



**JAWAHALAL NEHRU CENTRE FOR ADVANCED SCIENTIFIC
RESEARCH (JNCASR)
A DEEMED – TO- BE- UNIVERSITY
JAKKUR, BANGALORE 560064
INDIA**

Prospectus

2023-24

Disclaimer: Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) reserves the right to change the policies viz; selections, admissions, fellowships, courses, fees, or any other matter in this handbook without prior notice. The handbook is to be read neither as part of an agreement nor as a guarantee of the details described herein.

Introduction

Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) is a multidisciplinary research institute situated in Jakkur, a locality north of Bangalore, India. It is relatively young yet well-known around the globe. Our mandate is to pursue and promote world-class research and training at the frontiers of Science and Engineering covering broad areas ranging from Materials to Genetics.

It provides a vibrant academic ambience hosting more than 500 researchers. The Centre is an autonomous institution under Department of Science and Technology, Govt. of India and a deemed to be university.

- JNCASR has obtained the status of an institution Deemed to be University in the year 2002.
- Based on the success and impact of the Centre on the scientific community in India, it was recently graded as Category-I Deemed to be University, of UGC Regulations.
- 874 students have obtained various degrees of the Centre.

Accreditation and Rankings

NAAC

In the year 2016, JNCASR obtained NAAC accreditation of A++ with 3.76 out of the total score of 4 points.

National Institutional Ranking Framework (NIRF)

- In 2017, the Centre was ranked [4th among Universities](#) and [11th under Overall category](#)
- In 2018, the Centre was placed under [Special Mention Institutions](#)
- In 2021, the Centre was ranked 19th under the Research Category.
- JNCASR is ranked 30th under the "Research" Category for 2023.

Research based Degree and Diploma Programs Offered

JNCASR has a vibrant student community with diverse backgrounds from all over India. The students enrol in various academic programmes offered by the Centre; the majority pursue Ph. D., and the rest, integrated Ph. D., M. S. (Engg.)/M. S.(Research), and Postgraduate Diploma in Materials Science (PGDMS). In addition to the regular student community, JNCASR has national and international students visiting under various exchange programmes. The Centre offers the following research based degrees:

- (1) Research Programmes [(Ph.D. / MS(Engg.) / MS(Research)]
- (2) Master of Science (M.Sc) in Chemistry with the option to specialize in Materials Chemistry/Chemical Biology /Energy (Two-year programme)
- (3) Master of Science (M.Sc.) in Inter-disciplinary Biosciences
- (4) Integrated Ph.D. (Int. Ph.D) Programmes

Admissions to PhD and M.S. (Engg./Research) programs are carried out twice during the academic year. However admissions to Integrated PhD and MSc. programs are held only once during the academic year. The August session admits students to all the programs listed above.

The gist of the admission operations is given in the following paragraphs.

Applicants possessing the educational qualifications including those in the final semester/year of their qualifying examinations but expect to complete all the requirements for award of the degree (like examinations, project dissertations, viva-voce etc.,) before the commencement of admissions and can furnish necessary certificates on or before the completion of three months after joining are eligible to apply.

1. RESEARCH PROGRAMMES [Ph.D. / M.S(Engg.) / M.S(Research), PGDMS]

1.1 Eligibility

Candidates with an M Sc. or equivalent, B.E/B.Tech/B.S. (4 year) or equivalent or M.E/M.Tech or equivalent or B.VSc./M.VSc. or MBBS/MD as applicable to individual Units as given in the table below are eligible to apply.

- Candidates with an M.Sc. or equivalent, M.E/M.Tech or equivalent should have at least 55% marks in aggregate or its equivalent grade on a point scale wherever the grading system is followed.
- Candidates seeking admission after a 4-year/8-semester Bachelor's degree programme should have a minimum of 75% marks in aggregate or its equivalent grade on a point scale where the grading system is followed.

The candidates should also have qualified in any one of the national exams: GATE/JEST/GPAT/UGC-JRF/CSIR-NET-JRF/ICMR-JRF/DBT-JRF/INSPIRE-JRF. The award certificate of such tests should have the validity period for seeking admission to a research programme as on 1st August /1 January of the admission session.

