



**JAWAHARLAL NEHRU UNIVERSITY**  
**NEW DELHI-110067**

**[www.jnu.ac.in](http://www.jnu.ac.in)**

**e-PROSPECTUS**

**ACADEMIC SESSION**

**2021-22**

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The Jawaharlal Nehru University constituted under the Jawaharlal Nehru University Act 1966, (53 of 1966) came into existence in 1969. Its objectives, as defined in the First Schedule of the Act, are as follows:

"The University shall endeavour to promote the principles for which Jawaharlal Nehru worked during his life-time, national integration, social justice, secularism, democratic way of life, international understanding and scientific approach to the problems of society.

Towards this end, the University shall:

- (i) foster the composite culture of India and establish such departments or institutions as may be required for the study and development of the languages, arts and culture of India;
- (ii) take special measures to facilitate students and teachers from all over India to join the University and participate in its academic programmes;
- (iii) promote in the students and teachers an awareness and understanding of the social needs of the country and prepare them for fulfilling such needs;
- (iv) make special provision for integrated courses in humanities, science and technology in the educational programmes of the University;
- (v) take appropriate measures for promoting inter-disciplinary studies in the University;
- (vi) establish such departments or institutions as may be necessary for the study of languages, literature and life of foreign countries with a view to inculcating in the students a world perspective and international understanding;
- (vii) provide facilities for students and teachers from other countries to participate in the academic programmes and life of the University."

In the light of the above, the approach of the University has been to evolve policies and programmes which will make Jawaharlal Nehru University a distinct addition to the national resources in higher education rather than a mere quantitative expansion of facilities which already exist. The University has identified and is concentrating upon some major academic programmes, which are of relevance to national progress and development.

The basic academic units of the University are not single discipline departments but multi-disciplinary Schools of Studies. A School has been visualised as a community of scholars from disciplines which are linked with each other organically in terms of their subject-matter and methodology as well as in terms of problem areas. Some Schools are made up of a number of Centres which constitute the units operating within the broad framework of a School. A Centre has been defined as a community of scholars irrespective of their disciplines engaged in clearly identified inter-disciplinary programmes of research and teaching.

Unless otherwise specified, the JNU being an all India University, the medium of instruction for all programmes of study (barring Languages) is English.

In order, however, to facilitate students coming from varying backgrounds with medium of instruction other than English at their Bachelor's/Master's level, the University has in-built facilities for remedial courses in English Language in order to enable them to strengthen their foundation in English as well as to cope up with their academic and research programmes adequately.

The University includes the following Schools of inter-disciplinary research and teaching besides some Special Centres of Study:

- (i) School of International Studies
- (ii) School of Language, Literature and Culture Studies
- (iii) School of Social Sciences
- (iv) School of Arts and Aesthetics
- (v) School of Life Sciences
- (vi) School of Environmental Sciences
- (vii) School of Computer and Systems Sciences
- (viii) School of Physical Sciences
- (ix) School of Computational and Integrative Sciences
- (x) School of Biotechnology
- (xi) School of Sanskrit and Indic Studies
- (xii) School of Engineering
- (xiii) Atal Bihari Vajpayee School of Management and Entrepreneurship
- (xiv) Special Centre for E-Learning
- (xv) Special Centre for Molecular Medicine
- (xvi) Special Centre for the Study of Law and Governance
- (xvii) Special Centre for Nano Sciences
- (xviii) Special Centre for Disaster Research
- (xix) Special Centre for the Study of North East India
- (xx) Special Centre for National Security Studies
- (xxi) Special Centre for Systems Medicine

In matters relating to enrolment, steps have been taken to ensure that students from all parts of the country are able to join the University so that it becomes a national University in the true sense of the word.

The admission policy of the University is governed by the following principles:

- (i) to ensure admission of students with academic competence and potentialities of high quality so that its alumni may be able to play their role in the process of nation building and social change in a meaningful manner;
- (ii) to ensure that adequate number of students from the under-privileged and socially handicapped sections of our society are admitted to the University; and
- (iii) to maintain all-India character of the University by having on its rolls a fair representation of students from different regions of the country especially the backward areas.

**Reservation of seats in various programmes of study for candidates belonging to Scheduled Caste (SC), Scheduled Tribe (ST), Other Backward Classes (Non Creamy Layer (NCL) and Economically Weaker Sections (EWS) (not covered under SC, ST & OBC) category is 15%, 7.5%, 27% and 10% respectively. As per the provisions of Rights of Persons with Disabilities (PWD) Act, 2016, not less than 5% seats are reserved for Persons with Benchmark Disabilities, where "person with benchmark disability" means a person with not less than forty percent (40%) of a specified disability where specified disability has not been defined in measurable terms and includes a person with disability, as certified by the certifying authority.**

**Note:** For candidates applying for M.Tech., MPH, Post Graduate, PG Diploma, Under Graduate and Part-Time programmes: All OBC (NCL) category candidates are eligible to 10% relaxation in the percentage of marks in the qualifying examination in relation to open category. The SC/ST and Person with Disability (PWD) candidates who have passed the qualifying examination irrespective of their percentage of marks are eligible to appear in the Entrance Examination. For B. Tech and MBA, the criteria for the said courses are given separately in the concerned section of the e-Prospectus.

For candidates applying for Ph.D programme: Subject to the conditions stipulated in these Regulations, the following persons are eligible to seek admission to the Ph.D. programme: (a) Candidates who have a Master's degree or a professional degree declared equivalent to the Master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent grade 'B' in the UGC 7-point scale (or an equivalent grade in a point scale wherever grading system is followed) or an equivalent degree from a foreign educational Institution accredited by an Assessment and Accreditation Agency which is approved, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country for the purpose of assessing, accrediting or assuring quality and standards of educational institutions. A relaxation of 5% of marks, from 55% to 50%, or an equivalent relaxation of grade, may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/ PWD as per the decision of the Commission from time to time, or for those who had obtained their Master's degree prior to 19<sup>th</sup> September, 1991. The eligibility marks of 55% (or an equivalent grade in a point scale wherever grading system is followed) and the relaxation of 5% to the categories mentioned above are permissible based only on the qualifying marks without including the grace mark procedures; (b) Candidates who have cleared the M.Phil. course work with at least 55% marks in aggregate or its equivalent grade 'B' in the UGC 7-point scale (or an equivalent grade in a point scale wherever grading system is followed). A relaxation of 5% of marks, from 55% to 50%, or an equivalent relaxation of grade, may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/PWD and other categories of candidates as per the decision of the Commission from time to time; (c) Candidates possessing a Degree considered equivalent to M.Phil. Degree of an Indian Institution, from a Foreign Educational Institution accredited by an Assessment and Accreditation Agency which is approved, recognized or authorized by an authority, established or incorporated under a law in its home country or any other statutory authority in that country for the purpose of assessing, accrediting or assuring quality and standards of educational institutions, shall be eligible for admission to Ph.D. programme and (d) P.G. degree holders of AYUSH Systems of Medicine will be considered equivalent to Masters programmes (M.Sc./M.A.) and are also eligible for the JNUEE for Ph.D. programme.

In the light of the objectives of the University as spelt out in the First Schedule of the Act, steps have been taken to ensure that students from outside India, especially from the developing countries join the rolls of the University in adequate number.

The number of seats being limited; admission will be made on the basis of merit. Merit lists will be drawn in accordance with the provisions of Admission Policy 2021-22 of the University <http://jnu.ac.in/sites/default/files/Admission%20Policy%20Final-2021-22.pdf>

**The outstation candidates admitted to the programme of study of the University will be considered for hostel accommodation as per rules of the University subject to availability of hostel accommodation. Grant of admission in the University would not ensure automatic allotment of hostel accommodation and that the same will be offered subject to its availability.**

**No Candidate shall be eligible to register himself/herself for a full-time programme of study if he/she is already registered for any full-time programme of study in this University or any other University/Institution.**

In service candidature may kindly refer to Admission Policy of the University available on JNU website.

A candidate who successfully completes a programme in one particular language/subject may not be entitled for admission to same level of programme (language/subject) again. The candidate may be allowed one more chance to get admission in other language/ subject. Further, the candidate who fails to complete the programme successfully in the first two chances will not be given admission third time in the same language/ subject under any circumstances. This will be applicable to all programmes of study being offered by the University.

Reverse admission in a lower program of study after completing a higher program of study in the same subject would not be permitted.

**Selection Procedure for Admission:**

No viva voce examination is held for admission to any programme except for Ph.D. The candidates are admitted on merit on the basis of their performance in the Computer Based Test (CBT) and the deprivation points added to their score in accordance with the approved admission Policy and Procedures of the University.

**The candidates for admission to Ph.D. have to appear for Computer Based Test (CBT) and candidates qualifying with 50% marks for General Category and 45% marks for candidates belonging to SC/ST/OBC (non-creamy layer)/PWD category in the Computer Based Test (CBT) shall be called for viva voce Examination. It is to be noted that a candidate who scores 50% and above for General Category & 45% and above for SC/ST/OBC (non-creamy layer)/PWD in the computer based test, does not automatically qualify for being shortlisted for the viva-voce. Candidate shall be called for viva voce for admission to each programme of study for Ph.D. programmes as follows:**

The number of students after examination to be invited for viva-voce examination will depend upon the intake as per the following matrix:

INTAKE	No. of Students to be invited for Viva-Voce
1-5	5 times
6-10	4 times
11 & above	3 times

However, a flexible approach shall be adopted by the University, in case sufficient numbers of qualified candidates are unavailable among the reserved categories. Procedure for the same shall be worked out separately. Merit lists are prepared for each category i.e. candidates belonging to SC, ST, OBC, PWD categories separately and on the basis of performance of candidates in the total aggregate marks (CBT + Viva-voce).

**Note:** The syllabus of the entrance test for admission to a Ph.D. Programme shall consist of 50% of Research Methodology and 50% shall be Subject Specific. Questions on Research Methodology may be either implied/intrinsic or explicit.

**JRF qualified candidates shall be exempted from Computer Based Test (CBT). They are required to apply separately under JRF category. Such candidates shall be shortlisted and called directly for viva-voce.**

**GATE qualified candidates for the admission in the school of Engineering shall be exempted from Computer Based Test (CBT). They are required to apply separately under GATE category. Such candidates shall be shortlisted and called directly for viva-voce.**

**The admission to Diploma of Proficiency (DOP) in Bhasha Indonesia, DOP in Hebrew and DOP in Mongolian will be based on merit as per the performance in Certificate of Proficiency in respective language.**

**In case of bunching of aggregate total (CBT+Viva voce) marks for Ph.D. programmes**, merit shall be drawn on the basis of the higher marks secured in the CBT conducted by NTA and further, if need be (in case of tie), according to the marks obtained in the qualifying Post-Graduate degree will be given preference. In case of further tie, the higher marks obtained by the candidate (s) in the graduate degree shall be considered. In case of any further tie, the marks secured by the candidate(s) in the 10+2 examination shall be the basis for determining merit. The candidate whose result has been declared, would be given preference over those whose result has not been declared. In case of bunching in the JRF and GATE categories merit shall be drawn according to the marks obtained in the qualifying Post-Graduate degree, and for further tie, the same procedure will be adopted as mentioned above.

**In case a candidate does not appear in the Viva** then he or she will be disqualified & not be considered for selection to the Ph.D. programmes of study.

**In case of bunching in Under Graduate/Masters and other programmes** bunching formula as applied in Ph.D. programmes to be applied i.e. comparing the previous qualifying marks of the candidates. In case of bunching in MBA admission, first, the CAT percentile will be compared and then the previous qualifying marks of the candidates. The candidate whose result has been declared, would be given preference over those whose result has not been declared.

**Admission of JRF holders to Ph.D. programme**

Only those candidates who fulfil the minimum eligibility requirements as prescribed for admission of candidates to Ph.D. programmes as mentioned in the respective schools/centres and have qualified for Junior Research Fellowship through CSIR, UGC National Eligibility Test (NET), ICMR, ICAR, AYUSH, DBT examination are eligible to apply separately in the prescribed form under this category in the respective school/centre/Special Centre wherever separate intake through JRF category is available (the link for this category will be available on the JNU website). Such candidates shall be exempted from appearing in Computer Based Test (CBT). However, candidates shall have to appear for an interview and their selection will depend on their performance in the interview. Candidates who have appeared in these examinations, but results awaited may also apply under this category. However, such candidates will be interviewed upon submission of a valid proof of having qualified for or awarded the JRF certificate at the time of interview. Please note that candidates who have been awarded "Lectureship" (without JRF) in the CSIR/UGC examination are not eligible and will not be interviewed. In case of candidates applying under JRF category selection will be done on the basis of 100% viva score.

**Admission of GATE holders to Ph.D. programme in the School of Engineering**

Only those candidates who fulfil the minimum eligibility requirements as prescribed for admission of candidates to Ph.D. programme as mentioned for the School of Engineering and qualified for GATE fellowship are eligible to apply separately in the prescribed form under this category (the link for this category will be available on the JNU website). The intake will be as per the availability of number of fellowships and requirement of seats in the School. In case of candidates applying under GATE category, selection will be done on the basis of 100% viva score.

**Admission of Foreign Nationals to Ph.D. programmes**

The admission of foreign students for Ph.D. programmes may be considered in compliance with UGC 2016 Regulations regarding number of research scholars faculty (i.e. Professor/Associate Professor/Assistant Professor) can supervise. Foreign students shall be offered seats only if seats are left vacant in any discipline after being offered to Indian Candidates who have appeared in JNUEE – 2021-22.

## II. SCHOOL AND THEIR PROGRAMME OF STUDY

### 1. SCHOOL OF INTERNATIONAL STUDIES

Established in 1955, the School of International Studies is the oldest School of the University. The School has established itself as one of the premier institutions in the country for the study of international relations and area studies. The School has made pioneering contributions in promoting the study of international relations as an academic discipline in India and in advancing knowledge and understanding of international affairs in an interdisciplinary perspective. The School is also the first institution in the country to promote "Area Studies" and to develop expertise on various countries and regions of the world. It has also acquired an international reputation as a centre of advanced learning.

To begin with, the School was affiliated to the University of Delhi as the Indian School of International Studies. From September 1961 till the School merged with Jawaharlal Nehru University in June 1970, it functioned as a deemed university. Following the merger, the prefix "Indian" was dropped from the name of the School and it became the School of International Studies of the Jawaharlal Nehru University.

For a long time, the academic programmes of the School focused exclusively on research only awarding Ph.D. degree. Soon after the School became a part of the Jawaharlal Nehru University, the M.Phil. curriculum was introduced in 1971-72. In the following academic year 1973-74, the School started offering a 2 year M.A. (Politics: International Studies) programme. A new and unique M.A. programme in Economics (with specialization in World Economy) was introduced in 1995-96 by the Economics Division of the Centre for International Trade and Development. The School has introduced a new two year M.A. Programme (International Relations and Area Studies) with specialization on area studies and contemporary international developments.

Presently, there are more than 100 faculty members in the School. It also has Emeritus Professors and distinguished scholars. Several Chairs have been instituted in the School in the recent years. These are Appadorai Chair, Nelson Mandela Chair, State Bank of India Chair and Jawaharlal Nehru Chair in International Environmental Law. Members of the faculty of the School have contributed to the advancement and dissemination of knowledge in International Studies not only through their teaching and research supervision but also by publishing books and articles in journals of highest international repute.

The School holds national and international seminars from time to time on important aspects of area studies, inter-country relations and on themes relating to the study of international relations as an academic discipline.

The School also holds a series of Hriday Nath Kunzru Memorial (Extension) Lectures every year on a theme relating to contemporary international relations. Under an endowment funded by Asia Publishing House, Bombay, it also holds lectures in memory of the great poet and patriot, Sarojini Naidu and invites a distinguished scholar or statesman to deliver the memorial lecture.

The School publishes a quarterly journal "International Studies". Founded in July 1959, this journal has acquired world-wide reputation as a leading Indian academic journal in the field.

**PROGRAMMES OF STUDY****Centres of Studies & Fields of Study****1. Centre for Canadian, US and Latin American Studies**

1. Ph.D. in Canadian Studies
2. Ph.D. in United States Studies
3. Ph.D. in Latin American Studies

2. **Centre for European Studies**  
European Studies
3. **Centre for International Legal Studies**  
International Legal Studies
4. **Centre for International Trade and Development**  
International Trade & Development
5. **Centre for East Asian Studies**
  1. Japanese Studies
  2. Chinese Studies
  3. Korean Studies
6. **Centre for International Politics, Organization and Disarmament**
  1. International Politics
  2. International Organization
  3. Diplomacy and Disarmament
  4. Political Geography
7. **Centre for Russian & Central Asian Studies**  
Russian & Central Asian Studies
8. **Centre for South Asian Studies**  
South Asian Studies
9. **Centre for Indo-Pacific Studies**  
Indo-Pacific Studies
10. **Centre for Inner Asian Studies**  
Inner Asian Studies
11. **Centre for African Studies**  
African Studies
12. **Centre for West Asian Studies**  
West Asian Studies
13. **Centre for Comparative Politics and Political Theory**  
Comparative Politics and Political Theory
14. **Human Rights Studies Programme**  
The Human Rights Studies Programme offers only admission to Ph.D. programme.
15. **Energy Studies Programme**  
The Energy Studies Programme offers only admission to Ph.D. programme.

### **M.A.**

#### **(i) M.A. in Politics (with specialization in International Studies)**

The two-year Master's Degree Programme in Politics (with specialization in International Studies) is a School level programme in which all the Centres of Study of the School participate. The Programme combines studies in International Affairs, Area Politics, Political Theory, Comparative Politics and Economic Development which enable the graduates to receive all-around exposure in various fields of study.

#### **(ii) M.A. in Economics (with specialization in World Economy)**

The Centre for International Trade and Development launched a Master's Programme (M.A.) in Economics in 1995-96. The M.A. programme was designed with a clear emphasis on emerging global issues like trade, development, open economy macroeconomics, technology, currency, environment, natural resources, law and economics, public economics and finance that makes it unique, and distinct from conventional M.A. programmes in economics offered elsewhere in India.

The programme provides sound theoretical background in the Principles of Economics and equips students with analytical tools and techniques for understanding the evolution of the world economy. Apart from preparing students for advanced research work, the programme also aims at training students as professional economists for the government, non-government and the corporate sectors.



**(iii) M.A. in International Relations and Area Studies**

The two-year Master's Degree Programme in International Relations and Area Studies is a School level programme in which all the Centres of Study of the School participate. This programme focuses on Area Studies, an approach to social science in which the School, with nine area studies Centres that cover the entire globe, has distinct strengths. This programme is separate and distinct from an M.A. in Political Science. Candidates are advised that pursuing this Programme of Study may, in some circumstances, render them ineligible for employment as teaching faculty in Political Science departments.

**(B) CENTRES OF THE SCHOOL****(i) Centre for Canadian, US and Latin American Studies**

The Centre for Canadian, US & Latin American Studies comprises the following three streams:

1. Canadian Studies
2. United States Studies
3. Latin American Studies

The Centre offers inter-disciplinary courses at the M.A. (School level), and Ph.D. level on Canada, the United States, and Latin America and Caribbean. The Centre's thrust areas include domestic political dynamics, foreign policies, security policies, regional integration processes and issues related to multiculturalism, ethnicity, gender, environment, politics of development and the sociological study of immigrants. Candidates are required to apply in any one of the Ph.D. Programmes offered by the centre.

For more details about the Centre, visit the JNU website: <https://www.jnu.ac.in/sis/ccuslas>

**(ii) Centre for European Studies**

The Centre for European Studies (CES) is a multi-disciplinary department which promotes teaching, research and outreach activities to enhance the understanding of Europe and Indo-European affairs. The Centre came into existence in 2005 as a result of a larger restructuring of academic programmes in the School of International Studies and has seven faculties. The areas of teaching and research in the Centre include Europe, the European Union (EU), countries of Western Europe, Central and Eastern Europe, the Nordics, Baltic region and the Mediterranean. It offers various Ph.D. courses on Europe and the EU viz., European Economic Integration, Issues in European Security, EU in World Politics, Social Structures and Dynamics in Europe, Energy Security in Europe, Politics and Society in Central and Eastern Europe, Identity Issues in Europe, Contemporary Issues in the Nordic Region, Europe and the Mediterranean Region; and Foreign and Security Policy of the Baltic States. In addition, there are compulsory courses on Research Methodology and German/French. The Centre also offers B.A. and M.A. courses. Regular seminars, conferences, lectures and workshops are organized by the Centre with the aim of bringing together wide range of expertise and to exchange views on the subjects of contemporary importance. The UGC has recognized the Centre as one of the advanced centres of European Studies in India by granting it an Area Studies Programme. So far the Centre also has been awarded four Jean Monnet Chairs, three Jean Monnet Modules by the European Commission. While recognising its overall contribution to European Studies, the European Commission in 2018 also awarded the Jean Monnet Centre of Excellence to the Centre.

For more details about the Centre, visit the JNU website : <http://www.jnu.ac.in/sis/ces>

**(iii) Centre for International Legal Studies**

The Centre for International Legal Studies consists of specialists in International Law, Trade Law, Law of International Organisation, International Environmental Law, Human Rights Law, Intellectual Property Law and International Air and Space Law. The Centre offers Ph.D. programmes. It also offers three core courses (International Law of Peace, Legal Controls of International Conflicts and International Law and Organisation) to M.A. Students of the School.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sis/cils>

**(iv) Centre for International Trade and Development**

The Centre attempts to provide a strong foundation for theoretical and empirical economic analysis. The Centre concentrates on thrust areas such as International Economics, Economic Development, Microeconomics, Macroeconomics, Open Economy Macroeconomics, Finance, Environmental Economics and Econometrics. The Centre offers an M.A. in Economics (with Specialization in World Economy), Ph.D. with the following areas of research specialization – trade, development, economic growth, environment, labour, education, health, public economics, law and economics, finance, banking, regulation etc.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sis/citd>

**(v) Centre for East Asian Studies**

Scholars in the doctoral programme of the Centre specialise in the areas of their interest related to the East Asian region. The faculty of the Centre also offers courses at the MA level of the School. The Centre organises regular seminars, workshops

and meetings, conducts presentations by researchers and invites area experts from abroad to enhance scholarly understanding of the region. The faculty members of the Centre have published extensively in national and international journals and are reputed experts in their fields. They also serve as consultants, advisors, or honorary fellows at prestigious institutions in India and abroad. Several students of the Centre have been recipients of prestigious research fellowships awarded by the Chinese, Taiwanese, Japanese and Korean Governments. Besides, the scholars of the Centre also avail scholarships offered by the Japan Foundation, Nippon Foundation, Korea Foundation and the Academy of Korean Studies. The fellowships offered by the Nehru Memorial Museum and Library and the Indian Council of Cultural Relations also enable scholars of the Centre to conduct their field works and research in the East Asian countries. Over the years, the Centre has considerably expanded its international collaborations and networks and is well positioned to promote multidisciplinary studies and research on East Asia.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sis/ceas>

**(vi) Centre for International Politics, Organization and Disarmament**

The Centre runs four PhD programmes in

(i) International Politics (ii) International Organization (iii) Diplomacy and Disarmament (iv) Political Geography.

The focus of the Centre's research activities has evolved over the years, in line with emerging concerns in the arena of world politics. Those wishing to apply to any of our programmes should note the specific areas of concern for each programme. The International Politics division primarily works on theoretical approaches to the study of global politics, in particular major schools of thought such as Realism, Liberalism, Constructivism, Feminism, Marxism/Post-Marxism, Normative Theory, and Post-Colonialism. The International Organization division focuses on the structures, processes, politics and problems of organising co-operation to address major issues of vital global and regional importance. The Diplomacy and Disarmament division focuses on the following themes: history, theory and practice of diplomacy, negotiations, war and peace, technology and global politics, revolution in military affairs, nuclear deterrence, weapons of mass destruction, arms control, non-proliferation and disarmament, traditional and non-traditional security studies, climate change and environmental negotiations, economic and trade diplomacy, critical theory and critical security studies, terrorism, violence, critical terrorism studies, conflict management and resolution, environmental security, and epidemics and pandemics. The Political Geography division focuses on the study of theoretical and applied aspects of political geography, geopolitics and critical geopolitics. The division also runs a Cartographic Lab equipped with GIS software. Further information may be obtained at <https://www.jnu.ac.in/sis/cipod>

**(vii) Centre for Russian & Central Asian Studies**

The Centre runs Ph.D. Programmes and conducts research on Russia, Central Asian and other post-Soviet states. It works in close cooperation with policy makers and larger academic community. Regular seminars and conferences are organised by the Centre to bring together wide range of expertise and promote exchange of views on the region. In recognition of its high quality academic and research programme, University Grants Commission accorded the Centre the status of an Advanced Centre of Russian and Central Asian Area Studies in India. Other areas of research and teaching in the Centre are Transcaucasia and Baltic Republics, Ukraine, Belarus and Moldova. History, Politics, Foreign Policy, Economy and Society of these states are studied in an inter-disciplinary manner.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sis/crcas>

**(viii) Centre for South Asian Studies**

The Centre for South Asian Studies covers studies and research on a range of aspects of 8 countries. All the academic activities including teaching and interdisciplinary research have been designed to objectively study and analyse history, politics, foreign policy, security, societies, economies, environment, regional cooperation/integration and contemporary affairs in different regions/countries covered by the Centre. The Centre has focused on academic pursuits that have strong intellectual value, deeper social relevance and wider national and international utilities and policy dynamics. Its programme of studies has attracted bright students having diverse background from various parts of India and also from other countries. It has evolved into a full fledged institute of academic excellence, much admired by students, frequently consulted by the national governments and eagerly sought after by international organizations and other academic institutions.

The profile of the students who have completed their studies from the Centre does show that a large number of them have joined premier academic and research institutions and equally handsome numbers are in the national and state civil services. Many of the students have done exceedingly well in media and non-governmental organizations, other tertiary sector activities and national and regional politics. The importance of the Centre has become more critical and vital both in the context of large scale transformation in the global scenario and also within the countries that have been traditionally covered and studied by the Centre. There are immense opportunities for academic inquiry triggered by these new developments.

For more details about the Centre, visit the JNU website : <https://jnu.ac.in/sis/csas>

**(ix) Centre for Indo-Pacific Studies**

The Centre for Indo-Pacific Studies (CIPS) is a new Centre created in 2013 keeping in view the profound shifts that are taking place around India and India's rapidly rising stakes in the Indian Ocean and East Asia. Equally, it is also a reflection of today's

geopolitical realities. The Indo-Pacific as a region is emerging as the new template of reference since the confluence, interdependence and interface of the Indian and Pacific Oceans are getting strengthened not merely economically but geostrategically as well. The Indo-Pacific, comprising a vast spatial continuum spread from the Indian Ocean all the way up to West Pacific, including the crucial regions such as Southeast Asia and South Pacific, also brings forth India's centrality and its relationship with regions in the Indo-Pacific quite distinctly.

Centre's focus are Southeast Asia, the South Pacific and the Indian Ocean. First of its kind anywhere in the world, CIPS's intent is to break new ground by focusing its research and teaching on new frontiers of knowledge and bring out newer dimensions of a rapidly changing world. The programme is supported by competent and dedicated team of faculty committed to high quality teaching and research. Plans are afoot to expand and develop it into a leading Centre of academic excellence.

For more details about the Centre, visit the JNU website : <https://jnu.ac.in/sis/cips>

**(x) Centre for Inner Asian Studies**

The Centre for Inner Asian Studies, School of International Studies, Jawaharlal Nehru University is engaged in teaching and research on the whole of Central Asia, that is the five Central Asian Republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan; Xinjiang, Tibet and Inner Mongolia autonomous regions of China; Mongolia and Afghanistan. Over the years, this programme has evolved as the advanced Centre of Inner Asian Studies in India and is known for its excellent research work and publications both at the national as well as international levels. All the academic activities including teaching and research have been designed to study and analyze history, politics, society, economy, geopolitics of energy and transport networks, besides the contemporary developments in Central Asia, Chinese Central Asia, Afghanistan and Mongolia, and relate them to Indian experience and policy.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sis/cias>

**(xi) Centre for African Studies**

Centre for African Studies covers the entire African continent including Sub-Saharan, North African region and African Island countries. It has a UGC Area Studies Programme on African Studies established in 2005. The Centre focuses on research activities related to Southern Africa, Francophone Countries, North African Region and Diaspora Studies and also has a UGC sponsored special programme on Diaspora and International Migration Programme (DIMP). It has special focus on Indian diaspora in the region and Indo-African Relations.

The Centre offer M.A. as well as Ph.D. courses on African studies and Diaspora in international relations. Taught courses include foreign policy as well as political, economic and social systems pertaining to the region.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sis/cas>

**(xii) Centre for West Asian Studies**

The Centre for West Asian Studies focuses on all countries of West Asia and North Africa. It has a UGC sponsored Gulf Studies Programme established in 1978 as part of the Area Studies Programme of the UGC. The Gulf Studies Programme focuses on the countries on Gulf Cooperation Council, Iran, Iraq and Yemen. The Centre also focuses on Indian diaspora in the region.

The Centre offer M.A. as well as Ph.D. courses. Taught courses include areas of foreign policy and political, economic and social systems pertaining to the region.

**(xiii) Centre for Comparative Politics and Political Theory**

Comparing Global Politics require knowledge of the distinctive political and cultural practices in the Non European regions of the world.

Centre for Comparative Politics and Political Theory offers researchers the opportunity to specialize in Global Political Thoughts and Practices with an emphasis on: political thoughts from the non-Western world. Courses for all the two programmes viz. M.A and Ph.D., that the faculty of the Centre offer, impart specialized knowledge skills to make the scope of 'Comparison' wide enough to include thought and theories from the non-Western world. Research at CCPPT aims to offer a strong foundation in comparative or Multiple Knowledge worlds and their distinctive political thinking. The unique comparative vision of the Centre's research design attracts bright young scholars from varied disciplinary backgrounds including graduates from IITs for its Ph.D. programme.

The Centre offers Ph.D. programme. It also offers Four core courses (Political Thought I, Political Thought II, Comparative Political analysis; Indian Political System) to M.A. Students of the School.

For more details about the Centre visit the JNU website : <https://www.jnu.ac.in/sis/ccppt>

**(xiv) Human Rights Studies Programme**

The admission to Ph.D. programme in Human Rights is intended to offer a unique opportunity to extensively research important themes/issues of human rights and duties in contemporary global politics from an interdisciplinary perspective.

For more details about the Centre, visit the JNU website : <https://jnu.ac.in/sis-human-rights-studies-programme>

**(xv) Energy Studies Programme**

The admission to Ph.D. programme of Energy Studies aims at to offer opportunity to undertake research on Contemporary Themes and Issues in an inter-disciplinary perspective.

**ELIGIBILITY:****Master of Arts**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of International Studies	Politics (with specialization in International Studies) – PISM (201)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 50% marks.
2		International Relations and Area Studies – IRAM (234)	
3		Economics (with specialization in World Economy) – EILM (202)	(i) Bachelor's degree (with 50% marks in aggregate) in the following subjects: Economics (Honours) with Mathematics as a subsidiary subject; or Mathematics (Honours) with Economics as a subsidiary subject; or Statistics (Honours) with Economics and Mathematics as subsidiary subjects. (ii) Any other Bachelor's degree (with 60% marks in aggregate) with courses in Microeconomics, Macroeconomics, Mathematical Economics and Statistics.

**Ph.D.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of International Studies (SIS)	Human Rights Studies Programme – HRSB (846)	Only those candidates shall be considered for admission to the Ph.D. Programme who have – Master's Degree in the field of human rights with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR  Obtained two years M.Phil. or equivalent degree with at least 55% marks of a recognized University/Institution in the field of human rights or allied areas (with dissertation/seminar/viva) or one year M.Phil. degree with 55% marks in the field of human rights or allied areas with additional one year research experience of a recognized University/Institution and one publication in the field of human rights or allied areas and 55% marks or equivalent in Master's Degree.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.
2		Energy Studies Programme – ESPH (847)	Only those candidates shall be considered for admission to the Ph.D. Programme who have – Master's Degree/BE/B.Tech in the field of Energy Studies, Political Science, International Relations, Economics, Defence/Strategic Studies or Area Studies with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR  Obtained two years M.Phil. or equivalent degree with at least 55% marks of a recognized University/Institution in the field of energy studies or allied areas (with dissertation/seminar/viva) or one year M.Phil. degree with 55% marks in the field of energy studies or allied areas with additional one year research experience of a recognized University/Institution and one publication and 55% marks or equivalent in Master's Degree/BE/B.Tech.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Canadian, US and Latin American Studies (CCUS&LAS)	Canadian Studies – CANH (826)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree in the field of Political Science, International Relations, Economics, History, Sociology, Defence/Strategic Studies with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. or equivalent degree with at least 55% marks of a recognized University/Institution in Political Science, International Relations, Economics, History, Sociology or Defence/Strategic Studies (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 in the field of above subjects and 55% marks or equivalent in Master's Degree.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>
2		Latin American Studies – LAMH (828)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree in the field of Political Science, International Relations, Economics, History, Sociology, Defence/Strategic Studies with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. or equivalent degree with at least 55% marks of a recognized University/Institution in Political Science, International Relations, Economics, History, Sociology or Defence/Strategic Studies (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 in the field of above subjects and 55% marks or equivalent in Master's Degree.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>
3		United States Studies – USSH (827)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree in the field of Political Science, International Relations, Economics, History, Sociology, Defence/Strategic Studies with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. or equivalent degree with at least 55% marks of a recognized University/Institution in Political Science, International Relations, Economics, History, Sociology or Defence/Strategic Studies (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 in the field of above subjects and 55% marks or equivalent in Master's Degree.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for European Studies (CES)	European Studies – EUPH (829)	<p>Master's Degree in the field of Political Science, International Relations, Economics, History, Sociology, Defence/Strategic Studies or MA in any of the language officially recognised by the EU with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p>OR</p> <p>Obtained two years M.Phil. Degree in European Studies with at least 55% marks of a recognized University/Institution (with dissertation/ seminar/viva) or one year M.Phil. in European Studies with 55% marks with additional one year research experience of a recognized University/Institution and one publication and 55% marks or equivalent in Master's Degree.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for International Legal Studies (CILS)	Int. Legal Studies – ILGH (830)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have – Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p>OR</p> <p>Obtained two years M.Phil. Degree in International Law with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil. in International Law with 55% marks with additional one year research experience of a recognized University/Institution and one publication and 55% marks or equivalent in Master's Degree/BE/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for International Trade & Development (CITD)	Int. Trade & Development – ITDH (831)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Obtained two-year Master's degree in Economics with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p>OR</p> <p>Obtained two-year M.Phil. degree with at least 55% marks of a recognized university in Economics/ International Trade and Development (with dissertation/ seminar/viva) or one-year M.Phil. degree with 55% marks in Economics/ International Trade and Development with additional one-year research experience of a recognized university and at least one publication and 55% marks or equivalent in Master's degree in Economics.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for East Asian Studies (CEAS)	Chinese Studies – CHIH (832)	Only those candidates shall be considered for admission to the Ph.D. Programme who have – Master's Degree in Political Science, History, Economics, International Relations and Area Studies with at least 55% marks or Master Degree in Humanities and other Social Science with 55% Marks.  OR Obtained two years M.Phil. Degree in relevant discipline (Chinese studies/Japanese Studies/Korean Studies respectively) with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil. in relevant discipline (Chinese studies/Japanese Studies/Korean Studies respectively) with 55% marks with additional one year research experience of a recognized University/Institution and one publication and 55% marks or equivalent in Master's Degree/BE/B.Tech.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.
2		Japanese – JPIH (833)	
3		Korean – KOIH (834)	

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for International Politics, Organisation and Disarmament (CIPOD)	International Politics – INPH (835)	Only those candidates shall be considered for admission to the Ph.D. Programme who have – Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR Obtained two 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 Master's Degree/BE/B.Tech.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.
2		International Organisation – ORGH (837)	
3		Diplomacy and Disarmament – DADH (838)	
4		Political Geography – POGH (836)	

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Russian and Central Asian Studies (CR&CAS)	Russian & Central Asian Studies – RCAH (839)	Only those candidates shall be considered for admission to the Ph.D. Programme who have – Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR Obtained two 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 Master's Degree/BE/B.Tech.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for South Asian Studies (CSAS)	South Asian Studies – SASH (840)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two 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 Master's Degree/BE/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Indo-Pacific Studies (CIPS)	Indo-Pacific Studies – IPSH (841)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two 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 Master's Degree/BE/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Inner Asian Studies (CIAS)	Inner Asian Studies – IASH (842)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two 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 Master's Degree/BE/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>



Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for African Studies (CAFS)	African Studies – AFSH (843)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two 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 Master's Degree/BE/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for West Asian Studies (CWAS)	West Asian Studies – WASH (844)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two 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 Master's Degree/BE/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Comparative Politics and Political Theory (CCPPT)	Comparative Politics and Political Theory – CPTH (845)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech (with Research Methods Coursework) with minimum 55% marks or equivalent Grade 'B' in UGC 7 -point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. or equivalent degree with at least 55% marks from a recognized University/Institution with compulsory coursework on Research Methods in any disciplinary subject from Humanities, Social Science, or Liberal Arts; or One year M.Phil. Programme with 55% marks from recognized University/Institution with compulsory coursework on Research Methods in Humanities, Social Science, or Liberal Arts; and one publication in the field of research; or Master's Degree with Research Methods Coursework with 55% marks and one publication in the field of research.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

## 2. SCHOOL OF LANGUAGE, LITERATURE AND CULTURE STUDIES

In the age of globalization, the effective use of language ensures the success of any venture or endeavour, including forming alliances and partnerships at the national and international levels. Against this background, the significance of learning languages has increased manifold. Not only do we use language for expressing and exchanging our thoughts and ideas but it also helps us in understanding and appreciating the culture, tradition and customs of other societies. Hence, learning a language in addition to one's own mother tongue provides an informed and nuanced access to the literature, culture and civilization of the country in which the language is rooted. The School of Language, Literature and Culture Studies (SLL&CS) in Jawaharlal Nehru University (JNU) was set up with this objective of instilling a spirit of critical engagements with the concerned culture.

