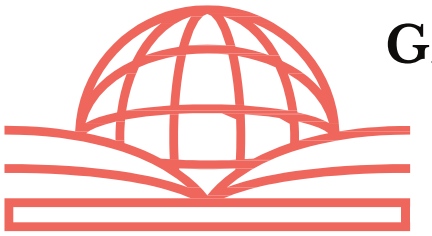
- Independent research project from a reputed research institute/ hospital/ university.

Why Recruit Us?

ROBUST ACADEMIC COURSEWORK



- Innovative Practical Pedagogies
- Strong technical literacy

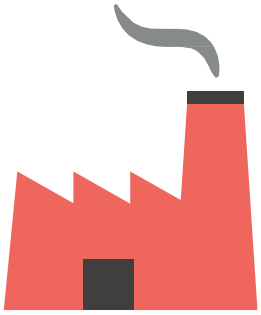


GLOBAL EDUCATION APPROACH

- Global perspective on problem solving skills
- Global level of practical training

STRONG INDUSTRY CONNECT

- NMIMS's Centre of Scientific Excellence
- Industry Connect Initiatives



VIBRANT LEARNING ECO SYSTEM

- Multilateral development
- Industry Projects

OUTSTANDING INTERNSHIPS AND DISSERTATIONS

- Dedicated placement cell to enhance Employability Excellent Internship and dissertation opportunities

Extracurriculars

Extracurriculars have been an integral part of our student's college life with diverse activities ranging from sports, cosplay days, and nature walks to the annual college fest 'Excalibur', being a regular part of the academic calendar. Various student clubs, such as the students council, science club, and nature club have allowed the students to

Along with these co-curricular activities, our students also have founded 'Eureka', a student-run, monthly newsletter where they talk about the modern-age discoveries for the masses.

Placement Cell Events

Name: Dr. Maithili Athavale

Date of Talk: 23rd January 2023

Title of Talk: "The Journey of a Drug from Bench to Bedside"

Description: Dr. Maithili Athavale, an assistant general manager at Sathgen Biotech, conducted an enlightening session for the Master's, final year Bachelor's and PhD students of the Department of Biological Sciences. She highlighted the entire journey of a drug, from the pre-clinical studies including in vitro assays and animal experiments to the Stage 4 clinical trials performed in humans.

Name: Dr. Gautam Das

Date of Talk: 17th February 2023

Title of Talk: "The Role of Human and Microbial Genomes in Health and Disease"

Description: Dr. Gautam Das, the founder of miBiome Therapeutics, conducted an informative session for the MSc and PhD students of the Department of Biological Sciences. He shed light on the importance of sequencing in diagnosing and treating diseases. A data analysis session was also conducted which helped the students understand how a pipeline for the analysis of sequencing data is constructed. The talk gave an insight into how biotechnology start-ups can contribute to the research ecosystem.

Placement Cell Events

Name: Mr. Nilesh Ambre

Date of Talk: 14th October 2023

Title of Talk: "Academics to Corporate"

Description: Mr. Nilesh Ambre, the head HR at Godrej Security Solutions, conducted an informative session for the MSc and PhD students of the Department of Biological Sciences. He shed light on the importance of skill development required for the corporate world. An interactive discussion was held discussing essential skills, adaptability, and strategies for success in the corporate world, along with the significance of continuous learning and personal growth. He also introduced us to the 'IKIGAI' system for self-awareness within oneself. The talk gave insights on the significant transition that impacts our academic community.

Placement Cell Events

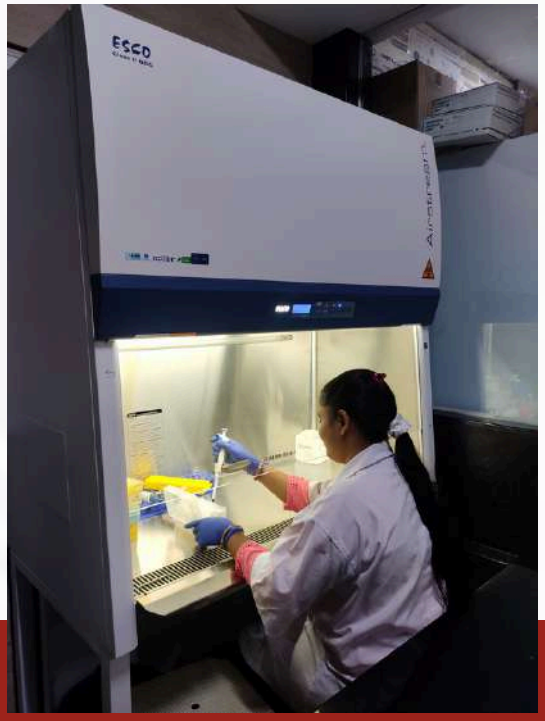
Name: Dr. Sanjeev Gupta

Date of Talk: 28th October 2023

Title of Talk: "Biologics/Biosimilar Development Approaches and Future Perspective"

Description: Dr. Sanjeev Gupta, the Vice-President of the Biosimilars Division at IPCA Laboratories, conducted an informative session for the MSc and PhD students of the Department of Biological Sciences. He gave an insightful glimpse into the operations of a research department in the biotechnology industry and expertise illuminated the technical, business, and regulatory intricacies of this dynamic field, fostering a deeper understanding among the students along with the development pipeline for biosimilars is different than that for biologics. He also described the challenges faced in manufacturing of biosimilars and the strategies that can be employed for economical manufacturing of the same. He explained this using a real case study of cell line development.