Qualifying in the national exam is desirable for ME/M.Tech or equivalent degree holders.

| Sl No. | Unit | Eligible Education qualifications | Qualifying in any one of the national entrance tests |
|--------|---|---|---|
| 1. | Chemistry and Physics of Materials Unit | 1. Master's Degree in Science or equivalent in Electronics, Chemical/Mathematical/Physical/Materials Science. | Valid GATE /JEST score / CSIR-JRF/UGC-JRF/DBT- JRF/ICMR-JRF / INSPIRE |
| | | 2. Bachelor's Degree in Engineering/Technology/4-year Bachelor of Science or equivalent in Electrical/Electronics/Metallurgy/ Polymer/Engineering Physics/Nano Technology/Chemical. | |
| | | Master's Degree in Engineering/Technology or equivalent in Electrical/Electronics/Metallurgy/Polymer/Engineering Physics/ Nano Technology/Chemical | Qualifying in one of the national exams mentioned above is desirable |

| | | | |
|----|--|---|--|
| 2. | Engineering Mechanics Unit | 1. Master's Degree in Science or equivalent in Mathematical/ Physical Sciences. | Valid GATE /JEST score / CSIR-JRF/UGC-JRF/ INSPIRE |
| | | 2. Bachelor's Degree in Engineering/Technology/4-year Bachelor of Science or equivalent in Aerospace/ Mechanical /Metallurgy/ Polymer/ Engineering Physics /Chemical. | |
| | | 3. Master's Degree in Engineering/Technology or equivalent in Aerospace/ Mechanical/Metallurgy/Polymer/Engineering Physics/Chemical/Atmospheric Science. | Qualifying in one of the national exams mentioned above is desirable |
| 3. | Evolutionary and Organismal Biology Unit | 1. Master's Degree in Science or equivalent in Life Sciences / any area of Biological Sciences / Mathematics /Physics. | Valid GATE /JEST score / CSIR-JRF/UGC-JRF/DBT-JRF/ICMR-JRF / ICAR AICE-JRF/INSPIRE |
| | | 2. Bachelor's Degree in Engineering/Technology/4-year Bachelor of Science or equivalent in Biotechnology, Biological Engineering, or any Biology related area. | |
| | | 3. MBBS /M.D. | |
| | | 4. B.VSc. / M.VSc. | |
| | | Master's Degree in Engineering/Technology or equivalent in Biotechnology, Biological Engineering, or any Biology related area. | Qualifying in one of the national exams mentioned above is desirable |
| 4. | Molecular Biology and Genetics Unit | 1. Master's Degree in Science or equivalent in Bioinformatics, Biotechnology, Chemical/ Biological/Life Sciences. | Valid GATE /JEST/ score / CSIR-JRF/UGC-JRF/DBT- JRF/ICMR-JRF / INSPIRE |
| | | 2. Bachelor's Degree in Engineering/Technology/4-year Bachelor of Science or equivalent in Biotechnology, Bioinformatics, or any Biology related area. | |
| | | 3. MBBS /M.D. | |
| | | Master's Degree in Engineering/Technology or equivalent in Biotechnology, Bioinformatics, or any Biology related area. | Qualifying in one of the national exams mentioned above is desirable |
| 5. | New Chemistry Unit | 1. Master's Degree in Chemistry/Physics. 2. Bachelor's Degree in Engineering/Technology/4-year Bachelor of Science (preferred with Chemistry as a major subject) | Valid GATE score / CSIR-JRF/UGC-JRF/ DBT-JRF/ICMR-JRF/INSPIRE |