The School of Language, Literature and Culture Studies (SLL&CS) is not only one of the largest Schools of the university but also is a pioneer and premier institution in the country which offers teaching and research in major foreign languages, literature and culture studies. The School has 12 Centres namely, Centre for Arabic and African Studies, Centre for Chinese and South-East Asian Studies, Centre for English Studies, Centre for French and Francophone Studies, Centre of German Studies, Centre for Indian Languages, Centre for Japanese Studies, Centre for Korean Studies, Centre for Linguistics, Centre for Persian and Central Asian Studies, Centre of Russian Studies and Centre of Spanish, Portuguese, Italian and Latin American Studies.

The 5-year Integrated M.A. Programme (10 semesters) is offered in Arabic, Chinese, French, German, Japanese, Korean, Persian, Pashto, Russian and Spanish; 2-year M.A. programme is offered in Hindi, Urdu, Linguistics, and English. However, on successful completion of 3-year of the 5-year Integrated M.A. Programme, a student can either leave with a B.A.(Honours/Pass) degree or continue with the Integrated M. A. Programme, subject to his/her fulfilling minimum eligibility requirements. Admissions are offered in the 1<sup>st</sup> and 4<sup>th</sup> year of the Five Year Integrated M.A. Programme in foreign languages. PhD is offered in all the above mentioned foreign and Indian languages and Linguistics, except in Pashto. In addition, the School offers Certificate of Proficiency in Pashto, Hebrew, Mongolian, Bahasa Indonesia, and Diploma of Proficiency in Hebrew, Mongolian, and Bahasa Indonesia.

### (A) PROGRAMMES OF STUDY

#### Centre of Studies, Programme of Study & Languages

##### 1. Centre of Persian and Central Asian Studies

- a. Ph.D. in Persian
- b. M.A. in Persian
- c. M.A. in Pashto
- d. B.A.(Hons.) 1st year in Persian
- e. B.A.(Hons.) 1st year in Pashto
- f. \*Certificate of Proficiency in Pashto

##### 2. Centre of Arabic and African Studies

- a. Ph.D. in Arabic
- b. M.A. in Arabic
- c. B.A.(Hons.) 1st year in Arabic
- d. \*Certificate of Proficiency in Hebrew
- e. \*Diploma of Proficiency in Hebrew

##### 3. Centre for Japanese Studies

- a. Ph.D. in Japanese
- b. M.A. in Japanese
- c. B.A.(Hons.) 1st year in Japanese

##### 4. Centre for Korean Studies

- a. Ph.D. in Korean
- b. M.A. in Korean
- c. B.A.(Hons.) 1st year in Korean
- d. \* Diploma of Proficiency in Mongolian
- e. \* Certificate of Proficiency in Mongolian

##### 5. Centre for Chinese & South-East Asian Studies

- a. Ph.D. in Chinese
- b. M.A. in Chinese
- c. B.A.(Hons.) 1st year in Chinese
- d. \* Diploma of Proficiency in Bahasa Indonesia
- e. \* Certificate of Proficiency in Bahasa Indonesia

**6. Centre for French and Francophone Studies**

- a. Ph.D. in French
- b. M.A. in French and Francophone Studies
- c. B.A.(Hons.) 1st year in French

**7. Centre of German Studies**

- a. Ph.D. in German
- b. M.A. in German (Literature, Translation, Translation & Interpretation)
- c. B.A.(Hons.) 1st year in German

**8. Centre of Indian Languages**

- a. Ph.D. in Hindi
- b. Ph.D. in Urdu
- c. Ph.D. in Hindi Translation
- d. Ph.D. in Tamil
- e. Ph.D. in Kannada
- f. M.A. in Hindi
- g. M.A. in Urdu
- h.\*Advanced Diploma in Mass Media in Urdu
- i.\*Certificate of Proficiency in Urdu

**9. Centre for Linguistics**

- a. Ph.D. in Linguistics
- b. M.A. in Linguistics

**10. Centre for English Studies**

- a. Ph.D. in English
- b. M.A. in English

**11. Centre of Russian Studies**

- a. Ph.D. in Russian
- b. M.A. in Russian
- c. B.A.(Hons.) 1st year in Russian

**12. Centre of Spanish, Portuguese, Italian and Latin American Studies**

- a. Ph.D. in Spanish
- b. M.A. in Spanish
- c. B.A.(Hons.) 1st year in Spanish

**\*Part Time Programme****(B) CENTRES OF THE SCHOOL****1. Centre of Persian and Central Asian Studies**

The Centre of Persian & Central Asian Studies in Jawaharlal Nehru University was established on the 7<sup>th</sup> of January 1971 as the Centre for Afro-Asian Languages (CAAL). It soon emerged as a prominent seat of Modern Persian Studies all over India. The Persian world at large began to appreciate the language teaching programs of the Centre which was unique of its kind in India. The Cultural Foundation of Iran (*Bonyad-e-Farhang*) took keen interest in the academic development of the Centre and provided it with **language laboratory**. This was the only University having the facility of language lab for learning Persian in India. Keeping the national character in view, JNU allows teachers and students of other universities to formally avail themselves of the service of the lab during vacations. The language laboratory is being used to enhance language proficiency of the students and develop their skill in the art of interpretation as well. Besides Modern Persian Studies, it also excels in Translations, Area Studies of Iran, Afghanistan, Tajikistan, Uzbekistan; Indo-Iran Relations; Ancient Iranian Studies, History of Persian Language and Literature and Stylistics in Modern Persian Literature - the topics which are exclusively taught in Centre. Sufism; Medieval Indian Culture and Civilization; Indo-Persian Literature and a host of other academic topics that come within the purview of Persian & Central Asian Studies are also given due place in the broad curriculum of the Centre.

Keeping in view the utility of inter-disciplinary approach, the Centre also offered service courses to the students of West Asian Studies (SIS) and Centre of Historical Studies (SSS). The Centre has been offering maximum number of service courses to the students of other Centres in SLL&CS. Special Course of Persian for the PG students of Urdu in CIL are being taught by the faculty members of Centre every semester. In addition, the following courses are successfully conducted by the Centre each academic year:

(A) Four Optional Courses for the UG students of various Centres of the School.

(B) Two Tool Courses for the undergraduate students of various Centres of the School.

In due course of time, the Centre developed in size and diversified its academic programs. Today it offers courses of Persian and Central Asian Studies, which cover entire gamut of language, literature and culture of Iran; Afghanistan, Tajikistan and Turkey. Ph.D.; M.A.; and B.A. (Hons) Courses of Persian, MA, BA (Hons.) and Certificate Courses of Pashto and Optional Courses of Turkish are being taught here with professional skill and scientific methods.

The teachers and students of the Centre of Persian & Central Asian Studies in JNU are continuously engaged in modern researches based on world interactions and comparative studies. The faculty members of the Centre, apart from teaching, take keen interest towards participating in different national and international seminars/conferences. The Professors of the Centre are regularly invited by different universities to deliver lectures to the teachers from all over India.

**Persian Language and Literature:** B.A. (Hons.) 1st year, MA 1st year

**Pashto Language and Literature:** B.A. (Hons.) 1st year, MA 1st year.

**Ph.D. programmes in Persian:** The courses offered by the Centre include Advance Translation, Interpretation, Audio-Visual, Literature, Culture, Area Studies, Comparative and Interactive Studies etc. The students are trained in research methodology and comprehensive history of Persian Language and Literature. Persian Studies in India specially the writings of Indian Scholars in Persian are the salient features of PhD program. Following are the major areas which the Centre has identified as thrust areas: 1. Contemporary Persian Literature-New Trends, 2. Interactive Literature, 3. Indo-Iran Relations, 4. Area Studies (Iran, Afghanistan, Tajikistan, Kazakhstan, Uzbekistan, and Azerbaijan), 5. Development of Pashto program up to the level of post-Graduation (MA Integrated) , 6. Centre is actively pursuing project in the area of "Indian Impact on the Persian World: Compilation of Thematic Urdu-Persian Encyclopedia of Language, Literature and Culture." 7. Introduction of Kazak, Uzbek and Mongolian languages.

**Note:** Computer Based Test (CBT) for M.A. and Ph.D. shall be conducted in the Persian language and MA in Pashto shall be conducted in the Pashto language.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/cpcas>

## 2. Centre of Arabic and African Studies

The Centre offers full time three year B.A.(Hons.), two year M.A. and Ph.D. programmes in Arabic Language, Literature and Culture. The salient features of these programmes are intensive specialised training in Arabic Language with particular focus on developing communication skills, oral, written as well as translation. Subsequently, students are gradually exposed to and provided deep insight about the culture and literary heritage of the Arab World through both classical and contemporary texts. In recent years, the Centre has emerged as one of the most prominent centres among all the Indian Universities specially in the field of modern Arabic Language and specialisation in its literature.

**B.A.(Hons.) in Arabic:** The course at the level of B.A.(Hons.) in Arabic is designed to develop language skill in speaking, reading, writing, comprehension, translation and interpretation. The students are also acquainted with history, culture and literature of the Arab World through courses such as contemporary Arab World and history of Arabic Literature. In teaching the language, audio visual language laboratory facilities and films are also used which makes learning the language simpler and interesting.

**M.A. in Arabic:** The M.A. programme has been designed to provide advanced and intensive training of Arabic Language, Literature, Culture and Civilisation through courses such as translation Arabic-English-Arabic, simultaneous interpretation together with course contents such as classical prose and poetry, modern prose and poetry, history of Arabic language and literature, Arabic novels and plays, prepare students for research and interpretation.

**Ph.D. Programme:** The Ph.D. programmes in Arabic have been designed to inculcate interest for research in different areas of Arabic and Islamic literature, culture, language and history.

The centre also plans to develop thrust areas such as:

- A. Classical Arabic language and literature
- B. Indo Arab relation in the field of contemporary literary exchange
- C. Indo African Studies: social cultural and literary aspects
- D. At the moment, the centre offers optional courses in Hebrew at B.A. level. It also offers COP & DOP courses in Hebrew.

**Note:** *Computer Based Test (CBT) for M.A. and Ph.D. shall be conducted in the Arabic language.*

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/caas>

## 3. Centre for Japanese Studies

The Centre was set up in 1973 and it is one of the oldest departments of Japanese language, literature and culture learning in India. Presently, named as Centre for Japanese Studies (CJS), it is one of the centres of excellence in the South Asia, where the programs ranging from B.A. to Ph.D. are offered. There is a three-year undergraduate degree programme, two year post graduate degree

programme, Ph.D. programme. The undergraduate courses are designed for making a beginner to acquire not only the language skills & efficiency but also impart basic knowledge about the history of Japanese literature, culture, history, society etc., so that by the end of the third year, the student will have sufficient command over the language as well as society of Japan. The postgraduate courses in the centre envisage students to pursue higher level of expertise, using Japanese Language as a tool in the areas of Japanese Literature, Culture, Linguistics, Translation and Interpretation. Under the Ph.D. programme, students pursue further research in fields related to Japanese Language, literature, culture, society etc.

**B.A. (Hons.) Japanese**, is a three-year degree programme of six semesters during which courses required for imparting the four skills of the language, i.e. reading, writing, speaking and listening, are offered to the students. Courses on History of Japanese Literature, Society and Cultural Traditions are also offered in the B.A. Programme.

**M.A. Japanese**, is a two-year programme of four semesters, in which students master the advanced skills in Japanese with special emphasis on current affairs & Newspaper translation, interpretation, analysis and appreciation of literary texts, and the cultural Heritage of Japan etc. At the M.A. level students have option to specialize either in Literature or Interpretation. The objective of this programme is to groom the students for translation, interpretation as well as research. In the final semester of M.A., the students are required to write a Dissertation on any area of their interest in Japanese studies.

**Ph.D. in Japanese:** The research scholar is required to submit a thesis on a topic of his/her choice from the field of Literature, Language, Comparative and Contrastive Linguistics.

**Note: Computer Based Test (CBT) for M.A. and Ph.D. in Japanese shall be conducted in the Japanese language.**

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/cjs>

#### 4. Centre for Korean Studies

The Centre is one of the biggest academic centres of Korean Language, Literature and Culture Studies in the Indian Subcontinent. It offers B.A., M.A., Ph.D. programme in Korean Language, Literature and Culture Studies. Korean language was first introduced in the Centre in 1976 as a Pre-Degree Diploma course. It was upgraded to a full-time B.A. (Hons.) programme in 1995 and M.A. in 1998. This was part of the 'Centre for Japanese, and North East Asian Studies' (CJNEAS), the nomenclature of which was changed to 'Centre for Japanese, Korean and North East Asian Studies' (CJKNEAS) in 2005. It became an independent centre- "Centre for Korean Studies (CKS)" in August, 2013. Over the years it has grown into one of the largest Centres of the SLL&CS in JNU. The Centre also offers part time certificate and diploma courses in Mongolian Language.

**B.A. (Hons) in Korean:** This is a three-year degree programme wherein students are first imparted basic skills in listening, speaking, reading and writing in Korean Language. They are first introduced to the Korean script (Hangeul) and then gradually to Hanja or the Chinese characters which are used along with Hangeul. The course also trains the students in conversation, composition and translation through a knowledge of specialized terminologies. The students are given intensive training in the Oral skills with the help of State-of-the-art audio-visual aids. Along with the language, students also study literature, culture, history and geography of the Korean peninsula.

**M.A. in Korean:** This programme is a two-year programme of four semesters, in which the students master the advanced skills in Korean with special emphasis on appreciation of literary texts of various genres, translation & interpretation from English to Korean and vice versa, analysis of current affairs, and study of social and cultural heritage of Korea. This programme also aims to impart general and overall understanding of Korean linguistics. The Centre often conducts on-line courses through an E-School programme tie-up with universities in the Republic of Korea. In the final semester of M.A., the students are required to write a dissertation on any area of their interest in Korean language, literature, culture or society.

**Ph.D. in Korean:** The research scholar is required to submit a thesis on a topic of his/her choice from the field of Literature, Language, Comparative and Contrastive Linguistics, Culture or Society.

**Mongolian Language Programme:** The Centre also offers Part-Time one-year Certificate of Proficiency and one year Diploma of Proficiency in Mongolian Language.

**Note: Computer Based Test (CBT) for M.A. and Ph.D. in Korean language shall be conducted in the Korean Language.**

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/cks>

#### 5. Centre for Chinese & South-East Asian Studies

A full-time three-year B.A. (Hons.) and two-year M.A. in Chinese language at the Centre have been attracting and inspiring both the Indian and foreign students for over four decades. The Centre offers an intensive specialized training in modern Chinese language with particular emphasis on the commonly spoken language (putunghua) in present day China. Apart from having proficiency in the language, the students are gradually exposed to the cultural and literary heritage of China through both classical and contemporary texts.

**B.A. (Hons.) in Chinese:** The courses at the level of B.A. (Hons.) in Chinese are designed to develop language skills in speaking, reading, writing and comprehension. The students are also familiarized with various aspects of life in China through courses such as Read Chinese, Newspaper Chinese, Chinese Oration/Fluent Chinese, General Knowledge of China, Composition etc. The courses are aimed at developing competence and proficiency in spoken as well as written Chinese through state-of-the-art audio-visual language laboratory facilities and films. The Centre offers a four-semester comprehensive optional course in English for the undergraduate students of the School of Language, Literature and Culture Studies and beyond on India China relations during ancient, colonial, and contemporary times.

**M.A. in Chinese:** The programme is designed to facilitate advanced and intensive training of Chinese language, literature, culture and civilization on the one hand and translation and interpretation on the other. Courses such as the History of Chinese Literature, Introduction to Chinese Language, Fundamental of Chinese-English Translation, Newspaper Translation, Chinese Novels, Consecutive and Simultaneous Interpretation, Introduction to the Economy of Modern China, Reading and Translation of Contemporary Writing train students for research and interpretation careers. The inter-disciplinary orientation of the courses also offers an opportunity to students to join Ph.D. programmes in social sciences streams of other Schools. The Centre offers a unique programme in training students in Modern Standard Chinese (Putonghua). Apart from having a practical proficiency in the language concerned, students are also familiarized systematically with various aspects of life in China and other Chinese-speaking areas in the South-East Asia. The aim of the programme, therefore, is to stimulate and facilitate young scholars to engage themselves in advanced level language-based studies on language, literature, history and culture of China and South-East Asian Countries.

**Ph.D. in Chinese:** The broad areas of research include:

1. Chinese Culture Studies
2. India-China Civilizational Interaction through Ages
3. India-China colonial connections
4. Contemporary Chinese Literature & Literary Theory & Criticism
5. Chinese Literary History
6. Chinese Language Linguistic Profile and Linguistic History
7. Theory and Practice of Translation
8. Structure and Styles of Modern Chinese

For Ph.D. programme are required to send a detailed research proposal of at least 3000 words, identifying the specific theme, statement of the problem, preliminary review of literature, and research methodology. It is desirable that in JRF category the candidate has one or two publications in academic journals or books.

**COP/DOP in Bahasa Indonesia:** The Centre also offers (Part-time) Certificate of Proficiency and Diploma of Proficiency programmes in Bahasa Indonesia.

**Note: Computer Based Test (CBT) for M.A & Ph.D. shall be conducted in the Chinese language.**

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/cc&seas>

## 6. Centre for French and Francophone Studies

The Centre is actively engaged in teaching and research in French and Francophone Studies with a view to promoting an interdisciplinary approach to learning. The Centre offers full-time courses at the level of B.A. (Hons.), M.A. and Ph.D. Teaching is carried out through the medium of the French Language.

**B.A. (Hons.):** The programme aims at language proficiency by imparting written and oral skills through communicative approaches, language laboratory, films etc. Along with language acquisition, courses in civilization, culture & literature of French and Francophone countries are also included in the programme.

### M.A. in French and Francophone Studies

At the M.A. level, students may specialize in French & Francophone Literature or Translation & Interpretation. Courses on language, linguistics methodology of teaching French as a foreign language and civilization (History of Art, Cinema, French Thought and Mass Media) are common to both streams.

The CFFS has the distinction of being the first Centre in Asia to have introduced Francophone literature as part of the curriculum: literatures from Canada, Sub-Saharan Africa, North Africa, the Indian Ocean, Asia and Europe constitute a substantial part of the syllabus. Equal weightage is given to theories of literature, thematic study of literature and its evolution through genres. With a view to promoting an intercultural perspective, courses on French Literature and India as well as Contemporary Indian literature in French have been introduced.

The programme is designed to teach theory and practice of translation and to analyze problems of inter linguistic and intercultural transfer and terminology of specialized fields. The role of translation in building national literatures and disseminating knowledge is

emphasized. Courses such as "Translation in French of Indian Literary works" study the construction of Indian identities in French translations. A course on Scientific and Technical translation initiates students to techniques of documentary and terminological research. The CFFS lays equal emphasis on consecutive and simultaneous interpretation, and students undergo rigorous training in laboratory booths before going professional.

With a view to broadening the philosophical horizons of the students, the Centre not only promotes individual research in the form of an M.A. Dissertation (written in French) under the personal supervision of a teacher, but also actively encourages students to present papers in Conferences and Seminars for a wide range of reactions to their ideas.

**Ph.D.:** A student admitted to Ph.D. programme is required to clear prescribed courses on Methodology of research, linguistics, theories of translation, literature. The broad areas of research for Ph.D. include:

1. Translation Studies
2. Didactics of Language and Culture
3. French & Francophone Literature
4. Mass Media
5. Culture Studies
6. Language Studies
7. French Thought & Western Thought

**Note: Computer Based Test (CBT) for M.A. and Ph.D. shall be conducted in the French language.**

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/cffs>

## 7. Centre of German Studies

The Centre offers a B.A. Programme, three M.A. Programmes (M.A. in Literature; M.A. in Translation; M.A. in Translation and Interpretation) as well as a research programme (Ph.D.).

**B.A.:** Intensive language courses in the first year B.A. equip the students with the requisite knowledge of the German language to study the cultural, political, and literary history of German speaking countries in the second year. Tool courses in the political history of German speaking countries after 1945 in B.A. I year and the cultural history of Europe in B.A. II year are taught in English. No other courses in the Center are conducted in any language besides German, which after B.A.I year becomes de facto the medium of instruction. In B.A. III year along with literary and social history students are exposed to intensive translation exercises and discourse analysis, developing the rudiments of a translator's consciousness and sensibility. An advanced language course is offered in B.A.III through an Introduction to German and General Linguistics or through German Newspaper Analysis.

**M.A.:** The Centre of German Studies is among the first departments to offer separate degrees in Literature, Translation, Translation and Interpretation. The M.A.s in Translation, Translation & Interpretation offer a broad spectrum of courses, ranging from the conventional to the innovative, thereby providing students the choice of becoming professionally competent translators/interpreters or entering the equally challenging and rewarding arena of research in Translation Studies. The M.A. in Literature focuses variously on particular authors, literary movements, genres, and periods in literary history. Courses in theories of literature provide students with the opportunity to read critical texts which also form the theoretical basis of the literature curriculum. Within the M.A. programme, we also offer a range of common courses, which seek to consolidate and supplement what students learn in their respective specializations. These include didactics of German language, the cultural and political history of key periods in the history of German speaking countries, Germany within the European Union, as well as courses on European philosophy, Folklore, Film Studies and Art History. Over the third and fourth semester of the M.A., students are expected to write a dissertation on an area of their choice. An adequate knowledge of German is a prerequisite to studying at the Centre of German Studies as the medium of instruction is German and students have to write the tests, examination and term-papers in that language. Candidates applying for M.A. (German) programme are allowed to exercise only one option, i.e., Literature or Translation/Translation and Interpretation, and the option so exercised must be clearly mentioned.

**PhD:** At the time of the viva-voce, PhD candidates seeking admission to the Centre are required to bring with them a synopsis of their research proposal, indicating its scope, plan and feasibility. The candidates must make their specific choice of specialization i.e. (Literature or Translation/Translation and Interpretation) with care; it is not possible to change from one stream to another.

**Note: The Computer Based Test (CBT) for M.A. and Ph.D. will be conducted in German. There will be one paper at M.A. level and two options for three M.A. programme offered by the Centre viz. 1. (Literature) and 2. M.A. (Translation, Translation & Interpretation).**

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/cgs>

## 8. Centre of Indian Languages

The Centre is a research-oriented Centre of higher studies for promoting inter-disciplinary approach and comparative perspective of literary studies. The centre undertakes socially relevant and intellectually stimulating research in various Indian languages. At present, the Centre has facilities for teaching and research in Hindi, Hindi Translation, Urdu, Tamil and teaching in Kannada. Bangla, Marathi &

Odia are likely to be introduced in future. Efforts are being made to introduce Punjabi, Malayalam & Telugu language and literature teaching in the Centre. The Centre has made innovations in its teaching and research programmes related to Hindi, Urdu and Tamil languages, literature and their cultures. The Centre is perhaps the only Centre of its kind in India where not only common courses in Hindi and Urdu at M.A. level are being taught but also faculty and students are engaged in comparative and integrated research in these languages and other Indian and foreign languages. The Centre for Indian Languages offers courses at M.A. level with special focus on History of language and literature, Indian and Western literary theories, literary texts and their aesthetic and sociological appreciations.

The Centre has Ph.D. programme in Hindi, Urdu and Tamil language and literature with special focus on the Areas like Historiography, Classic and Ancient, Medieval, Modern and Contemporary Literature, Social Perspective of Literature, Women Literature, Dalit and Adivasi Literature, Comparative Studies of literature and Emerging Literary trends in Literature.

The thrust areas of research programme in Ph.D. in Hindi Translation are History/Tradition, Tools, Theory of Translation in Indian Perspective and comparative studies including different prospects of translation.

### Programmes of Study:

The Centre offers M.A. (Hindi), M.A. (Urdu) with literature and Mass Media streams, Ph.D. in Hindi, Urdu, Hindi Translation and Tamil. Apart from service courses in Hindi, Urdu, Tamil & Hindi Translation like Tool and Optional courses, two part-time courses namely Advance Diploma in Mass Media in Urdu and Certificate of Proficiency in Urdu are also offered by the Centre.

**M.A. in Hindi and Urdu:** Each programme contains four semesters.

**Ph.D. programme in Hindi, Urdu Tamil & Hindi Translation:** Ph.D. programme at the Centre consists of course work and a thesis for Ph.D. **Advance Diploma (ADOP) in Mass Media in Urdu:** This is a part-time evening programme of two semesters with focus on:

- I. Introduction of Mass Communication
- II. Print Media
- III. Stage & Film
- IV. Radio and Television

**Certificate of Proficiency (COP) in Urdu:** COP is a part-time evening course of two semesters meant for beginners for imparting introductory knowledge of script, grammar, basic vocabulary and sentence formation in Urdu language.

**Optional & Tool courses in Hindi & Urdu:** The optional courses meant for those who have basic knowledge of language and literature and need the further proficiency in language, literature and culture. The course is spread over 4 semesters. Whereas tool course is an elementary language programme for beginners. The course is spread over two semesters.

**Short term courses for Foreign/casual students in Hindi and Urdu:** Centre offers short-term courses in Hindi & Urdu for foreign students. The duration of the course varies from six months to one year. The course covers script, grammatical skills, language proficiency, knowledge of culture of respective language and literary appreciation.

For more details about the Centre, visit the JNU website : <https://jnu.ac.in/sllcs/cil>

## 9. Centre for Linguistics

The Centre offers an M.A. in Linguistics and Ph. D. research programmes for those who has done Masters in Linguistics. The Centre also offers a wide range of optional courses in Linguistics to undergraduate students of the Centres of foreign languages in the School.

### (a) M.A. in Linguistics:

The M.A. programme in Linguistics provides the students a basic grounding in descriptive, general and theoretical linguistics, and initiates them into specialized areas, Applied Linguistics, Language Typology, Generative Phonology, Generative Syntax, Semantics, and Morphology, Cognitive Linguistics, Construction Grammar, Language-Mind and Brain, Sociolinguistics, Indian Linguistic Theories, Semiotics and philosophy of Language and Culture, South Asia as a linguistic area, Historical and Comparative Linguistics, Tibeto-Burman Linguistics, Language Documentation, and Acoustic and experimental Phonetics.

The Centre imparts training in the practical and research aspects of the discipline, enabling the students to explore and reflect upon various theories of language and their relevance in specific contexts. Among other facilities that the Centre provides are: Computerized Speech Lab and Phonetics Lab, Field-work on lesser known Indian Languages.

### (c) Ph.D. in Linguistics:

The Ph.D. programme allows researchers to engage in almost all areas of language studies. Research works in the following areas have resulted in significant and impressive research outputs: Descriptive Linguistics, Speech sciences including Language Pathology,



Generative Syntax and Semantics, Neuro-cognitive Linguistics, Sign Linguistics, Phonological Theory, Indian linguistic theory, Multilingualism, Sociolinguistics, Language Documentation, Applied Linguistics including Language Teaching, Language technology, Semiotics and Philosophy of Language.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/cl>

#### 10. Centre for English Studies

The Centre, recognized by the QS World University Ranking as one of the top 100 departments of English in the world, offers an M.A. programme in English, and interdisciplinary programmes of research (Ph.D.). The Centre also offers tool and optional courses in English Language and Literature to undergraduate students of the School majoring in foreign languages.

The MA programme lays emphasis on introducing students to new ways of looking at literatures in English both from England and from other parts of the world, like Indian, American, Australian and Irish literatures in English. Courses in critical thought both Western and Indian, literary theories, and culture studies further help students to develop the ability to relate literatures to their contexts, to compare theories and texts, and to explore the way history, ideology, and material forces condition literary and other cultural texts.

The research programme Ph.D. is open to postgraduates from many disciplines. This allows for considerable interdisciplinary intellectual interaction. The areas of research include British Literature, Literature in other Englishes, Indian Literatures, Comparative Literature, Translation Studies, Gender Studies, Literary Disability Studies, Contemporary Literary and Cultural Theories, Classical Indian Literary and Aesthetic Theories, Folkloristics, Theatre and Performance Studies, Popular Culture Studies, etc.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/ces>

#### 11. Centre of Russian Studies

The Centre of Russian Studies is one of the leading Centres in India, offering degree courses in Russian Language, Literature, Culture and Translation Studies. Besides, the Centre also offers Optional courses in Russian (4 semesters) to undergraduate students of other Centres of the School of Language, Literature & Culture Studies.

##### Programmes of Study:

At present, the Centre offers B.A. (Hons.), M.A. and Ph.D. programmes in Russian Studies.

**B.A. (Hons.) in Russian:** This Programme is spread over six semesters (three years). During this period, the students would earn a total of 74 credits in Core courses, and 10 credits in four Tool courses. The Core courses in Russian Language, Literature, Translation and Interpretation, and the two Tool courses on “Culture and Civilization of Russia” in English and two Tool courses on “Cultural Heritage of Russia” in Russian, are all compulsory courses. Besides, the students have to earn credits in optional/tool courses as prescribed by the School of Language, Literature & Culture Studies.

**M.A. in Russian:** The Master’s Programme is spread over four semesters (two years). During this period, the students would earn 80 credits. Courses on Russian Grammar, Stylistics, Lexicology, Phonetics, Morphology, Syntax, Introduction to Linguistics, Introduction to Research, Literary Trends, Introduction to Translation Studies and Translation Techniques are compulsory for all students. However, choice between some Literature and Translation/Interpretation courses can be exercised in the second (final) year. In the final semester, the students would be required to write a Term paper, which is meant to prepare them to carry out research work in future.

**Ph.D. in Russian:** The research scholar would be required to complete the course work in the first year (two semesters) comprising courses like Research Methodology, Contrastive Grammar, Language and Thought, Advance Course on Theory of Translation, History of Literary Criticism, Comparative Literature, Study of a Genre - Short Story of the XIX century Russian Literature etc. Scholars can opt for courses either on Language or Literature. At the end of the course work, the scholar would be required to submit his/her research proposal on a topic of his/her choice from the field of Russian Philology – Linguistics, Literature, Methodology of Teaching Russian, Culture and Translation Studies. Upon approval of the proposal the scholar will get 3 years to submit his/her thesis.

Note: Computer Based Test (CBT) for M.A. and Ph.D. shall be conducted in the Russian language.

For more details about the Centre, visit the Centre’s website: <https://www.jnu.ac.in/sllcs/crs>.

#### 12. Centre of Spanish, Portuguese, Italian and Latin American Studies

The Centre initially began its academic programmes as one of the Centres of the then School of Languages, with courses in language proficiency in Spanish. Since then, it has grown into a specialized Centre dealing with language, linguistics, literature, culture and civilization of Spain and Latin America as well as translation studies. In Spanish studies, the programmes go upto the Ph.D. level.

The Centre is a pioneering institution in the country, having prepared students and teachers to take up important assignments involving use of Spanish studies. Besides having provided teaching faculty to a number of academic institutions where Spanish is taught, personnel prepared by the Centre are engaged in such activities as tourism, interpretation, translation, banking and the business sector.

**B.A.(Hons.):** This programme, besides imparting language proficiency in Spanish written and oral skills through a mix of traditional/modern methods, including language laboratory and film shows, also offers courses in civilization, culture and literature of Spain and other Spanish speaking countries. There are also courses on translation involving professional, technical, literary and commercial texts.

**M.A.:** The two year comprehensive post-graduate programme offers courses in Spanish and Latin American literature and in translation and interpretation studies, as well as in language teaching methodology and contrastive linguistics. The programme aims to prepare students to conduct research at the Ph.D. level and also to impart translation/interpretation/teaching skills.

**Ph.D.:** This programme covers area of hispanic/Portuguese studies and offers courses on Methodology of Research, theories of translation, literature, contrastive linguistics and didactics. The faculty and the students of the Centre regularly avail of the opportunities offered by the active cultural exchange programmes with Spain, Portugal, Mexico, and Italy. A number of protocols of bilateral exchange programmes have been established with Spanish and Portuguese Universities. Each year a number of students from the Centre are selected for scholarships for further studies in these countries.

The Centre has been specially selected as an associate member of the European Union consortium under the MULTIELE (Erasmus Mundus) Program of European Commission to jointly conduct the Master Degree Program in Learning and Teaching of Spanish in Multilingual and International Contexts ([www.multiele.org/es/miembros/html](http://www.multiele.org/es/miembros/html)). Under this program European participants have to spend at least one semester (Monsoon Semester) in JNU to receive practical & theoretical training in the teaching of Spanish in Multicultural Context of India. This program is open to only Multiele participants from Europe.

**Note: Computer Based Test (CBT) for M.A. and Ph.D. in Spanish language shall be conducted in the Spanish language.**

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sllcs/cspilas>

### ( C ) SPECIAL FEATURES OF PART-TIME PROGRAMMES

Part-time courses are designed to suit the professional requirements of those who require some knowledge of the language for their areas of specialisation and for professional work where ability to understand the language at elementary level would be an asset.

- i. **Certificate of Proficiency (COP) in Pashto, Mongolian, Bahasa Indonesia, Urdu and Hebrew:** It is a one year part-time course in the language concerned in which basic skills of reading and comprehension are imparted.
- ii. **Diploma of Proficiency (DOP) in Bahasa Indonesia, Mongolian and Hebrew:** It is a one year part-time course open to candidates who have completed the Certificate of Proficiency course in the concerned language.
- iii. **Advanced Diploma in Mass Media in Urdu:** It is a one year part-time intensive course which gives training in writing for radio, television, film, drama, journalism and other means of communication.

#### **Selection of candidates to part time programmes of study**

- (a) **For COP and Advanced Diploma in Mass Media in Urdu Courses:** The admission to COP and Advanced Diploma in Mass Media in Urdu Programmes of Study in the School will be made on the basis of the performance of the candidate in the Computer Based Test (CBT).
- (b) **For DOP Courses:** The admission to DOP course in the School will be made on the basis of the performance of the candidates on the basis of merit.

#### **Part-time courses**

The candidates who have obtained their qualification under the pattern of education other than 10+2 will be eligible for admission to the COP and DOP programmes of study if they have successfully completed the first year of Bachelor's degree examination of a University with atleast a minimum of 45% marks. Similarly, the candidates who have obtained their Bachelor's degree under the pattern of education other than 10+2+3 will be considered for admission to Advanced Diploma in Mass Media in Urdu if they have successfully completed the first year of Master's degree programme or a bridge course in lieu thereof, wherever prescribed, from a recognised University with atleast a minimum of 45% marks.

**ELIGIBILITY:****CERTIFICATE OF PROFICIENCY**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Korean Studies (CKS)	COP-Mongolian – MONC (702)	At least Senior School Certificate (10+2) or an examination recognized as equivalent thereto with a minimum of 45% marks in aggregate.
2	Centre for Chinese, South East Asian Studies (CCSEAS)	COP-Bhasha Indonesia – BHAC (703)	
3	Centre for Indian Languages (CIL)	COP-Urdu – URDC (704)	
4	Centre for Persian and Central Asian Studies (CPCAS)	COP in Pashto – PUSC (701)	
5	Centre for Arabic & African Studies	COP in Hebrew – HEBC (710)	

**DIPLOMA OF PROFICIENCY**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Chinese and South East Asian Studies (CCSEAS)	DOP-Bhasha Indonesia – BHAD (602)	At least Senior School Certificate (10+2) or an examination recognized as equivalent thereto with a minimum of 45% marks in aggregate and <b>Certificate of Proficiency in the language concerned</b> or an examination recognized as equivalent thereto.
2	Centre for Korean Studies (CKS)	DOP in Mongolian – MOND (603)	
3	Centre for Arabic & African Studies (CAAS)	DOP in Hebrew – HEBD (604)	

**ADVANCE DIPLOMA OF PROFICIENCY**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Indian Languages (CIL)	ADOP-Mass Media in Urdu – URDA (502)	A Bachelor's Degree under 10+2+3 pattern of education with a minimum of 45% marks in aggregate with Urdu as one of the subjects at High School or Intermediate or B.A. Level.