Instrumentation



Biosafety Cabinet

Non-refrigerated Centrifuge

Waterbath

Deep Freezer

Instrumentation

Shaker Incubator

Gel Documentation System

Inverted Phase Contrast Microscope

Eppendorf Centrifuge

Instrumentation

ELISA Plate Reader

Electrophoresis

RT PCR

Animal Tissue Culture Lab

RESEARCH PROJECTS

PROJECT GUIDE: DR. PURVI BHATT

Gaurang Upadhye	p53/p21CIP1/WAF pathway: its role in cellular senescence age related diseases and senotherapeutics targeting the p53/p21CIP1/WAF pathway
Krutika Desai	Insights into the role of epigenetics in cellular senescence

PROJECT GUIDE: DR. BRIJESH SUKUMARAN

Honey ChandwanI Shruti Singh	Impact of the Big Five Personality traits on different dimensions of Well-Being : A Cross-Sectional study

PROJECT GUIDE: DR. EKTA KHATTAR

Heer Sanghvi Shreya Rao	Literature collection on studies which have performed genome wide binding of NF-κB under different stimulation conditions (Chip sequencing)
Sakshi Sondhi Yashvi Thakkar	p53 genome-wide binding analysis and DNA damage
Rushikesh Barad	Design Gene Knockout Strategy for ZCRB1 using CRISPR

RESEARCH PROJECTS

PROJECT GUIDE: DR. HARINDER SINGH

Anagha Oke Isha Haria	In silico bioprospecting and characterization of a putative laccase from *Helicobacter bilis*

PROJECT GUIDE: DR. PAMELA JHA

Anurima Menon	Insulin Resistance: A interconnecting link between PCOS and T2DM and therapeutic effects of Tanshinone and Berberine in the alleviation of Insulin Resistance
Hetvi Gada	Demographic study of prevalence of diabetes and psychiatric disorders in Indian population
Maitreyee Aurangabadkar	Artificial sweeteners: Their impact on glucose homeostasis, diabetes and macrovascular complications

PROJECT GUIDE: DR. BAJARANG KUMBHAR

Aditi Singh & Devanshi Sen	Insight into the interaction of laulimalide with drug-resistant tubulin isotypes βIIa and βIII in human ovarian carcinoma using computational approach
Mehak Khandelwal & Sukhada Kanse	Immunoinformatics approach to design multi-epitope vaccine against VP1 capsid protein of JC Polyomavirus

Summer Internship - 2023

HaystackAnalytics

ICMR INDIAN COUNCIL OF MEDICAL RESEARCH | NIRRCH NATIONAL INSTITUTE FOR RESEARCH IN REPRODUCTIVE AND CHILD HEALTH

Reliance LIFE SCIENCES

RGCB DISCOVERIES FOR A BETTER TOMORROW

Next Gen Scientists Foundation

Kokilaben Dhirubhai Ambani hospital & medical research institute
Every Life Matters

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
भारतीय प्रौद्योगिकी संस्थान मुंबई
ज्ञानम् परमम् ध्येयम्

NBMG

ipca A dose of life

Summer Internship - 2023

Name	Description	Tenure
Ms. Yashvi Thakkar	Research and development at **HayStack Analytics, Mumbai**	2 months Stipend: 10,000/- INR
Ms. Anagha Oke	Interned at **Rajiv Gandhi Centre for Biotechnology** and received a stipend from the **Next Gen Scientists Foundation, Chennai**	2 months Stipend: 12,000/- INR
Ms. Sukhada Kanse	Medical Diagnostics Department at **Reliance Life Science, Mumbai**	1 month
Mr. Rushikesh Barad	Marketing and Operations at **HayStack Analytics, Mumbai**	2 months Stipend: 20,000/- INR
Ms. Hetvi Gada	R&D and Scientific Communication at **HayStacks Analytics, Mumbai**	2 months

Student Profiles

Anagha Oke

Interested in Immunology, Omics and Genetics

Anurima Menon

Interested in Cancer Biology, Stem Cell Biology, Molecular Biology

Devanshi Sen

Interested in Stem Cell Biology and Neuroscience

Hetvi Gada

Interested in Biosimilars, Therapeutics, Clone Development

Student Profiles

Isha Haria

Interested in Cancer Biology & Immunoengineering

Krutika Desai

Interested in Biomaterials, Stem Cell Biology & Genomics

Maitreyee Aurangabadkar

Interested in Immunology, Genetics

Rushikesh Barad

Interested in Sales, Marketing, Venture Investments

Student Profiles

Shreya Rao

Interested in Reproductive and Developmental Biology, Pharmaceutical Sciences

Sukhada Kanse

Interested in Molecular Biology, Vaccine Design, Bioinformatics

Yashvi Thakkar

Interested in Neuroscience

Testimonials - 2023

5 Year Integrated Biomedical Sciences

Sayalee Samant

The past five years spent at SDSOS have been full of wonderful learning experiences. The well-rounded curriculum has exposed me to a variety of disciplines in biology, and the practicals conducted since the first year form an enriching academic component. The faculty's field of expertise and expansive scientific network have been a valuable resource as I navigate the world of science as a young professional.

Ushma Pandia

Spending 5 years as a part of NMIMS has been a bittersweet journey. While the coursework was tough, every subsequent year I was more prepared and knowledgeable than ever. I extend my sincere. ratitude to the faculty and university for a well-rounded, in-depth training and education in Biomedical Sciences

Shloka Shetty

Studying at NMIMS has been an extremely fulfilling and enriching experience. During my course, I had numerous opportunities to advance my practical skills in the fields of molecular biology, cytology, microbiology, and bioinformatics. The curriculum is designed to impart comprehensive knowledge, and the interactive internal assessments have positively impacted my interpersonal and communication skills for holistic growth.

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