

Semester IV

Hardcore Subject

- Organic Chemistry - III

- Frontiers in Organic Chemistry
- Green and Environment Chemistry

Softcore Subjects (theory Any Two; Elective II)

- Chemistry of Biomolecules
- Physical Chemistry - III

Generic Elective

Major Project: Project work & Dissertation

RESEARCH ORIENTATION

Research orientation is the unique feature of JAIN (Deemed-to-be University) M.Sc. program where each M.Sc. student is engaged to an existing research laboratory to involve into the research activities in frontier areas of Chemistry / Material Science / Nanotechnology.

CAREER OPPORTUNITIES

Postgraduates in M.Sc. Chemistry can have various jobs opportunities in both public and private sector organizations. Major employment areas recruiting graduates in M.Sc. Chemistry are given below:

- Pharmaceutical Companies
- Agrochemical Industry
- Petrochemical Industry
- Toiletry Industry
- Chemical Manufacturers
- Food Processing Firms
- Paint Manufacturing Companies
- Plastics Industries
- Educational Institutes
- Independent Laboratories
- Environmental Law, Patent Law Firms
- Space Exploration Agencies
- Forensic Science Department
- Ceramics Industry
- Paper Industry
- Military Systems Department

SOME OF THE GLOBAL RECRUITERS



Admissions Office

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Study Campus

Jain Global Campus

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M.Sc.

Chemistry



Ranked 91-95 among
the top Indian Universities



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ABOUT JAIN (DEEMED-TO-BE UNIVERSITY)

Established with an aim to provide quality education with entrepreneurial development, JAIN (Deemed-to-be University) is an intellectual destination that draws inspired students from more than 43 countries to India's Silicon Valley - Bengaluru. Spread across five campuses, the University has been consistently ranked among the top private universities in India by India Today Nielsen Best Universities Survey. Over the last ten years, the University has made conscious and concerted efforts to build on its strengths and consolidate its achievements. From academic discoveries to athletic records, from artistic creations to scientific breakthroughs, students are defining JAIN (Deemed-to-be University)'s success in many different ways.



ABOUT CENTRE FOR NANO AND MATERIAL SCIENCES (CNMS)

Centre for Nano and Material Sciences (CNMS) is a research center established by JAIN (Deemed-to-be University), Bangalore. The centre offers a complete platter of all the frontier areas of Chemistry under the mentorship of faculty with definitive expertise.

Some of the major areas of research concerns include Nano Science, Catalysis, Organic Electronics, Bioinorganic and Clinical Chemistry, Electrochemistry, Analytical Chemistry, Drug Discovery, Heterogeneous Catalysis for Energy (H₂ production), Medicinal and Organometallic Chemistry, Low Dimensional Materials, Energy Storage and Conversion Materials, Graphene and 2D Materials, Chemical and Biosensors, Nano-probes for Bio-imaging and Membrane Sciences etc. In each of these research subjects, young research fellows pursuing their doctoral program are encouraged and guided, to adopt innovative and unique approaches.

The faculty members are from reputed institutes who attract substantial financial support for their research activities from governmental and private funding agencies. The centre offers a vibrant atmosphere to students and faculty to nurture the spirit of scientific quest and to pursue cutting-edge research in a highly encouraging environment.

ABOUT M.SC. IN CHEMISTRY

The Master of Science in Chemistry is a 2 years (4 semesters) degree course. The course attempts to bring the student the best research experiences in chemistry with prime importance given to Organic, Inorganic, Physical and Analytical branches of Chemistry.

Emerging topics like Nanotechnology, Environment Chemistry, Green Chemistry, Industrial Chemistry, Bio-analytical Chemistry and other interface branches are also touched upon to expose students to create an interesting balance between new trends and strong foundations of fundamentals of Chemistry.

Program Code : 044

Course Code : 4416

Duration : 2 years (4 semesters)

Total Credits : 100

Eligibility

The minimum qualification required is a bachelor's degree from a recognized University / Institution having Chemistry as a major subject. Those who are due to appear in the qualifying examination can also apply.

PROGRAM FEATURES

- Opportunity to understand projects with renowned research institutes such as IITs, IISc, CSIR labs and foreign universities
- Advanced training on handling modern sophisticated instruments such as BET, FESEM, AFM, FTIR, MS, PXRD etc
- Opportunity to interact with and attend invited talks of Eminent Scientists from National / International Universities / Research Organizations
- Be a part of an active research community with access to useful and advanced facilities
- Industry-ready skills to help students make a career in scientific laboratories / industries research institutions or any other public bodies
- An excellent foundation for students wishing to undertake subsequent doctoral research work and competitive exams such as NET, GATE etc
- Each student will be tagged to an existing research laboratory to involve into the research activities in the frontier areas of Chemistry / Material Science / Nanotechnology

PROGRAM CURRICULUM

Semester I

Hardcore Subjects

- Inorganic Chemistry - I
- Organic Chemistry - I
- Physical Chemistry - I
- Spectroscopy - I

Softcore Subjects (Any two)

- Learning Labs
- Physical Chemistry - I
- Organic Chemistry - I
- Analytical Chemistry
- Nanochemistry

Minor Project - I

Semester II

Hardcore Subjects

- Inorganic Chemistry - II

- Organic Chemistry - II
- Physical Chemistry - II
- Spectroscopy - II

Softcore Subjects (Any two)

- Learning Labs
- Physical Chemistry - I
- Organic Chemistry - II
- Pharmaceutical Chemistry
- Interdisciplinary Chemistry

Minor Project - II

Semester III

Hardcore Subject

- Inorganic Chemistry - III

Softcore Subjects

(Theory any two; Elective I)

- Analytical Chemistry
- Applied Chemistry
- Pharmaceutical and Industrial Chemistry
- Chemistry
- Nano Technology

Softcore Subjects

(Learning Labs, any two)

- Physical Chemistry - II
- Inorganic Chemistry - II
- Material Science
- Natural Products

Generic Elective

Major Project: Designing of the Project