**B.A. (HONS.) 1<sup>ST</sup> YEAR**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility	
1	Centre for Persian and Central Asian Studies (CPCAS)	Persian – PERU (401)	(i) Senior School Certificate (10+2) or equivalent examination with minimum of 45% marks. <b>The candidates who are due to appear in Senior School Certificate (10+2) or equivalent examination are eligible to apply.</b>	
2		Pashto – PUSU (410)		
3	Centre for Arabic and African Studies (CA&AS)	Arabic – ARBU (402)	(ii) Certificate of Alimiah with atleast 45% marks issued by any of the following Madrasas subject to the condition that the candidate has passed English language at the level of Senior Secondary from a recognised Board/University or a three year course conducted by Darul-Uloom Deoband. 1. Darul Uloom Deoband, U.P. 2. Mazahirul Uloom Saharanpur, U.P. 3. Darul Uloom Mau, U.P. 4. Miftahul Uloom, Mau, U.P. 5. Jamia Athria Darul Hadith Mau, U.P. 6. Jamia Faize Am Mau, U.P. 7. Madrasa Alia Mau, U.P. 8. Madrasa Muhammadiyah, Mau, U.P. 9. Madrasa Faizanul Uloom Bahadurganj, Ghazipur, U.P. 10. Madrasa Ihyaul Uloom Mubarkpur, Azamgarh, U.P. 11. Tauhid Education Trust Ma'hadabad-Khagra Kishan Ganj, Bihar 12. Jamia Imam Ibn Taimiya, Madinatussalam, E. Champaran, Bihar	
4	Centre for Japanese Studies (CJS)	Japanese – JAPU (403)		
5	Centre for Korean Studies (CKS)	Korean – KORU (404)		
6	Centre for Chinese, South East Asian Studies (CCSEAS)	Chinese – CHNU (405)		
7	Centre for French and Francophone Studies (CFFS)	French – FRNU (406)		
8	Centre for German Studies (CGS)	German – GERU (407)		
9	Centre for Russian Studies (CRS)	Russian – RSNU (408)		(iii) (a) Certificate of Alimiah with atleast 45% marks issued by the following Madrasas 1. Nadwatul Ulema, Lucknow, U.P.

10	Centre for Spanish, Portuguese, Italian and Latin American Studies (CSPI&LAS)	Spanish – SPNU (409)	<ol style="list-style-type: none"> <li>2. Jamiatul Flah, Bilariaganj, Azamgarh, U.P.</li> <li>3. Certificate of Fazilah from Madrasatul Islah, sarai Mir, Azamgarh, U.P.</li> <li>4. Madrasa Jamia Islamia, Muzaffarpur, Azamgarh, U.P.</li> <li>5. Madrasa Eram Convent for Girls and Boys Indra Nagar, Lucknow, U.P.</li> <li>6. Jamial Muzahrul Uloom (Patna) (Degree of Fazilah)</li> <li>7. Jamial Darul Huda al-Islamiyah (Certificate of al-Sanaviyah al-Ulia)</li> <li>8. Darul Uloom Alimia, Jamda Shahi, Basti, UP (Alimia Certificate)</li> <li>9. Al-Jamia-Tus-Salafiah (Markazi Darul-Uloom) (Degree of Alemiat)</li> <li>10. Al Jamia Al Islamiya Kerala India (V) ( Preparatoy course which is of 2 years after senior school leaving certificate)</li> <li>11. Al Jamiatul Ashrafia, Mubarak Pur, Azamgarh UP (Certificate of Alimiat/Fazilat)</li> <li>12. Jamia Syed Ahmad Shaheed, Vill. Ashmadabad (Katauli) Malihabad, Lucknow UP (Alamiyat degree)</li> <li>13. Jamiya Misbahul Uloom, Chaukonja Bharat Bhari, Siddharth Nagar, UP ( Almia degree)</li> <li>14. Jamia Islamia Sanabil (Aaliya/Fadhil)</li> <li>15. Al Jamiatul Islamiah Tilkahna, Siddarth Nagar, UP (Alimia)</li> <li>16. Madrasa Arabia Islamia Wasiatul Uloom, Allahabad, UP (Alimia)</li> <li>17. Mahad Aysha Al-siddiqa Qasimul Uloom Libanat, Darussalam Abul Barakat, Deoband, UP (Almiyat).</li> </ol> <p>(b) Certificate of Maulvi with atleast 45% marks issued by the Bihar Board of Madrasa Education</p> <p>(c) Certificate of Senior Secondary (Class 12) with atleast 45% marks issued by the Urdu Education Board, New Delhi</p> <p>(d) Certificate of Alima with atleast 45% marks issued by the Jamiat-UI-Mominath, Hyderabad</p> <p><b>(iv) Candidates who have already pursued B.A./M.A., Language programme in two or more Centres of the School during their entire academic career are not eligible for admission.</b></p> <p><b>Minimum Age: 17 years as on 1st October 2021.</b></p> <p><b>NOTE:</b></p> <ol style="list-style-type: none"> <li>1. 80% of the seats in the First Year of 3-year B.A.(Hons.) programme in the School are earmarked for those who have either passed the Senior School Certificate or equivalent examination in the year 2020 or are due to appear in 2021, and the remaining 20% are open to all other candidates.</li> <li>2. Candidates who have obtained their Higher Secondary Certificate under the 10+1 pattern of education will be eligible for admission to the First-Year of the three-year B.A. programme if they have successfully completed the First-Year of Bachelor's degree examination of a University under 10+1+3 pattern of education with the prescribed percentage of marks.</li> </ol>
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### MASTER OF ARTS

**Candidates who have already pursued B.A. (Hons.)/M.A. Language programme in any two or more Centres of study of the School during their entire academic career are not eligible for admission to M.A. Language Programme.**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Persian and Central Asian Studies (CPCAS)	Persian – PERM (203)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 45% marks with adequate proficiency in the concerned language.
2		Pashto – PUSM (236)	
3	Centre for Arabic and African Studies (CA&AS)	Arabic – ARBM (204)	
4	Centre for Japanese Studies (CJS)	Japanese – JAPM (205)	
5	Centre for Korean Studies (CKS)	Korean – KORM (206)	
6	Centre for Chinese, South East Asian Studies (CCSEAS)	Chinese – CHNM (207)	
7	Centre for French and Francophone Studies (CFFS)	French and Francophone Studies – FRNM (208)	

8	Centre for German Studies (CGS)	German Literature – GRLM (209)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 50% marks with adequate proficiency in German.
9		German Translation – GRTM (230)	
10	Centre for Indian Languages (CIL)	Hindi – HNDM (210)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 45% marks with adequate proficiency in the concerned language.
11		Urdu – URDM (211)	
12	Centre for Russian Studies (CRS)	Russian – RSNM (212)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 45% marks with adequate proficiency in the concerned language.
13	Centre for Spanish, Portuguese, Italian and Latin American Studies (CSPI&LAS)	Spanish – SPNM (213)	
14	Centre for Linguistics (CL)	Linguistics – LINM (214)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 50% marks.
15	Centre for English Studies (CES)	English – ENGM (215)	

### PH.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Persian and Central Asian Studies (CPCAS)	Persian – PERH (848)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree in Persian with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree in Persian with at least 55% marks of a recognized University/Institution (with dissertation/ seminar/viva) or one year M.Phil degree in Persian with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Arabic and African Studies (CA&AS)	Arabic – ARBH (849)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme in Arabic who have –</p> <p>Master's Degree in Arabic Language with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree in Arabic Language and Literature with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree in Arabic Language and Literature with 55% marks with additional one year research experience of a recognized University/Institution.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility	Desirable
1	Centre for Japanese Studies (CJS)	Japanese – JAPH (850)	<p>Only those candidates shall be eligible/considered for admission to the Ph.D. Programme who have –</p> <p>M.A. or equivalent degree in Japanese from a recognized Indian or Foreign university with minimum 55% marks</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil in Japanese with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil in Japanese with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>	<p><b>1. Experience of study/research in Japan</b></p> <p><b>2. Publication in the proposed field of study.</b></p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Korean Studies (CKS)	Korean – KORH (851)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Chinese, South East Asian Studies (CCSEAS)	Chinese – CHNH (852)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for French and Francophone Studies (CFFS)	French – FRNH (853)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for German Studies (CGS)	German – GERH (854)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Indian Languages (CIL)	Hindi – HNDH (855)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>
2		Urdu – URDH (856)	
3		Tamil – TAMH (857)	
4		Hindi Translation – HTLH (858)	

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Russian Studies (CRS)	Russian – RSNH (860)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Spanish, Portuguese, Italian and Latin American Studies (CSPI&LAS)	Spanish – SPNH (861)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree in Spanish with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree in Spanish with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree in Spanish with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for English Studies (CES)	English-ENGH (864)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>



Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Linguistics (CLIN)	Linguistics – LINH (863)	<p>Only those candidates shall be considered for admission to the Ph.D. Programme who have –</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and 55% marks or equivalent in Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

### 3. SCHOOL OF LIFE SCIENCES

#### BRIEF HISTORY AND PROFILE

The School of Life Sciences (SLS) established in the year 1970.

The School offers M. Sc. and Ph.D. degree in Life Sciences. The teaching and research programme in the School was conceptualized as an interdisciplinary program unifying the disciplines of biological sciences from a molecular level to whole organismal level. The experimental approaches undertaken by different research groups include biochemistry, biophysics, cell biology, genetics and molecular biology in organisms representing bacteria, fungi, plants and mammals.

The teaching programme of the School of Life Sciences has earned a high reputation for its interdisciplinary nature for students from both biological and physical sciences at the Master's and Ph.D. levels. This is made possible by offering remedial courses in physical sciences for Master's students coming from the bioscience stream and in elementary biology for students entering biology after their first degree in physical sciences. The School has an in-house system of continuous review of its academic programmes that allows inclusion of newer areas into research and teaching. The M.Sc. practical laboratories are well equipped to give 'hands-on' training to students in the theory subjects taught to them. Graduates completing their degrees at the School are always sought after by research labs in India and abroad and have performed exceptionally well in the universities, institutes and industries.

#### HIGHLIGHTS OF OUR TEACHING PROGRAMME

- Molecular, cellular and organismal biology with emphasis on a holistic understanding of the mechanisms operating in living systems
- Experienced Faculty Members with national and international recognition
- Continuous review of its academic programs that allows inclusion of newer areas into research and teaching
- Well equipped M.Sc. practical laboratories give 'hands on' training in the subjects taught in theory classes
- M.Sc. dissertation research carried out in SLS laboratories
- Strong Mentoring programme and successful placements of students in India and abroad

#### Two programmes of Study-

- **Ph.D. (Life Sciences)**

Modest support for travel/registration for senior students to attend conference and present their research covering various aspects of advanced research in life sciences.

The School offers core/foundation courses as well as advanced courses for the Ph.D. students. Students are assessed and evaluated throughout the semester by a continuous system of tests, seminars, assignments, mid and end-semester examinations.

- **M.Sc. (Life Sciences)**

The M. Sc. course lays emphasis on research and offers students the choice of a research career. Our M.Sc. students are encouraged to rejoin SLS through due admission procedure to pursue their doctoral studies, or seek admission in other institutions in India/abroad.

This program offers an in-depth theoretical as well as practical knowledge in all areas of Life Sciences. Students from both Physical Sciences as well as Biological Sciences backgrounds may join this program. Students have to take both core courses and optional courses spread over four semesters, and practical courses in the first two semesters. During the final two semesters, students also have to carry out a research project on a specific topic under the supervision of a faculty member in a laboratory and submit a dissertation for evaluation by a committee of experts followed by open oral presentation defending the project. Students also have to present a seminar and submit a term paper on a current topic in life sciences. Detailed information regarding the course structure can be obtained from the website ([www.jnu.ac.in/sls](http://www.jnu.ac.in/sls)).

### Funding:

#### School-level funding:

- From UGC
- Departmental Special Assistance Programme in “Cell and Molecular Biology”
- UGC-Resource Networking Program
- University with Potential for Excellence (UPOE)
- From DST
- FIST-I and FIST-II programmes
- PURSE Grant

#### Faculty-level funding:

- Research grants from various national and international funding agencies such as the UGC, DST, DBT, CSIR, ICMR, The European Union, the Wellcome Trust (UK), Swiss Development, USDA, International Atomic Energy Agency (IAEA) etc.

### Career and Aptitude Development of our Students

- JNU and the SLS pro-actively support career and aptitude development of its students by the following:
- Students elected to the statutory Student Faculty Committee
- Student representation in the Special Committee (Board of Studies) of SLS
- Organization of the highly successful annual research festival ‘BioSparks by senior Ph.D. students Visiting Scholar seminar ‘Meet the Speaker’ anchored by students

### HIGHLIGHTS OF OUR RESEARCH PROGRAMME

SLS has been on the forefront of research in several important areas/field as reflected by high impact research articles published in peer-reviewed national and international journals of repute. The School has consistently maintained a high level of productivity in terms of publications in reputed peer reviewed journals and books.

- Over 1, 600 papers authored by the faculty of the school since its inception.
- Several national and international patents
- Over 500 students have been awarded Ph.D. degree.
- Some of our Ph.D. students have won the prestigious INSA Medal for Young Scientists
- International travel award and best poster and talk prize won by our Students in International Conferences
- SLS Alumni have obtained independent faculty and Scientist positions in India and Abroad
- Alumni of the SLS have also achieved success in biotechnology industry
- Alumni have been constantly accepted in top research institutions in India and abroad as post-doctoral fellows
- Our faculty members have been honoured with recognitions like Padma Awards, Shanti Swarup Bhatnagar Prize, National Bioscience Award, Birla Award, J.C. Bose Award, Bhasin award, member of the Planning Commission of India, elected Fellows of various Academies, The World Academy of Sciences Award, Ranbaxy Award, J.C. Bose Fellowship and many others.

### RESEARCH INFRASTRUCTURE

- A well-established 24x7 accessible Central Instruments Facility (CIF) with ‘state of the art’ instruments
- Equipments for Genomics and proteomics research: FACS, MALDI-TOF/TOF, Nano LC-ESI-MS/MS, and real-time PCR.
- Equipments for Cell biology: Fluorescence microscopes, live cell microscope, Cell sorter/FACS and whole animal imaging system.
- Common Equipments: Ultra- and high-speed centrifuges, spectrophotometers, spectrofluorimeters, time-resolved single photon counting fluorescence spectrometer, atomic absorption spectrometer, isothermal titration calorimeter, phosphorimager, scintillation counter, PCR-machines, gel documentation system, imaging facilities, lyophilizer, ultra-low freezers, water purification system, brain-wave analyzer, oscilloscope, polygraph for electrophysiological measurements, gene gun, and gamma chamber
- Plant cell culture, Glass House for experimental and transgenic plants and animal cell culture facilities and stereotaxic surgical facility for small animals.
- JNU’s Advanced Instrumentation Research Facility (AIRF) (<http://www.jnu.ac.in/AIRF/>) is with sophisticated equipments are open to all SLS research scholars

In-house Training Opportunities

- Training in Animal Handling
- Training in Radiation Safety
- CIF orientation and equipment usage
- Equipment training in the JNU-AIRF
- English learning through JNU Linguistic Empowerment Cell
- Maths learning through JNU Maths Empowerment cell
- Course on Plagiarism awareness and software training through JNU library

**ADMISSION PROCEDURE****(i) M.Sc. (Life Sciences)**

Students are admitted to the M. Sc. (Life Sciences) program each year on the basis of their performance in the nation-wide entrance test conducted by JNU. Candidates with an undergraduate degree in the relevant areas are eligible to apply. Those who are pursuing undergraduate studies in the relevant areas are also eligible to appear in the admission test. However, they can be admitted only if they have earned the undergraduate degree prior to the admission, as per the university rules.

**(ii) Ph.D. (Life Sciences)**

Students would be admitted into the Ph.D. programme into one of the five research groups (see Table below).

Key Features of this change:

- **Each candidate has to indicate their choice of any Two of the five research areas in order of their priority in the application form for admission.**
- The entrance exam question paper would cover all aspects of Life Sciences. About 50% of the weightage will be given for assessing knowledge on Research Methodology while 50% questions will be from specific subject.
- Based on the performance in the entrance test, students will be shortlisted group-wise for viva-voce/interview.
- Eligible candidates would be interviewed by a competent interview board on the basis of their choice of research areas indicated in the application form.
- Separate merit list will be prepared for admission to each group and candidates would be offered admission accordingly.

**Instructions for the Candidates short-listed for interview**

- Each candidate must come prepared to present a research proposal in the topic of their choice.
- Candidates would be asked to write a short summary of the research proposal at the time of the interview. Following this, candidates would be asked to present their proposal in a chalk-and-board format.

**Key Aspects of our Ph.D. Program**

- There would be an orientation session in the form of faculty colloquium, following which students would be offered a list of vacant seats available with individual faculty members in the chosen research group, and supervisor/laboratory would be assigned thereafter.
- Each student during their tenure in the SLS would be assigned to a Research Advisory Committee (RAC).
- For confirmation into the Ph. D. programme, a student has to secure the required qualifying marks. The student, in consultation with the respective Ph.D supervisor, has to submit a synopsis of the research proposal and defend it in an open seminar in the RAC. Upon acceptance by the RAC, the Special Committee of the School would approve the enrollment of the student into the Ph. D. programme.
- There would be a six-monthly assessment of progress of each student by the RAC.

After sufficient amount of research work has been carried out by the student and with due approval of the RAC, each student would make a presentation in an open seminar detailing their research work, and would become eligible to submit their Ph. D. thesis. Although Ph. D. thesis can be submitted upon completion of at least 2 years of research work, normally it is between 2 to 4 years from the date of confirmation for the Ph. D. program.

A student may apply, for consideration by the RAC, for an extension for up to two years to submit the Ph. D. thesis, provided the research work has been examined and recommended by the RAC.

- **Lab Allotment:** After new students complete the registration for admission, students would be offered a list of positions/vacancies available with individual faculty members in the respective research groups of the School as per their admission. To orient new students to the ongoing research, the SLS faculty members would highlight their research in a colloquium soon after the completion of the admission process.
- Thereafter, students are required to interact with the faculty members to discuss and decide on joining a laboratory. Mutual consent would be required for the final choice of the laboratory. Each candidate would then be issued an allotment form by the GAC. The allotment forms, duly signed, are to be submitted by the students (having signatures of both the student and the concerned faculty) to the GAC. The GAC would formally designate a supervisor to each student and the list would be immediately displayed.
- It is expected that by following the criteria/procedure given above, every student would get a supervisor. However, in case any student could not find any supervisor, the GAC would allot a supervisor to him/her from the vacancies available in the research group to which the student has taken admission, for that academic year. It is expected that no student would continue without being formally allotted a supervisor beyond the month of September of the year of admission.

- A change of Supervisor is highly discouraged in SLS. Before joining a lab, students should ensure the areas of research, and the lab of their choice is in synchrony with his/her interest. It needs to emphasize that once the lab allotment is done there is no scope for change of lab. However, the extraordinary situation, upon receiving of proposal letter from the student and supervisor, the concerned RAC after reviewing the research progress of the student for at least two years may suggest a change of lab. In such cases, the student has to submit a fresh Synopsis, which needs to be approved by the concerned RAC and two years residency would re-start from the date of change of lab/supervisor.

The Ph. D. degree is awarded on the basis of evaluation and recommendation of the thesis by examiners and successful oral defense of the research work by the candidate after fulfilling due requirements as per UGC regulations.

### Research Groups in the School of Life Sciences

Research in the School of Life Sciences is organized into five thematic research areas. Candidates should indicate their choices for 2 (Two) research areas in the order of their preference in the application form. Each faculty member is listed alongside one Research Group. However, as faculty members in the School of Life Sciences conduct inter-disciplinary research, they may be conducting research in other areas either independently or jointly with faculty members in the other groups.

Research Group		Topics (For a detailed list, see SLS website <a href="http://www.jnu.ac.in/sls">www.jnu.ac.in/sls</a> )	Faculty Members conducting research in the area mentioned *Faculty not taking students in 2019-2020
No. Code	Group Name		
I GONH	Plant Biology; Virology; Biotechnology	Biology of Plant-virus Interactions; Genetic and epigenetic regulation of plant immune response; Functional Genomics and Metabolomics of Abiotic stress in Crop Plants; Plant molecular biology and fungal genetics; Plant developmental biology; Genetics and genomics of Capsicum sp.	SC(2), AN(1), AP*, PKV(3), AS(2), NR(1)
II GTWH	Microbiology; Immunology; Infectology, Radiation and Cancer Biology	Carcinogenesis, Cancer Chemoprevention and Therapeutics; Yeast Molecular and Cell Biology; Microbiology; Cellular and Cancer Biology; Cellular and molecular immunology; Yeast Molecular Genetics in <i>S. cerevisiae</i> and the pathogenic fungus <i>Candida albicans</i> ; Radiation and Cancer therapeutics; Cell and molecular biology of the malaria parasite, <i>Plasmodium falciparum</i> ; Transcriptomics of vascular syndromes in diabetes and atherosclerosis	RPS*, AKM*, AKJ(2); ASK(1), NM(1), NP(1), SLP*, ABT(1)*, AB*, VY(2)
III GTRH	Genetics; Cell & Molecular Biology; Developmental Biology	Non-coding RNA, Stem Cells; Chromatin, transcription and Gene Regulation; Developmental biology with emphasis on autophagy in Dictyostelium; Epigenetics & Chromatin Remodeling	PCR(2), KN(1), SS(1), RM(1)
IV GFOH	Animal Physiology; Neurosciences and Systems Biology	Neurobiology of Sleep-Waking-REM Sleep; Brain Ageing and its counter strategies; Sleep, Learning and Memory; Neurodegenerative disorders	BNM*, DS*, ACM*, SKJ(2)
V GFIH	Biochemistry; Biophysics; Bioinformatics; Nanobiology	Structural and Molecular Biology; Structural & Parasite Biology; Biochemistry of GPI biosynthesis; Biophysics, Nanobiotechnology; biochemistry	AKS(2), SGN(2), SSK(1), KK(1)

**Number in parenthesis indicates student intake for a particular laboratory during 2020-21 academic session.**

**Faculty Members:** Prof. Birendra Nath Mallick (BNM), Prof. Pramod Rath (PCR), Prof. K. Natarajan (KN), Prof. Shweta Saran (SS), Prof. Supriya Chakrabarty (SC), Prof. Ajay Kumar Saxena (AKS), Prof. Deepak Sharma (DS), Prof. Rana Pratap Singh (RPS), Prof. Ashis Kumar Nandi (AKN), Prof. Ashwani Pareek (AP), Prof. Alok Kumar Mondal (AKM), Prof. Atul Kumar Johri (AKJ), Prof. Sneha Sudha Komath (SSK), Prof. S. Gourinath (SGN), Prof. Arun S. Kharat (ASK), Prof. Praveen Kumar Verma (PKV), Prof. Ananda Sarkar (AS), Dr. Neelima Mandal (NM), Dr. Sushil Kumar Jha (SKJ), Dr. Rohini Muthuswami (RM), Dr. Amal C. Mandal (ACM), Dr. Sneha Panwar (SLP), Dr. Ashu Tiku (ABT), Dr. Niti Puri (NP), Dr. Nirala Ramchiary (NR), Dr. Karunakar Kar (KK), Dr. Abhisheka Bansal (AB), Dr. Vikash Yadav (VY).

For further details, please visit SLS website ([www.jnu.ac.in/sls](http://www.jnu.ac.in/sls))

**ELIGIBILITY:****M.Sc.**

Sl No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1.	School of Life Sciences (SLS)	Life Sciences –SLSM (225)	Bachelor's (B.Sc. or B.Tech or equivalent) in Biological, Physical or Agricultural Sciences or Biotechnology under the 10+2+3 pattern of education with at least 55% marks.

**Ph.D.**

Sl No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1.	School of Life Sciences (SLS)	Life Sciences – Group-I GONH (892)	Master's degree or equivalent 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) in Life Sciences/Biological, Physical, Chemical, or Agricultural Sciences/Biotechnology/Botany/Zoology/Bioinformatics/Genetics/Microbiology/ Systems Biology/ any other branch of biological sciences or MBBS with 55% marks or equivalent.  OR Master's degree in the fields given above with 55% marks (or equivalent) and obtained two years M.Phil Degree with at least 55% marks (or equivalent) of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil with 55% marks (or equivalent) with additional one year research experience of a recognized University/Institution and one publication
2.		Life Sciences Group-II – GTWH (893)	
3.		Life Sciences Group-III – GTRH (894)	
4.		Life Sciences Group-IV – GFOH (895)	
5.		Life Sciences Group-V – GFIH (896)	
			Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.

**4. SCHOOL OF SOCIAL SCIENCES****(A) PROGRAMMES OF STUDY**

The School of Social Sciences is the largest post-graduate School in the University. It has M.A., MPH and admission to Ph.D. programmes in its various Centres. It has no undergraduate programme of its own, even though it offers a few under-graduate courses for students of School of Language, Literature & Culture Studies. The School has thirteen Centres plus one group, in which regular admission takes place in different programmes as detailed in the following table:

**Centre, Programme of Study & Field of Study****1. Centre for Economic Studies and Planning**

1. Ph.D. in Economic Studies & Planning
2. M.A. in Economics

**2. Centre for Historical Studies**

1. Ph.D. in Historical Studies
  - a. Ancient History
  - b. Medieval History
  - c. Modern History
2. M.A. in History
  - a. Ancient History
  - b. Medieval History
  - c. Modern History

**3 Centre for Political Studies**

1. Ph.D. in Political Studies
2. M.A. in Political Science

- 4. Centre for the Study of Regional Development**
  1. Ph.D. in Regional Development
    - a. Economics
    - b. Geography
    - c. Population Studies
  2. M.A. in Geography
- 5. Centre of Social Medicine and Community Health**
  1. Masters in Public Health (MPH)
  2. Ph.D. (Social Sciences in Health)
  3. Ph.D. (Public Health)
- 6. Centre for the Study of Social Systems**
  1. Ph.D. in Social Systems
  2. M.A. in Sociology
- 7. Centre for Studies in Science Policy**
  1. Ph.D. in Studies in Science Policy
- 8. Centre for Philosophy**
  1. Ph.D. in Philosophy
  2. M. A. in Philosophy
- 9. Zakir Husain Centre for Educational Studies**
  1. Ph.D. in Education and Studies
- 10. Centre for Women's Studies**
  1. Ph.D. in Women's Studies.
- 11. Centre for the Study of Social Exclusion and Inclusive Policy**
  1. Ph.D. in Social Exclusion and Inclusive Policy
- 12. Centre for Informal Sector and Labour Studies**
  1. Ph.D. in Informal Sector and Labour Studies
  2. M.A. in Development and Labour Studies
- 13. Centre for Media Studies**
  1. Ph.D. in Media Studies
- 14. Group of Adult Education**

The Group of Adult Education offers admission to only Ph.D. programme.

The School has a lively academic ambience. The teaching and research programmes in the School have certain innovative elements. While ensuring rigorous discipline- oriented training in each Centre, interest is generated in multi-disciplinary study and research, by allowing students to take courses in other Centres depending upon their aptitude as well as the relevance of the courses to their main disciplines and areas of research interest.

## **(B) CENTRES OF THE SCHOOL**

### **1. Centre for Economic Studies and Planning**

The Centre has established itself as a premier institution for teaching and research in Economics, and has been recognized by the UGC as a Centre for Advanced Studies. The richness of the teaching and research programmes is reflected in the structure of the courses and the research output of faculty and research scholars. The faculty has a distinguished record of publications of books, monographs and articles, as well as outreach through more accessible articles in the popular media.

The Centre strives to ensure that the faculty is easily accessible to the students. The pedagogic emphasis is on analysis, understanding and learning, rather than on memorizing. Students have to write term papers, make presentations, solve problems, appear in open book examinations, etc. as part of a continuous evaluation process.

#### **(a) Admission to the Ph.D. programme**

A very limited number of scholars are admitted to the Ph.D. programme.

#### **(b) M.A. programme:**

The focus of the M.A. programme is twofold: (i) to acquaint the students with the analytical foundations of the discipline of

economics in alternative theoretical approaches; global and Indian economic history and quantitative methods and (ii) to enable the students to relate their analytical understanding of the subject to the actual experience of economies and to interpret processes of change using a historical perspective. Special emphasis is placed on the study of aspects of development, in the context of the global and the Indian economy. The programme consists of 16 courses taught over four semesters. 8 courses taught in the first year are compulsory while the remaining 8 courses are optional, to be chosen out of a range of courses offered out of the Centre and including 2 that can be chosen from outside the Centre if desired. One of the new experiences for many students comes from an introduction to research through the requirement of writing term papers for several courses.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/ssss/cesp>

## 2. Centre for Historical Studies

Recognised as a Centre for Advanced Studies by the UGC, The Centre for Historical Studies is a premier centre of teaching and research in history within India. It is also one of the oldest centres in the School of Social Sciences having launched its programme of Post Graduate Studies in 1970 under the guidance of eminent historians like Professors S. Gopal, Romila Thapar, Bipan Chandra and Satish Chandra. A major focus of the Centre continues to be on cutting-edge research that can expand the frontiers of the discipline.

### (a) Admission to Ph.D. programme

The Centre focuses its teaching and research on Ancient, Medieval, Modern and Contemporary History with particular emphasis on the study of economic, social and cultural changes. Students who learn to handle different types of source material are encouraged to work on themes that cut across these chronological divides.

**Ancient History:** Emphasis is placed on training students in different disciplines: archaeology, text studies, languages, epigraphy, and numismatics. In particular, study and research on the following are encouraged: evolution of social structure, gender and sexuality, political process, agrarian relations, urbanization, trade, religion, philosophy, literary culture, intellectual history, cultural history, historical geography.

**Medieval History:** Study and Research includes structure and change in medieval Indian Society, state systems, agrarian development, growth of trade and commerce, ideology and culture. Emphasis is also given to the study of two major transitions in Indian History—from ancient to medieval and from medieval to colonial regimes, through a reconstruction of structural continuities and cleavages encompassing the institutional, technological, social, economic and ideological development.

**Modern History:** Apart from the study of social changes and evolution of agrarian, industrial and class structures, emphasis is placed on the study of colonialism in its economic, political and cultural dimensions, nationalism and the national movement, peasant, trade union and tribal movements, the growth of left-wing parties and groups and developments in the cultural, intellectual and ideological fields.

Focuses on the study of Colonial and contemporary societies. Themes include: colonialism and nationalism, capitalism, state and law; labour and gender history, economic and social history, cultural and intellectual history, legal and environmental history; histories of peasant and tribal societies, histories of castes and communities, histories of domination and subordination; comparative perspectives on Asia, Africa and Europe.

**Contemporary History:** In this field an effort is made to situate the evolution of contemporary developments, particularly those since World War II, in a long term historical context. Special attention is given to studying the linkages between different aspects of contemporary society viz., the economy, polity, culture, environment, etc., in a holistic manner, i.e. not compartmentalised into the relatively strict boundaries of disciplines such as political science, economics or sociology. Also, an attempt is made to conduct the above studies in a comparative perspective, taking into account the experience of different countries.

At the time of the viva-voce, Ph.D. candidates should come with 1000 word synopsis of their research proposal (six copies). In the interview, they will be asked questions regarding their proposal, primary sources and some of the key books read by them in their M.A. course.

**Candidates applying for Ph.D. (History) programme are allowed to exercise only one option, i.e., Ancient History; or Medieval History; or Modern Indian History, and the option so exercised must be clearly mentioned in the appropriate column in the Application Form.**

### (b) M.A. in History

Students entering the Centre are offered a flexible programme while specialising in (1) Ancient History, or (2) Medieval History, or (3) Modern and Contemporary History. Along with courses in their specialisation, students are required to offer a set of common courses designed to survey (a) historiography and historical methods, and (b) broad patterns of socio-economic and political formations and structural changes through a series of three courses covering the Ancient, Medieval and Modern periods. In addition, students will be required to offer at least two courses on histories of countries other than India.

Apart from these compulsory courses, a large part of the programme is available as "Open Options", wherein the students may choose courses in areas other than that of one's specialization including (1) other periods of Indian history, and (2) courses in other Centres

(with permission of the Faculty) in disciplines relevant to the student's area of interest and specialization. Students are strongly advised to do a language course relevant to their area of specialisation.

With the exception of two seminar courses in the fourth semester of the M.A. Programme, all courses offered by a student are lecture courses. In lecture courses fifty per cent of the evaluation depends on a student's performance in examination or tutorials during a semester, and fifty percent on performance in the end-semester examination. The programme expects a good deal of independent writing by students as part of the curriculum. The seminar courses initiate students into the exciting and painstaking world of research, wherein they are required to present an original paper on the basis of an investigation of primary sources.

**The candidates must make their specific choice of specialisation, i.e. (Ancient History or Medieval History or Modern Indian History) with care; it is not possible to change from one stream to another.**

**Candidates applying for M.A. (History) programme are allowed to exercise only one option, i.e., Ancient History; or Medieval History; or Modern Indian History.**

Students applying for the MA entrance examination will be examined on themes related to political, economic and social history, and on aspects of religion and culture pertaining to ancient, medieval and modern periods of Indian history. They will also have the option of answering questions from the history of countries other than India. The student is expected to have some familiarity with the debates on historical issues and periods.

No application for a second M.A. at the Centre for Historical Studies will be entertained from those who have completed an M.A. degree from the same Centre even if the period of specialization is different.

Candidates who qualify are requested to register at the earliest so that they can take full advantage of the tutorial system. Classes normally begin from the end of July. Students are required to check with the CHS office for specific dates. Students are also requested to attend the Orientation Meeting with the Faculty. This will introduce them to the structure of courses, the system of evaluation and the rules and norms of the Centre. The date of this meeting will be put up on the notice board of the Centre by the first week of August.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/ssss/chs>

### 3. Centre for Political Studies

The Centre is recognized as a premier centre for teaching and research in Political Science. Students who have graduated from the Centre are holding important positions in academic institutions and other walks of public life all over the world. The faculty members have a distinguished record of publications of books and articles in important national and international journals.

The Centre offers two programmes of study- MA. and Ph.D. The teaching and research work of the Centre covers three rubrics of political studies: (1) political philosophy and history of ideas; (2) Indian government, politics and public policy; and (3) comparative politics and international relations.

#### (a) Admission to Ph.D. programme:

The Centre for Political Studies offers admission to Ph.D. programme in the three core areas of research mentioned above. Those who wish to apply for a research degree are expected to have a strong, detailed and well developed research proposal for a thesis that can be supervised in the Centre. In addition to fulfillment of the entry requirements, they will need to approach the subject with rigor and appropriate knowledge of the field. Candidates must submit a copy of their research proposal along with their application for admission to the Ph.D. programme.

**The candidates admitted to the Ph.D. programme will be required to complete the prescribed course work in the first year.**

#### (b) M.A. in Political Science

As a degree in Political Science, the M.A. programme of the Centre focuses on the study of Political Theory/ Ideas, Comparative Politics/International Relations, and Indian Politics and Public Policy. The programme is designed to - a) enhance theoretical understanding and develop methodological skills in these three branches of Political Science; (b) relate political processes with social structures and ideas; and (c) interpret institutions, policies and processes in a historical perspective. The Centre places special emphasis on the study of political developments in India and promotes theoretically informed analysis of social and political reality.

The M.A. programme consists of 16 courses, which are taught over four semesters. Of these 10 are compulsory and the remaining six are optional courses. Of the six optional courses, at least four should be chosen from a wide range of optional courses offered by the Centre and two may be from outside the Centre in the two years M.A. programme.

All compulsory courses offered to the students are lecture-based courses. However, they require students to write tutorials/term papers. In each case, fifty percent of the grade depends on the student's performance in midterm assignments and the remaining fifty percent is awarded on the basis of their performance in the end semester examination.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/ssss/cps>



#### 4. Centre for the Study of Regional Development

The Centre for the Study of Regional Development came into existence in the year 1971 with the mandate of evolving an interdisciplinary teaching and research programs with a focus on the issues of regional development in India. This is one of the largest Centres in the School of Social Sciences, offering postgraduate degree programs in Geography, PhD research programs on diverse issues of regional development within the interdisciplinary framework.

