



**SCHOOL OF PHYSICAL SCIENCES**

The School of Physical Sciences (SPS), is one of the leading departments in India in terms of research and teaching in Physical Sciences. Some years ago, the school has started Ph.D. programmes in Chemical and Mathematical Sciences as well. Over the years, the SPS faculty has made significant contributions to novel interdisciplinary areas interfacing Physics, Chemistry and Mathematics, in addition to the more traditional areas of Physics. The school has state of the art computing facilities and well-equipped laboratories for Physics and Chemistry and a rich library with an excellent collection of books on Mathematics, Physics and Chemistry.

The research emphasis of the Physics group has been on topics in Computational Physics, Condensed Matter Physics, Chemical Physics, Disordered Systems, High Energy Physics, Mathematical Physics, Neutrino Physics, Non-equilibrium Statistical Mechanics, Non-linear Dynamics, Probability Measures, Quantum Chaos, Quantum Optics, Statistical Nuclear Physics and String Theory. Active Research is also undergoing in the area of complex fluids, Material Sciences, Superconductivity, Magnetism, Semiconductors, Non-linear Optics, Mesoscopic Systems, Chalcogenides, Polymers, Bio and Nano Materials.

The Chemistry group is active in the areas of Supramolecular Chemistry, Crystal Engineering, Spectroscopy, Synthetic Organic Chemistry, Organic-Inorganic hybrid materials, MOF and zeolite membranes and Bio-physical Chemistry, Bio-inorganic and Medicinal Chemistry.

The Mathematics group has been working in the areas of Algebra, Number Theory, Elliptic Curves, Ergodic Theory and Dynamical Systems, Probabilities on Groups and Operator Algebras.

The research and teaching contributions of SPS have been acknowledged in various ways. Many of our students have gone on to become faculty and scientists in leading institutions and laboratories in India and abroad. Many of the faculty members are frequent speakers at national and international conferences. The faculty and students regularly publish research papers in top international journals and their publications have received extensive citations in the scientific literature. Some faculty members have received prestigious awards and been elected fellows of some reputed scientific academies as well. In recognition of the excellence in the teaching and research programmes at SPS, the UGC has been continuously supporting the SPS since 1994 through various schemes such as DRS-COSIST and DSA. Apart from the UGC support, SPS also received major funding from the DST under the FIST programme in 2002, 2007 and 2014. It is also worth mentioning that SPS faculty members have attracted considerable individual support through research projects from CSIR, DST, DBT, UGC, NBHM, DAE etc.

#### **PROGRAMMES OF STUDY**

##### **(i) Ph.D. programmes in Physical Sciences, Chemical Sciences and Mathematics.**

Suitable courses may be prescribed for candidates admitted to a Ph.D. programme.

##### **(ii) M.Sc. in Physics**

The detailed syllabus of the M.Sc. programme is available at the JNU website. The salient features of the syllabus are: (a) emphasis on core aspects of modern physics, and (b) emphasis on laboratory training. The M.Sc. programme is nurtured as an integral part of the research activities of the School.

##### **(iii) M.Sc. in Chemistry**

The detailed syllabus of the M.Sc. programme is available at the JNU website. The salient features of the syllabus are: (a) emphasis on the fundamental and applied aspects of chemistry, (b) emphasis on laboratory training, and (c) initiation to the primary aspects of scientific research in chemistry.

Master of Science

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	School of Physical Sciences (SPS)	Physics- SPSM (226)	Bachelor's degree (with Physics as one of the subjects) under the 10+2+3 pattern of education with 55% marks in the aggregate (or in Physics, Chemistry and Mathematics combined), or in Physics Honours. Applicants with B.Tech. (Electronics/Electrical/Mechanical/Computer) degree (or equivalent) can also apply.
2		Chemistry – CHEM (227)	<b>Bachelor's degree (with Chemistry as one of the subjects) under the 10+2+3 pattern of education with 55% marks in the aggregate (or in Chemistry, Physics and Mathematics combined), or in Chemistry Honours. Applicants with B.Tech degree (or equivalent) in Chemical/Polymer/Petroleum Engineering can also apply.</b>

Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	School of Physical Sciences (SPS)	Mathematical Science – MATH (897)	Candidates shall be considered for admission to the Ph.D. programme on the following basis:  Candidates who have obtained M.Sc. degree (2 years programme or 5 years Integrated programme) from a recognized University/Institution in Mathematics/Physics/Chemistry (for the corresponding subject) with at least 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).
2		Physical Sciences – PHYH (898)	OR  obtained 2 years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil with 55% marks with additional one year research experience of a recognized University/Institution and one publication and 55% marks or equivalent in M.Sc.
3		Chemical Sciences – CHEH (899)	Relaxation to SC/ST/OBC (Non creamy layer)/Differently abled as per the UGC Regulations 2016.