| | | | |
|----|---------------------------|--|--|
| 6. | Neuroscience Unit | 1. Master's Degree in Science or equivalent in Neuroscience, Bioinformatics, Biotechnology, Biological/Life Sciences/ Pharmacy. | Valid GATE /JEST/GPAT score / CSIR-JRF/UGC-JRF/DBT- JRF/ICMR-JRF / INSPIRE |
| | | 2. 4-year Bachelor of Science or equivalent in Biotechnology, Bioinformatics, or any Biology related area/Bachelor's Degree in Engineering or Technology (electrical or computer science branches) | |
| | | 3. MBBS /M.D. | |
| | | 4. Master's/4-year Bachelor's Degree in non-Biology area with demonstrated interest in Neuroscience can also apply | |
| | | Master's Degree in Engineering/Technology or equivalent in Biotechnology, Bioinformatics, or any Biology related area. | Qualifying in one of the national exams mentioned above is desirable |
| 7. | Theoretical Sciences Unit | 1. Master's Degree in Science or equivalent in Electronics, Chemical/Mathematical/Physical/Materials Sciences. | Valid GATE /JEST score / CSIR-JRF/UGC-JRF/DBT- JRF/ICMR-JRF / INSPIRE |
| | | 2. Bachelor's Degree in Engineering/Technology/4-year Bachelor of Science or equivalent in Aerospace/ Engineering Physics/ Electrical/ Electronics /Metallurgy /Chemical/Mechanical Sciences. | |
| | | 3. Master's Degree in Engineering/Technology or equivalent in Aerospace/EngineeringPhysics/Electrical/Electronics /Metallurgy/Chemical/Mechanical Sciences. | Qualifying in one of the national exams mentioned above is desirable |

1.2 Selection procedure

Candidates are short-listed for an interview based on their performance in the national exam(s) and academic performance. The selection is based on the performance in the interview (in some Units, an aptitude test/preliminary interview may precede the final interview).

Note: Interviews will be held in-person only.

2. MASTER OF SCIENCE (M.Sc.)

2.1 Eligibility

| Programme | Qualifying degree and exams |
|-----------|--|
| Chemistry | <ul style="list-style-type: none"> Applicants possessing a minimum of 55% marks at the Bachelor's degree in any branch of Science with Chemistry as one of the major subject. |

| | |
|---|--|
| <p>Inter-disciplinary Biosciences (with an option to specialize in Epigenetics and Diseases, Neurosciences, Human Disease Genetics, or Chemical Biology approach to understanding Disease Biology and Drug Discovery)</p> | <ul style="list-style-type: none"> • Applicants possessing a minimum of 55% marks at the Bachelor's degree in any branch of Biological Science with Chemistry as a significant subject and who have qualified for the Joint Admissions Test for Masters (JAM) 2024 and/or equivalent examination are eligible to apply. |
|---|--|

2.2 Selection procedure:

Shortlisting for interviews for Master of Science (M.Sc.) in Chemistry will be done based on the performance in Joint Admission test for Master's (JAM) 2024 or a written examination conducted by JNCASR.

For M.Sc. Inter-disciplinary Biosciences, shortlisted JAM candidates will be called for an interview directly. The final selection is based on the performance in the interview.

Note: Interviews will be held in-person only.

3. INTEGRATED Ph. D. PROGRAMME

3.1 Eligibility

| Disciplines | Qualifying degree and exams |
|--|--|
| <p><i>Physical Science (Specialization in Materials)</i></p> <p>Web link for related information is available at https://www.jncasr.ac.in/sites/default/files/users/user277/Int.%20PhD_Physical%20Sciences.pdf</p> | <ul style="list-style-type: none"> • Students with minimum of 55% marks at bachelor's degree in any branch of Science/Engineering with an aptitude for advanced physics education and materials research. • Candidacy will be evaluated on past academic records and/or scores in national level exams |
| <p><i>Chemical Science</i></p> | <ul style="list-style-type: none"> • Students with minimum of 55% marks at bachelor's degree in any branch of Science with Chemistry as one of the major and mathematics as a subject at least up to PUC (10+2 level) are eligible to apply. |
| <p><i>Biological Science</i></p> | <ul style="list-style-type: none"> • Students with minimum of 55% marks in bachelor's or equivalent degree in Physical, Chemical or Biological Science (including Biotechnology, Pharmaceutical, Veterinary Sciences and Agricultural Sciences) or B.E/B. Tech degree or equivalent degree. • Candidates who have qualified the JAM 2024 test are encouraged to apply. |

3.2 Selection procedure

Shortlisting for interviews for selection to the Int. Ph.D. Physical Science Programme will be based on academic records, performance in the national level exams, statement of purpose mentioned in the application form.

Shortlisting for interviews for Int. Ph.D. Chemical Science Programme will be done based on the performance in Joint Admission test for Master's (JAM) 2024 or a written examination conducted by JNCASR.