##### (a) Admission to Ph.D. Programme

A limited number of scholars are admitted to the PhD Programme

##### (b) M.A. in Geography

The focus of the programme is on the contemporary approaches of Geography with special reference to issues and challenges associated with the pattern of regional development in India. The curriculum includes theoretical, topical and methodological courses. The courses cover geographical thought, human ecology, regional development theory, geomorphology, climatology, hydrology, economic geography, social geography, population and settlement geography. All the topical courses have emphasis on India. Issues on regional development are dealt with in courses on regional geography of India, meso-regional studies, and levels of regional development in India. The methodological courses cover quantitative techniques, computer assisted cartography, GIS and remote sensing. As part of the M.A. programme the centre also runs two compulsory courses on field and survey methods i.e. physical and socio-economic, constituting a vital mode of teaching in the discipline. The students are required to participate in the field work which is usually organised in the challenging terrain and rural settings during the summer and winter vacation. The fourth and the last semester offer diverse specialization streams and set of optional courses to the students to choose from. Students can opt for any one of the following specialization streams:

- a) Physical Resources and Geomorphology
- b) Population and Settlement Geography
- c) Regional Development and Planning
- d) Social Geography
- e) Agricultural Geography
- f) Remote Sensing and GIS
- g) Advanced Techniques in Geography

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/ssscsrd>

#### 5. Centre of Social Medicine & Community Health

The Centre of Social Medicine and Community Health (CSMCH) was established in order to shape and provide academic content to the discipline of public health, making it relevant to the situation in India. It was recognised that the discipline of Preventive and Social Medicine needed a paradigm shift that could only be provided if this Centre was set up outside the confines of a medical college.

Over the last five decades, the Centre has acquired vast experience in evolving problem-oriented interdisciplinary academic programmes in public health, in addition to building an active research base. At the same time, efforts have also been made at establishing institutional links with various academic, research, policy-making and non-governmental organisations.

Under the overall objective of creating academic programmes for making health services meaningful to the people of the country, the Centre has set out as its objective the task of understanding the health problems and health needs of the Indian people. The endeavour is to understand how health problems are shaped by socio-economic factors and to examine the social structure itself, to delineate the structural constraints that contour the scope of health interventions. The task requires an inter-disciplinary approach involving disciplines such as sociology, anthropology, psychology, economics, history, political science, demography, statistics and public administration, apart from the disciplines that are traditionally included in public health. It was for this reason that the Centre was located in the School of Social Sciences. Epidemiology, health service structure, health programme design, health systems research and health policy analysis are important foci for all the programmes.

The Centre offers the following academic programmes:

1. Master of Public Health (M.P.H.)/ in Public Health
2. Ph.D. in Social Sciences in Health.
3. Ph.D. in Public Health

The MPH students are required to undertake three semesters of course work. They are additionally required to conduct a field study during the inter semester breaks and to be completed in the fourth semester. The successful completion of the prescribed course work and dissertation/field study will lead to the award of M.P.H. degree. In addition to the above programmes, the Centre also admits candidates to the Ph.D. programme as per criteria mentioned in the eligibility column. The Centre may prescribe courses to the candidates admitted under the Ph.D. programme.

Courses in public health cover areas such as organization of health programmes, epidemiology, nutrition, maternal and child health, communicable diseases, family planning, research methodology, operations research etc. Courses in social sciences cover concepts perspectives and methods relevant for public health within an interdisciplinary perspective.

During the second semester students are offered a number of optional courses. They also get an opportunity to familiarise themselves with the current issues in public health through an intensive journal club. All students are exposed to group field work in both urban and rural areas as a part of their course work.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/ssscsmch>

## 6. Centre for the Study of Social Systems

The Centre is recognized as a premier centre for teaching and research in Sociology. This Centre has been ranked among the top 55 best departments in the world for sociology in 2017-18 by QS World Rankings. Students who have graduated from the Centre have distinguished themselves in all walks of public life. Our alumni are present in most leading institutions of higher education and research nationally and globally. Our faculty members have made their mark in the broader world of social sciences with a distinctive intellectual orientation and an illustrious record of publications.

Since its inception in 1971, the Centre has developed a distinctive approach to sociology both in terms of a plurality of theoretical and methodological orientations as well as in a variety of substantive fields of empirical enquiry. Equal focus is therefore given on the teaching of qualitative and quantitative methods on the one hand and on philosophy of methods on the other. From its very inception both teaching and research in our Centre have shown an engagement with pressing questions of development and marginalization, social movement and social justice. The CSSS is recognized as a Centre for Advanced Studies in the discipline of sociology by the UGC.

The Centre offers Two programmes of study-MA and Ph.D. The teaching and research work of the Centre covers three aspects of sociological studies:(i) Theory and Social Thought; (ii) Methodological Orientation and Methods of Social Research; (iii) Substantive studies on different dimensions of social life.

### (a) M.A in Sociology

Teaching and research programmes of the Centre for MA are organized around studies in theories and methods, on the one hand, and analysis of structures and processes of social systems on the other. Courses at the M.A level seek to combine theoretical and methodological concerns with the study of the substantive issues relating to Indian society. Of the 16 courses offered to the M.A students, 5 are optional courses.

All courses offered to the students are lecture-based courses. However, they require students to write tutorials/term papers. In each case, fifty percent of the grades depend on the student's performance in mid-term assignments/tests and the remaining fifty percent is awarded on the basis of their performance in the end semester examination.

### (b) Admission to Ph.D. Programme

Those who wish to apply for a research degree will have to submit a strong, detailed and well-developed proposal for a thesis that can be supervised in CSSS.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sssc/csss>

## 7. Centre for Studies in Science Policy

Studies in Science Policy is an interdisciplinary field drawing upon a range of social, natural and applied sciences, engineering, and technology disciplines to enhance our understanding of the interactions between science, technology and society. The primary focus of teaching and research at the Centre is on areas relating to science and technology policy analysis; sociological and historical perspectives in science and technology; economics of technological change, sustainability, innovation studies, technology futures analysis, gender relations, intellectual property rights (IPR), scientometrics, environment and agro-foods. Please visit: [https://www.jnu.ac.in/sssc/cssp-programme\\_of\\_study](https://www.jnu.ac.in/sssc/cssp-programme_of_study)

The Centre offers Ph.D. programmes.

### a) Admission to Ph.D. Programme

Scholars seeking admission to Ph.D. programme are required to bring with them a research proposal of 1800 to 2000 words at the time of interview. The research proposal is expected to indicate a research, theme, a statement of the research problem, objectives, research questions, methodology and a brief review of literature along with a list of references.

## 8. Centre for Philosophy

The Centre was set up in 1999 in the School of Social Sciences. For a long time, the School and the University had felt the urgent need

for an independent Centre for Philosophy. This was driven by the understanding that Philosophy must have a central place in an institution of higher learning and research. Further, that an engagement with Philosophy would strengthen the ongoing research in the various fields of knowledge in the University. It was this concern that led to the creation of the Centre for Philosophy in the School of Social Sciences.

The academic programmes of the Centre are intended to provide students with a deeper and more rigorous foundation in the discipline in Philosophy while simultaneously encouraging an engagement with substantive issues and contemporary concerns. The teaching and research work is designed to train students to read and engage critically with original philosophical texts, both classical and contemporary, with a high degree of methodological awareness; and to reflect systematically on concepts and problems central to Philosophy. The primary purpose of this is to create a body of scholarly work that can yield newer and richer reflections on philosophical problems and debates. The Centre would like to encourage research students to study issues and concerns in Philosophy cutting across diverse traditions and narrow disciplinary boundaries. It would also like students to move to a problem-oriented study where philosophical reflection addresses concern of present day society and polity.

The Centre offers admission to Ph.D. programme and M.A. programme.

- (i) **Admission to Ph.D. Programme:** The Centre welcomes applications in major areas of Philosophy, which is of interest to the faculty members of the Centre, such as, Ethics, Epistemology, Metaphysics, Social and Political Philosophy, Philosophies of Language, Mind and Action, Philosophy of Social Sciences, Classical and Contemporary Indian Philosophy and Comparative Philosophy. Applicants for the programme are expected to submit a well articulated research proposal (between 2000-2500 words) for a doctoral thesis that can be supervised in the Centre. The candidates are required to approach the area of their research with adequate understanding of the contemporary discussions in the field.
  
- (ii) **M.A. programme:** As a degree in Philosophy, the M.A. Programme of the Center focuses on the study of the distinctive character of philosophical inquiry, debates in metaphysics, epistemology, logic and ethics. Since philosophical inquiry is not isolated but rooted in the basic questions of other academic disciplines and social life, students will be encouraged to comprehend the interdisciplinary and foundational character of philosophical studies. They will also be trained to identify and appreciate the sources of philosophical questions and puzzles in our reflections on language, thought, knowledge and values. The programme will review and attempt to overcome the received binaries and dichotomies such as study of philosophy in terms of geographical and civilizational divisions, intra-disciplinary segregations like analytic philosophy and phenomenology, metaphysics and epistemology, moral and social philosophy, etc. The programme aims to develop philosophical aptitude and analytical skills among the students through a rigorous training. An intensive study of philosophical texts for a critical appraisal of concepts and arguments used by philosophers, and writing of philosophical essays will be an integral part of the programme. The two year M.A Programme consists of 16 courses with 10 compulsory and 06 Optional courses of 04 credits each. These are Philosophical Studies: Problems and Perspectives; Epistemology and Metaphysics: Issues and Problems of Knowing and Being; Moral and Social Philosophy; Logic and Scientific Methods; Philosophy of Social Sciences; Philosophy of Language; Readings in 20<sup>th</sup> Century Indian Philosophy, Readings in Analytic Philosophy and Phenomenology; Seminar Course: Reading a Philosopher and Seminar Course: Project on a Philosophical Theme. Out of the 06 optional courses at least 04 should be chosen from the courses offered by the Centre. All courses are lecture and seminar based. Students are required to write term papers/ tutorial assignments and give seminar presentations in each course. 50% of the grade depends on the student's performance in mid semester assignments and the remaining 50% is awarded on the basis of their performance in the end semester examination.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sssc/cp>

## 9. Zakir Husain Centre for Educational Studies (ZHCES)

The Centre offers a programme of study leading to the degree of Ph.D. in Economics of Education, History of Education, Sociology of Education and Social Psychology of Education. The Centre focuses on the study of education from social science perspectives. Its teaching and research programmes are structured around social science disciplines of Economics, History, Sociology and Psychology. According, there are four streams of research.

**Economics of Education:** Students are introduced to the economic issues in education both from the perspectives of theory as well as applied research for analyzing problems related to human resource development. Wider issues of education from the development economics perspective receive special attention. Other topics include concept and measurement of human capital, investment decisions in education, demand and supply of education, financing of education, applied economics of education, social choice dilemmas, education and labour market, educational inequality and poverty, educational policy issues, migration of knowledge workers, trade in education services, etc.

**History of Education:** The research programme in the History of Education at the Centre has evolved into three distinct areas. The first one deals with the growth of modern schools, access to these schools in terms of gender and caste, the emergence of the system of state and private funding, curriculum, text books and educational debates during the British rule in India. The second dimension has to do with the evolution of the system of higher education, again from the eve of colonialism into contemporary times. The focus is on the social history of higher education, with an emphasis on issues of the globalization and naturalization of models of the university, and the transformation of knowledge ideals in changing political and socio-economic contexts. The attempt is to study historically the impact of the globalization of the university, on the one hand and the formation of academic disciplines within the university and

research institutes on the other. And finally, a third area deals with the history of science and technology in India, where in addition to looking at the philosophical and social dimensions of the history of science education, research also focuses upon contexts, policies, and strategies of science communication and popularization.

**Social Psychology of Education:** The co-constitutive nature of cultural-historical processes and the psychological phenomena is problematized. The existing theoretical traditions within Psychology and their transformative roles in bringing about changes in the educational processes are examined. Areas such as cultural roots of learning with specific emphasis on language and mathematics learning, every day and scientific cognition, personality, motivation, social cognition, inter-group dynamics and identity processes, etc., and their implications for curricular and pedagogic practices in a multicultural-multilingual society are discussed and analyzed.

**Sociology of Education:** Special emphasis is placed on issues relating to diversity, equity and social justice, structure and processes of schooling and higher education, social and educational policy, social impact of globalization and privatization of the educational systems, and other contemporary concerns of education in the 'developing' world. Basic concepts and approaches in sociology, linkages of education with socialization, stratification, social change and mobility, social and educational inequality, etc. are some of the areas discussed from multiple theoretical standpoints in the Sociology of Education. Classroom teaching focuses on a comparative analysis of diverse social contexts with India and also other countries.

The scheme of teaching is as follow:

- a. A compulsory core course in Research Methods in Social Sciences as applied to Educational Studies, focusing on quantitative and qualitative techniques of data collection.
- b. A compulsory course on Education in India: Social Science Perspectives focusing on various dimensions of the Indian education system.
- c. Introductory and advanced level courses in Economics of Education, Sociology of Education, History of Education and Social Psychology of Education are offered in the first and second semesters.
- d. A basket of optional courses is also offered in the second semester and students have to opt for one of them. Courses include Economic Policy in Education; Educational Thought in Modern India; Changing Conceptions of the Modern University; Education and Diversity in Multicultural Societies; Culture, Cognition and Mathematics, Multilingualism and Education; Cultural Psychology and Gender and Education.
- e. Those applying for Ph.D. should send a detailed research proposal of at least 3500 words, indicating the scope of the problem chosen, preliminary review of literature, perspectives (Theoretical and empirical) and methodology seen as relevant to the proposed study.

The UGC has accorded the Centre the status of Centre for Advanced Study (CAS). Earlier, the Centre was also accorded Department of Special Assistance (DSA) and Assistance for Strengthening of Infrastructure for Humanities and Social Sciences (ASIHSS) by the UGC.

For more details about the Centre, visit the JNU website: <https://www.jnu.ac.in/sss/zhces>

## 10. Centre for Women's Studies

The Centre undertakes both innovative, and intensive, interdisciplinary research and teaching, besides providing the space for creating a vibrant community of feminist academics, students, activists and artists concerned with issues of gender, and wider issues of power in society. The Centre regularly organizes lectures, seminars, workshops and film screenings on a wide range of subjects.

Currently, the Centre offers a Ph.D. in Women's Studies. In addition, the Centre also offers Optional courses at the Master's level that are open to students not only in Social Sciences but also to those enrolled in other Schools and Centres of the University. In these, students learn to examine the historical, social, political, economic, and cultural dimensions of gender, while gaining a more complex understanding of the construction of gender and its intersection with other categories of difference, power, and inequality.

### (a) Admission to Ph.D. programme

The Centre welcomes applications in all subjects of Social Sciences & Humanities. Ph.D. scholars will be required to complete prescribed course work in the first year after admission, including two Compulsory Courses in Feminist Theory and Social Research and Research Methodologies. Ph.D. candidates seeking admission to the Programme are required to submit a synopsis of roughly 1000 words on a research theme of their interest, indicating its scope, statement of the problem, methods and a preliminary review of literature.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/sss/cws>

## 11. Centre for the Study of Social Exclusion and Inclusive Policy:

The Centre for the Study of Social Exclusion and Inclusive Policy was created as a centre to document and analyse Social Exclusion and Inclusive Policy in Indian society. The objective is to use theories and concepts from several disciplines to discover, document and analyze various sites and modes of Social Exclusion. The idea is not merely to study the structures and processes of exclusion but also to discover the ways for deconstruction of these structures and identify the unique processes of inclusion and empowerment. The focus is primarily to understand theories and concepts of social exclusion in reference to caste-class, gender, disability, tribe, religion etc. The Centre brings together the comparative and interdisciplinary framework necessary for teaching and research programme that would

study social exclusion and Inclusion given its diverse structural roots and varied forms and manifestations in different social and economic spheres. The thrust of the centre is to study various sites of Social exclusion; Scheduled castes, Scheduled tribes, minorities, disability, old age, gender, child labor, migration, diaspora etc.

The Centre also offers optional courses to MA and B.A on a number of thematic issues such as Histories from the Margins, Agrarian Change and Exclusions; Minorities, Political Economy of Discrimination, Intersectionality of caste class and gender, Dalits and Exclusion, Processes of Marginalizations, Understanding key concepts of inclusion and Policies for Inclusion, Philosophy of Affirmative Action, Development and Exclusion, globalization and issues of exclusion and inclusion, contemporary debates on exclusion and inclusion etc.

Students from all social science disciplines can apply for admission to the Centre.

The Centre offers the following courses:

**a) Admission to Ph.D. programme**

The Centre offers admission to its Ph.D. programme. Candidates shall have to appear for an entrance examination followed by an interview. Candidates seeking admission to the Ph.D. programme should demonstrate their academic capability by preparing a well-developed research proposal of roughly 2000 words, drawing out a specific theme, statement of the problem, literature review and relevant research methodology.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/ssscsde>

## 12. Centre for Informal Sector and Labour Studies

Centre for Informal Sector and Labour Studies is one of the newly created Centres with the objective of studying the informal sector which includes non-agricultural workers, agricultural labourers, peasants, fishermen, craftsmen, street vendors, domestic work etc. Since the overwhelming bulk of the working people are located in the informal sector which is also termed as the “Unorganized Sector”, the focus of teaching and research in the Centre is on labour processes and working conditions in the unorganised sector in the contemporary world, particularly the developing countries. The Centre offers the following programmes:

**(i) Admission to Ph.D. Programme**

The Ph.D. programme focuses on interdisciplinary research on Indian informal sector and labour scenario. The programme encourages to work on themes such as—Political Economy of State, Development and Underdevelopment in the contemporary world, Labour History, Globalization and the changing forms of Labour, Global Production Systems, Informalisation in various sectors, Labour Market, Forms of Employment, Poverty, Migration, Urbanisation, Labour Rights and Regulation, Workers’ Organizations and Politics, Trade Unions, Resistance, Peasant Production, Non-farm Economy, Agrarian Change and Rural Development, Political Economy of Care, Discrimination on the basis of Caste, Gender and Community, Common Property Resources, Public Policies in the Unorganised Sector, and Sustainable Development. The objective of the programme is to enable students to understand the linkages between the formal and the informal sectors and between theory and empirical investigations in research work.

**(ii) M.A. in Development and Labour Studies**

MA in Development and Labour Studies focuses on contemporary themes related to the informal sector and labour. Its main objectives are – (i) providing an interdisciplinary perspective on the contemporary themes and issues on informality and labour drawing from the disciplines of history, economics, sociology and political science, (ii) providing basic theoretical and empirical training to undertake in depth analysis of the structural changes and public policy challenges that confront the labour in the informal sector in the contemporary world.

The M.A. programme consists of sixteen courses which are taught over four semesters. Of these eight compulsory courses are spread over the first two semesters. These compulsory courses cover broad thematic areas which provide students with an overview of the subject and basic theoretical knowledge of the structural factors that impact on labour processes and the growing informalization. Eight Optional Courses will be offered in the third and the fourth semesters. Out of the eight Optional Courses, students will have to do seven Lecture Courses (up to a maximum of three can be chosen from outside the Centre) and one Seminar Course in the third and fourth semesters. The optional courses will focus on specific themes and problems to allow students to undertake in-depth analysis of recent debates and contemporary areas of research in labour processes and unorganised sector. Seminar Courses will focus on introducing students to original research in various themes of informal sector and labour.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/ssscisls>

## 13. Centre for Media Studies

Centre for Media Studies (CMS) started in the year 2009 with the idea of becoming the academic location for the study of critical and dynamic developments in the field of Media and their relationship with societal changes through historical and contemporary times. With its first M.Phil. and Doctoral batches passing out in 2016 and 2018, respectively, the centre acquired not only the experience but also insights in the themes, issues and concerns shaping media and media studies that needed to be woven into its ongoing curriculum.

During this time, it has also been able to synergize its academic efforts with the founding vision of the centre and thereby orienting its engagements with the study of different dimensions of Media, i.e., processes, institutions and resultant socio-economic and cultural formations. As has been envisioned in the founding documents, the core areas of the centre's academic activity have been defined in terms of its engagement with

1. Histories of media
2. Politics and economics of media
3. Media and issues of language
4. Media, democracy, and dimensions of rights and justice
5. Media, technologies and cultural industries
6. Media and the nature of connectivity
7. Visual and digital culture

**Admission to Ph.D. programme:** The Centre for Media Studies (CMS) offers a Ph.D. Programme in the broad areas mentioned above. Candidates are required to submit a synopsis of about 1000-1500 words on a research theme which they intend to study.

For more details about the Centre, visit the JNU website : <https://www.jnu.ac.in/ssss/cms>

#### 14. Group of Adult Education

The Group of Adult Education (GAE) conducts research, both theoretical and practical, teaching and outreach programmes in the area of formal and non-formal education. The main thrust areas include 'literacy studies' (e.g. basic literacy, adult literacy, digital literacy, financial literacy, consumer literacy, legal literacy, environmental literacy, health literacy, family literacy, functional literacy, media literacy etc.); adult education; lifelong learning; community education; development education; citizenship education, vocational, education; sustainable livelihoods, social entrepreneurship and continuing education in India and abroad. The GAE focuses on problems of contemporary youth and their lifestyles and the impact of globalization and market practices on the local communities and society with special emphasis on consumer rights and their public awareness. By linking education research, policy and practice in all these areas, GAE makes a special contribution to enhancing access to learning and improving professionalism in social and educational sectors.

Presently, the GAE has faculty members from the disciplines of education, economics, history, political science and sociology. It offers optional courses (including one on research methodology) which are credited by students across other Centers and Schools in the University.

The Group is offering PhD programme for students of social sciences, humanities, arts and media studies and for professionals engaged in development and social sectors.

For more details about the Centre, visit the JNU website : <https://jnu.ac.in/ssss/gae>

#### ELIGIBILITY:

##### Master of Arts

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Economics studies and Planning (CESP)	Economics-ECOM (216)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 50% marks. Knowledge of Mathematics at 10+2 level is expected and will be tested for in the Entrance Examination.
2	Centre for Historical Studies (CHS)	Modern History-MODM (217)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 50% marks.
3		Medieval History – MEDM (218)	
4		Ancient History – ANCM (219)	
5	Centre for Political Studies (CPS)	Political Science – POLM (220)	Bachelor's degree under 10+2+3 pattern of education with at least 50% marks in Social sciences and 55% marks for those who have Bachelor's Degree in science and technology disciplines.
6	Centre for the Study of Regional Development (CSR D)	Geography-GEOM (221)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 45% marks.
7	Centre for the Study of Social Systems (CSSS)	Sociology- SOCM (222)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 45% marks.

8	Centre for Philosophy (CP)	Philosophy-SPHM (229)	Bachelor's degree under 10+2+3 pattern of education with at least 50% marks in Social Sciences and Humanities and 55% marks in Science & Technology disciplines.
9	Centre for Informal Sector and Labour Studies (CIS&LS)	Development and Labour Studies-DLSM (231)	Bachelor's degree in any discipline under 10+2+3 pattern of education with at least 50% marks.

#### MPH

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre of Social Medicine and Community Health (CSMCH)	Master of Public Health - MPHT (145)	<p>i. Bachelors level degree with minimum duration of four years in clinical sciences viz. MBBS, AYUSH, BDS, BAMS, BUMS, BSMS, BHMS, BPT, BOT, B.Sc.(Nursing) and Allied Subjects/field with Minimum of 55% marks from a recognized University/Institution (or equivalent grade B in UGC 7-point scale or equivalent grade in a point scale wherever grading system is followed)</p> <p style="text-align: center;">OR</p> <p>ii. Masters level degree in Social Sciences, Humanities, Management, Sciences, Technology and Allied Subjects/field with Minimum 50% marks from a recognized University/Institution (or equivalent grade B in UGC 7-point scale or equivalent grade in a point scale wherever grading system is followed)</p>

#### Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility	Desirable
1	Group of Adult Education (GAE)	Adult Education-GAEH (883)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>(a) Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>(b) Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>	<p>In addition to (a) or (b) those candidates who have two years (full-time) work/professional experience in the area of NGO sector, development and social sectors, governmental sector, main 'literacy studies' or work areas (such as basic literacy, adult literacy, consumer literacy, legal literacy, environmental literacy, health literacy, media literacy, citizenship education) with research publication(s) comparable to M.Phil. standard are also eligible for the PhD programme. In this case, such candidates must have obtained their Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility	Desirable
1	Centre for Informal Sector & Labour Studies (CISL)	Informal Sector & Labour Studies- ISLH (884)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>(a) Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>(b) Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>	In addition to (a) or (b) students with specialization in the areas of informal sector and labour studies. Students from all disciplines in Social Sciences and Humanities can apply and should have 55% marks or equivalent in Master's degree.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Economics studies and Planning (CESP)	Economics Studies & Planning - ECOH (865)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Historical Studies (CHS)	Modern History- MODH (866)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>
2		Medieval History – MEDH (867)	
3		Ancient History – ANCH (868)	



Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Political Studies (CPS)	Political Science – POLH (869)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility	Desirable
1	Centre for the Study of Regional Development (CSRD)	Population Studies- POPH (870)	Only those candidates shall be considered for admission to the Ph. D. Programme who have —	Candidates are admitted to Ph.D. Programme with relevant eligibility/qualification in the field of Geography, Economics, Population Studies and allied/related disciplines/areas.
2		Geography- GEOH (871)	Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).	
3		Economics- ECNH (872)	<p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>	

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre of Social Medicine and Community Health (CSMCH)	Social Sciences in Health- CSMH (873)	<p>Social Sciences and other disciplines allied to public health; Masters degree/ M.Phil. in Social Sciences, Humanities Management, Sciences, Technology and allied subjects/fields with at least 55% marks from a recognized University/Institutions (or equivalent grade B in UGC 7-point scale or equivalent grade in a point scale wherever grading system is followed).</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>
2		Public Health - PUBH (874)	<p>MD/MPH/M.Sc. (Nursing)/M.Phil degree with minimum 55% marks from a recognized University/Institution (or equivalent grade B in UGC 7-point scale or equivalent grade in a point scale wherever grading system is followed), <i>for candidates with</i>, bachelors level degree with minimum duration of four years in clinical sciences viz. MBBS, AYUSH, BDS, BAMS, BUMS, BSMS, BHMS, BPT, BOT, B.Sc.(Nursing) and Allied Subjects/field with Minimum of 55% marks from a recognized University/Institution (or equivalent grade B in UGC 7-point scale or equivalent grade in a point scale wherever grading system is followed)</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for the Study of Social Systems (CSSS)	Social Systems - SOCH (875)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Zakir Husain Centre for Education Studies (ZHCES)	Educational Studies-EDUH (876)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Studies in Science Policy (CSSP)	Studies in Science Policy- SSPH (877)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Philosophy (CP)	Philosophy- SPHH (878)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for Women Studies (CWS)	Women Studies-WSPH (879)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for the Study of Social Exclusion and Inclusive Policy	Social Exclusion and Inclusive Policy – SEIH (880)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility	Desirable
1	Centre for Media Studies (CMS)	Media Studies-CMSH (881)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>	May have exposure in Social Sciences/Humanities/Media and Cultural Studies.

## 5. SCHOOL OF ENVIRONMENTAL SCIENCES

Environmental Sciences as a discipline was incepted at JNU in 1974 as a bold step to clear precept the frame of boundaries across disciplines— Biology, Chemistry, Geology, Mathematics, Physics among others. The school is truly multidisciplinary in its teaching, research and outreach activities. These ensure interaction between fundamental and applied sciences, and expect evaluation of meaningful, viable and sound academic curriculum where Environmental Science remains a central focus. The outcomes of the research are value addition to existing knowledge and creation of newer information which helps in affecting and shaping policy interventions for environmental conservation and management. The research work ranges from environmental pollution, climate change issues, ecological and geological processes to science and technology based interventions. The intake of students, research scholars and faculty members ensures diverse interests and multi-disciplinary built-up in the school with the dynamic perspectives to find sustainable solutions.

The school offers Ph.D. and M.Sc. programmes. The School is distinguished for recipient of UGC sponsored special assistance programme (SAP)/DSA/ DRS programmes, FIST sponsored by the DST and the ENVIS centre sponsored by the Ministry of Environment and Forests, Government of India. Academic activities of the faculty members have been recognized both nationally and internationally, and several of them are recipients of various research projects, funded by governmental and intergovernmental agencies such as DST, ISRO, DBT, MoES, UGC, ICMR, CSIR, MoEF&CC, Global Environment Facility, NIC, DRDO, MoWR and others. Faculty members are also part of various committees constituted by the Central and State Governments. The School has set-up a Central Instrumental Facility (CIF) housing many state of art of analytical instruments including CHNSO Analyser, Gas Chromatograph, Atomic Absorption Spectroscopy, UV-Vis Spectrophotometer, Scintillation Counter, AKTA system, XRD, Real Time PCR, Microwave Digestion, AXIOSKOP AXIOVERT microscope and Fluorescent Microscope, Flow Cytometer, OC/EC analyzer, Ion exchange Chromatograph, Ultra-centrifuge, Spectroradiometer, Atomic absorption spectroscopy, WD – XRF, High-end Performance Computing (HPC) facility etc. Other than that a well equipped M.Sc. laboratory with some essential instrumental facilities, an in-house library and computational laboratory with internet facilities are provided to the students to strengthen their scientific awareness with global challenges.

### PROGRAMMES OF STUDY

The activities of the School are inter-disciplinary. The School endeavours to study the problem of environment in an integrated manner using the principles of Mathematics, Physics, Chemistry, Geology and Biology.

#### (i) M.Sc.

The School offers a two years interdisciplinary M.Sc. programme in Environmental sciences. The program covers various aspects of the environment by providing in depth understanding of issues at local, regional and global level; using interdisciplinary teaching/research/field work resources. Well-designed contemporary courses are offered to ensure development of scientific understanding of the environmental problems. The courses offered fall under four categories: (i) Core courses, (ii) Optional courses (iii) Remedial courses and (iv) Non-credit courses. The M.Sc. programme is spread over four semesters. It carries 64 credits and comprises of four different components viz., I) Teaching, II) Lab Work, III) Field Work and IV) Dissertation. The subject's areas covered require

knowledge of the basic scientific disciplines (Mathematics, Physics, Chemistry, Biology, and Geology). Detail about all the courses offered in this programme can be obtained from the Jawaharlal Nehru University Website.

### (ii) Ph.D.

Students admitted for Ph.D. are required to go through one year mandatory course works and secure qualifying CGPA for further continuation for the PhD thesis.

The candidates may give their preference to any two research areas of the following four research areas at the time of applying. The candidature of those candidates applying for more than two research areas of the School is likely to be rejected. Therefore, candidates are advised in their own interest not to apply for more than two research areas.

Based on performance in entrance exam, candidates will be called for interview. At the time of interview, the candidates will have to give their preference for research specializations within the area they have been called for. The research specializations of each faculty are described in the JNU web site.

**Research Area-I:** Application of applied Physics and Mathematics in the disciplines to study the Environmental Problems, Air Pollution, Aerosol Studies, Noise, Meteorology and Climatology, Science of Climate change and Regional Climate Modeling, Paleoclimate, Snow and Glacier Physics.

**Research Area-II:** Application of Geology Geochemistry and Biogeochemistry to problems of surface earth processes, water bodies including ground water, glaciers, Coastal Aquatic Systems, Estuaries and Mangroves, soils/ sediments, Mineral Deposits and Mining Pollution. Remote sensing applications in Geosciences. Extra terrestrial Remote sensing application in Lunar and Martian observation by using Chandrayan and Mangalyan (MOM), Climate Change impact on glacier & water resources.

**Research Area-III:** Application of Chemistry and Geochemistry in monitoring and management of Air, Water and Soil Pollution, Biogeochemical Cycling, Weathering and Paleoclimate studies.

**Research Area-IV:** Ecosystem Dynamics, Cellular and Molecular Biology, Biochemistry, Biophysics and Biotechnology in Environmental Science, Molecular Microbial Ecology, Bioremediation and Bioconversion of xenobiotics, Environmental Cancer Biology, Environmental Toxicology, Antimicrobial Agent Discovery & Development, Bioaerosols, Environmental Pathogen and Remote Sensing & GIS for LULC/ecosystem analysis & modelling.

For more details about the School, visit the JNU website : <https://www.jnu.ac.in/ses>

### ELIGIBILITY:

#### Master of Science

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Environmental Sciences (SES)	Environmental Sciences – SESM (223)	B.Sc. degree or equivalent in any branch of basic or applied science under 10+2+3 pattern of education or B.E./B.Tech/MBBS with at least 55% marks.

#### Ph.D.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Environmental Sciences (SES)	Research Area I- ONEH (885)	Only those candidates shall be considered for admission to the Ph.D. programme who have:  M.Sc. in any branch of basic or applied sciences or BE/B.Tech/MBBS with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR  Obtained two years M.Phil. in any branch of basic or applied sciences with 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil. in any branch of basic or applied sciences with at least 55% marks with additional one year research experience of a recognized University/Institutional, and one publication and 55% marks or equivalent in M.Sc.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.
2		Research Area II- TWOH (886)	
3		Research Area III-THRH (887)	
4		Research Area IV-FORH (888)	

## 6. SCHOOL OF COMPUTER & SYSTEMS SCIENCES

The School of Computer and Systems Sciences was established in 1975. It is among the first few institutions in the country to offer degree in Computer Science & Technology. The School offers Masters and Research programs leading to degrees in MCA, M.Tech in Computer Science and Technology, M.Tech in Data Science, and Ph.D. in the areas of Computer and Systems Sciences. The School attracts the very best and most talented students from all over the country. The large number of applicants for admissions to the research programme of the School clearly indicates the prestige, reputation and popularity of the programmes offered by the school. This trend is also prevalent in the case of admission seekers from neighboring and other foreign countries. Besides the teaching and research programmes of the School, the School has been engaging methods and ways to stimulate research further and enhance the learning skills of the students by organizing weekly research seminars and National Seminar-Cum-Technical Festival for students from across India. The School has the following research areas:

Big Data, Cloud Computing, Computer Graphics, Computer Network, Computer Vision, Databases, Data Mining, Data Warehousing, Embedded Systems, Image Processing, Knowledge Engineering, Artificial Intelligence, Machine Learning, MEMS, Mobile Networks, Modelling and Simulation, Natural Language Processing, Network Security, Optimization Theory, Parallel and Distributed Systems, Pattern Recognition, Programming Languages, Software Engineering, VLSI, Web Mining and Wireless Network.

### PROGRAMMES OF STUDY

#### (i) Ph.D. Programme

The School will have two separate streams namely "Computer Science" stream and "Microsystems" stream in the JNU entrance examination for the admissions to the PhD programme. An applicant for the PhD programme should clearly mention only one stream in the application form. The candidature of those applying for both the streams is likely to be rejected. Therefore, the applicants are advised in their own interest not to apply for both the streams. Admission is offered to candidates based on their performance in the Computer Based Test (CBT) and the viva-voce examination, as per University rules. In the entrance examination, besides the common part, the applicants must answer questions only for the part meant for their choice of stream. On the basis of the candidates' performance in the entrance examination and as per University rules, the candidates would be called for the viva-voce examination. Separate viva-voce examination would be conducted for "Computer Science" stream and "Microsystems" stream. Admission to the PhD Programme will be based on the merit in entrance and viva-voce examination.

#### (ii) M.Tech. Programme

##### (a) M.Tech. (Computer Science & Technology)

The two year MTech programme in Computer Science and Technology strengthens the foundations in various areas of computer science to prepare for the research in the current trends and challenges in computer science. Admission is offered to candidates based on their performance in the Computer Based Test (CBT).

##### (b) M.Tech. (Data Science)

The M.Tech. Programme in Data Science is of two years' duration. The objective of the programme is to understand the reasons behind the necessity of data in the industries, modeling data for analyzing huge data sets generated from different industrial applications and programming using data science tools. This programme would inculcate good knowledge of both theory and applications of computational statistics and computer science for the various aspects of data science and help the student in developing skills in machine learning, data mining, data analytics, data modeling etc. to be used for research or industrial exposure. Admission is offered to candidates based on their performance in the Computer Based Test (CBT).

There will be a common JNUEE paper for admission to both M.Tech. Programme in "Computer Science and Technology" and M.Tech. Programme in "Data Science". An applicant should clearly mention the order of preference amongst the two MTech programmes in the application form. The eligibility and syllabus for the JNU entrance examination for both M.Tech. Programme in "Computer Science and Technology" and M.Tech. Programme in "Data Science" would be the same. Further, admission to the M.Tech. Programme in "Computer Science and Technology" and M.Tech. Programme in "Data Science" will be based on the Computer Based Test (CBT) and the preference of the candidate. Separate merit lists for M.Tech. Programme in "Computer Science and Technology" and M.Tech. Programme in "Data Science" will be prepared. These two programmes are terminal degree programmes.

#### (iii) Master of Computer Application

This two-year programme is designed to provide necessary theoretical background and practical experience in Computer Science and Applications to meet the ever growing manpower requirements in academia and industry. The candidates shall be admitted to the MCA programme each year on the basis of their performance in the Computer Based Test (CBT).

