



TATA MEDICAL CENTER

PG Diploma in Molecular Medical Microbiology

***A Joint Program by
St. Xavier's College
(Autonomous), Kolkata
&
Tata Medical Center, Kolkata***

***Industry Academia
Collaboration for Next - Gen
Healthcare***



PG Diploma in Molecular Medical Microbiology

*A Joint Program by St.Xavier's
College & Tata Medical Center,
Kolkata*

*Industry Academia Collaboration for
Next Gen Healthcare*

Nature of the Course :

The PG Diploma in Molecular Medical Microbiology covers advanced topics in Microbiology, Molecular Biology, and Cancer Biology, blending theory with hands-on training.

- 01** The curriculum includes sophisticated techniques like Droplet Digital PCR, Cartridge-based Nucleic Acid Amplification, Hybrid Capture Assay, Non-Amplification Molecular Methods, Line Probe Assay, Gene Chips, and DNA Microarrays.
- 02** It also emphasizes statistical analysis of biological data to enhance research skills.
- 03** Students gain exposure to state-of-the-art instruments used in molecular diagnostics, including Automated Nucleic Acid Extraction Systems, Qubit Fluorometer, TapeStation, Next-Generation Sequencing Platforms (MiSeq, Ion Studio, Oxford Nanopore), and FISH Station.
- 04** Most importantly, candidates develop comprehensive expertise in theoretical, practical, analytical, and experimental aspects of the field.

Why Study Molecular Microbiology?

- This course offers comprehensive 360° training in Molecular Medical Microbiology and Cancer Biology—pioneering in the country with broad applications across several related fields.
- Ideal for those passionate about Molecular Medical Microbiology and driven to make a meaningful impact in healthcare.
- Taught by faculty of St. Xavier's College and doctors and microbiologists from Tata Medical Center, students receive academic excellence paired with practical clinical training for a specialized and respected career.

COLLABORATION

- St. Xavier's College (Autonomous), Kolkata will provide classroom lectures in Basic Microbiology, Host-Pathogen Interaction, Oncogenic Microbes, Biostatistics, Bioinformatics, and labs in Molecular Microbiology, Serology, Clinical Biochemistry, and Enzymology.
- Tata Medical Center, Kolkata will offer clinical training, hands-on sessions with advanced equipment, access to hospital infrastructure, and a six-month paid internship—the icing on the cake.
- The course concludes with a Joint Certification from St. Xavier's College and Tata Medical Center.

OUTCOME

Graduates will emerge as skilled Molecular Medical Microbiologists, equipped to tackle complex healthcare challenges with confidence, competence, and empathy, ready for roles in Cancer Biology, Molecular Biology, and Pathology labs.

Curriculum Structure

Year 1: Academic Training

Semester 1 & 2 (July –June)

Classes at:

St. Xavier's College (SXC):

Smart classroom sessions

Class hours: 10:10 A.M.– 4:00 P.M.,
three days a week

Tata Medical Center (TMC):

Class hours to be announced at the
beginning of each semester.

Lab Sessions:

Held at SXC or TMC, depending on
subject requirements

Format:

Hybrid – Includes smart classroom
learning, lab-based sessions, and
hospital-integrated training

Year 2: Clinical Internship

**Semester 3 (July –
December)**

Paid Internship at TMC:

Stipend of approximately Rs.
10,000/- per month

Culminates in the submission
of a project/dissertation

Eligibility:

Clearance of all Semester 1 & 2
papers



ELIGIBILITY & ADMISSION

- **Minimum Qualification:**
M.Sc. in any branch of Life Science: Microbiology, Molecular Biology, Genetics, Biotechnology, Biochemistry, Physiology, Botany, or Zoology (from a recognized university)
- **Admission Process:**
Entrance Test (MCQ) + Interview
Total Seats: 8

COURSE STRUCTURE & CREDITS

Total Credits:

Year 1(Semesters 1& 2):

40 credits

Internship: 20 credits

Total: 60 credits (20 credits per semester)

Marks Distribution:

10 theory/practical papers × 100 marks = 1000 marks

Passing Criteria:
Minimum 40%

EVALUATION

- **Theory Examinations:**
Conducted at St. Xavier's College (SXC)
- **Continuous Lab Assessments:**
Conducted at SXC-Tata Medical Center (TMC)
- **Arrear/Supplementary Exams:**
Will be conducted at the appropriate forthcoming end semester

INTERNSHIP

Commencement:

Only after successful completion of Semesters 1 & 2

Nature of Work:

May include odd-hour duties based on institutional requirements

REGISTRATION VALIDITY

REGISTRATION WILL REMAIN VALID FOR TWO YEARS, EXCLUDING THE YEAR OF ADMISSION

CERTIFICATION DIPLOMA

- Jointly awarded by St. Xavier's College (Autonomous), Kolkata and Tata Medical Center, Kolkata.
- Mark Sheets issued after completion of Year 1

COURSE FEES

- SEMESTERS 1 & 2:
₹15,000 PER MONTH (ALL INCLUSIVE)
- NOTE:
- FEES ARE SUBJECT TO REVISION AS REQUIRED.

CAREER OPPORTUNITIES

The growing global demand for skilled Molecular Medical Microbiologists is opening up a wide array of career paths across both national and international landscapes. Students completing this course will be well-positioned for roles in:

- Hospitals & Pathological Laboratories Cancer Research Centers
- Molecular Diagnostic Kit Manufacturing Companies
- Central Instrumentation Facilities in Higher Educational Institutes

Job Roles Include:

- Skilled Laboratory Technician
- Molecular Diagnostics Specialist
- Research Assistant in Oncology and Infectious Disease
- Technical Expert in Instrumentation Facilities

ADMISSIONS & APPLICATION

FURTHER DETAILS REGARDING APPLICATION PROCEDURES AND ADMISSION TIMELINES WILL BE AVAILABLE ON THE ST. XAVIER'S COLLEGE (AUTONOMOUS), KOLKATA WEBSITE.

Students will receive:

- Placement assistance from the SXC Placement Cell Mentorship
- Guidance through Tata Medical Center (TMC)



Vitros XT7600: For Clinical Chemistry & Immunoassay



QIA Symphony: Automated purification of nucleic acids in Molecular Diagnostics



VITEK-2: Automated microbial identification & antimicrobial susceptibility testing



3500-Genetic Analyzer: 8 capillary sequencing instrument



Bact/ALERT-3D: Automated Microbial Detection Blood Culture Testing



MiSeq: Sequencing System data analysis & storage for targeted microbial genome application



**“Make a difference to your life—
and to others.**

**Step into the future of
medical technology with
confidence and empathy.”**