The applications for the Int. Ph.D. Biological Science Programme will be screened based on overall academic performance for eligibility to attend an entrance exam. Successful candidates will be invited to appear for interviews shortly afterwards.

The final selection to the Int. Ph.D. Degree Programme will be based on the performance in the interview.

Note: Interviews will be held in-person only.

4. POST GRADUATE DIPLOMA IN MATERIALS SCIENCE (PGDMS)

Postgraduate Diploma in Materials Science (PGDMS) is a full-time two semester (one-year) programme offered by the International Centre for Materials Science (ICMS), JNCASR. The training will be imparted through projects and formal courses. A stipend will be paid as per norms.

4.1 Eligibility

Candidates who have completed their M.Sc. in any branch of Science are eligible to apply.

4.2 Selection procedure

The applications received by the deadline will be scrutinized by the Committee and eligible/meritorious candidates will be shortlisted for offline interviews. Only a limited number of candidates will be selected based on the recommendation of a selection committee.

Note: Interviews will be held in-person only.

HOW TO APPLY

Applications for all the degree programmes mentioned above are available online. Only online applications will be considered.

APPLICATION FEE

The application fee is Rs.500/- and is non-refundable. The payment is to be made to the JNCASR bank account through NEFT. Service charges if any, must be borne by the applicant. Please visit the online admissions portal for beneficiary bank details.

Approved Intake

| Degree Program | Approved Intake |
|-------------------------------|--|
| Ph.D | Maximum 8 per faculty (as per vacancy) |
| Int. Ph.D (P.S.+ B.S. + C.S.) | Maximum of 25 in each area |
| Masters Programs | Maximum 60 |

P.S- Physical Science, B.S.- Biological Science C.S.- Chemical Science

Fellowships

All the Ph.D students joining JNCASR are eligible for a fellowship from the respective funding agency depending upon their mode of entry. Students enrolled to the Ph.D, Masters in Engineering or Research degree programs and PGDMS are paid fellowships (as applicable) as per the norms of the Centre. Those joining the Postgraduate degree programs in Chemistry and Biosciences are not offered any fellowship.

Faculty

| Sr no | Name | Designation | Qualification | Unit |
|-------|-----------------------------|---|---------------|--|
| 1 | BALASUBRAMANIAN S | Professor | Ph.D | Chemistry and Physics of Materials Unit |
| 2 | BIVAS SAHA | Associate Professor | Ph.D | Chemistry and Physics of Materials Unit |
| 3 | CHANDRABHAS NARAYANA | Professor | Ph.D | Chemistry and Physics of Materials Unit |
| 4 | ESWARAMOORTH Y M | Professor and Dean Academic Affairs | Ph.D | Chemistry and Physics of Materials Unit |
| 5 | G U KULKARNI | President | Ph.D | Chemistry and Physics of Materials Unit |
| 6 | NARAYAN K S | Professor | Ph.D | Chemistry and Physics of Materials Unit |
| 7 | SUNDARESAN A | Professor and Chair, CPMU | Ph.D | Chemistry and Physics of Materials Unit |
| 8 | TAPAS KUMAR MAJI | Professor | Ph.D | Chemistry and Physics of Materials Unit |
| 9 | DIWAKAR SEYYANUR VENKATESAN | Assistant Professor | Ph.D | Engineering Mechanics Unit |
| 10 | GANESH SUBRAMANIAN | Professor | Ph.D | Engineering Mechanics Unit |
| 11 | MEHEBOOB ALAM | Professor | Ph.D | Engineering Mechanics Unit |
| 12 | SANTOSH ANSUMALI | Professor | Ph.D | Engineering Mechanics Unit |
| 13 | SREENIVAS K R | Professor and Dean Research and Development | Ph.D | Engineering Mechanics Unit |
| 14 | AMITABH JOSHI | Professor | Ph.D | Evolutionary and Organsimal Biology Unit |
| 15 | ANAND KRISHNAN | Assistant Professor | Ph.D | Evolutionary and Organsimal Biology Unit |
| 16 | TNC VIDYA | Associate Professor | Ph.D | Evolutionary and Organsimal Biology Unit |