For more details about the School, visit the JNU website : <https://www.jnu.ac.in/scss>

**ELIGIBILITY:****MCA**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Computer & Systems Sciences (SC&SS)	Master of Computer Applications- MCAM (224)	BCA/ Bachelor Degree in Computer Science Engineering or equivalent Degree with at least 55% marks <b>OR</b> B.Sc./ B.Com./ B.A. with Mathematics at 10+2 Level or at Graduation Level with at least 55% marks.

**M.Tech. Programmes**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Computer & Systems Sciences (SC&SS)	<b>Computer Science &amp; Technology – MTCT (157)</b>	Master's degree in Computer Science/ Mathematics/ Statistics/ Operational Research/any branch of Science /Master of Computer Applications (MCA)/Bachelor's degree in any branch of Engineering/ Technology with 55% marks.
2		Data Science - MTIT (192)	

**Ph.D.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Computer & Systems Sciences (SC&SS)	(i) Computer Sciences - SCSH (890)	The candidates interested in research in Cloud Computing, Computer Graphics, Computer Network, Computer Vision, Databases, Data Mining, Data Warehousing, Embedded Systems, Image Processing, Knowledge Engineering, Artificial Intelligence, Machine Learning, MEMS, Mobile Networks, Modelling and Simulation, Natural Language Processing, Network Security, Optimization Theory, Parallel and Distributed Systems, Pattern Recognition, Programming Languages, Software Engineering, VLSI, Web Mining and Wireless Network will be considered for Admission to Ph.D. programme this year.  Only those candidates shall be considered for admission to the Ph.D. programme who have
		(ii) Microsystems – MISH (915)	Master's Degree in Computer Science or Mathematics or Statistics or Operational Research or in any branch of Science or Master of Application (MCA) with 55% marks or equivalent Grade 'B' in UGC 7- point scale (or an equivalent Grade in a point scale wherever Grading system is followed). <b>OR</b> Master's Degree in Electronics or Electrical & Electronics Engineering or Electronics & Communication Engineering or related areas with 55% marks or equivalent Grade 'B' in UGC 7- point scale (or an equivalent Grade in a point scale wherever Grading system is followed). <b>OR</b> Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with Dissertation/Seminar/Viva), and with 55% marks or equivalent Master's degree; <b>OR</b> One year M.Phil. with 55% marks with additional one year research experience of a recognized University/Institute, and one publication and with 55% marks or equivalent in Master's degree;  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.

## 7. 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. Over the years, the School has made significant contributions to traditional as well as interdisciplinary areas spanning Physics, Chemistry and Mathematics. The School has well-equipped laboratories for Physics and Chemistry and state of the art computing facilities. It also has a library with an excellent collection of books on Mathematics, Physics and Chemistry.

The research emphasis of the Physics group has been on topics in Condensed Matter Physics, Chemical Physics, Disordered Systems, High Energy Physics, Mathematical Physics, Laser Physics, Neutrino Physics, Non-equilibrium Statistical Mechanics, Non-linear Dynamics, Statistical Biophysics, Quantum Chaos and String Theory. Active research is also being carried out in the areas of Complex Fluids, Superconductivity, Magnetism, Semiconductors, Spintronic Materials, Thermoelectrics, Photovoltaics, Plasma Astrophysics, Quantum Optics, Quantum Information Science, Mesoscopic Systems, Polymers, Bio and Nano Materials, Thin Films, Quantum Dots, Strongly Correlated and Frustrated systems, Topological Materials, High entropy alloys, Magnetocaloric Materials and Materials for Nuclear energy applications.

The Chemistry group is active in the areas of Synthetic Organic Chemistry, Inorganic Chemistry, Physical Chemistry Especially Supramolecular Chemistry, Glycochemistry, Crystal Engineering, Ultrafast Spectroscopy, Materials Chemistry, Biophysical Chemistry, Bio-inorganic, Bio-organic Chemistry, Medicinal Chemistry, Peptide Chemistry and Structure Based Drug Design.

The Mathematics group has been working in Number Theory (Algebraic and Analytic), 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 academicians in leading institutions and laboratories. Many of the faculty members are frequent speakers at national and international conferences. The faculty and students regularly publish research articles 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 reputed scientific academies. In recognition of its excellence in teaching and research, SPS has been continuously supported by the UGC since 1994 through various schemes such as DRS-COSIST and DSA. Apart from the UGC support, SPS has also been receiving major funding from the DST under the FIST programme. In addition, SPS faculty members have received 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.

Candidates admitted to a Ph.D. programme would be required to successfully go through prescribed course work.

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

The detailed syllabus of the M.Sc. programme is available on the JNU website. It emphasises laboratory training and core aspects of modern physics. 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 on the JNU website. The salient features of the syllabus are: (a) emphasis on the fundamental and applied aspects of chemistry, (b) focus on advanced laboratory training, and (c) initiation to research in chemistry.

#### (iv) M.Sc. in Mathematics

The detailed syllabus of the M.Sc. programme in Mathematics is available on the website of the School of Physical Sciences, JNU. In addition to standard courses, the programme includes a course in Computational Mathematics. The students are required to undertake a project in Mathematics.

### ADMISSION TO PROGRAMMES OF STUDY

For admissions, SPS is offering degree Programmes mentioned above. Admission to all these programmes is through JNU Entrance Examination. In addition, students who have UGC/CSIR/NBHM Junior Research Fellowship (JRF) may be invited directly for the viva/interview for admission to Ph.D. Programmes in the relevant subjects.

For more details about the School, visit the JNU website: <https://www.jnu.ac.in/sps>



**ELIGIBILITY:****M.Sc. in Chemistry/Physics/Mathematics**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Physical Sciences (SPS)	Physics- SPSM (226)	Bachelor's degree (with Physics, Mathematics as main subjects) under the 10+2+3/4 pattern of education with 55% marks in the aggregate or in Physics Honours. Applicants with B.E./B.Tech. in any of the Engineering disciplines with a CGPA of at least 6.0 out of 10.0 (or equivalent percentage).
2		Chemistry – CHEM (227)	Bachelor's degree (with Chemistry as one of the subjects) under the 10+2+3/4 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 with a CGPA of at least 6.0 out of 10.0 (or equivalent percentage).
3		Mathematics – MATM (237)	Bachelor's degree in Mathematics under the 10+2+3/4 system with at least 55% marks or equivalent, Or B.Tech. or B.E. in any of the Engineering disciplines with a CGPA of at least 6.0 out of 10.0 (or equivalent percentage).

**Ph.D. in Chemical Sciences/Physical Sciences/Mathematical Sciences**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Physical Sciences (SPS)	Mathematical Sciences – MATH (897)	Candidates shall be considered for admission to the Ph.D. programme on the following basis:  Candidates who have obtained M.Sc. degree (two years programme or five 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).  OR  Obtained two years M.Phil. Degree for the corresponding subject with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil. with 55% marks with the corresponding subject with additional one year research experience of a recognized University/Institution and one publication and 55% marks or equivalent in M.Sc.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the latest UGC Regulation.
2		Physical Sciences – PHYH (898)	
3		Chemical Sciences – CHEH (899)	

**8. SCHOOL OF COMPUTATIONAL AND INTEGRATIVE SCIENCES**

The **School of Computational and Integrative Sciences**, Jawaharlal Nehru University, presently houses the **Center for Computational Biology and Bioinformatics**, a Center of Excellence of the Department of Biotechnology, Govt. of India. Additionally, SCIS has initiated the Center for Complex Systems, introduced and supported in the XII Plan by the UGC. The major objective of the School is to develop and apply computational methods in different disciplines. This mission is reflected in the diverse faculty profile of the school which comprises researchers from fields as varied as Genomics, Computational Biology, Plant Biology, Complex Systems, Bioenergy, Theoretical and Computational Chemistry, Petri nets and Graph Theory, Mathematical Biology, Bio- & Nano- molecular Interactions, Biosensors, Statistical Data Analysis and Modeling, Computational Radio Frequency and Microwave, Antenna applications for Biomedical application.

**PROGRAMMES OF STUDY**

Teaching and research programs in Computational and Systems Biology involve the research, development, and application of computational tools and approaches for expanding the use of biological, agricultural, medical, behavioral or health data, including those to acquire, store, organize, archive, analyze, or visualize such data. In addition, research programs involve the development and application of data analytical and theoretical methods, mathematical modeling and computational simulation techniques to the study of biological, behavioral, and social systems. The School has initiated a program in Complex Systems which will study the behavior of

mathematical, physical, living and social systems, identify patterns that underlie these inter-related systems, and examine properties such as emergence, evolution, network, structure and dynamics of these systems in a competitive environment.

(a) The School runs a vibrant Ph.D. program, with research in different areas of Computational Biology and Complex Systems.

Some of the frontier areas of research conducted at the School are:

Computational Genomics and Next Generation Sequencing Plant Biology: Genomics, Epigenomics, Genome Editing and Systems  
 Biology of Abiotic Stress and Development  
 Application of Omics Technologies and Crop Genetics to Feedstock Improvement for Biofuels  
 Cheminformatics and Drug Discovery  
 Genome-wide Application of Information Theory and Pattern Recognition Methods  
 Intelligent Systems and Machine Learning  
 DNA-Protein Interactions  
 Chromatic Conformational Dynamics  
 Biomechanics and Mathematical Modeling of the biological systems  
 Stochastic and Nonlinear Dynamics Applied to Biological Systems  
 Monte Carlo Simulation Techniques to Explore the Energy Landscape of Water Clusters and Biomolecules.  
 Development of a Bacterial Cell Model: diffusion and hydrodynamics.  
 Effect of Molecular Crowding on Biomolecular Systems.  
 Mathematical biology, Graph Theory and Petri-Nets optimization techniques.  
 Application of Network Theory in Social and Financial Systems.  
 Econophysics and Sociophysics- Application of Physics to Model Socio-Economic Systems.

Wireless communication and Applications in Biology, including wearable/implantable devices as antennas/sensors  
 High Performance Computing and Cyber infrastructure.  
 Biomolecular Interactions, nano- and bio-sensor for clinical, food and environment applications.

(b) SCIS offers:

- (i) **M.Sc. degree in Computational and Integrative Sciences (specialization in either Computational Biology or Complex Systems) (Students will be admitted on the basis of GAT-B ranking through DBT).**

The Schools post-graduate teaching/training program has been funded from the Department of Biotechnology, initially as a P.G. Diploma in Bioinformatics, later as an MTech in Computational and Systems Biology, and is currently run as an MSc in Computational and Integrative Sciences, with a specialization in either Computational Biology or Complex Systems.

The program aims to provide analytical and bioinformatics skills to biotechnology students and to train students entry from physical sciences to apply skills in computational biology. Students from the Life Sciences/Biotechnology are provided with conceptual knowledge in the Physical Sciences, Mathematics and Statistics including Data Analytical skills required in the new phase of analysis and understanding of biological data. While students with the above backgrounds are introduced to concepts in Biotechnology. In following semesters, students are equipped with computational skills, including methods in mathematical modeling and computer simulation followed by specialized research project that apply the core unique skills taught in the previous semesters.

Admission to this program will be through the Biotechnology common admissions test. For details on admission, prospective candidates may visit the SCIS and DBT websites.

(ii) A program in data science through a **Post-Graduate Diploma in Big Data Analytics (PGD)**, with specialization in **Biological Big Data**. This is a sponsored skill-development program of the Department of Biotechnology, and is aimed at training postgraduates in the upcoming field of Big Data analytics for life sciences and health. Trained graduates from this program are expected to learn key technologies of data sciences, including big data collection and warehousing as well as machine learning, data integration and modeling technologies, which can be applied in an academic, and industry environment in the future.

The curricular work leading to the award of Post- Graduate Diploma shall be spread over a period of two semesters – one Monsoon Semester and one Winter Semester with a provision of a project report to be submitted by student at the end of the Winter Semester.

(iii) **PhD in Computational and Integrative Sciences**. The School has encouraged intake from multiple disciplines into all its programs of study, which are grouped with independently specified intake requirements as (1) Physical Sciences: Physics, Chemistry and Mathematics (2) Life Sciences/Bioinformatics, and (3) Engineering/Computer science, to provide an optimal peer-group of analytical, domain and computational skills within each program. Admitted students can pursue research on any topics broadly listed under (a).

The teaching and research programs are supported by good computational and communication infrastructure. Each student is provided with a Desktop/workstation, and the School manages a centralized facility for high-performance computers, consisting of computer clusters with multiprocessor nodes, large-memory nodes and GPUs to facilitate specialized research. The school takes pride in being among the country's best institutions in imparting high- value employability-related skills to its students such as in genomics data analytics, molecular simulations, data science and financial modeling and simulation.

Research areas are broadly listed under section (a).

**(c) ADMISSION TO PROGRAMMES OF STUDY**

For admissions, SCIS is offering three degree programs vis: (i) PhD and (ii) P G Diploma in Big Data Analytics. Admission to all these programs is through JNU Entrance Examination. In addition, students who have cleared the National Eligibility Test & hold a Junior Research Fellowship (JRF) may be invited directly for the viva/interview for admission to Ph.D. Courses. Entrance examination will consist of a choice from two or three tracks for Ph.D. programme based on the academic background of applicants.

**Admission of Ph.D. is as follows:-**

**Track 1: Physical Sciences:** Physics, Chemistry, Mathematics and related disciplines.

**Track 2: Life Sciences/Bioinformatics** with an aptitude in informatics; Bioinformatics and Computational Biology

**Track 3: Engineering/Computer Sciences:** Engineering disciplines, including Information Technology, with a stress on disciplines with computational data analytics.

**The use of the word “Track” in this document is solely for the purpose of grouping disciplines for the purpose of Entrance examination and admission to various programs**

**Note: Candidates applying for Ph.D. programme are allowed to exercise only one track for each programme**

For more details about the School, visit the JNU website : <https://www.jnu.ac.in/scis>

**ELIGIBILITY:****M.Sc. Programme (Students will be admitted on the basis of GAT-B ranking through DBT)**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Computational and Integrative Sciences (SC&IS)	Computation and Integrative Sciences - CISM (232)	A minimum of 55% marks in Bachelor's degree in any branch of Basic and Applied Science or Technology, including medicine and engineering disciplines.
2			

**Post-Graduate Diploma in Big Data Analytics (PGD)**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Computational and Integrative Sciences (SC&IS)	Post-Graduate Diploma in Big Data Analytics - PGDT (191)	M.Sc/B.Tech/B.E. in Physics/ Chemistry/ Mathematics/Computer Science/ Statistics/ Operations research/Life Sciences/ Biotechnology/Bioinformatics/related disciplines in engineering, physical, and biological sciences. Minimum of 55% in the qualifying degree.

## Ph.D.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Computational and Integrative Sciences (SC&IS)	Computational Biology and Bioinformatics - Track 1 – TROH (903)	M.Sc./B.E./B.Tech in Physics/ Chemistry/ Mathematics/Computer Science/ Statistics/ Operations research/Life Sciences/ Biotechnology/Bioinformatics/engineering and related disciplines with minimum of 55% in the qualifying degree or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR
2		Computational Biology and Bioinformatics - Track 2 – TRTH (909)	Candidates with Advanced Diploma (after M.Sc. degree with at least 55% marks) in Bioinformatics are also eligible.  OR
3		Computational Biology and Bioinformatics - Track 3 – TRDH (910)	Obtained two years M.Phil. degree or equivalent with at least 55% marks in the related field like science, engineering, medical and pharmaceutical science from a recognized University/Institution (with dissertation/seminar/Viva) or one year M.Phil. degree with 55% marks in the related field like science, engineering, medical and pharmaceutical science with additional one year research experience of a recognized University/Institution, and one publication and with minimum of 55% in the M.Sc./B.E./B.Tech in relevant field or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016

## 9. SCHOOL OF ARTS AND AESTHETICS

The School of Arts and Aesthetics offers post-graduate degree courses in the theoretical and critical study of cinema, and the visual and performing arts. It is one of the few places in India where these disciplines are offered in one integrated programme at the Masters level. The M.A. programme offers a specialized focus in each of the three disciplines viz. Cinema Studies, Theatre and Performance Studies, and Art History and Visual Studies.

The study of the arts in recent years has been enriched by methods and insights from many fields, such as sociology, anthropology, linguistics, cultural studies, political science, economic history, semiotics and feminist studies. The School's outlook has been formulated in response to new ways of thinking about culture using a wide array of critical and theoretical approaches. During the course of their studies, students are introduced to a range of research methods that combine archival, ethnographic, theoretical and cultural approaches and are encouraged to create theory-practice interface. The faculty also encourages students to visit museums, exhibitions, and monuments and to attend festivals of theatre, film, dance and music. The school frequently hosts interactive sessions with eminent scholars and practitioners from within the country as well as from overseas.

Please bear in mind that SAA does not impart a practice based education in the arts. Our pedagogy is a theoretical and critical one that examines the histories, philosophies and critiques of the mentioned areas.

**Resource Centre:** Over the years the School has also built up a valuable and expanding library and archive of photographs, audio and video recordings. The use of multi media in teaching helps students maintain live contact with performance, visual art and film. Students are encouraged to undertake field trips, learn documentation methods, to curate exhibitions in the art gallery, to organize film festivals on specific themes and observe performance practices.

### Disciplinary Streams:

**Cinema Studies** courses position the moving image as a force inhabiting a multi-media environment that includes film, television, video, and digital cultures. While film, as a powerful experience of 20th century modernity, continues to be an important scholarly focus, we also see it as a gateway to a broader field of the moving image complex. Our courses are structured to offer students exposure to a wide range of issues such as the sensory experience of moving image technologies; the stylistic and aesthetic dimension of diverse media forms; the political and cultural evaluation of audio-visual representations; and the infrastructures of media production, circulation, and exhibition. Students are encouraged to think conceptually and critically about global media cultures along with a special focus on India.

**Theatre and Performance Studies** offers a diverse spectrum of courses covering the history, theory and practice of theatre, dance, music and performance, both within India and across the world. Introductory courses are offered alongside a wide range of optional courses in music and dance. Covering a vast timeframe from 'living traditions' of rural performances in India and bhakti to the cutting-edge developments in political theatre, gender, globalization, and performance art, the Department is committed to studying theatre and performance both within established traditions of the stage, as well as in relation to the immediacies and contradictions of public culture at national and global levels.

**Visual Studies:** The visual studies courses address “high” art forms as well as the larger visual field of popular culture and visual practices. The majority of visual studies courses encourage a critical engagement with aspects of Indian visual culture (including shastric and aesthetic theories of Indian art, ancient sculpture, medieval temple architecture, Mughal and Rajput painting, 19th and 20th century popular culture, photography, modern and contemporary art in India and elsewhere) in the light of cutting-edge research and theoretical developments in art history, visual studies, history, literary theory, philosophy, aesthetics and sociology. Theoretically-oriented and cross-cultural courses take up issues such as the relationship between methods, materials and meanings in art, narrative strategies in art, and the history and politics of art institutions, particularly museums, in the creation of canons of art.

### **PROGRAMMES OF STUDY**

The School runs an MA programme in Arts and Aesthetics, three Ph.D. programmes in Cinema Studies, Theatre and Performance Studies and Visual Studies.

**PhD Programme:** For details kindly see the eligibility table.

### **M.A. IN ARTS AND AESTHETICS:**

#### **M. A. COURSE STRUCTURE:**

The School offers an integrated MA programme in Visual Studies, Cinema Studies, and Theatre and Performance Studies. Students of this programme are required to complete sixteen courses of four credits each, earning sixty-four credits over the course of four semesters. Of these, eight courses must be taken from among the ten compulsory courses on offer, while the other eight are to be selected from optional courses. While students are expected to take optional courses within the School, they are also permitted to take up to two optional courses from other centres or schools.

For more details about the School, visit the JNU website : <https://www.jnu.ac.in/saa>

#### **ELIGIBILITY:**

#### **Master of Arts**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Arts & Aesthetics (SA&A)	Arts & Aesthetics-SAAM (235)	Bachelor's degree under 10+2+3 pattern of education with at least 50% marks.

#### **Ph.D.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Arts & Aesthetics (SA&A)	Visual Studies – VSAH (900)	Only those candidates shall be considered for admission to the Ph. D. Programme who have — Master's Degree with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR Obtained two years M.Phil. degree with 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) or one year M.Phil. degree with 55% marks with additional one year research experience of a recognized University/Institution, and one publication and Master's Degree with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC regulations 2016.
2		Theatre & Performance Studies- TPSH (901)	
3		Cinema Studies-CNSH (902)	

## 10. SCHOOL OF BIOTECHNOLOGY

The School of Biotechnology was one of the first six centres established under the aegis of Department of Biotechnology (DBT), Govt. of India for carrying out Postgraduate teaching and research in areas related to Biotechnology. Initially established as a Special Centre for Biotechnology in 1985, it was upgraded to the level of a School in the year 2006.

Over the years the Biotechnology programme at JNU has established itself as a leading academic programme both from the teaching and research point of view. The faculty of the school is internationally recognized for basic and applied aspects of biotechnology research.

### PROGRAMMES OF STUDY

(i) **M.Sc. in Biotechnology** (students will be admitted on the basis of GAT – B ranking through DBT)

The MSc Biotechnology program at School of Biotechnology, JNU has been running for the past 30 years with DBT support. The previous national CEEB examination conducted by JNU for selection and admissions of students for the MSc Biotechnology program has now been replaced by the **Graduate Aptitude Test for Biotechnology (GAT-B)** and is now being organised by Regional Centre for Biotechnology (RCB), Faridabad.

SBT continues to receive strong funding support for the Flagship M.Sc. Biotechnology program. SBT is a fully functional department with a strong focus on various interdisciplinary aspects of Biotechnology such as Chemical Biology, Biochemical and Bioprocess Engineering, genome science, technology, engineering, Infectious Disease Biology, Immunology and vaccine development, Cancer biology, Virology, Structural Biology & Biophysics, Molecular and Cell Biology, Genetics, Microbiology, Bioinformatics, Plant Biotechnology, Nanobiotechnology, Optogenetics, Ciliopathies, Systems & Synthetic Biology, integrated genome analysis and use of artificial intelligence tools in biology.

The SBT M.Sc. program provides (a) cutting edge research-oriented teaching and hands on training program (b) Top quality faculty with interdisciplinary expertise and proven credibility Some of the unique for M.Sc. Biotechnology program are:

- SBT has received top rating in conducting the M.Sc. Biotech program for >25 years
- Leadership role in organizing M.Sc. biotech entrance exam (CEEBS) for more than two decades
- SBT alumni are globally placed at key positions in Academia, Research Institutes and Industry
- Fully prepared to meet the emerging demand of Biotech workforce
- Strong Industry liaison, including patent filing, starting new companies & transferring technology

The rigorous project work and wet / dry lab training makes students capable of designing and performing experiments independently. Students are trained in Scientific communication skills, critical analysis, innovation and entrepreneurial skills and so on.

For more details on admission, prospective candidates are encouraged to visit the SBT, JNU Admission and DBT websites.

(ii) **Ph.D.**

The competitive and vibrant Ph.D. programme in basic and applied biotechnology embarks on creating a strong academic research foundation in the following cutting-edge areas of Biotechnology:

- Molecular & Cell Biology
- Cancer Biology
- Infectious Disease Biology
- Biology of Rare Genetic Disorders
- Protein Science
- Structural Biology
- Chemical Biology & Bioconjugate Chemistry
- Bioinformatics & Systems Biology
- Immunology & Vaccine Development
- Nanobiotechnology & Microfluidics
- Biomaterials for regenerative medicine
- Plant Biotechnology
- Environmental Biotechnology & Metagenomics:  
Applications of Metagenomic Studies - Bacterial Biofuel & Plastic Biodegradation
- Cilia Biology & Optogenetics
- Biophotonics
- Functional Genomics of Human Complex Diseases
- Bioprocess Engineering
- Synthetic Biology
- Molecular Virology
- genome science, technology, engineering
- integrated genome analysis and use of artificial intelligence tools in biology

The School of Biotechnology is well endowed with State of the art facilities for cutting edge research in Biotechnology. Some of the major equipments/facilities in the school are as follows:

- Central Instrumentation Facility
- Recombinant Product Development Facility
- Spectroscopic Facility
- Microcalorimetric Facility
- Microscopic Facility
- Protein production and purification Facility
- Biosafety Level 2 Facility
- Biosafety Level 3 Facility
- Plant Tissue Culture Facility

#### Central Instruments Facility

The School has a Central Instruments Facility (CIF) equipped with all the basic and advanced equipments/ instruments required for modern day research in biotechnology. The facility is open round the clock for both the students and the faculty.

#### Recombinant Product Development Facility (RPDF)

Under the FIST support from the Department of Science and Technology (DST), the School has created a Recombinant Product Development Facility. The facility includes all necessary up stream and downstream equipments, and quality control and testing equipments required for the recombinant product development.

#### Spectroscopic facility:

The spectroscopic facility includes a number of highly sensitive UV-Visible spectrophotometers, Fluorescence spectrometers, Circular Dichroism spectrometer with stopped flow attachment, FT-IR spectrometer and Nano drop Spectrophotometer etc.

#### Microcalorimetric facility:

This facility includes Microcal differential scanning calorimetric and isothermal titration calorimetric set up for studying bimolecular stability, folding and interactions.

#### Microscopic facility:

This includes Simple microscopes, Fluorescent microscopes, Laser Scanning Confocal microscope, Phase contrast microscopes.

#### Protein Production and Purification Facility:

This facility includes refrigerated incubator shakers, Bacterial and Mammalian cell bioreactors with online FTIR analysis, AKTA-Prime, AKTA-Explorer FPLC for protein purification, Shimadzu HPLC.

#### Flow Cytometer and Sorter Facility:

The flow cytometer facility includes BD FACSAria™ Fusion machine with four laser cell analyser and sorter. The school also has Attune NxT Flow Cytometer facility.

#### Other equipments:

Other specialized analytical facilities that are available in various labs and the Central facility include Real Time PCR, ELISA readers, Elispot Reader, Fluorescence Activated Cell Sorter, Bioreactors. Denaturing Gradient Gel Electrophoresis etc. In addition to the above, the University has an Advanced Instrumentation Facility. Details about the facility can be looked at: <http://www.jnu.ac.in/AIRF>

Strong emphasis is placed on the interdisciplinary nature of Biotechnology; Thus, students coming from both the Physical and Biological Sciences streams are welcome.

For more details about the School, visit the JNU website : <http://www.jnu.ac.in/sbt>

#### ELIGIBILITY:

#### **M.Sc. Programme (Students will be admitted on the basis of GAT-B ranking through DBT)**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Biotechnology	M.Sc. in Biotechnology – BITM	Bachelor's degree under 10+2+3 pattern of education in Physical, Biological (Biochemistry / Bioinformatics / Biotechnology/Botany/Microbiology/Zoology), Agricultural, Veterinary and Fishery Sciences, Pharmacy, Engineering/Technology, 4-year B.Sc.(Physician Assistant Course); MBBS/ B.D.S with at least 55% marks

**Ph.D.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Eligibility
1	School of Biotechnology	Biotechnology – SBTH (904)	<p>M.Sc. in Biotechnology, Biochemical Engineering, Biochemistry, Chemistry, Physics, Mathematics or any branch of Physical or Biological or Engineering Sciences or B.Tech/B.E. (Biotechnology/Bioengineering/Allied Areas)/MBBS 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).</p> <p>OR</p> <p>M.Sc./B.Tech/B.E./MBBS with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p>OR</p> <p>Obtained two 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./B.E./B.Tech./MBBS</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016</p>

## 11. SCHOOL OF SANSKRIT AND INDIC STUDIES

The School of Sanskrit and Indic Studies, formerly Special Centre for Sanskrit Studies established in 2000, was upgraded by the 144th Academic Council meeting vide the Notification dated 18/12/2017. The new School broadens its domain of study to undertake research and teaching in Sanskrit studies directed towards relating Indian knowledge systems both to contemporary Indian reality and contemporary Western thought. The initial focus is on philosophy, grammar, as reflected in Sanskrit, Pali and Prakrit languages and Language Technology, literary theory, literature, social and scientific thought.

### PROGRAMMES OF STUDY

#### (A) Regular Courses

(i) **Ph.D. programme:** Research and teaching is undertaken in areas of Vedic and Agamic/Tantric literature and thought, Indian philosophical systems, Sanskrit poetics and poetry, Sanskrit grammar and grammatical theory, Pali and Buddhist Studies, Mahayana Buddhism, modes of disputation and interpretation of text, Sanskrit linguistics including Computational Linguistics etc. Comparative research is also encouraged.

(ii) **M.A.:** Wide ranging courses are offered by the School in Vedas, Literature, Philosophy, Pali and Buddhist Studies, Sanskrit Linguistics including Computational Linguistics and Social and Scientific thought etc.

M.A. programme in Sanskrit Studies requires completion of sixteen courses over four semesters. Specialized courses are offered in the above mentioned areas

(iii) B.Sc.-M.Sc. Integrated program in Ayurveda Biology (5 years)

- B.Sc. (Ayurveda Biology) –36 courses in 6 semesters
- M.Sc. (Ayurveda Biology) -16 courses in 4 semesters

#### (A) Part-time Courses

- i. **Certificate of Proficiency in Pali:** The admission to Certificate of Proficiency in Pali will be made on the basis of the performance of the candidate in the Computer Based Test (CBT) examination.
- ii. **Certificate of Proficiency in Sanskrit Computational Linguistics:** The admission to Certificate of Proficiency in Sanskrit Computational Linguistics will be made on the basis of the performance of the candidate in the Computer Based Test (CBT) examination
- iii. **Certificate of Proficiency in Yoga Philosophy:** The admission to Certificate of Proficiency in Yoga Philosophy will be made on the basis of the performance of the candidate in the Computer Based Test (CBT) examination



- iv. **Certificate of Proficiency in Vedic Culture:** The admission to Certificate of Proficiency in Vedic Culture will be made on the basis of the performance of the candidate in the Computer Based Test (CBT) examination
- v. **Certificate of Proficiency in Sanskrit:** The admission to Certificate of Proficiency in Sanskrit will be made on the basis of the performance of the candidate in the Computer Based Test (CBT) examination

For more details about the School, visit the JNU website : <https://www.jnu.ac.in/ssis>

### 1. REGULAR COURSES

#### ELIGIBILITY:

#### B.Sc.-M.Sc. Integrated program in Ayurveda Biology

Sl. No.	Name of School	Sub. Code & Code Number	Eligibility
1	School of Sanskrit and Indic Studies (SSIS)	Ayurveda Biology - AYBU (411)	At least Senior School Certificate (10+2) or an examination recognized as equivalent thereto with a minimum of 45% marks in aggregate.

#### Master of Arts

Sl. No.	Name of School	Sub. Code & Code Number	Eligibility
1	School of Sanskrit and Indic Studies (SSIS)	Sanskrit – SANM (228)	Bachelor's Degree in Sanskrit or in any other subject under (10+2+3) pattern of education with at least 45% marks.

#### Ph.D.

Sl. No.	Name of School	Sub. Code & Code Number	Eligibility
1	School of Sanskrit and Indic Studies (SSIS)	Sanskrit Studies – SANH (906)	<p>Master's degree or equivalent in Sanskrit or in any allied 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).</p> <p>OR</p> <p>Obtained two 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 Master's degree.</p> <p>Knowledge of Sanskrit is desirable.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

### II. PART-TIME COURSES

Sl. No.	Name of School	Sub. Code & Code Number	Eligibility
1	School of Sanskrit and Indic Studies (SSIS)	Pali – PALC (705)	At least Senior School Certificate (10+2) or an examination recognized as equivalent thereto with a minimum of 45% marks in aggregate.
2		Sanskrit Computational Linguistics – SCLC (706)	
3		COP in Yoga Philosophy – YOPC (707)	
4		COP in Vedic Culture – VECC (708)	
5		COP in Sanskrit – SANC (709)	

## 12. SCHOOL OF ENGINEERING

The School of Engineering was established in 2018. The school offers a five year dual degree program with B. Tech in engineering discipline (4 years) combined with a master's program, M. Tech/M.S. (1 year), with specialisation in Social science/Management/Humanities/Science/ Technology and a Ph.D. program in Computer Science & Engineering, Electronics & Communication Engineering and Mechanical Engineering.

The five year dual degree is one of the very few programmes in the country where the student would acquire skills in technology and its application to aid the sustainable development of the society. In the dual degree program, the students will acquire the necessary foundational skills through the designed core/elective/optional courses in the areas of technology, basic science, humanities, social science. This will build the basic competencies to pursue a master's degree from amongst a spectrum of options available, subsequently.

The dual degree program is novel in the sense that it extends an opportunity to the students, especially in their fourth and fifth year of the program to involve themselves in projects/dissertations and courses in humanities, international studies, sciences, languages, linguistics and social science. Not only will this allow an acquaintance with the frontier areas, it will make the students more sensitive towards their socio-economic and environmental responsibilities. The programme would emphasize further that generating returns for society and the larger community is indispensable. With such an engaging and holistic learning approach, students will have the opportunity to become better problem solvers.

The School aspires to be at the forefront in offering interdisciplinary research - a goal in JNU's charter. Our notable faculty covers various facets of modern computer engineering, electronics and communication engineering and mechanical engineering. The Ph.D. program will be an exploration in the above mentioned disciplines.

### Programmes of Study

#### 1. Five years dual degree programme (B.Tech. + M. Tech/M.S.)

##### Admission eligibility:

- (a) Students will be admitted after 10+2 schooling on the basis of JEE Main ranking through CSAB/ JoSAA.
- (b) 15% supernumerary seats for foreign nationals at the entry level of the dual degree (B. Tech + M. Tech/M.S.) programme as per DASA Scheme of MHRD

##### Program Structure:

- (a) B. Tech in Computer Science and engineering and M.S/M. Tech in Social Sciences/ Humanities/ Science/ Technology (4 year + 1 year)
- (b) B. Tech in Electronics and Communication Engineering and M.S/M. Tech in Social Sciences/ Humanities/ Science/ Technology (4 year + 1 year)

##### List of available M. Tech specialisations\*:

- (a) Computer Science and Engineering
- (b) VLSI (Very large scale integration)
- (c) RF and Microwave

##### List of M.S specialisations\*:

- (a) Computational Biology
  - (b) Computational Finance
  - (c) Computational Linguistics
  - (d) Environment Science
  - (e) Economics
  - (f) International Studies
  - (g) Korean Studies
  - (h) Management
  - (i) Management and Entrepreneurship
- \*Subject to availability of seats and faculty

#### 2. Doctor of Philosophy (Ph.D.) program

##### (a) Ph.D. in Computer Science and Engineering (CSE)

Research Areas: Computer Vision, Computer Networks, Cyber Security, Data Science, Artificial Intelligence, Social Networks.

##### (b) Ph. D. in Electronics and Communication Engineering (ECE)

Research Area: Microwave, RF, Electro-magnetic, Signal Processing, Time Series, Analysis, Network Science, Meta Materials.

##### (c) Ph.D. in Mechanical Engineering

Research Areas: Welding Technology, Metallic foams, Metal Machining, Material Science.

##### Mode of Admission:

Through JRF/GATE mode. Admission through GATE will be against fellowship availability in the School of Engineering.

**Credit Requirements:****1. Dual degree programme (B. Tech + M. Tech/M.S.)**

The minimum credit requirement for the dual degree programme would be 183 credits. The duration of the program is 10 semesters. Broadly, it consists of approximately 6 semesters of undergraduate engineering curriculum followed by approximately 2 semesters of postgraduate curriculum and lastly, 2 semesters of dissertation.

The curriculum for the M. Tech component will either be a continuation of the undergraduate engineering discipline or one from the pool of M.S specializations. There will be a compulsory dissertation (concerned specialization) in the last two semesters. The students can do additional credits through open choice of courses, which will allow them to develop broad inter-disciplinary knowledge base and opportunity to do their M.S/M. Tech in discipline other than B. Tech.

**\*\*There will be no exit option available for getting a degree before 5 years**

**2. Doctor of Philosophy (Ph.D.) program**

A student in the Ph.D. program has to earn a minimum of 18 credits along with two non-credit courses within first year of their Ph.D. Program in order to be eligible to continue in the Ph.D. program.

**Hostel Accommodation:**

The outstation candidates, admitted to the programmes of study of the university, will be considered for hostel accommodation as per rules of the university subject to availability of hostel accommodation. Grant of admission in the university would not ensure automatic allotment of hostel accommodation and that the same will be offered subject to availability. No candidate shall be eligible to register himself/herself for a full-time programme of study if he/she is already registered for any full-time programme of study in this university or any other university/institution.

