



# St. Xavier's College, Mumbai.

(Empowered Autonomous Institute)

## **MSc Physics (Specialization in Astrophysics)** **Admissions for Academic Year 2024-25**

### **About the programme:**

Astrophysics is among the most exciting research disciplines of the 21st century, pushing the boundaries of what we know about our solar system, other stars, exoplanets, galaxies, and the Universe at large. In order to participate in and make contributions to cutting-edge research in astrophysics, it is essential to first develop sound comprehension of relevant theory and practical skills - both of which require the foundational knowledge of basic physics. In 2019-20, the Department of Physics at St. Xavier's College, Mumbai started an MSc programme that spanned the breadth of core physics areas while also offering specialization in Astrophysics. Our alumni have successfully transitioned into either professional careers or higher education - including reputed PhD programmes overseas.

In 2023-24, we implemented the National Education Policy (NEP) 2020. The courses offered in the first three semesters of the MSc Physics programme under NEP are listed in the table below. The final semester is dedicated completely to working on the Master's thesis, the topic of which may be in any area of physics or astrophysics.

Semester 1	Semester 2	Semester 3
Mathematical Physics (Core)	Statistical Mechanics (Core)	Relativistic Transient Astrophysics (Core)
Classical Mechanics (Core)	Electrodynamics (Core)	Stellar Physics (Core)
Quantum Mechanics (Core)	Atomic and Molecular Physics (Core)	Astrophysics of Galaxies (Core)
Nuclear Physics (Core)	Solid State Physics (Core)	Interstellar and Intergalactic Medium (Core)
Electronics and Python Programming (Elective)	Observational Astronomy and the Solar System (Elective)	General Relativity and Cosmology (Elective)
Embedded Systems (Elective)	Introductory Space Technology (Elective)	Atmospheric Physics (Elective)
Research Methodology (Mandatory)	Internship (Mandatory)	Research Proposal for Dissertation (Mandatory)
<b>Semester 4</b>	Master's Dissertation	

Further details about syllabi may be obtained from the college website: <https://xaviers.ac/academics/syllabus>. Queries about the MSc programme and admissions may be directed to [mscphysics.sxc@gmail.com](mailto:mscphysics.sxc@gmail.com).

#### **Eligibility:**

Applications are now invited to the MSc Physics programme for the academic year 2024-25 from those who have a BSc degree in Physics. Applications that do not meet this eligibility criterion may not be considered further during the selection process, even if the application processing fee has been paid. There will be no refund of the fee.

Admission will be merit-based, and Semester V marks will be considered for the same. However, admission granted will be provisional, and will be subject to the applicant successfully qualifying the BSc degree and fulfilling the eligibility criteria as per University of Mumbai rules. Marks & relevant documents will be verified at the time of admission. On admission to the course the original consolidated or third year mark sheet(s) must be submitted to the college office.

Please go through the application procedure and selection criteria outlined in this document prior to filling the online form.

**Application procedure:**

- Candidates can apply online by logging on to [www.xaviers.ac](http://www.xaviers.ac). Click on the appropriate link to fill the online application form.
- The online application portal will be open from 9 am (IST) on 25th April 2024 to 6 pm (IST) on 1st June 2024.
- The instructions given on the form must be followed for filling the same.
- In case the candidate is applying for a seat under minority/special category/Student with Disability (SWD), it is mandatory to upload a clear and legible scanned copy of proof, e.g., Baptism certificate for Christian minority, or the relevant document for special category and SWD.
- All the subjects and the corresponding marks must be entered in the online application form. Best of 4 or 5 subjects will not be accepted.
- All applicants are mandatorily required to enter the marks of Semester V. No GPA will be entertained.
- Candidates are required to make an online payment through the provided payment portal only. The fee for online application for MSc Physics is Rs. 1500/-. Once a payment has been officially received, the candidate will receive a confirmation email, informing him/her about the same.
- Note that the application procedure is entirely online and no in-person forms of any sort will be accepted.
- The college takes no responsibility for corrections or any other processing in case of details entered incorrectly. You will have to apply afresh with the correct details. No queries in this regard will be entertained.
- The last date for receipt of the application form is 1st June 2024 (6.00 pm). Any application received after this date will not be accepted.
- Application fees are non-refundable.
- In case you belong to the Economically Weaker Section (EWS) as defined by the Government of India and you desire to apply for a concession in the application fee for the programme then please apply with all requisite documents to the Rector, The Bombay St. Xavier's College Society at **rectors.office@xaviers.edu**