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|----|-----------------------------|--|------|---|
| 17 | RAJESH GANAPATHY | Professor | Ph.D | International Centre for Materials Sciences |
| 18 | RANJAN DATTA | Professor | Ph.D | International Centre for Materials Sciences |
| 19 | RANJANI VISWANATHA | Professor | Ph.D | International Centre for Materials Sciences |
| 20 | ANURANJAN ANAND | Professor | Ph.D | Molecular Biology and Genetics Unit |
| 21 | KAUSTUV SANYAL | Professor and Chair Molecular Biology and Genetics Unit | Ph.D | Molecular Biology and Genetics Unit |
| 22 | KUSHAGRA BANSAL | Assistant Professor | Ph.D | Molecular Biology and Genetics Unit |
| 23 | MANEESHA S INAMDAR | Professor | Ph.D | Molecular Biology and Genetics Unit |
| 24 | RANGA UDAY KUMAR | Professor | Ph.D | Molecular Biology and Genetics Unit |
| 25 | RAVI MANJITHAYA | Professor and Chair, NSU | Ph.D | Molecular Biology and Genetics Unit |
| 26 | TAPAS KUMAR KUNDU | Professor | Ph.D | Molecular Biology and Genetics Unit |
| 27 | VARUN BHASKAR | Assistant Professor | Ph.D | Molecular Biology and Genetics Unit |
| 28 | ACHIRA ROY | Assistant Professor | Ph.D | NeuroScience Unit |
| 29 | SHEEBA VASU | Professor and Associate Warden | Ph.D | NeuroScience Unit |
| 30 | ABHISHEK KUMAR | Assistant Professor | Ph.D | New Chemistry Unit |
| 31 | BANI KANTA SARMA | Assistant Professor | Ph.D | New Chemistry Unit |
| 32 | GOVINDARAJU T | Professor and Chair, ETU | Ph.D | New Chemistry Unit |
| 33 | JAYANTA HALDAR | Professor and Warden | Ph.D | New Chemistry Unit |
| 34 | KANISHKA BISWAS | Associate Professor | Ph.D | New Chemistry Unit |
| 35 | PRATAP VISHNOI | Assistant Professor | Ph.D | New Chemistry Unit |
| 36 | PREMKUMAR SENGUTTUVAN | Associate Professor | Ph.D | New Chemistry Unit |
| 37 | SARIT S AGASTI | Associate Professor | Ph.D | New Chemistry Unit |
| 38 | SEBASTIAN CHIRAMBATTE PETER | Professor | Ph.D | New Chemistry Unit |
| 39 | SRIDHAR RAJARAM | Professor | Ph.D | New Chemistry Unit |
| 40 | SUBI JACOB GEORGE | Professor and Chair, NCU | Ph.D | New Chemistry Unit |
| 41 | KAVITA JAIN | Professor | Ph.D | Theoretical Sciences Unit |
| 42 | SHOBHANA NARASIMHAN | Professor and Faculty In-charge Placement Alumni and International Relations | Ph.D | Theoretical Sciences Unit |
| 43 | SRIKANTH SASTRY | Professor | Ph.D | Theoretical Sciences Unit |
| 44 | SUBIR KUMAR DAS | Professor and Chair TSU | Ph.D | Theoretical Sciences Unit |
| 45 | SWAPAN K PATI | Professor | Ph.D | Theoretical Sciences Unit |
| 46 | UMESH V WAGHMARE | Professor and Dean Faculty Affairs | Ph.D | Theoretical Sciences Unit |
| 47 | VIDHYADHIRAJA N S | Professor and Dean Fellowships and Extension Programs | Ph.D | Theoretical Sciences Unit |

Fee structure

The tuition fee to be paid for various degree programs at the Centre is as follows:

For Ph.D. students:

| | |
|-------------|-------------------------|
| Tuition fee | Rs. 10,000/- per annum* |
|-------------|-------------------------|

Fee structure for M.S. (Integrated Ph.D). / M.Sc (Chemistry)/ M.Sc. Inter-disciplinary Biosciences and PGDMS students:

| | |
|-------------|------------------------|
| Tuition fee | Rs. 5,000/- per annum* |
|-------------|------------------------|