For more details about the School, visit the JNU website : <https://www.jnu.ac.in/se>

**ELIGIBILITY:****B.Tech. + MTech/M.S.**

Sl. No.	Name of School	Sub. Code & Code Number	Eligibility
1	School of Engineering	B.Tech. in Computer Science and Engineering and MTech/M.S. in Social Sciences/ Humanities/ Science/ Technology – CSEE (1001)  B.Tech in Electronics and Communication Engineering and MTech/M.S. in Social Sciences/ Humanities/ Science/ Technology – ECEE (1002)	As per eligibility mentioned for JEE Main

**Ph.D.**

Sl. No.	Name of School	Sub. Code & Code Number	Eligibility
1	School of Engineering	Computer Science and Engineering – CSEH (912)  Electronics and Communication Engineering – ECEH (913)  Mechanical Engineering – MEEH (918)	Only those candidates shall be considered for admission to the Ph.D. Programme who have  Master's degree in the areas related to Electronics, Electrical, Computer Science, Information Technology, 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).  OR  Obtained M.Tech./M.E. degree in the area related to Electronics, Electrical, Computer Science, Information Technology, Software Engineering, Materials Engineering, Mechanical Engineering, Aerospace Engineering, Industrial Engineering, Manufacturing/ Production Engineering 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) from a recognised university/institute.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.

## 13. ATAL BIHARI VAJPAYEE SCHOOL OF MANAGEMENT AND ENTREPRENEURSHIP (ABVSME)

The Jawaharlal Nehru University's Atal Bihari Vajpayee School of Management and Entrepreneurship (ABVSME) will offer admission in the following academic programmes in the session 2021-22.

- Master of Business Administration (MBA): 2-Year duration
- Doctor of Philosophy (Ph.D.) in different management sub-disciplines

### A. Master of Business Administration (MBA)

#### i. Academic Eligibility Criteria for admission in the MBA programme:

The candidates having the following qualifications are eligible to apply for admission to the "Master of Business Administration" (MBA) programme.

A Bachelor's degree or equivalent awarded by any of the universities incorporated by an act of the central or state legislature in India or other educational institutions established by an act of Parliament or declared to be deemed as a University under Section 3 of the UGC Act, 1956, or possess an equivalent qualification recognized by the Ministry of Education, GOI.

The Bachelor's degree or equivalent qualification obtained by the candidate must entail a minimum of three years of education after completing higher secondary schooling (10+2) or equivalent.

For General Category, OBC and EWS candidates, a minimum of 50% marks in aggregate (of all the years/semesters) or equivalent CGPA in the qualifying degree is required.

For SC/ST/PWD candidates, a minimum of 45% marks in aggregate (of all the years/semesters) or equivalent CGPA in the qualifying degree is required.

Candidates appearing for the final year of bachelor's degree/equivalent qualification examination, and those who have completed degree requirements and are awaiting results, can also apply. If selected, such candidates will be allowed to join as per the University Rules, only if she/he submits the documentary evidence of having qualified the eligibility requirements by certain date (to be decided by the University in due course).

#### ii. Process for Admission (in MBA programme):

All applicants seeking admission in the MBA programme must have appeared in the Common Admission Test (CAT) in 2020 conducted by IIMs. Each applicant applying for admission in the MBA programme must submit his/her CAT Registration Number and CAT Score. JNU will use CAT score for short-listing the applicants for GD and PI for the MBA programme. Based on the CAT score merit, the number of applicants shortlisted for GD and PI will be at least seven times the number of seats in each category. The final list of selected candidates will be based on CAT score and marks obtained in the Group Discussion and Personal Interview with respective weightage as 70%, 10% and 20% of CAT score.

**For Foreign National:** The eligibility for admission in MBA programme for Foreign National will be valid GMAT Score (minimum 500) and a Bachelor's degree.

#### iii. Number of Seats and Reservation Policy:

In MBA admissions, the reservation policy as per Government of India rules will be strictly followed. As MBA programme is a professional programme, no additional deprivation points (as it may be the case in some other JNU courses) will be taken into consideration for admission. Intake in the MBA programme of ABV-SME will be 75 students.

#### iv. Application Fee:

**For Indian National:** Applicants for the MBA programme at ABVSME, JNU, have to pay the following application fees (non-refundable). Rs.2000 (Rs.two thousand only) for General Category, EWS and OBC applicants, Rs.1000 (Rs.one thousand only) for SC/ST/PWD applicants.

#### v. Fee refund policy:

As per UGC notification dated October, 2018 on Refund of Fees and Non-Retention of Original Certificates.

#### vi. MBA Courses:

Details of the courses are available on ABVSME website: <https://jnu.ac.in/abvsme>

**B. Doctor of Philosophy (Ph.D.) - SMEH (914)****For Indian Citizens:**

**Eligibility:** Master's Degree in Management or in a relevant discipline (such as Economics, Commerce, Statistics, Psychology, Operations Research and related areas) with at least 55% marks.

**Mode of admission:** (i) through JRF (ii) JNU Entrance Examination.

The process for admission to Ph.D. programme in management will be the same as per other Ph.D programme offered by the University.

**For Foreign Nationals:**

GMAT Score (minimum 650) and Master's Degree in Management or in a relevant discipline (such as Economics, Commerce, Statistics, Psychology, Operations Research and related areas).

**Ph.D. Courses:**

Details of the courses are available on ABVSME website: <https://jnu.ac.in/abvsme>

**Further Query:**

For any further query, the Dean, ABV-SME, can be contacted on: [dean.abvsme@mail.jnu.ac.in](mailto:dean.abvsme@mail.jnu.ac.in)

## 14. SPECIAL CENTRE FOR THE STUDY OF NORTH EAST INDIA

Special Centre for the Study of North East India (SCSNEI) at JNU was established in the year 2018. Earlier it was functioning as a university level Programme under the name, North East India Studies Programme.

SCSNEI is conceived with a purpose to build a corpus of academic works on North East India. It aims at holistic understanding of the region by bringing together different epistemic perspectives into a platform with strong commitment to multi-disciplinary research. SCSNEI provides a common platform for researchers in the areas of humanities, social sciences, natural sciences, and other allied disciplines, whose works are directly or indirectly linked to the studies on North East India and its neighbouring countries.

At present, SCSNEI focuses on areas of study, such as, social change, religion and statecraft, empowerment politics, regional economic growth, livelihood studies, border trade and state policies, global capital and institutions, conflict, peace and security studies, borderland studies, intercultural discourses, ancient Indian culture and archaeology, aesthetics and performance studies, traditional knowledge, health, biodiversity, folk medicine, etc. Students and researchers are encouraged not only to conduct in-depth research but also simultaneously develop social commitment to judiciously apply the freshly acquired knowledge.

**Programme of Study****Admission to Ph.D. Programme**

Candidates seeking admission to the PhD Programme are required to submit a comprehensive research proposal indicating the research problem, nature and scope, theoretical and conceptual understanding, methodology and review of literature of the work the candidate proposes to undertake. They are also expected to have initial research experience and sound knowledge on the region and the neighbouring countries (with focus on Act East Policy). The essential qualifications are provided in the table below:

For more details about the Special Centre, visit the JNU website : <https://www.jnu.ac.in/scsnei>

**ELIGIBILITY:****Ph.D.**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre for the Study of North East India	North East India Studies-NESH (882)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

**15. SPECIAL CENTRE FOR E-LEARNING (SCEL)****About SCEL:**

The newly created 'Special Centre for E-Learning (SCEL)' at Jawaharlal Nehru University aims to develop and offer online courses with an aim to bring its expertise and high quality education system to those who miss out for the university's competitive entrance examination, and because of its limited on-campus space. The online courses are planned to be offered in large numbers and multiple disciplines, ranging from Certificate to Undergraduate and Post-graduate degrees, where interested students from even the remote regions of the country will get an opportunity to virtually attend the classes taught by the best faculty; access JNU's vast intellectual resources; participate in the discussion forums; take test and earn a JNU degree.

In order to fulfill the laid down conditions and the quality parameters specified under the University Grants Commission (Online Courses or Programmes) Regulations, 2018, SCEL plans to develop the infrastructure, appoint academic and administrative staffs, maintain and administer the Centralised Data Base of all the online Courses or Programmes, work for effective coordination among the faculty members offering online courses, admission branch, evaluation branch and Communication and Information Services at JNU.

**16. SPECIAL CENTRE FOR MOLECULAR MEDICINE**

Molecular medicine is an emerging area within biomedical sciences that aims to understand the molecular determinants of health and disease with the ultimate goal of applying this knowledge for the prevention, diagnosis and treatment of diseases. The Special Centre for Molecular Medicine (SCMM) at JNU has pioneered research and education in this field in India and is imparting Ph.D. level training in this field. The centre aims to accomplish its goal through innovative and collaborative basic and clinical research programs and has initiated many collaborative research activities with reputed national and international medical research institutes.

The objective of SCMM is to foster teaching and research activities in the study of human diseases using advanced tools of molecular and cell biology. SCMM conducts academic programs for the training of young scientists (clinical and non-clinical) who are keen to pursue a career in basic medical research. The academic programs have been designed for non-clinical biologists/chemists, with sufficient knowledge to deal with medical problems, to enable them to deliver product/processes to society and clinicians with a basic clinical degree, who understand modern biology and chemistry at the molecular level to enable them to apply this knowledge to drug development. For successful implementation of these objectives, SCMM offers the following programs of study.

To encourage students from basic sciences and medical graduates, the centre offers Ph.D. Programs in Molecular Medicine and is pursuing teaching & research activities in the following thrust areas:

1. Metabolic disorders such as cardiovascular diseases, role of iron in insulin resistance related pathogenesis, neurodegenerative disorders like Parkinson and Alzheimer diseases, and endocrine-related cancers.
2. Nuclear receptors in health and diseases: to study underlying molecular mechanisms of nuclear receptors functions with specific reference to PXR, RXR, CAR, SHP. Involvement of PXR in drug metabolism and hepatic cancer.
3. Cell adhesion and signaling, Cell polarity and tissue patterning, Diseases associated with cell-cell junctions and modulation of cellular junctions by pathogens.
4. Infectious and non-infectious diseases: hepatitis C, Leishmaniasis, Helicobacter pathogenesis, Candidiasis, Inflammatory Bowel Disease, Pathobiology of innate immune dysfunction, DNA replication and cell cycle regulation of medically important pathogens: Helicobacter pylori and Plasmodium falciparum, application of codon-shuffling against Mycobacterium tuberculosis and Plasmodium falciparum, Mycobacterium tuberculosis and drug resistance, Enteropathogenic E.coli.
5. Chemical biology, radiation biology and cell signaling; development of novel synthetic methodology for drug development and study of their mechanism of action based on genomics and proteomics against radiotherapy; cancer; development of antibiotics for gyrase resistant strains targeting topoisomerase 1A gene in bacteria.
6. Synthetic organic chemistry: Synthesis of biologically active heterocycles using novel methodology with transition metal catalyst.
7. Designing /Discovering codon shuffled de-novo peptide/protein inhibitors against essential/crucial proteins of pathogens. To study crucial host-pathogen interactions by designing codon shuffled de-novo peptide/protein inhibitors. Synthesis and selection of novel drug like de-novo peptide binders by codon shuffling method that may inhibit crucial host-pathogen interactions in Malaria and Tuberculosis diseases.
8. Diagnostics and medical proteomics, and mass spectrometry based metabolomics.

Selected students will have the option to choose their research area depending on their merit/aptitude and according to the vacancy available.

SCMM also offers **M.Sc. Programme in Molecular Medicine**. The goal of this program is to train students in modern areas and techniques of cell, molecular biology and organic chemistry in relation to human health and disease and the subsequent application of this training to identify new targets for the diagnosis and therapy of different diseases. The completion of the Human Genome project and various other genomes including pathogenic organisms has opened new opportunities for the understanding of the molecular mechanisms of diseases both from the host as well as pathogen's perspectives. Students will be trained to use the tools of modern biology including bioinformatics so as to understand, retrieve and exploit the wealth of information provided in the Genome projects to design modern and personalized medicines.

## PROGRAMMES OF STUDY

### (i) Admission to Ph.D. Programme in "Molecular Medicine"

**Admission procedure:** Candidates appearing for above program will be selected through a JNU Computer Based Test (CBT) followed by an interview of short listed candidates.

### (ii) M.Sc. Programme in "Molecular Medicine"

#### Duration

The duration of the academic program leading to the award of M.Sc. degree in 'Molecular Medicine' shall be for a period of four semesters (two Monsoon Semesters and two Winter Semesters) with a compulsory requirement for submission of a research-based dissertation at the end of the Winter Semester of the 2<sup>nd</sup> year.

For more details about the Special Centre, visit the JNU website : <https://www.jnu.ac.in/scmm>

## ELIGIBILITY:

### M.Sc. Programme

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre for Molecular Medicine (SCMM)	Molecular Medicine-CMMM (233)	Bachelor's degree in any branch of Basic or Applied Sciences (including MBBS/BVSc./B.Pharm) from recognized Universities and Institutes with at least 55% marks.

## Ph.D. Programme

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre for Molecular Medicine (SCMM)	Molecular Medicine-CMMH (905)	<p>Only those candidates shall be considered for Admission to the Ph.D. programme, who have either --</p> <p>Obtained masters degree or equivalent from recognized University /institution in any branch of biological sciences /chemical sciences 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).</p> <p style="text-align: center;">OR</p> <p>Obtained MBBS/M.Pharm./M.VSc/MD degree with at least 55% marks (during 2014 or later) from a recognized University/Institution OR Candidates with M.Tech. degree with at least 55% marks in Biological/Chemical Sciences.</p> <p style="text-align: center;">OR</p> <p>Obtained two 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 relevant Master's Degree with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

### 17. CENTRE FOR THE STUDY OF LAW AND GOVERNANCE

The manifold agendas of public policy and legal reform in India remain impoverished in the absence of substantial research in many areas that impact the everyday life of Indian citizens. Since its inception, the Centre for the Study of Law and Governance has initiated a new interest in examining how practices of governance get stabilised through law and how these practices open law to further contestation. The Centre adopts a multidisciplinary approach to framing research and teaching on the relationship between law and governance. The study of governance, in its various forms and at different sites, is central to several contemporary issues: the reform of public institutions and public law; the creation and establishment of procedures and rules that lead to greater efficiency, transparency, and accountability; and the challenge of making governance more inclusive and participatory through the strengthening of democracy and civil society. The Centre's interdisciplinary focus draws on critical social science approaches in its attempt to explore how practices of law and governance are embedded in political, economic, social and historical processes; how practices of law and governance are dispersed over various sites ranging from the government, bureaucracy, judiciary, community and family; the socio-legal processes that deter or provide access to justice; and notions of governmentality, sovereignty and rights in specific politico-jural regimes. The normative ideals of justice, equity and freedom inflect the Centre's critical interrogations of existing institutions and practices of law and governance. It is in this spirit that, while the Centre's academic programme produces scholarly research in these areas, it also seeks to translate theory into practice by initiating debate, sharing research and providing a platform for dialogue between the academy, government, civil society and international agencies. In almost two decades since it came into existence the Centre for the Study of Law and Governance has developed at least three attributes that make it a distinctive part of the intellectual landscape. First, the Centre is explicitly inter-disciplinary, as evidenced by the diverse academic trainings of its faculty and its student body as well as in the teaching and research programme it has fostered. Second, the Centre has developed a reputation as a location where academic rigour can be meshed with reflection on policy and advocacy. Third, the Centre has become a focal point for understanding the links between the law and governance in practice. The ongoing research by the faculty and research students, a working paper series published by CSLG, an active seminar program and annual lectures by distinguished guests mark the other activities of the Centre. CSLG offers Ph.D. programme in Law and Governance.



**PROGRAMMES OF STUDY:** The Centre offers admission to Ph.D. programme.

The PhD programme is marked by its

- multi-disciplinary orientation in both course design and teaching plan;
- substantive academic content;
- distinctiveness when compared to available courses in other Indian Universities; and
- coherence as a programme of study with a policy-orientation.

The objectives of the Programme include the following:

- To provide an interdisciplinary perspective on the study of law and governance, by introducing the basic concepts, debates and the now extensive literature on governance and legal issues, emanating from the disciplines of political science, economics, public administration/public policy, sociology and jurisprudence.
- To equip students with the skills necessary to undertake research in areas of public policy, including a special focus on the legal implications of these issues, by developing their expertise in these diverse disciplinary areas, and so to enable a more complex and multi-faceted approach to issues of governance, public policy and law.
- To acquaint the qualified practitioner—policy-maker, civil servant, lawyer or NGO worker—with the major issues in this area.

All admissions to the PhD programme will be made through the JRF route. Those who have qualified the UGC-JRF examination are eligible to apply and final selection will be made through an interview. For the interview, candidates must prepare a 1,000-word research proposal with a bibliography. The candidate will be questioned on her/ his domain knowledge, work experience and proposed research project.

For more details about the Centre/Special Centre, visit the JNU website: <https://www.jnu.ac.in/cslg>

**ELIGIBILITY:**

**Ph.D.**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Centre for the Study of Law & Governance (CSL&G)	Law & Governance – CLGH (907)	<p>Only those candidates shall be considered for admission to the Ph.D. programme who have –</p> <p>Master's Degree in Law, Political Science, Public Administration, Economics, Sociology, History, Philosophy, Social Work, Development Studies and cognate areas/ disciplines in the social sciences or humanities with at least 55% marks in aggregate or its equivalent Grade 'B' in the UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed) or an equivalent degree from a foreign educational Institution.</p> <p style="text-align: center;">OR</p> <p>M. Phil. Degree in Law, Political Science, Public Administration, Economics, Sociology, History, Philosophy, Social Work, Development Studies and cognate areas/ disciplines in the social sciences or humanities with at least 55% marks from any Indian University recognized by the University Grants Commission or from a Foreign Educational Institution;</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC regulations 2016</p>

## 18. SPECIAL CENTRE FOR NANOSCIENCES

Special Centre for Nanosciences (SCNS) is an inter-disciplinary research and teaching centre at JNU. The Nanoscience related research topics pursued currently include nanoscale interface, ferromagnetic nanostructures, spintronics, magnetic nano composites, microwave absorbers and nano-devices, magnetic nano particles based targeted drug-delivery & treatment of cancer cells by radio-frequency-(RF) Hyperthermia, electrode materials for Li-ion batteries, hydrogen generation, bio-sensors, hybrid nanomaterials, anti-biofilm materials, Electron microscopy, ferroelectric/ multiferroic nanocomposites, soft condensed matter, nano-biotechnology and nanomedicine (nano-based drug delivery, therapy, toxicity and bioimaging) for infectious diseases etc.

The Centre has faculty members with background in Physics, Chemistry, Biology, Electronics, Material Sciences, Electron Microscopy etc.

Presently, Common Instrumentation Facility (CIF) of the Centre has nanomaterial synthesis and characterization facilities which include XRD, UV-Vis spectrophotometer, Raman spectrophotometer, Dynamic Light Scattering, AFM, Zeta Potential Measurement, UV-NIR Spectrophotometer, Viscometry, Tensiometry, Potentiostat-Galvanostat, Contact Angle Measurement, Cell culture facility, BOD incubator, Laminar Hood, Fluorescence Spectrometer, Elisa Reader etc. A Scanning Electron Microscope (SEM) will soon be installed in the centre.

A wide range of analytical facilities including Transmission Electron Microscopy, Scanning Electron Microscopy, PPMS, Confocal Microscope, Confocal-Raman-AFM, XRD and other on-line cell imaging facilities are available at the Advanced Instrumentation and Research Facility (AIRF), a central facility of JNU.

The Nano-electronics and Microwave laboratory consists of DC and microwave probe-stations, microwave nano-devices testing facilities like Vector Network Analyzer (Keysight Inc. PNA - 44 GHz), Spectrum Analyzer (Rohde and Schwarz Inc. - 40 GHz), Microwave Power Amplifier (Marki Microwave Inc.) for absorber testing, angle and temperature dependent variable-frequency Ferromagnetic Resonance (FMR) system. For nanostructure deposition, we have multi-target RF Sputtering and thermal evaporation system. For *in vitro* and *in vivo* study on human cell-lines and mouse model, we have automated Radio-Frequency Hyperthermia system (MSI AUTOMATION, INC.).

The Ferroelectrics and Multiferroics Characterization Laboratory has Impedance Analyzer (20 Hz to 120 MHz, Key Sight Technologies), Ferroelectric/ Multiferroic Hysteresis Loop Measurement Setup (aixACCT, 10 kV); D<sub>33</sub> Test Meter, Liquid Nitrogen Cryostat (77 – 800 K) etc. This Laboratory is involved in the study of size dependent properties of Ferroelectric and Piezoelectric Materials, Multiferroics, Electrocaloric Materials, Structural Phase Transitions in Ferroic Perovskites and Functional Nanomaterials for various Applications.

Nanobio laboratory is equipped with human cell lines culture and storage facility (-20°C and -80 °C) and Fluorescence Microscope for study of nanotoxicity and nanobio interactions. We have Microfluidic based biosensor with mask less lithography system, Electrospinning setup for synthesis of nanofibres for various applications and Multichannel Electrochemical analyzer for detection of multianalytes on a single electrode. Research facilities are also available for study of Water remediation using nanostructured materials, Optical detection of analytes in environment and clinical samples and Bio-imaging of fluorescent materials.

The central theme of thin-film and electron microscopy research group is "Nanostructure - Physical property correlation in technologically important nanostructures using Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM)". Thin-film and electron microscopy lab has a RF-DC magnetron sputtering system, metallurgical light microscope, spin coater, LCR meter etc. Low speed saw and ion milling system for the preparation of SEM and TEM samples is available. Thin-films and bulk materials of functional oxides are being synthesized using mixed oxide and wet chemistry methods. Lead-free ferroelectrics, photovoltaic materials and semiconductor films are currently being investigated.

The investigation of the Nanobiotechnology and Nanomedicine laboratory is being carried out involving nano-based drug delivery, therapy, toxicity and fluorescent bioimaging for infectious diseases. Nanomedicine laboratory is equipped with facilities for synthesis of nano-based antimicrobials for infectious diseases and study of their molecular mechanisms of action.

### PROGRAMME OF STUDY

#### (i) **Ph.D. programme in Nanoscience.**

The admission to PhD program will be in two modes: A) JNU Entrance Exam and B) Junior Research Fellowship (JRF) mode.

**Entry for PhD through JNU Entrance Exam:** The admission to PhD will be based on an All India Computer Based Test (CBT) conducted by the University at different centers spread all over the country. Based on the Computer Based Test (CBT), short-listed candidates will have to appear in the interview. Admission will be offered to candidates finally selected on the basis of their performance in the written test and interview.

**Entry for PhD through JRF Mode:** Candidates with a valid Junior Research Fellowship (JRF) awarded through National Eligibility Tests conducted by CSIR/ UGC, UGC, DBT, ICMR etc. will be exempted from JNU Entrance Exam and directly called for interview.

**(ii) M.Tech. programme in Nanoscience/Nanoelectronics.**

The admission to M.Tech. will be based on an All India Computer Based Test (CBT) conducted by the University at different centers spread all over the country. Admission will be offered to candidates finally selected on the basis of their performance in the written test.

For more details about the Centre/Special Centre, visit the JNU website: <https://jnu.ac.in/scns>

**ELIGIBILITY:****M.Tech Programme in Nanoscience & Nanoelectronics**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre for Nano Sciences	Nanoscience – NNST (182)	Master's degree in Science or B.E./B.Tech. in any branch of engineering and technology  with 55% marks of a recognized University/ Institution or equivalent grade 'B' in UGC 7-point scale or an equivalent grade in a point scale where grading system is followed.
2		Nanoelectronics – NNET (190)	Master's degree in Electronics or B.E./B.Tech. in Electronics & Communications/ Electrical Engineering  with 55% marks of a recognized University/ Institution or equivalent grade 'B' in UGC 7-point scale or an equivalent grade in a point scale where grading system is followed.

**Ph.D.**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre for Nano Sciences	Nano Sciences – NNSH (908)	Master's degree in Science/ Engineering with 55% marks of a recognized University/ Institution or equivalent grade 'B' in UGC 7-point scale or an equivalent grade in a point scale where grading system is followed.  OR  Obtained two 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 Master's degree/B.E/B.Tech.  Relaxation to SC/ ST/ OBC (Non-creamy layer)/PWD as per the latest UGC regulations implemented by JNU will be applicable.

<b>19. SPECIAL CENTRE FOR DISASTER RESEARCH</b>
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Social Science is growing into and developing an understanding of technology and natural science which can bring human safety and sustainable development. This objective requires transdisciplinary interaction, understanding and knowledge. The universe is one holistic habitat for humanity to survive. It may also be man's last habitat if we continue to allow the magnitude, frequency and recurrence of disasters to increase. In consideration of this objective the Special Centre for Disaster Research aims to build upon an appropriate relationship between social sciences, ICT and geospatial sciences on one hand and between the government and academic research on the other hand. The objective of teaching and research in disaster studies is to understand how disasters affect development, national resources and human and nonhuman lives. It also highlights the need for ecologically sensitive land use policies through GIS mapping and demarcation of fragile ecological areas. The centre looks into the new areas of information and communication research (ICT), Artificial Intelligence and preparedness to disasters, ecosystem and communities, smart cities and urban development. The research would also define the parameters of scientific preparedness, technology of mitigation and institutional accountability. Much of disaster prevention is about transparency, accountability, constitutional and environmental law which are helped through a basic understanding of geospatial sciences, Computational intelligence and community resilience. Those who are ready for a more versatile and contemporary thought processes are encouraged to apply.

**Programme of Study:**

- (i) Ph.D. programme in Disaster Studies  
(ii) M.A. programme in Disaster Studies

For more details about the Special Centre, visit the JNU website : <http://scdr.jnu.ac.in/>

**ELIGIBILITY:****Master's Programme**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre For Disaster Research (SCDR)	Disaster Studies - DSSM (239)	Bachelor's degree in any social sciences /natural sciences/ any other professional stream with 55% marks from a recognized University/Institution.

**PhD Programme**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre for Disaster Research (SCDR)	Disaster Studies - DSSH (911)	<p>Only those candidates shall be considered for admission to the Ph. D. Programme who have —</p> <p>Master's Degree/BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained two years M.Phil. degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/Viva) is essential 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 Master's degree/B.E/B.Tech.</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.</p>

**20. SPECIAL CENTRE FOR NATIONAL SECURITY STUDIES (SCNSS)**
**Special Centre for National Security Studies**

Special Centre for National Security Studies (SCNSS) is one of the newest centres established in JNU (2018) to study National Security in comprehensive and holistic manner. It has a prime focus on analyzing, comparing and theorizing the security issues of India. The Centre intends to examine, reflect on and provide policy inputs and alternative policy suggestions to relevant security agencies of India. The Centre is a super specialty centre of national importance on the domestic and external security issues of India. The Centre intends to examine all core national security issues from the prism of Indian civilizational knowledge and its security traditions, to protect its national interest, territorial integrity and world peace. It is an interdisciplinary center combining social sciences and civilizational/cultural insights of India with a strong focus on latest emerging technologies relating especially to cyber, space, chemical, biological, nuclear and Artificial Intelligence (AI).

The Centre is offering Ph.D. programme in National Security Studies in academic session 2021-22.

For more details about the Centre, visit the JNU website: <https://www.jnu.ac.in/scnss>

**ELIGIBILITY:****PhD Programme**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre for National Security Studies (SCNSS)	National Security Studies – NSSH (916)	BE/B.Tech with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR  Master's degree with at least 55% marks in social science or natural science or Humanities.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.

## 21. SPECIAL CENTRE FOR SYSTEMS MEDICINE

Systems Medicine is a modern interdisciplinary branch of science that combines disease biology, systems biology including genomics, transcriptomics, proteomics, metabolomics, metabonomics, culturomics, immunomics, regulomics, phenomics, computational biology, high throughput data analysis, integrated with biobanking and animal studies to provide a comprehensive understanding of various aspects of disease studies.

The classical medicine approach lacks mechanistic understanding of molecular and cellular networks and pathology in almost every disease area. Most of the time, diagnosis and understanding of a particular disease is based on a reductionist model of a single or a few molecules. The key unmet need is to connect underlying molecular descriptors using large patient cohorts for better understanding of disease prevention, prediction, diagnosis and treatment.

**Programme of Study****(a) PhD (Systems Medicine)**

A limited number of scholars will be admitted to PhD programme. The courses are offered to make a strong foundation in systems medicine. The credit courses will be divided in first two semesters of the programme that include both basic and applied aspects. The second semester will mark the beginning of hands-on training in various aspects and techniques in systems medicine. In no case, a research scholar is allowed to repeat any course either in case of failure or for improving the grades. The programme being interdisciplinary, the research scholar will work under the joint supervision of faculty members.

**Salient Features of Teaching and Training Programme**

The competitive and vibrant PhD programme in Systems Medicine embarks on creating a robust academic research foundation in the following cutting-edge areas:

- i. Advances in systems biology and biological data
- ii. Molecular basis of human diseases
- iii. Advances in genomics and transcriptomics
- iv. Advances in proteomics and metabolomics
- v. Advances in immunomics and pathomics
- vi. Ethics in research, regulatory compliances, IPR and entrepreneurship

In addition, students admitted to the SCSM PhD program shall be trained in the following areas:

- i. Research methodology and lab techniques
- ii. Research manuscript writing and editing
- iii. Critical analysis and presentation of research output
- iv. Writing and defending research proposals

SCSM faculty members' laboratories are well equipped with state-of-the-art facilities for the cutting-edge research in the area of systems medicine. Additionally, the campus houses Central Instrument Facilities and Advanced Instrumentation Research Facility.

For the academic year 2021-22, candidates those who have qualified NET/JRF or its equivalent category as permitted by the University, will be called for an interview.

The interview of the candidates will be conducted by the Admission Committee of the Special Centre, where the candidates are required to discuss their research interest/area through a presentation. The competence of the candidate to undertake the proposed research; the suitability of the research topic/area at the Special Centre; and the potential of the proposed research to contribute new/additional knowledge, etc will be considered.

For more details about the Centre, visit the JNU website : <https://jnu.ac.in/scsm>

#### ELIGIBILITY:

#### PhD Programme

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	Special Centre for Systems Medicine (SCSM)	Systems Medicine – SSMH (917)	Master's degree (M.Sc., MBBS, M.VSc, M. Pharma)/ B.Tech, B. Pharma or a professional degree declared equivalent to the Master's degree by the corresponding statutory regulatory body, with at least 55% marks in aggregate or its equivalent grade 'B' in the UGC 7-point scale (or an equivalent grade in a point scale wherever grading system is followed); or an equivalent degree from a foreign educational institution.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.

### III. RESERVATIONS OF SEATS FOR SC/ST/OBC/PWD CANDIDATES

The admissions will be given as per the reservation policy of the Government of India.

#### RESERVATION OF SEATS FOR SCHEDULE CASTE (SC)/TRIBE (ST) APPLICANTS

- 15 % of the total numbers of seats are reserved for applicants belonging to Scheduled Caste and 7.5% for Scheduled Tribes.
- Applicant must note that Certificate from any person/ authority, other than the Competent Authority empowered to issue such certificate, shall not be accepted in any case. If the applicant happens to belong to SC or ST, applicant's caste/ tribe must be listed in the appropriate category Govt. of India schedule. **The Caste Certificate should clearly state:**
  - (a) Name caste/ tribe of the candidate,
  - (b) whether applicant belongs to SC or ST,
  - (c) District and the State or Union Territory of applicant's usual place of residence and
  - (d) The appropriate Govt. of India schedule under which the candidate's caste/ tribe is approved as SC or ST.
- If the applicants do not have the SC or ST caste/ tribe certificate at the time of (i.e. final registration after selection), the applicant may upload the acknowledgement slip of the SC or ST caste/tribe certificate application. However, at the time of admission, the applicant will have to produce the valid SC or ST caste/tribe certificate. If an SC or ST applicant seeks admission under unreserved category, the applicant should satisfy the minimum eligibility requirement for that category.

- SC/ST students who get admission under open merit (unreserved) will not be included in the reserved quota, i.e. (15% + 7.5%)

#### RESERVATION OF SEATS FOR OTHER BACKWARD CLASSES (NON-CREAMY LAYER, CENTRAL LIST) APPLICANTS

- 27% seats will be reserved for the applicants belonging to Other Backward Classes (OBCs) (non-creamy layer, central list).
- At the time of admission to an OBC applicant, the University will ensure that the caste of the candidate must be included in the Central List of OBC (the OBC status is to be determined on the basis of the Central List of OBCs notified by the Ministry of Social Justice and Empowerment on the recommendations of the National Commission for Backward Classes available on the following website: [http://ncbc.nic.in/backward\\_classes/index.html](http://ncbc.nic.in/backward_classes/index.html)).
- The certificate must mention non-creamy layer status of the applicant (Non-creamy layer status issued by an authority mentioned in DOPT Office Memorandum no. 36012/22/93-Estt. (SCT) dated 15.11.1993).
- The OBC applicants who belong to the 'Non-Creamy Layer' and whose caste appears in the Central List of the OBCs only, shall be eligible to be considered for admission under the OBC category (Validity period of OBC certificate in respect of 'creamy layer' status of the applicants as per DOPT Office Memorandum No.36036/2/2013-Estt. (Res-I) dated 31 March 2017 or as amended time to time). The validity of the non-creamy layer certificate shall be for the financial year 2020-21.

•If the applicant does not have the latest OBC non-creamy layer certificate at the time of upload, the applicant may upload old OBC non-creamy layer certificate or latest acknowledgement slip of OBC non-creamy layer certificate application. However, at the time of admission, the applicant will have to invariably produce the latest OBC non-creamy layer certificate.

**THE FOLLOWING ARE EMPOWERED TO ISSUE THE SC/ST/OBC CERTIFICATE:**

- (a) District Magistrate/ Additional District Magistrate/ Collector/ Deputy Commissioner/ Addl. Deputy Commissioner/ Deputy Collector/ 1st class Stipendiary Magistrate/ City Magistrate/ Sub-Divisional Magistrate/ Taluka Magistrate/ Executive Magistrate/ Extra Assistant Commissioner.
- (b) Chief Presidency Magistrate/ Addl. Chief Presidency Magistrate/ Presidency Magistrate.
- (c) Revenue Officer not below the rank of Tehsildar.
- (d) Sub-Divisional Officer of the area where the Applicant and/ or his family normally resides.
- (e) Administrator/ Secretary to the Administrator/ Development Officer (Lakshadweep Islands).

**RESERVATION OF SEATS FOR PERSONS WITH DISABILITIES (PWD)**

•As per the provisions of Rights of Persons with Disabilities Act, 2016, not less than five percent (5%) seats are reserved in admission for Persons with Benchmark Disabilities, where “person with benchmark disability” means a person with not less than forty percent (40%) of a specified disability where specified disability has not been defined in measurable terms and includes a person with disability, as certified by the certifying authority.

•Reservation of 5% seats in respect of PWD candidates shall be done horizontally, as per the Government of India Guidelines/Policy.

•The following specified categories of disabilities as mentioned in the Schedule to the Rights of Persons with Disabilities Act, 2016 [See clause (zc) of section 2 of Rights of Persons with Disabilities Act, 2016] are eligible to get the benefit of the said reservation:

**1. Physical disability—**

A. **Locomotor disability** (a person’s inability to execute distinctive activities associated with movement of self and objects resulting from affliction of musculoskeletal or nervous system or both), including—

- (a) “leprosy cured person” means a person who has been cured of leprosy but is suffering from—
  - (i) loss of sensation in hands or feet as well as loss of sensation and paresis in the eye and eye-lid but with no manifest deformity;
  - (ii) manifest deformity and paresis but having sufficient mobility in their hands and feet to enable them to engage in normal economic activity;
  - (iii) extreme physical deformity as well as advanced age which prevents him/her from undertaking any gainful occupation, and the expression “leprosy cured” shall construed accordingly;
- (b) “cerebral palsy” means a Group of non-progressive neurological condition affecting body movements and muscle coordination, caused by damage to one or more specific areas of the brain, usually occurring before, during or shortly after birth;
- (c) “dwarfism” means a medical or genetic condition resulting in an adult height of 4 feet 10 inches (147 centimeters) or less;
- (d) “muscular dystrophy” means a group of hereditary genetic muscle disease that weakens the muscles that move the human body and persons with multiple dystrophy have incorrect and missing information in their genes, which prevents them from making the proteins they need for healthy muscles. It is characterised by progressive skeletal muscle weakness, defects in muscle proteins, and the death of muscle cells and tissue;
- (e) “acid attack victims” means a person disfigured due to violent assaults by throwing of acid or similar corrosive substance.

**B. Visual impairment—**

- (a) “blindness” means a condition where a person has any of the following conditions, after best correction—
  - (i) total absence of sight; or
  - (ii) visual acuity less than 3/60 or less than 10/200 (Snellen) in the better eye with best possible correction; or
  - (iii) limitation of the field of vision subtending an angle of less than 10 degree.
- (b) “low-vision” means a condition where a person has any of the following conditons, namely:—

- (i) visual acuity not exceeding 6/18 or less than 20/60 upto 3/60 or upto 10/200 (Snellen) in the better eye with best possible corrections; or
- (ii) limitation of the field of vision subtending an angle of less than 40 degree up to 10 degree.