**Number of seats:**

Intake of 20 students per year

**Allocation of seats:**

St. Xavier's College is a Christian Minority College, administered under the Provisions of the Indian Constitution. As per the Judgement dated 12th October 2017 of the Honorable Bombay High Court vide Writ Petition No.1726 of 2001, Minority Colleges do not need to set aside seats for Backward Classes. This was reiterated by the University of Mumbai Circular (No. Aff. / Recog.I / Admission (2018-19) / 10 / of 2018) dated 30th May 2018. Accordingly, the allocation of seats is as follows:

Category	Percentage of seats reserved	Number of seats out of 20
Management Quota	15%	3
		<b>Number of seats out of 17</b>
Christian Minority	50%	8
General	42%	7
Persons with disability	5%	1
Special**	3%	1

\*\* The Special category is for the wards of transferred State / Central Government and Private Sector employees, Defense Personnel, Ex-Servicemen, Freedom Fighters; for students who have met with an accident and for award winners at the District / State / National Level in Sports or Cultural activities.

# Seats for international students are supernumerary. Applications for those seats must be done through the University of Mumbai website ([www.mu.ac.in](http://www.mu.ac.in)), or you can apply directly through [mu.admissiondesk.org](http://mu.admissiondesk.org). Please email and inform us if you are applying in the international student category. Students that fall under this category include - Foreign students (FR/FS), Persons of Indian origin (PIO), Overseas Citizens of India (OCI), SAARC students having a passport other than an Indian Passport, Non-Resident Indians (NRI). Students who have done their undergraduate degrees abroad also fall into this category. If you are unsure, please contact us. **NOTE:** You should not apply to the college or fill the college application form. The number of these students, who are sent to the College directly by the University, are over and above the sanctioned seats. Kindly refer to this circular for further details:

[https://xaviers.edu/files/International%20Admission%20Circular%20\(2022\)%20\(1\)\\_230420\\_172945.pdf](https://xaviers.edu/files/International%20Admission%20Circular%20(2022)%20(1)_230420_172945.pdf)

**Selection criteria:**

- Applications will be sorted on the basis of the criteria listed in the table below.

Criteria	Mandatory	Weightage	Requisite document/s
BSc grades	Mandatory	30%	BSc Physics Sem V marksheet
Statement of purpose	Mandatory	10%	An essay of about 500 words describing your motivation for doing a Master's course in Physics with Astrophysics as a specialization
Co-curricular and extra-curricular achievements	Not mandatory	30%	Certificate/s or mark sheets of Inter-college/National/International achievements since June 2019 (single PDF file of less than 2 MB for upload)
Academic Interview	Mandatory	30%	---

- The date and time of the interview along with the video call link, will be intimated to the candidates through their email ID provided in the online form.

**Merit list:**

- The category-wise merit list and the dates of admission for all those who qualify for admission as per the criteria mentioned above, will be announced through the college website. Candidates are advised to check the same.
- The merit lists are time-bound as will be mentioned in the admission notification on the college website.
- If a candidate in the first merit list fails to complete the admission process within the stipulated date and time as mentioned in the notification, their candidature stands lapsed. The candidates in the second and subsequent merit lists will subsequently be offered admission.
- Candidates who accept the offer of admission shall pay the necessary fees (as displayed on the college website or college notice board).
- The total fee for the programme is Rs. 1,20,000/- per year for both the years of the programme. This does not include the online application fee. The programme fees for subsequent years are subject to revision depending on newer requirements.

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