Fee structure for M.S. (Engg.)/Research students:

| | |
|-------------|-----------------------|
| Tuition fee | Rs.7,000/- per annum* |
|-------------|-----------------------|

Students registered to all the programs have to pay the following in addition to the tuition fees mentioned above:

| | |
|---|---------------------------|
| Contributory Medical Scheme | Rs. 200/- per month |
| Personal Accident Insurance | Rs. 25/- per month |
| Hostel and Mess Deposit (upon joining) | Rs. 10,000/- (refundable) |
| Statutory and Library Deposit (upon joining) | Rs. 10,000/- (refundable) |
| <i>Issue of duplicate Identity card (if required)</i> | <i>Rs. 200/-</i> |

* On production of necessary documents, SC/ST candidates are exempted from the payment of tuition fee.

Fees and Deposits will be refunded as per the norms of the Centre.

Academic Calendar

Academic calendar – Ph. D.

| Event | Timeline | | Additional Information |
|--|--------------------------|-----------------|--|
| Admission | <i>Regular</i> | <i>Mid-year</i> | Both tracks follow the same formalities – Annexure-I |
| Academic year | First working day of | | Annexure-IA: Prior to arrival at the Campus |
| | August | January | |
| Enrolling | on the date of reporting | | Annexure-IB: During enrolling in a combined session |
| Orientation | around mid-August | | |
| Semester-1 & 2 -Course work | | | |
| Semester 3 & 4 - Embark on Research Project and Complete Comprehensive examination for Upgradation to SRF | | | |
| Semester 5 to 9 – Ph.D. Thesis work | | | |
| Semester 10 - Colloquium, Synopsis submission and Ph.D. Thesis submission | | | |

Academic calendar – Int. Ph.D.

| Event | Timeline | | Additional Information |
|--|-----------------------------|--|--|
| Admission | <i>Regular</i> | | Annexure-I |
| Academic year | First working day of August | | Annexure-IA: Prior to arrival at the Campus Annexure-IB: During enrolling |
| Enrolling | on the date of reporting | | |
| Orientation | around mid-August | | in a combined session and a separate session by the Unit |
| Semester 1 to 4 - Course work and Qualifying Examination for Confirmation of Doctoral Candidacy | | | |
| Semester 5 & 6 M.S. Research Report | | | |
| Semester 7 to 13 -Ph.D. thesis work | | | |
| Semester 14 - Colloquium, Synopsis and Ph.D. Thesis submission | | | |

Academic calendar – M.S. (Engg./M.S. (Research))

| Event | Timeline | | Additional Information |
|--|--------------------------|-----------------|--|
| Admission | <i>Regular</i> | <i>Mid-year</i> | Both tracks follow the same formalities – Annexure-I |
| Academic year | First working day of | | Annexure-IA: Prior to arrival at the Campus |
| | August | January | |
| Enrolling | on the date of reporting | | Annexure-IB: During enrolling in a combined session |
| Orientation | around mid-August | | |
| Semester-1 & 2 - Course work | | | |
| Semester 3 - Embark on M.S. Research Project and complete Comprehensive examination | | | |
| Semester 4 - Colloquium, Synopsis and M.S. Thesis submission | | | |

Contact details

Admissions related queries:

| | | |
|-----------------|--|--------------|
| Academic Office | academic@jncasr.ac.in | 080-22082777 |
|-----------------|--|--------------|

Students related grievances or requests:

| | | |
|-----------------------|--|--------------|
| Academic Coordinator | acoord@jncasr.ac.in | 080-22082900 |
| Dean Academic Affairs | deanacad@jncasr.ac.in | 080-22082764 |

Anti-ragging:

| | | |
|----------------------|--|--------------|
| Academic Coordinator | acoord@jncasr.ac.in | 080-22082900 |
| President | president@jncasr.ac.in | 080-22082752 |

Administration:

| | | |
|------------------------|--|--------------|
| Administrative Officer | ao@jncasr.ac.in | 080-22082751 |
| President | president@jncasr.ac.in | 080-22082752 |

Sexual Harassment/ICC:

| | | |
|----------------------|--|--------------|
| Academic Coordinator | acoord@jncasr.ac.in | 080-22082900 |
| Chairperson, ICC | rv@jncasr.ac.in | 080-22082573 |