**C. Hearing impairment—**

- (a) “deaf” means persons having 70 DB hearing loss in speech frequencies in both ears;
- (b) “hard of hearing” means person having 60 DB to 70 DB hearing loss in speech frequencies in both ears;

**D. “Speech and language disability”** means a permanent disability arising out of conditions such as laryngectomy or aphasia affecting one or more components of speech and language due to organic or neurological causes.

**2. Intellectual disability, a condition characterised by significant limitation both in intellectual functioning (reasoning, learning, problem solving) and in adaptive behaviour which covers a range of every day, social and practical skills, including—**

- (a) “specific learning disabilities” means a heterogeneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia;
- (b) “autism spectrum disorder” means a neuro-developmental condition typically appearing in the first three years of life that significantly affects a person's ability to communicate, understand relationships and relate to others, and is frequently associated with unusual or stereotypical rituals or behaviours.

**3. Mental behaviour —**

“mental illness” means a substantial disorder of thinking, mood, perception, orientation or memory that grossly impairs judgment, behaviour, capacity to recognise reality or ability to meet the ordinary demands of life, but does not include retardation which is a condition of arrested or incomplete development of mind of a person, specially characterised by subnormality of intelligence.

**4. Disability caused due to—**

- (a) chronic neurological conditions, such as—
  - (i) “multiple sclerosis” means an inflammatory, nervous system disease in which the myelin sheaths around the axons of nerve cells of the brain and spinal cord are damaged, leading to demyelination and affecting the ability of nerve cells in the brain and spinal cord to communicate with each other;
  - (ii) “parkinson's disease” means a progressive disease of the nervous system marked by tremor, muscular rigidity, and slow, imprecise movement, chiefly affecting middle-aged and elderly people associated with degeneration of the basal ganglia of the brain and a deficiency of the neurotransmitter dopamine.
- (b) Blood disorder—
  - (a) “haemophilia” means an inheritable disease, usually affecting only male but transmitted by women to their male children, characterized by loss or impairment of the normal clotting ability of blood so that a minor wound may result in fatal bleeding;
  - (iii) “thalassemia” means a group of inherited disorders characterised by reduced or absent amounts of haemoglobin.
  - (iv) “sickle cell disease” means a hemolytic disorder characterised by chronic anemia, painful events, and various complications due to associated tissue and organ damage; “hemolytic” refers to the destruction of the cell membrane of red blood cells resulting in the release of hemoglobin.

**5. Multiple Disabilities (more than one of the above specified disabilities) include deaf blindness which means a condition in which a person may have combination in which a person may have combination of hearing and visual impairments causing severe communication, developmental, and educational problems.**

**6. Any other category as may be notified by the Central Government.**

Candidates claiming reservation as per the disability Act 2016, shall be required to upload the required Medical Certificate/and produce the original Medical Certificate in the required format for the relevant category of disability i.e. from V, VI and VII, as the case may be. Required proforma of from V, VI and VII are given under the heading Certificates and other documents required at the time of viva voce and admission.



**Relaxation for admission to M. Tech, MPH, Post Graduate, PG Diploma, Under Graduate and Part-Time programmes: All OBC category (non creamy layer) candidates are eligible to 10% relaxation in the percentage of marks in the qualifying examination in relation to open category. The SC/ST and Person with Disability (PWD) candidates who have passed the qualifying examination irrespective of their percentage of marks are eligible to appear in the Entrance Examination. For B. Tech and MBA, the criteria for the said courses are given separately in the concerned section of the e-Prospectus.**

**Relaxation for admission to Ph.D. programmes.**

A relaxation of 5% marks from 55% to 50%, or an equivalent relaxation of grade may be allowed for those belonging to SC/ST /OBC (non-creamy layer)/ **PWD** as per the decision of the UGC from time to time;

All SC/ST /OBC and PWD candidates are required to submit certificate in respect of their claims from the authorized officers as notified by the Government of India for the purpose from time to time.

Candidates belonging to SC/ST/OBC/PWD category who are selected on their own merit with General Category candidates are not counted under reserved quota. In programmes where viva voce is prescribed candidates belonging to SC/ST/OBC/PWD/EWS and General Category will be called for Viva-voce under their respective category at that stage. Further in final merit, reserved category candidates qualifying on their own merit should be adjusted in UR Category as per Gol rules.

## IV. RESERVATION FOR ECONOMICALLY WEAKER SECTIONS (EWSs)

In accordance with the provisions of the constitution (One Hundred and Third Amendment) Act 2019, and with reference to OM No. 20013/01/2018-BC-II dated 17<sup>th</sup> January, 2019 of Ministry of Social Justice and Empowerment, enabling provision of reservation for the economically weaker Sections (EWSs) who are not covered under the existing scheme of reservation for the Scheduled Castes, the Scheduled Tribes and the Socially and Educationally Backward Classes in Admission. Reservation shall be extended to EWSs category candidates in all programmes of study. Guidelines issued by Government of India from time to time regarding criteria for Income & Assets, issuing authority/verification of certificate shall be followed by the University for implementing EWSs reservation.

### Quantum of Reservation

The persons belonging to EWSs who are not covered under the scheme of reservation for SCs, STS and OBCs shall get 10% reservation in Admission to various programmes of study.

### Criteria of Income & Assets:

Persons who are not covered under the existing scheme of reservations for the Scheduled Castes, the Scheduled Tribes and the Socially and Educationally Backward Classes and whose family has gross annual income below **Rs. 8.00 lakh (Rupees eight lakh only)** are to be identified as EWSs for the benefit of reservation. Family for this purpose will include the person who seeks benefit of reservation, his/her parents and siblings below the age of 18 years as also his/her spouse and children below the age of 18 years. The income shall include income from all sources i.e. salary, agriculture, business, profession etc. and it will be income for the financial year prior to the year of application, also persons whose family owns or possesses any of the following assets shall be excluded from being identified as EWSs, irrespective of the family income:

- i. 5 acres of Agricultural Land and above;
- ii. Residential flat of 1000 sq. ft. and above;
- iii. Residential plot of 100 sq. yards and above in notified municipalities;
- iv. Residential plot of 210 sq. yards and above in areas other than the notified municipalities.

### Income and Asset Certificate issuing Authority

The income and assets of the families as mention in Criteria of Income & Assets would be required to be certified by an officer not below the rank of Tehsildar in the States/UTs in the prescribed format as given in Annexure-I.

**Government of .....**  
**(Name & Address of the authority issuing the certificate)**

**INCOME & ASSEST CERTIFICATE TO BE PRODUCED BY ECONOMICALLY WEAKER SECTIONS**

Certificate No. \_\_\_\_\_

Date: \_\_\_\_\_

**VALID FOR THE YEAR \_\_\_\_\_**

This is to certify that Shri/Smt./Kumari \_\_\_\_\_ son/daughter/wife of \_\_\_\_\_ permanent resident of \_\_\_\_\_, Village/Street \_\_\_\_\_ Post Office \_\_\_\_\_ District \_\_\_\_\_ in the State/Union Territory \_\_\_\_\_ Pin Code \_\_\_\_\_ whose photograph is attested below belongs to Economically Weaker Sections, since the gross annual income\* of his/her 'family'\*\*\* is below Rs. 8 lakh (Rupees Eight Lakh only) for the financial year \_\_\_\_\_. His/her family does not own or possess any of the following assets\*\*\*:

- I. 5 acres of agricultural land and above;
- II. Residential flat of 1000 sq. ft. and above;
- III. Residential plot of 100 sq. yards and above in notified municipalities;
- IV. Residential plot of 200 sq. yards and above in areas other than the notified municipalities.

2. Shri/Smt./Kumari \_\_\_\_\_ belongs to the \_\_\_\_\_ caste which is not recognized as a Scheduled Caste, Scheduled Tribe and Other Backward Classes (Central List)

Signature with seal of Office \_\_\_\_\_

Name \_\_\_\_\_

Designation \_\_\_\_\_

Recent Passport  
size attested  
photograph of  
the applicant

**\*Note 1.:** Income covered all sources i.e. salary, agriculture, business, profession, etc.

**\*\*Note 2:** The term "Family" for this purpose include the person, who seeks benefit of reservation, his/her parents and siblings below the age of 18 years as also his/her spouse and children below the age of 18 years

**\*\*\*Note 3:** The property held by a "Family" in different locations or different places/cities have been clubbed while applying the land or property holding test to determine EWS status.

## FORM OF CASTE CERTIFICATE TO BE PRODUCED BY THE CANDIDATES BELONGING TO SC/ST CATEGORIES

Form of Certificate as prescribed in M.H.A, O.M. NO.42/21/49-N.G.S., dated 28-1-1952 as revised in Dept. of Per.& A.R., Letter No.36012/6/76-Estt.(S.C.T.), dated 29-10-1977, to be produced by a candidate belonging to a Scheduled Caste or Scheduled Tribe in support of his claim.

### FORM OF CASTE CERTIFICATE

This \_\_\_\_\_ is to certify that Shri/Shrimathi\*/Kumari\* \_\_\_\_\_ Son/daughter\* of \_\_\_\_\_ of village/town\* \_\_\_\_\_ in District/Division\* \_\_\_\_\_ of the State/ Union Territory\* \_\_\_\_\_ belongs to the \_\_\_\_\_

Caste/Tribe\* which is recognized as a Scheduled Caste Scheduled Tribe\* Under: The Constitution (Scheduled Castes) Order, 1950.

\*The Constitution (Scheduled Tribes) Order, 1950.

\*The Constitution (Scheduled Castes) (Union Territories) Order, 1951.

\*The Constitution (Scheduled Tribes) (Union Territories) Order, 1951.

(As amended by the Scheduled Castes and Schedules Tribes Lists (Modification Order)1956, the Bombay Reorganization Act, 1960, the Punjab Reorganization Act, 1966, the State of Himachal Pradesh Act, 1970, the North-Eastern Areas (Reorganization) Act, 1971 and the Scheduled Castes and Schedules Tribes Orders(Amendment) Act, 1976.)

\*The Constitution (Jammu and Kashmir) Scheduled Castes Order, 1956;

\*The Constitution (Andaman and Nicobar Islands) Scheduled Tribes Order, 1959, as amended by the Scheduled Castes and Scheduled Tribes Orders(Amendment)Act, 1976;

\*The constitution (Dadra and Nagar Haveli) Scheduled Castes Order, 1962; \*The Constitution (Dadra and Nagar Haveli) Scheduled Tribes Order, 1962; \*The Constitution (Pondicherry) Scheduled Castes Order, 1964;

\*The Constitution (Uttar Pradesh, Scheduled Tribes Order, 1967;

\*The Constitution (Goa, Daman and Diu) Scheduled Castes Order,

1968; \*The Constitution (Goa,

Daman and Diu) Scheduled Tribes Order, 1968;] \*The Constitution (Nagaland) Scheduled Tribes

Order,1970; \*The Constitution (Sikkim) Scheduled Castes Order, 1978;

\*The Constitution (Sikkim) Scheduled Tribes Order, 1978;

\*The Constitution (Jammu and Kashmir) Scheduled Tribes Order, 1989. \*The Constitution (Scheduled Castes) Order (Amendment)

Act, 1990. \*The Constitution (Scheduled Tribes) Order Amendment Act, 1991.

\*The Constitution (Scheduled Tribes) Order Second Amendment Act,1991.

2. \*\*This certificate is issued on the basis of the Scheduled Castes/Scheduled Tribes Certificate issued to Shri/Shrimathi\* \_\_\_\_\_ father/mother\* of Shri/Shrimathi/Kumari\* \_\_\_\_\_ of village/town\* \_\_\_\_\_ in District/Division\* \_\_\_\_\_ of the State/Union Territory\* \_\_\_\_\_ who belong to the Caste/Tribe\* which is recognized as a Scheduled Caste/Scheduled Tribe\* in the State/Union Territory\* \_\_\_\_\_ issued by the \_\_\_\_\_ dated \_\_\_\_\_.

3. Shri/Shrimathi\*/Kumari\* \_\_\_\_\_ and /or\* his/her\* family ordinarily reside(s) in village/town\* \_\_\_\_\_ of \_\_\_\_\_ District/Division\* of the State/Union Territory\* of \_\_\_\_\_

Signature \_\_\_\_\_  
Designation \_\_\_\_\_  
(With seal of office)

State \_\_\_\_\_

Union Territory \_\_\_\_\_

Place \_\_\_\_\_

Date \_\_\_\_\_

Note: - The term "Ordinarily resides" used here will have the same meaning as in Section 20 of the Representation of the Peoples Act, 1950.

(iii) **Please delete the words which are not applicable.**

**Applicable in the case of SCs, STs persons who have migrated from one State/UT.**

The authorities competent to issue Caste Certificates are indicated below:

- (i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner/ Deputy Collector / Ist Class Stipendiary Magistrate / Sub-Divisional Magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (not below the rank of Ist Class Stipendiary Magistrate).
- (ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
- (iii) Revenue Officer not below the rank of Tehsildar, and Sub-Divisional Officer of the area where the candidate and / or his family resides.

**OBC Non-Creamy Layer (NCL) Certificate Format****FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES NCL)  
APPLYING FOR ADMISSION TO CENTRAL EDUCATIONAL INSTITUTIONS (CEIs),  
UNDER THE GOVERNMENT OF INDIA**

This to certify that Shri/Smt./Kum\* \_\_\_\_\_ Son/ Daughter\* of Shri/Smt.\*  
\_\_\_\_\_ of Village/ Town\* \_\_\_\_\_ District/ Division\* \_\_\_\_\_  
in the State/Union Territory \_\_\_\_\_ belongs to the \_\_\_\_\_ community that is recognized  
as a backward class under Government of India\*\*, Ministry of Social justice and Empowerment's Resolution No.  
\_\_\_\_\_ dated \_\_\_\_\_ \*\*\*.

Shri/Smt./Kum.\* \_\_\_\_\_ and his/ her family ordinarily reside(s) in the  
\_\_\_\_\_ District/Division of the \_\_\_\_\_ State/ Union Territory. This is also  
to certify that he/she does NOT belong to the persons/ sections (Creamy Layer) mentioned in Column 3 of the Schedule to the  
Government of India, Department of Personnel & Training O.M. No. 36012/22/93 Estt. (SCT) dated 08/09/93 which is amended vide  
OM No. 36033/2004 Estt. (Res.) dated 09/03/2004, further amended vide OM No. 36036/2/2013 Estt. (Res.) dtd. 30/05/2014\*\*\*\*.

Place: \_\_\_\_\_ District Magistrate/  
Deputy Commissioner/  
Dated: \_\_\_\_\_ Any other Competent Authority  
(With seal of the Office)

\*- Please delete word(s) which are not applicable.

\*\* - As listed in the Annexure (for FORM OBC NCL).

\*\*\* - The authority issuing the certificate needs to mention the details of Resolution of Government of India, in which the caste of the candidate is mentioned as OBC.

\*\*\*\* - As amended from time to time.

**NOTE:**

- (a) The term 'Ordinarily resides' used here will have the same meaning as in Section 20 of the Representation of the people Act, 1950.
- (b) The authorities competent to issue Caste Certificates are indicated below:
- (i) District Magistrate/ Additional Magistrate/ Collector/ Deputy Commissioner/ Additional Deputy Commissioner/ Deputy Collector/ 1<sup>st</sup> Class Magistrate/ Sub Divisional magistrate/ Taluka Magistrate/ Executive Magistrate/ Extra Assistant Commissioner (not below the rank of 1<sup>st</sup> Class Stipendiary Magistrate).
- (ii) Chief Presidency Magistrate/ Additional Chief Presidency Magistrate/ Presidency Magistrate.
- (iii) Revenue Office not below the rank of Tehsildar' and
- (iv) Sub Divisional Officer of the area where the candidate and/or his family resides.

**Declaration by the Candidate in Lieu of OBC-NCL Certificate**

Name of the Candidate: \_\_\_\_\_

Address: \_\_\_\_\_

Passport Size  
Photo

Mobile No: \_\_\_\_\_

E mail: \_\_\_\_\_

I understand that as per the new guidelines from the Ministry of Personnel, Public Grievances and pensions, GoI, I am required to submit OBC-NCL certificate issued on **or after April 2020**.

Since I have not been able to collect the said certificate on time, I may kindly be allowed to appear in JNUEE 2021-22 provisionally and I will upload the OBC-NCL certificate (issued on or after April 1, 2020) at the University web portal at the earliest. I understand that failure to do so will lead to the withdrawal of OBC-NCL benefit. I also understand that, if qualified, my category will be adjusted accordingly in the Common Rank list.

Signature of Father/ Mother

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Signature of Applicant:

Date:

**Form - V**

**Certificate of Disability**

(In case of amputation or complete permanent paralysis of limbs or dwarfism and in case of blindness)

[See rule 18 (1)]

(Name and Address of the Medical Authority issuing the Certificate)

Recent passport size  
attested photograph

(Showing face only) of the  
person with disability.

Certificate No. \_\_\_\_\_

Date: \_\_\_\_\_

This is to certify that I have carefully examined Shri/Smt./Kum. \_\_\_\_\_  
Son/wife/daughter of Shri \_\_\_\_\_ Date of birth (DD/MM/YY) \_\_\_\_\_ Age \_\_\_\_\_ Years,  
male/female \_\_\_\_\_ registration No. \_\_\_\_\_ Permanent resident of House No. \_\_\_\_\_  
Ward/Village/Street \_\_\_\_\_ Post office \_\_\_\_\_ District \_\_\_\_\_ State \_\_\_\_\_,  
whose photograph is affixed above, and am satisfied that:

(A) he/she is a case of:

- Locomotor disability
- dwarfism
- blindness

(Please tick as applicable)

(B) The diagnosis in his/her case is \_\_\_\_\_.

(A) he/she has \_\_\_\_\_% (in figure) \_\_\_\_\_ percent (in words) permanent locomotor disability/ dwarfism/ blindness in relation to his/her \_\_\_\_\_ (Part of body) as per guidelines (\_\_\_\_\_ number and date of issue of the guidelines to be specified).

2. The applicant has submitted the following documents as proof of residence: -

Nature of Document	Date of Issue	Details of authority issuing certificate

(Signature and Seal of Authorised Signatory of notified Medical Authority)

Signature/thumb impression  
of the person in whose favour  
certificate of disability is  
issued

**Form – VI**  
 Certificate of Disability  
 (In case of multiple disabilities)  
 [See rule 18 (1)]  
 (Name and Address of the Medical Authority issuing the Certificate)

Recent passport size attested photograph (Showing face only) of the person
--

Certificate No. \_\_\_\_\_

Date: \_\_\_\_\_

This is to certify that we have carefully examined Shri/Smt./Kum. \_\_\_\_\_ Son/wife/daughter of Shri \_\_\_\_\_ Date of birth (DD/MM/YY) \_\_\_\_\_ Age \_\_\_\_\_ Years, male/female \_\_\_\_\_ Registration No. \_\_\_\_\_ Permanent resident of House No. \_\_\_\_\_ Ward/Village/Street \_\_\_\_\_ Post Office \_\_\_\_\_ District \_\_\_\_\_ State \_\_\_\_\_ whose photograph is affixed above, and am satisfied that:

(A) he/she is a case of Multiple Disability. His/her extent of permanent physical impairment/disability has been evaluated as per guidelines (\_\_\_\_\_ number and date of issue of the guidelines to be specified) for the disabilities ticked below, and is shown against the relevant disability in the table below:

Sl. No.	Disability	Affected part of body	Diagnosis	Permanent physical impairment/mental disability (in %)
1.	Locomotor disability	@		
2.	Muscular Dystrophy			
3.	Leprosy cured			
4.	Dwarfism			
5.	Cerebral Palsy			
6.	Acid attack Victim			
7.	Low vision	#		
8.	Blindness	#		
9.	Deaf	€		
10.	Hard of Hearing	€		
11.	Speech and Language disability			
12.	Intellectual Disability			
13.	Specific Learning Disability			
14.	Autism Spectrum Disorder			
15.	Mental Illness			
16.	Chronic Neurological Conditions			
17.	Multiple sclerosis			
18.	Parkinson's disease			
19.	Haemophilia			
20.	Thalassemia			
21.	Sickle Cell disease			

(B) In the light of the above, his/her over all permanent physical impairment as per guidelines (\_\_\_\_\_ number and date of issue of the guidelines to be specified), is as follows: -

In figure: - \_\_\_\_\_ percent

In words: - \_\_\_\_\_ percent

2. This condition is progressive/non-progressive/likely to improve/ not likely to improve.

3. Reassessment of disability is:

(i) Not necessary,

Or

(ii) is recommended/after \_\_\_\_\_ years \_\_\_\_\_ months, and therefore this certificate shall be valid till \_\_\_\_\_ (DD) (MM) (YY) \_\_\_\_\_

@ - e.g. Left/right/both arms/legs

# - e.g. Single eye

€ - e.g. Left/Right/both ears

4. The applicant has submitted the following document as proof of residence: -

Nature of document	Date of issue	Details of authority issuing certificate

5. Signature and seal of the Medical Authority.

Name and Seal of Member	Name and Seal of Member	Name and Seal of the Chairperson

Signature/thumb impression of the person in whose favour certificate of disability is issued.
---

**Form - VII**  
**Certificate of Disability**  
 (In case other than those mentioned in forms V and VI)  
 (Name and Address of the Medical Authority issuing the Certificate)  
 [See rule 18 (1)]

Recent passport size attested photograph  (Showing face only) of the person with disability.
--

Certificate No. \_\_\_\_\_

Date: \_\_\_\_\_

This is to certify that we have carefully examined Shri/Smt/Kum. \_\_\_\_\_ Son/wife/daughter of Shri \_\_\_\_\_ Date of birth (DD/MM/YY) \_\_\_\_\_ Age \_\_\_\_\_ Years, male/female \_\_\_\_\_ Registration No. \_\_\_\_\_ Permanent resident of House No. \_\_\_\_\_ Ward/Village/Street \_\_\_\_\_ post office \_\_\_\_\_ District \_\_\_\_\_ State \_\_\_\_\_, whose photograph is affixed above, and am satisfied that he/she is a case of \_\_\_\_\_ disability. His/her extent of percentage physical impairment/disability has been evaluated as per guidelines (\_\_\_\_\_ number and date of issue of the guidelines to be specified) and is shown against the relevant disability in the table below: -

Sl. No.	Disability	Affected part of body	Diagnosis	Permanent physical impairment/mental disability (in %)
1.	Locomotor disability	@		
2.	Muscular Dystrophy			
3.	Leprosy cured			
4.	Cerebral Palsy			
5.	Acid attack Victim			
6.	Low vision	#		
7.	Deaf	£		
8.	Hard of Hearing	£		
9.	Speech and Language disability			
10.	Intellectual Disability			
11.	Specific Learning Disability			
12.	Autism Spectrum Disorder			
13.	Mental illness			
14.	Chronic Neurological Conditions			
15.	Multiple sclerosis			
16.	Parkinson's disease			
17.	Haemophilia			
18.	Thalassemia			
19.	Sickle Cell disease			

(Please strike out the disabilities which are not applicable)

2. The above condition is progressive/non-progressive/likely to improve/ not likely to improve.

3. Reassessment of disability is:

(i) not necessary, or

(ii) is recommended/after \_\_\_\_\_ years \_\_\_\_\_ months, and therefore this certificate shall be valid till (DD)/(MM)/(YY) \_\_\_\_\_

@ - e.g. Left/right/both arms/legs

# - e.g. Single eye/ both eyes

£ - e.g. Left/Right/both ears

4. The applicant has submitted the following document as proof of residence: -

Nature of document	Date of issue	Details of authority issuing certificate

(Authorised Signatory of notified Medical Authority)  
(Name and Seal)

Signature/thumb impression of the person in whose favour certificate of disability is issued.
---

Countersigned  
 {Countersignature and seal of the Chief Medical officer/medical superintendent/Head of Government hospital, in case the certificate is issued by a medical authority who is Not a Government servant (with seal)}

Note: In case this certificate is issued by a medical authority who is not a Government servant, it shall be valid only if countersigned by the Chief Medical Officer of the District.



## V. GUIDELINES FOR PROVIDING SCRIBE TO THE CANDIDATES WITH BENCHMARK DISABILITY

Scribe facility shall be provided to the eligible candidates by NTA as per Government of India/NTA guidelines.

## VI. DEPRIVATION POINTS

### *Details of Deprivation points awarded to candidates*

Deprivation Points (upto a maximum of 12 points) are given to the candidates of the following categories:

1. **A candidate would get separate points for each educational level i.e. 10<sup>th</sup>/ High School/ Matriculation/ 12<sup>th</sup> level/ Intermediate, B.A./B.Sc. and M.A./M.Sc. from either a Quartile 1 or Quartile 2 District as given below:**

#### **Quartile 1 Marks**

Programme of study applied for	*10 <sup>th</sup> /12 <sup>th</sup>	UG
UG.	6	
PG	3	3

#### **Quartile 2 Marks**

Programme of study applied for	*10 <sup>th</sup> /12 <sup>th</sup>	UG
UG	4	
PG	2	2

#### **\*Note for 10<sup>th</sup> and 12<sup>th</sup> class quartile**

- If 10<sup>th</sup> from Q1 and 12<sup>th</sup> from Q1 Then benefit of Q1**  
**If 10<sup>th</sup> from Q1 and 12<sup>th</sup> from Q2 Then benefit of Q1**  
**If 10<sup>th</sup> from Q2 and 12<sup>th</sup> from Q1 Then benefit of Q1**  
**If 10<sup>th</sup> from Q2 and 12<sup>th</sup> from Q2 Then benefit of Q2**

List of Districts quartile drawn from each state in the form of Quartile 1 & Quartile 2 by using the following four parameters as per the provisional figures of the Census of India 2011 are listed below for information of intending candidates:

1. **Percent female illiteracy;**
2. **Percent agricultural workers;**
3. **Percent rural population; and**
4. **Percentage of household having no latrine within the premises.**

Candidates hailing from Districts of Quartile 1 or 2 (The Districts in which the candidates reside) and have passed and/or appearing in their respective qualifying examination through Distant Education programme are also eligible for award of deprivation points, as the case may be. They should indicate the State, District and District Code under respective column of the Application Form. They should also indicate in respective Column of the application that they have passed and/or appearing in the qualifying examination through Distant Education programme.

2. All Kashmiri Migrants are eligible for grant of 05 (five) deprivation points on production of registration documents from the notified authorities certifying their Kashmiri Migrant Status.

3. All female/Transgender candidates are eligible for deprivation points as per details given below:

SC/ST/OBC/PH/Quartile 1/Quartile 2	7 deprivation points
Other Candidates (UR not falling under either Quartile 1/Quartile 2)	5 Deprivation Points

**This benefit of deprivation points will be given only to UG/PG/COP/ADOP programmes except B.Tech., M.Sc. (Biotechnology), M.Sc. (Computational and Integrative Sciences), MBA and Ph.D. programmes.**

**DETAILS OF THE STATE-WISE LISTS OF VARIOUS DISTRICTS OF QUARTILE 1 AND 2 DRAWN BY THE UNIVERSITY (As per the provisional figures of the Census of India 2011)**

State	District Name & Code		Distt. Code	
	Quartile 1	Quartile 2		
ANDHRA PRADESH	Mahbubnagar	0101	Prakasam	0151
	Srikakulam	0102	Adilabad	0152
	Vizianagaram	0103	Nalgonda	0153
			Kurnool	0154
			Medak	0155
			Anantapur	0156
			Khammam	0157
			Nizamabad	0158
			Warangal	0159
		Karimnagar	0160	
ARUNACHAL PRADESH	Kurung Kumey	0104	East Kameng	0251
	Anjaw	0105	Upper Subansiri	0252
			Changlang	0253
			Tirap	0254
			Upper Siang	0255
ASSAM			Kokrajhar	0351
			Chirang	0352
			Dhemaji	0353
			Baksa	0354
			Darrang	0355
			Dhubri	0356
			Udalguri	0357
			Karbi Anglong	0358
		Morigaon	0369	
BIHAR	Madhepura	0401	Bhojpur	0451
	Araria	0402	Rohtas	0452
	Supaul	0403	Begusarai	0453
	Purnia	0404	Bhagalpur	0454
	Banka	0405		
	Saharsa	0406		
	Madhubani	0407		
	Katihar	0408		
	Kishanganj	0409		
	West Champaran	0410		
	Sheohar	0411		
	East Champaran	0412		
	Sitamarhi	0413		
	Samastipur	0414		
	Khagaria	0415		
	Jamui	0416		
	Nawada	0417		
	Darbhanga	0418		
	Arwal	0419		
	Kaimur	0420		
	Gopalganj	0421		
	Saran	0422		
	Vaishali	0423		
	Gaya	0424		
	Siwan	0425		
	Jehanabad	0426		
	Aurangabad	0427		
	Lakhisarai	0428		
	Buxar	0429		
	Muzaffarpur	0430		
	Sheikhpura	0431		
	Nalanda	0432		

State	District Name & Code Quartile 1	State	District Name & Code Quartile 2	State
<b>CHHATISGARH</b>	Bijapur	0501	Raigarh	0551
	Bastar Dantewada	0502	Rajnandgaon	0552
	Narayanpur	0503	Bilaspur	0553
	Kabirdham (Formerly Kawardha)	0504	Dhamtari	0554
	Bastar	0505	Koriya	0555
	Surguja	0506	Korba	0556
	Jashpur	0507		
	Mahasamund	0508		
	Kanker	0509		
	Janjgir - Champa	0510		
<b>GUJARAT</b>	Dahod	0601	Sabarkantha	0651
	Narmada	0602	Patan	0652
	Tapi	0603	Surendranagar	0653
	Banaskantha	0604		
	Dang	0605		
	Panchmahal	0606		
<b>HARYANA</b>	Mewat	0701		
<b>HIMACHAL PRADESH</b>			Chamba	0851
			Kullu	0852
<b>JAMMU &amp; KASHMIR</b>	Ramban	0901	Rajouri	0951
	Reasi	0902	Poonch	0952
	Kishtwar	0903	Doda	0953
			Shopian	0954
			Kulgam	0955
			Udhampur	0956
			Kathua	0957
		Kupwara	0958	
<b>JHARKHAND</b>	Godda	1001	Koderma	1051
	Garhwa	1002	Hazaribag	1052
	Dumka	1003	Seraikela Kharsawan	1053
	Latehar	1004		
	Chatra	1005		
	Gumla	1006		
	Khunti	1007		
	Pakur	1008		
	Simdega	1009		
	West Singhbhum	1010		
	Giridih	1011		
	Jamtara	1012		
	Sahibganj	1013		
	Palamu	1014		
	Lohardaga	1015		
Deoghar	1016			
<b>KARNATAKA</b>	Yadgir	1101	Chamarajnaragar	1151
	Raichur	1102	Koppal	1152
			Vijyapur	1153
			Mandya	1154
			Bagalkot	1155
			Chitradurga	1156
			Bidar	1157
			Gulbarga	1158
			Chikkaballapur	1159
			Belgaum	1160
			Gadag	1161
			Tumkur	1162
			Haveri District	1163
		Hassan	1164	

State	District Name & Code	State	District Name & Code	State
<b>MADHYA PRADESH</b>	<b>Quartile 1</b>		<b>Quartile 2</b>	
	Alirajpur	1201	Datia	1251
	Jhabua	1202	Betul	1252
	Dindori	1203	Balaghat	1253
	Barwani	1204	Rewa	1254
	Sheopur	1205	Anuppur	1255
	Sidhi	1206	Damoh	1256
	Tikamgarh	1207	Sehore	1257
	Rajgarh	1208	Morena	1258
	Shivpuri	1209	Neemuch	1259
	Mandla	1210	Vidisha	1260
	Panna	1211	Ratlam	1261
	Singrauli	1212	Bhind	1262
	Khargone (West Nimar)	1213	Chhindwara	1263
	Ashok Nagar	1214	Katni	1264
	Dhar	1215	Dewas	1265
	Umariya	1216	Narsinghpur	1266
	Shajapur	1217	Raisen	1267
	Guna	1218	Satna	1268
	Chhatarpur	1219	Burhanpur	1269
Seoni	1220	Harda	1270	
Khandwa (East Nimar)	1221			
Mandsaur	1222			
Shahdol	1223			
<b>MAHARASHTRA</b>	Nandurbar	1301	Gadchiroli	1351
			Jalna	1352
			Hingoli	1353
			Beed	1354
			Osmanabad	1355
			Parbhani	1356
			Washim	1357
			Dhule	1358
			Nanded	1359
			Yavatmal	1360
			Buldhana	1361
		Latur	1362	
<b>MEGHALAYA</b>			Jaintia Hills	1451
<b>MIZORAM</b>			Lawngtlai	1551
<b>NAGALAND</b>			Mon	1651
			Kiphire	1652
			Tuenseng	1653
<b>ORISSA</b>	Nabarangpur	1701	Balasore	1751
	Malkangiri	1702	Nayagarh	1752
	Nuapada	1703	Kendrapara	1753
	Kalahandi	1704	Bhadrak	1754
	Rayagada	1705	Dhenkanal	1755
	Koraput	1706	Ganjam	1756
	Gajapati	1707	Jajpur	1757
	Boudh (Bauda)	1708	Angul	1758
	Kandhamal	1709		
	Debagarh (Deogarh)	1710		
	Mayurbhanj	1711		
	Balangir	1712		
	Subarnapur (Sonepur)	1713		
Bargarh (Baragarh)	1714			
Kendujhar (Keonjhar)	1715			

State	District Name & Code Quartile 1	State	District Name & Code Quartile 2	State
<b>RAJASTHAN</b>	Pratapgarh	1801	Nagaur	1851
	Banswara	1802	Udaipur	1852
	Jalore	1803	Dholpur	1853
	Barmer	1804	Alwar	1854
	Jhalawar	1805	Pali	1855
	Dungapur	1806	Churu	1856
	Karauli	1807	Jodhpur	1857
	Jaisalmer	1808		
	Chittorgarh	1809		
	Bundi	1810		
	Dausa	1811		
	Tonk	1812		
	Sawai Madhopur	1813		
	Baran	1814		
	Rajsamand	1815		
	Sirohi	1816		
	Bharatpur	1817		
	Bhilwara	1818		
<b>TAMIL NADU</b>	Ariyalur	1901	Perambalur	1951
			Viluppuram	1952
			Dharmapuri	1953
			Tiruvannamalai	1954
			Pudukkottai	1955
			Krishnagiri	1956
<b>UTTAR PRADESH</b>	Shravasti	2001	Ghazipur	2051
	Balrampur	2002	Etah	2052
	Bahraich	2003	Mahoba	2053
	Siddharthnagar	2004	Unnao	2054
	Gonda	2005	Azamgarh	2055
	Maharajganj	2006	Shahjahanpur	2056
	Kaushambi	2007	Ambedkar Nagar	2057
	Chitrakoot	2008	Pilibhit	2058
	Budaun	2009	Deoria	2059
	Kushinagar	2010	Ayodhya	2060
	Lalitpur	2011	Hamirpur	2061
	Sitapur	2012	Kanpur Dehat (Ramabai Nagar)	2062
	Sant Kabir Nagar	2013	Mainpuri	2063
	Barabanki	2014	Mirzapur	2064
	Basti	2015	Ballia	2065
	Lakhimpur Kheri	2016	Kannauj	2066
	Hardoi	2017	Chandauli	2067
	Sultanpur	2018	Sant Ravidas Nagar	2068
	Raebareli	2019	Auraiya	2069
	Pratapgarh	2020	Hathras (Mahamaya Nagar)	2070
	Kanshi Ram Nagar	2021	Farrukhabad	2071
	Banda	2022	Jalaun	2072
	Sonbhadra	2023	Gorakhpur	2073
	Jaunpur District	2024	Rampur	2074
	Fatehpur	2025	Jyotiba Phule Nagar	2075
		Mau	2076	
		Etawah	2077	

State	District Name & Code Quartile 1	State	District Name & Code Quartile 2	State
UTTARAKHAND			Uttarkashi	2151
			Bageshwar	2152
			Rudraprayag	2153
			Tehri Garhwal	2154
			Almora	2155
			Champawat	2156
WEST BENGAL	Purulia	2201	Bankura	2251
	Uttar Dinajpur	2202	Birbhum	2252
			Malda	2253
			Dakshin Dinajpur	2254
			Paschim Medinipur	2255

**Note: Reservation and Benefit of deprivation point are given on the basis of particulars furnished by the candidates in the relevant field of the online application form. In case of failure to produce documentary evidence at the time of admission/registration, the candidate will be declared as ineligible for admission. In case of submission of false information by the candidate, his/her admission will be cancelled, ipso-facto.**

## VII. SUPERNUMERARY SEATS

### a) WIDOWS/WARDS OF DEFENCE PERSONNEL

The University reserves 5% reservation of supernumerary seats for widows/wards of Armed Forces Personnel killed/disabled in action or during peace time for Admission to University programmes shall be in order of following priority:

- Priority I : Widows/Wards of Defence personnel killed in action.
- Priority II : Wards of Defence personnel disabled in action and boarded out from service with disability attributable to military service.
- Priority III : Widows/Wards of Defence personnel who died while in service with death attributable to military service.
- Priority IV : Wards of Defence personnel disabled in service and boarded out with disability attributable to military service.
- Priority V : Wards of Ex-Servicemen and serving personnel including personnel of Police Forces/Paramilitary who are in receipt of Gallantry Awards:
- i) Param Vir Chakra
  - ii) Ashok Chakra
  - iii) Sarvottam Yudh Seva Medal
  - iv) Maha Vir Chakra
  - v) Kirti Chakra
  - vi) Uttam Yudh Seva Medal
  - vii) Vir Chakra
  - viii) Shaurya Chakra
  - ix) Yudh Seva Medal
  - x) President Police Medal for Gallantry
  - xi) Sena, Nau Sena, Vayu Sena Medal
  - xii) Mention-in-Despatches.
  - xiii) Police Medal for Gallantry
- Priority VI : Wards of Ex-Servicemen.
- Priority VII : Wives of :
- i) defence personnel disabled in action and boarded out from service.
  - ii) defence personnel disabled in service and boarded out with disability attributable to military service
  - iii) ex-Servicemen and serving personnel who are in receipt of Gallantry Awards.
- Priority VIII : Wards of Serving Personnel.
- Priority IX : Wives of Serving Personnel.

The applicants seeking admission under this category need to produce a certificate in the prescribed format (Annexure-II), issued by any of the following authorities:

1. Secretary, Kendriya Sainik Board, Delhi
2. Secretary, Rajya Zila Sainik Board
3. Officer-in-charge, Record Office
4. Ministry of Home Affairs (For Police Personnel in receipt of Gallantry Awards).

(Supernumerary seats meant for Widows/wards of Defence Personnel are earmarked for UG/PG/Part-time programmes except B.Tech., M.Sc. (Biotechnology), M.Sc. (Computational and Integrative Sciences), MBA and Ph.D. programme).

b) **WARDS OF JNU EMPLOYEES (GROUP B, C, & D)**

<b>Programme</b>	<b>Number of Seats</b>
B.A. (Hons.) Programme 1st year	<b>05</b>
M.A./M.Sc./MCA Programme	<b>03</b>

c) **Foreign Nationals:**

The University offers up to 15% (Supernumerary) of the seats in each programme (**except Ph.D. programme**) of study to Foreign Nationals. These seats are over and above the intake fixed for each programme of study.

Note: The admission of Foreign students for Ph.D. programmes may be considered in compliance with UGC 2016 Regulations regarding number of research scholars faculty (i.e. Professor/Associate Professor/Assistant Professor) can supervise. Foreign students shall be offered seats only if seats are left vacant in any discipline after being offered to Indian candidate who have appeared in JNUEE.

**FORMAT**  
**EDUCATIONAL CONCESSION CERTIFICATE**

(On the proper Letter Head with complete address, telephone number(s) and e-mail ID)  
Office of the \_\_\_\_\_

This is to certify that Mr. / Miss. \_\_\_\_\_ is son / daughter of \_\_\_\_\_  
(No. \_\_\_\_\_) resident of \_\_\_\_\_.

The above named officer / JCO / OR \_\_\_\_\_:

- Priority I** : Widows/Wards of Defence personnel killed in action on \_\_\_\_\_ during \_\_\_\_\_.
- Priority II** : Wards of Defence personnel disabled in action on \_\_\_\_\_ during \_\_\_\_\_ and boarded out from service with disability attributable to military service.
- Priority III** : Widows/Wards of Defence personnel who died while in service with death attributable to military service.
- Priority IV** : Wards of Defence personnel disabled in service and boarded out with disability attributable to military service.
- Priority V** : Wards of Ex-Servicemen and serving personnel including personnel of Police Forces/Paramilitary who are in receipt of Gallantry Awards:
- i) Param Vir Chakra
  - ii) Ashok Chakra
  - iii) Sarvottam Yudh Seva Medal
  - iv) Maha Vir Chakra
  - v) Kirti Chakra
  - vi) Uttam Yudh Seva Medal
  - vii) Vir Chakra
  - viii) Shaurya Chakra
  - ix) Yudh Seva Medal
  - x) President Police Medal for Gallantry
  - xi) Sena, Nau Sena, Vayu Sena Medal
  - xii) Mention-in-Despatches.
  - xiii) Police Medal for Gallantry
- Priority VI** : Wards of Ex-Servicemen.
- Priority VII** : Wives of:
- i) Defence personnel disabled in action and boarded out from service.
  - ii) defence personnel disabled in service and boarded out with disability attributable to military service
  - iii) ex-Servicemen and serving personnel who are in receipt of Gallantry Awards.
- Priority VIII** : Wards of Serving Personnel.
- Priority IX** : Wives of Serving Personnel.

Mr. / Miss. / Mrs. \_\_\_\_\_ son / daughter/ wife of \_\_\_\_\_ Officer / JCO / OR is eligible for educational concession for admission in **Jawaharlal Nehru University** against the Armed Forces Category under Priority No. \_\_\_\_\_.

No.: \_\_\_\_\_ Date: \_\_\_\_\_

(Signature)

Seal <Rubber Stamp> with Name & Designation



## VIII. Dr. B. R. AMBEDKAR CENTRAL LIBRARY

Dr. B. R. Ambedkar Central Library was established in the year 1969 to support the educational and research programmes of the University by providing physical and online access to information. It is housed in Nine-storey tower building with a carpet area of about one lakh sq. ft. In accordance with the objectives of the University, the Central Library has the objectives and aims to procure, organize and disseminate information in different formats. It supports and promotes the use of its rich and diverse collection among the users.

**Timings:** Library is open 24x7 throughout the year, except three national holidays and Holi festival. The Library circulation services remain open from 9.00 a.m. to 8.00 p.m. throughout the year. During the examination days, the library services are extended up to 12 midnight for 45 days in each semester.

Library is fully automated and is using Virtua, Integrated Library Management Software for housekeeping jobs in different sections. The electronic resources can be accessed through the remote access platform 24X7, anytime and anywhere.

Library has a collection of 5 Lac + volumes which includes books, theses, dissertation, bound volume of journals, newsletters, Govt. and UN report, encyclopedias, dictionaries, thesaurus, glossaries, CDs ROMs, charts, maps, micro rolls, audio/video cassettes etc. Library is a depository of all Govt. publications and publications of some important international organisations like WHO, European Union, United Nations and its allied agencies etc.

**Print /E-Books/E-Journals and Online Databases:** Dr B R Ambedkar Central Library has subscription to 48 Print Magazines, 40 Print Newspapers and 27 Online Databases for the year 2020. It also provides access to 14 online databases through UGC eSS-Consortia. These online databas includes:

Emerald eShodh Sindhu 312 eJournals Collection, IEEE IEL Online, Prowess, ISI Emerging Markets, Science Online (AAAS), PNAS Tier-4, SIAM Locus, ACM Digital Library, China Academic Journals (CAJ-Web- Series F, G, H & J ), EBSCO Academic Search Complete, Hein Online Academic Core Database, Institute of Physics, Manupatra, ProQuest Academic Research Library, Newspaper Direct – Library Press Display, Royal Society of Chemistry Gold – eSS Collection, SciFinder, Springer Nature includes Nature Chemistry, Nature Materials, Nature Microbiology, Nature Physics Journals, Sage Publishing (Management & Organization Studies 120 subject collection & Sage Business Collection), Incites, citation-based research analytics tool, Turnitin-Originality Check, Grammarly Writing Support & Plagiarism & EBSCO Discovery Service, Ezproxy License. The Library is also having the perpetual access of ProQuest Historical Newspapers Times of India Archive, Society for Industrial and Applied Mathematics (SIAM) and South Asian Archive.

Further, library has a rich collection of 2 Lakhs e-books from various publishers.

**Some of the services provided by the Dr. B. R. Ambedkar Central Library are as follows:**

**Information Desk:** To provide information about Library and its collections and services.

**Information Browsing Unit:** Library provides a separate reading room for Faculty Members. Besides, reading facilities, computers with scanning facilities have also been made available in the Reading Room.

**New Books Display:** New Books purchased by the Library are displayed on every Monday. All these Books are kept for consultation at the Circulation Counter.

**Digital Library Services:** The library provides digital services for online resources accessible through IP authentication and remote access through single sign on facility. It also has a very interactive user oriented website (<http://www.jnu.ac.in/library>) for various library services, collection and information 24x7 anytime anywhere.

**Helen Keller Unit:**

In order to meet the special needs of the visually Challenged students of the University, a separate unit named Helen Keller is located at the Ground Floor. Eighteen desktops, One Braille printer with multilingual support and 12 scanners are available for digital delivery of information. All the desktops are installed with screen reading (JAWS) software to facilitate visually challenged scholars in their studies. All the students have been provided digital voice recorders. Laptops are also issued to the visually challenged students of the University at M.Phil. and Ph.D. levels. Dedicated staff is available for scanning the hard copy documents and books for visually impaired students.

**Institutional Repository:** Central Library, JNU is in the process of creating an Institutional Repository of faculty publications using DSpace.

**Cyber Library:** Cyber Library is located at the Ground Floor of Central Library with 144 Computers for the students and research scholars to access the available online resources and search the catalogue of the Library.

**Single Window Search:** At present Central Library, JNU has provided single window access system to all e-resources available at Central Library. The discovery services can be accessed from JNU library home page as well as through remote access.

**Online Press-Clippings Database:** The press clippings collection consists of over 8 lacs newspaper articles on international and bilateral relations, political, economic, socio-cultural, environmental issues etc. which are readily accessible to the users through WEBOPAC.

**Electronic Theses and Dissertations:** Approximately 20,000 + digital copies of theses and dissertations are available for online access through Library Web-OPAC. Further, approximately 5000+ Ph.D. theses have been submitted to INFLIBNET, Shodhganga and are accessible through the Shodhganga platform.

**Other services:**

- Access to CD-ROMs, books / journals and statistical data through Automation Unit.
- Overnight issue facilities of textbooks in all disciplines through textbook section.
- Inter library loan of books and Document Delivery Services from other libraries.
- Locker facility for JNU Researchers, Faculty and Visually & Physically Challenged users.
- Consultation facility for Research Scholars of other Universities/Institutions
- Orientation sessions, Author Workshops, Staff Development programmes for students, researchers, faculty members and staff.

**EXIM Bank Economics Library:** The Exim Bank Economics Library, part of Dr. B.R. Ambedkar Central Library has a special collection of 14210 Economics books and 2735 back volumes of 56 journals. Automated Library Services, inter-library loan, reference and book lending facilities are provided to the users.

**Archives on Contemporary History:** The archives on contemporary history (ACH), located in 6th Floor of Dr. B.R. Ambedkar Central Library is a unique collection of materials pertaining to the Indian Nationalist Movement, especially on the revolutionary trends in the National Movement. The materials preserved in the Archives on Contemporary History are rare and unique in nature and many of them are not available in any other library or Archives. The index for the documents preserved in the Archives is available at [https://www.jnu.ac.in/sss/archive-Index\\_list](https://www.jnu.ac.in/sss/archive-Index_list). It has digitized 7500 documents from its collections and made them available online.

**There are other Libraries located at different Schools and Centres.**

- i. School of Arts & Aesthetics
- ii. Centre for Historical Studies Library.
- iii. Centre for Political Studies Library.
- iv. Centre for Law and Governance Library.
- v. School of Computer and System Sciences Library.
- vi. Academic Staff College Library.
- vii. SIS Reading Hall.

Please visit <http://lib.jnu.ac.in> for more information and updates.

## IX. FELLOWSHIPS/SCHOLARSHIPS/ AWARDS

The details of Fellowships/Scholarships like UGC-CSIR Junior Research Fellowships, UGC Scholarships & Fellowships, Ayush fellowship, State Government fellowships, etc, operated by external agencies/other departments can be referred to by the interested candidates by accessing the website of the concerned departments.

Applications for internal Fellowships/Scholarships/ Awards will be invited from registered and eligible students as per the terms & conditions of the fellowships and subject to availability of funds, through a separate circular/notice.

## X. LINGUISTIC EMPOWERMENT CELL

Linguistic Empowerment Cell (LEC) is committed to empowerment and capacity building programs for students who need linguistic skills for their academic pursuits in JNU. LEC runs foundation courses in English for students who may not have had English as a medium of instruction prior to coming to JNU and who may find it difficult to grasp what is offered in the regular programs in their respective centres and schools. LEC also conducts courses for students who wish to learn academic writing skills. Learners can opt for the 8 to 10 am slot or the 4 to 6 pm slot depending on the timing of their regular programs. Foreign students from non-English speaking countries are encouraged to do these courses. Students are awarded certificates of proficiency after the completion of two successive semesters.

Intensive short term programs are conducted in the summer and winter break in order to address the specific concerns of language in academic writing for research students.

LEC organizes lessons in "Communication Skills in Hindi" for foreign to students as well, so as to enable them to integrate well in the

social and cultural life on the campus. LEC also organizes basic courses in Sanskrit for beginners. In accordance with the principles of social justice and empowerment, JNU also organizes special classes twice a week in Indian Sign Language for students, staff, faculty and other JNU-ites, to empower them to communicate with the deaf. Participants are awarded special certificates after the end of the two semester long program.

For registration and queries regarding these courses please write to [linguistic.e.c@gmail.com](mailto:linguistic.e.c@gmail.com).

## XI. HOSTEL FACILITIES

**It is important to note that in view of the limited hostel accommodation, the candidates should clearly understand that the grant of admission to a full-time programme of study in the University**

- a. Would not ensure allotment of hostel accommodation**
- b. Accommodation will be offered to the eligible applicant's subject to availability**
- c. Candidates admitted to Part-Time programmes of study are not eligible for hostel accommodation**
- d. No request for out of turn allotment of hostel on medical ground will be entertained.**

- 1 All selected students who need Hostel/Dormitory accommodation will be required to apply in the prescribed application form obtainable from the Office of the Dean of Students. Admission in the Hostel/Dormitory is in accordance with the Hostel Points and Rank in his/her respective category. **The last date for receipt of application form for hostel allotment will be the last date of admission.**
- 2 **The reservation, hostel allotment (Priority) and reservation/concession/exemption in hostel fee etc. to SC/ST/PWD/OBC (Non-creamy layer)/EWS are as per University rules.**
- 3 The criteria for allotment of hostel accommodation by the University is as under:

### **First Priority (P-I)**

- a. Students admitted to full-time programs in the current year, who have passed their qualifying examinations from places outside Delhi and are not resident of Delhi except clause mentioned in P-II category and those who are admitted to a program at a level at which the student already has a degree or has pursued/taken admission in any institute/studying in JNU at the same level with hostel accommodation.
- b. Students who are not from NCT of Delhi but have passed their qualifying examinations from Delhi and stayed in recognized University/College hostel, subject to their furnishing documentary evidence from the Head of the Institution regarding the details of their stay.
- c. Students who have passed their qualifying examinations from Delhi by making their own private arrangement for accommodation, but at the same time do not have their family/official residence of parents in Delhi, provided they submit satisfactory proof such as address proof and other related documents, as approved by IHA which shows that they belong to other states and do not have any residential property in Delhi.

### **Second Priority (P-II)**

- (a) Outstation students, who are admitted to a programme of study after passing their qualifying examination after a gap of 2 years but not more than 5 years before admission to JNU.
- (b) Outstation students, who are admitted to a programme of study at a level at which the student already has a degree or has pursued or has taken admission in any institute pursuing studies from an institution from outside Delhi or an institution from Delhi or from JNU (at the same level) with/without hostel accommodation except in the case of lateral entry in IInd year at graduate level course.

**Explanation: - For all purpose "resident of Delhi" mentioned in Clause 2.1 of Hostel Manual means the resident of National Capital Territory (NCT) Delhi and "outstation" means outside NCT Delhi.**

### **Third Priority (P III)**

The applicants who do not come under Priority I and II may be considered under P III category.

In this category the following sections may be considered such as:

- a. Students who reside in NCT Delhi.
- b. Who joins any course after 5 years of gap after passing the qualifying examination.
- c. Students admitted under study-leave and sponsored candidates.
- d. Any other category referred by the competent authority.

"Inclusion/exclusion in the above categories will be subject to decision taken by the Competent Authority.

**Students, who have already availed hostel facilities, are not eligible for the same in case of their admission to the same level of programme.**

The Hostel applicants will not be allowed to change the address and other information furnished/documents submitted along with the application, during the current academic year except in the case of change in parents' official residence due to transfer/retirement.

**(List of documents to be attached with the Hostel Form-- -----see Annexure)**

4. **Hostel charges as applicable to be paid at the time of allotment of hostel/dormitory.**
5. **Hostel residents are expected to observe the rules and regulations prescribed for them as well as all the requirements of corporate life and the social norms that living together demands.**
6. **Failure to observe discipline or violation of rules may make a student liable to disciplinary action which may result in the withdrawal of hostel facilities.**

**In case it is found at later stage that incorrect information has been furnished or some material facts have been concealed, the student is liable to eviction from the hostel besides such other action which the University may deem fit to take against him/her.**

- Note:**
1. **The above mentioned rules may be amended by the Competent Authority at any time.**
  2. **The hostel/dormitory/Second Roommate/Third Roommate will be allotted as per the rules of Hostel Manual applicable at the time of submission of application for hostel allotment and amended from time to time.**
  3. **The students residing in the hostel are abide by the rules and regulations of Hostel Manual.**

**ANNEXURE**

#### **DOCUMENTS TO BE ATTACHED WITH HOSTEL FORM**

1. Photocopy of the Admission Folio.
2. Copy of the subject Folio from the school/Centre.
3. Photocopy of **Passport/Voter ID/Aadhar Card/Domicile Certificate** (issued by the SDM/Tehsildar) – any of the **TWO** showing permanent address. The original document should be produced at the time of hostel allotment. **No other address proof will be entertained in this regard.**
4. Copy of Electricity Bill/Water Bill/House Tax Receipt/Paying Guest Receipt (any one) is mandatory for outstation students who were living or lived in private accommodation in Delhi during their studies.
5. Outstation Students whose parents are working in Delhi should submit a certificate from their parent's employer mentioning that they haven't been allotted any Residential accommodation in Delhi by the employer.
6. Those students who have more than one year Gap period but not above 5 years after qualifying examination, have to submit the migration certificate dully attested by the Admission Branch of JNU and work experience certificate from the employer, if any.
7. Outstation students who were staying in Delhi with their parents are transferred/retired should submit Transfer/Retirement order of parents with official resident vacating certificate from the employer.
8. Hostel resident certificate for those who are staying/stayed in college & other recognised hostels/Paying Guest accommodation.
9. Photocopies of the Anti Ragging affidavits.
10. Copies of Admission Offer Letter, Medical Insurance Certificate, Passport and Visa [Only for Foreign Nationals]
11. One recent colour passport size photograph.

## XII. UNIVERSITY HEALTH CENTRE

**Location:** University Health Centre (UHC) is located near the north gate of South West of Ganga Hostel.

**Staff:** Dean of Students is the Head of the Department of University Health Centre. The staff of the University Health Centre (UHC) comprises of CMO (SAG), I/C Health Centre, Senior Medical Officers, Part Time doctors for General OPD, Part time Specialists, a Part Time Homoeopathic Physician, Staff Nurses, Pharmacists, a Senior Technical Assistant, Technical Assistant, Lab Technician and other supportive staff functions under the overall supervision and administrative control of the Chief Medical Officer (SAG), I/C Health Centre. University Health Centre also has staff for control of mosquito-borne-diseases.

JNU is an educational institute, has its own Health Centre with medical facilities. Students who wish to avail additional facilities are advised to obtain medical insurance cover or any other medical coverage at their own cost to meet expenses on hospitalization, consultation in OPD of any hospital, investigation etc.

### **OPD Services:**

1. Doctors of the University Health Centre provide primary OPD facility. The student can just walk in for consultations and treatment for General OPD, Dental OPD and Homeopathy OPD.
2. Specialist: Consultations with the specialists in Internal Medicine, Psychiatry, ENT, Ophthalmology, Skin, Orthopedic, Gynecology, Cardiology, Pediatrics, General Surgery (consultation only) and Counseling Services are also available at the U.H.C.
3. Prior online specialists OPD appointments can be taken by login to [hcopd.jnu.ac.in](http://hcopd.jnu.ac.in).
4. Consultation facility with Part Time Clinical Psychologists is available in Health Centre during morning and evening shifts.
5. Medicines are provided free of cost to students from the pharmacy of the Health Centre as per University rules through Govt. Medical Stores Depot and local purchase from approved chemist inside the campus.
6. Laboratory facility provides spectrum of routinely available Hematological, Biochemical and Microbiology tests. Blood sample collection timings are from 8.30 A.M – 11.30 A.M on all normal working days.
7. Routine Immunization (only for tetanus).
8. Referral services to public hospitals for specialized treatment/hospitalization and other services which are not covered by the U.H.C.
9. Medical examinations for academic pursuits in the University.
10. The facilities (wife and children only) of married students can avail of such medical facilities as are available at the Health Centre on payment of medical fees for the family. They are provided with medicines which are available in the Health Centre. The student may contact the Health Centre to get further information. In case of spouse of female student medical facility is provided up to the age 25 years or till they start earning, whichever may be earlier.
11. When the Health Centre is not open, all the patients are advised to go to government hospital or any other hospital. No reimbursement is permissible for students as per UGC norms.

**Ambulance:** - An Advanced Life Support Vehicle and a Patient Transport Vehicle are available at the Health Centre for 24 hrs. A doctor is also available at night from 9 P.M. to 8 A.M. with the ambulance. Mobile numbers to contact the ambulance in emergency are also printed on the O.P.D cards/Medical Booklets.

**Emergency Ambulance mobile numbers: 9971728866 & 9971728877**

### **Services not covered:**

1. Dental services like making of denture, root canal treatment etc.
2. Medical examination/certifications for employment outside JNU, Insurance, legal and other non-academic purpose.
3. Laboratory tests and X-ray for purpose other than diagnosis and treatment.

**Timing:** The University Health Centre functions from 8 a.m. to 2 p.m. and 3 p.m. to 9 p.m. on all working days from Monday to Saturday. In the Evening the part time doctors provide services and essential medicines are provided to meet the immediate needs of the students. Holi, Diwali, Sundays and National Holidays presently are observed as closed holidays. Health Centre functions between 8 a.m. to 2 p.m. on gazetted holidays.

**Health Service Fee:** Charged as per University Rules.

**Medical Facilities for Foreign Students:** Foreign Students are extended medical facilities at par with the Indian Students.

**For New Admission:**

- (i) **For Foreign Students:** Minimum Rupees One Lakh insurance cover will be mandatory for Foreign Students. They will be required to submit the copy of policy at the time of admission or as per the University Rules from time to time.
- (ii) **Indian Students:** Indian Students who are admitted to JNU in future are advised to take insurance cover of RS. One Lakh at least or more if desired.
- All these records/information shall be maintained in the office of Dean of Students.

**For already Registered Foreign Students of JNU:** Foreign Students who are already registered in JNU should also get a medical **insurance** cover and submit the relevant documents latest by failing which they will not be allowed to register in the following semester i.e. winter semester or it may be as per University Rules from time to time.

**Health Education:** Health Education is an integral part of University Health Service.

**General Policy Regarding Confidentiality:** Personal and medical histories of the patients are treated with utmost confidentiality. Notification to the parents and others is generally considered to be the responsibility of the students unless the condition of the student is serious or student is unable to assume responsibility for informing parents. OPD Card/Health Booklets with details of prescription remains with the patient/students.

**Health Advisory Committee:** Student representation on the Health Advisory Committee provides a liaison between the provider and the users of the service. The committee assesses, recommends programmes for development of services for benefit of the students.

### XIII. GAMES AND SPORTS

A student, at the University level is aware of the importance of physical activities and organised Sports and Games programmes which should be combined with his/ her academic pursuits. JNU provides the basic facilities for such activities in terms of the sport fields/courts and also playing equipment, both for practice and competitions.

The University's Sports Office is located in the Sports Stadium, and is being looked after by one full-time Asst. Director of Physical Education. Presently the following games are organised under the framework of a club, with elected Convener. Athletics, Badminton, Basketball, Cricket, Chess, Volleyball, Mountaineering & Trekking, Weightlifting, Power-Lifting & Body Building, Taekwondo, Football, Tennis, Table-Tennis & Yoga. The election of the Convenor(s) is normally done in September each year. Annual competitions in all games are conducted by the Club with the help of the Sports Office.

Each Hostel has separate facilities for recreation which includes outdoor courts for Basketball, Badminton and Volleyball as also facilities for indoor games like Table - Tennis, Chess, Carrom, etc. Each hostel gets an annual grant towards recreation and is spent by the Hostel Committee in consultation with Warden (Recreation).

The Sports Office also runs a Yoga Centre. Yoga Classes are held both in the morning and evening. In addition, workshops, special lectures, demonstrations and short courses are also conducted throughout the year.

### XIV. CULTURAL ACTIVITIES

Cultural activities among the student community on the campus are promoted through various cultural clubs namely: Debating, Drama, Film, Fine Arts, Literary, Music and Dance, Nature and Wild Life, Photography, and UNESCO.

Each club functions under the supervision of the elected student's conveners and the members of their executive committee who are elected every year by the student members of the respective clubs.

The University has a Culture Committee headed by a Cultural Coordinator to promote the functioning of the clubs and organizing of various cultural activities from time to time.

Only a nominal annual fee is charged to enable a large number of students to become members of clubs that they are interested in. A student can hold membership of more than one club.

## XV. INTERNAL COMPLAINTS COMMITTEE (ICC)

The University has duly constituted Internal Complaints Committee (ICC) in compliance of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 and the UGC (Prevention, Prohibition and Redressal of Sexual Harassment of Women Employees and Students in Higher Educational Institutions) Regulations, 2015. For further information Please visit : <https://jnu.ac.in/icc>

## XVI. ANTI RAGGING POLICY OF THE UNIVERSITY

In order to prohibit, prevent and eliminate the scourge of ragging, the University has implemented the regulations notified by the University Grants Commission on curbing the Menace of Ragging in Higher Educational Institutions, 2009 in view of the directions of the Hon'ble Supreme Court of India. The students found guilty of ragging are awarded punishment as prescribed in the UGC regulations. All candidates selected for admission will be required to submit an Affidavit from their parents.

### **UGC regulations on curbing the menace of ragging in higher educational institutions, 2009:**

Excerpts from the UGC regulation (CPP- II) dated 17th June, 2009 (Full text is available in every hostel, Dean of Students office and JNU Website)

In exercise of the powers conferred by Clause (g) of sub-section (1) of Section 26 of the University Grants Commission Act, 1956, the University Grants Commission hereby makes the following Regulations, namely;

1.1 These regulations shall be called the "UGC regulations on curbing the Menace of Ragging in Higher Educational Institutions, 2009".

### **2. Objectives: -**

To prohibit any conduct by any student or students whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness a fresher or any other students, or indulging in rowdy or in disciplined activities by any student or students which causes or is likely to cause annoyance, hardship or psychological harm, or to raise fear or apprehension thereof in any fresher or any other student or asking any student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other students, with or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any other student; '3nd thereby, to eliminate ragging in all its forms from universities, deemed universities and other higher educational institutions in the country by prohibiting it under these Regulations, preventing its occurrence and punishing those who indulge in ragging as provided for in these Regulations and the appropriate law in force.

### **2. What constitutes Ragging: -** Ragging constitutes one or more of any of the following acts:

- a. any conduct by any student or students whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness a fresher or any other student;
- b. indulging in rowdy or in disciplined activities by any student or students which causes or is likely to cause annoyance, hardship, physical or psychological harm or to raise fear or apprehension thereof in any fresher or any other student;
- c. asking any student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student;
- d. act by a senior student that prevents, disrupts or disturbs the regular academic activity of any other student or a fresher;
- e. exploiting the services of a fresher or any other student for completing the academic tasks assigned to an individual or a group of students.
- f. any act of financial extortion or forceful expenditure burden put on a fresher or any other student by students;
- g. any act of physical abuse including all variants of it: sexual abuse, homosexual assaults, stripping, forcing obscene and lewd acts, gestures, causing bodily harm or any other danger to health or person;
- h. any act or abuse by spoken words, emails, post, public insults which would also include deriving perverted pleasure, vicarious or sadistic thrill from actively or passively participating in the discomfiture to fresher or any other student;
- i. any act that affects the mental health and self-confidence of a fresher or any other student with or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any other student. - .

- 6.1 (g) A student seeking admission to a hostel forming part of the institution, or seeking to reside in any temporary premises not forming part of the institution, including a private commercially managed lodge or hostel, shall have to submit additional affidavits countersigned by his/her parents/guardians in the form prescribed in Annexure I and Annexure II to these Regulations respectively along with his/her application.
- 6.2 (e) The institution shall, on the arrival of senior students after the first week or after the second week, as the case may be, schedule orientation programmes as follows, namely;
- (i) Joint sensitization programme and counseling of both fresher and senior students by a professional counsellor, referred to in clause (i) of Regulation 6.1 of these Regulations;
  - (ii) joint orientation programme of freshers and seniors to be addressed by the Head of Institution and the anti-ragging committee; (iii) organization on a large scale of cultural, sports and other activities to provide a platform for the freshers and seniors to interact in the presence of faculty members; (iv) in the hostel, the warden should address all students; and may request two junior colleagues from the college faculty to assist the warden by becoming resident tutors for a temporary duration; (v) as far as possible faculty members should dine with the hostel resident in their respective hostels to instill a feeling of confidence among the freshers. 6.2 (O) Every student at the time of his/her registration shall inform the institution about his/her place of residence while pursuing the course of study, and in case the student has not decided his/her place of residence or intends to change the same, the details of his place of residence shall be provided immediately on deciding the same; and specifically in regard to a private commercially managed lodge or hostel where he/she has taken up residence.
- 4.2 (p) The Head of the institution shall, on the basis of the information provided by the student under clause (O) of Regulation 6.2, apportion sectors to be assigned to members of the faculty, so that such member of faculty can maintain vigil and report any incident of ragging outside the campus or en route while commuting to the institution using any means of transportation of students, whether public or private.
- 4.3 Every institution shall constitute the following bodies; namely
- a. Every institution shall constitute a committee to be known as the Anti Ragging Committee to be nominated and headed by the (i) Head of the institution, and (ii) consisting of representatives of civil and (iii) police administration, (iv) local media, (v) Non government Organizations involved in youth activities, representatives of faculty members, (vi) representatives of parents, (vii) representatives of students belonging to the freshers' (ix) category as well as senior students, (x) non-teaching staff; and shall have a diverse mix of membership in terms of levels as well as gender.
  - b. Every institution shall also constitute a smaller body to be known as the Anti-Ragging Squad to be nominated by the Head of the Institution with such representation as may be considered necessary for maintaining vigil, oversight and patrolling functions and shall remain mobile, alert and active at all time Provided that the Anti-Ragging Squad shall have representation of various members of the campus community and shall have no outside representation.
  - c. It shall be the duty of the Anti-Ragging Squad to be called upon to make surprise raids on hostels, and other places vulnerable to incidents of, and having the potential of, ragging shall be empowered to inspect such places.
  - d. It shall also be the duty of the Anti-Ragging Squad to conduct an on spot enquiry into any incident of ragging referred to it by the Head of the institution or any member of the faculty or any member of the staff or any student or any parent or guardian or any employee of a service provider or by any other person, as the case may be; and the enquiry report along with recommendations shall be submitted to the Anti-Ragging Committee for action under clause (a) of Regulation 9.1.

Provided that the Anti-Ragging Squad shall conduct such enquiry observing a fair and transparent procedure and the principles of natural justice and after giving adequate opportunity to the student or students accused of ragging and other witnesses to place before it the facts, documents and views concerning the incident of ragging, and considering such other relevant information as may be required.

7. Action to be taken by the Head of the institution:- On receipt of the recommendation of the Anti- Ragging Squad or on receipt of any information concerning any reported incident of ragging, the Head of institution shall immediately determine if a case under the penal laws is made out and if so, either on his own or through a member of the Anti-Ragging Committee authorized by him in this behalf, proceed to file a first Information Report (FIR), within twenty four hours of receipt of such information or recommendation, with the police and local authorities, under the appropriate penal provisions relating to one or more of the following namely;
- i. Abetment to ragging;
  - ii. Criminal conspiracy to rag;
  - iii. Unlawful assembly and rioting while ragging;
  - iv. Public nuisance created during ragging;



- v. Violation of decency and morals through ragging;
- vi. Injury to body, causing hurt or grievous hurt;
- vii. Wrongful restraint;
- viii. Wrongful confinement; ix. Use of criminal force;
- x. Assault as well as sexual offences or unnatural offences;
- xi. Extortion;
- xii. Criminal trespass;
- xiii. Offences against property;
- xiv. Criminal intimidation;
- xv. Attempts to commit any or all of the above mentioned offences against the victim(s);
- xvi. Threat to commit any or all of the above mentioned offences against the victim(s);
- xvii. Physical or psychological humiliation;
- xviii. All other offences following from the definition of "Ragging".

Provided that the Head of the institution shall forthwith report the occurrence of the incident of ragging to the District Level Anti - Ragging Committee and the Nodal officer of the affiliating University, if the institution is an affiliated institution.

Provided further that the institution shall also continue with its own enquiry initiated under clause 9 of these Regulations and other measures without "waiting for action on the part of the police/local authorities and such remedial action shall be initiated and completed immediately and in no case later than a period of seven days of the reported occurrence of the incident of ragging.

#### 8. Administrative action in the event of ragging: -

8.1 The institution shall punish a student found guilty of ragging after following the procedure and in the manner prescribed here in under:

(a) The Anti-Ragging Committee of the institution shall take an appropriate decision, in regard to punishment or otherwise, depending on the facts of each incident of ragging and nature and gravity of the incident of ragging established in the recommendations of the Anti- Ragging Squad. (b) The Anti Ragging Committee may, depending on the nature and gravity of the guilt established by the Anti-Ragging Squad, award, to those found guilty, one or more of the following punishments, namely;

- I. Suspension from attending classes and academic privileges.
- II. Withholding! with drawing scholarship / fellowship and other benefits.
- III. Debarring from appearing in any test/examination or other evaluation process.
- IV. Withholding results.
- V. Debarring from representing the institution in any regional, national or international meet, tournament, youth festival, etc.
- VI. Suspension/expulsion from the hostel. vii. Cancellation of admission.
- VII. Rustication from the institution for period ranging from one to four semester.
- VIII. Expulsion from the institution and consequent debarring from admission to any other institution for a specified period.
- IX. Provided that where the persons committing or abetting the act of ragging are not identified, the institution shall resort to collective punishment.

(C) An appeal against the order of punishment by the Anti-Ragging Committee shall lie,

- (i) In case of an order of an institution, affiliated to or constituent part, of a university, to the Vice-Chancellor of the University;
- (ii) In case of an order of a university, to its Chancellor.
- (iii) In case of an institution of national importance created by an Act of Parliament, to the Chairman or Chancellor of the institution, as the case may be.

**AFFIDAVIT BY THE STUDENT**  
(on a Non Judicial Stamp Paper of Rs.10/-)

I, \_\_\_\_\_ (full name of student with admission/registration/enrolment number) s/o d/o Mr./Mrs./Ms. \_\_\_\_\_, having been admitted to **JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI** have received a copy of the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, (hereinafter called the "Regulations"), carefully read and fully understood the provisions contained in the said Regulations.

- (i) I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
- (ii) I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against me in case I am found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
- (iii) I hereby solemnly aver and undertake that
  - I will not indulge in any behavior or act that may be constituted as ragging under clause 3 of the Regulations.
  - I will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulations.
- (iv) I hereby affirm that, if found guilty of ragging, I am liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against me under any penal law or any law for the time being in force.
- (v) I hereby declare that I have not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, I am aware that my admission is liable to be cancelled.

Declared this \_\_\_\_\_ day of \_\_\_\_\_ month of \_\_\_\_\_ year.

\_\_\_\_\_  
Signature of deponent  
Name: \_\_\_\_\_  
Centre /School \_\_\_\_\_

**VERIFICATION**

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at \_\_\_\_\_ on this the \_\_\_\_\_ of \_\_\_\_\_, \_\_\_\_\_  
(place) (day) (month) (year)

\_\_\_\_\_  
Signature of deponent

Solemnly affirmed and signed in my presence on this the \_\_\_\_\_ of \_\_\_\_\_, \_\_\_\_\_ after  
(day) (month) (year)  
reading the contents of this affidavit.

**OATH COMMISSIONER**

**AFFIDAVIT BY PARENT/GUARDIAN**  
(on a Non Judicial Stamp Paper of Rs.10/-)

I, Mr./Mrs./Ms. \_\_\_\_\_ (full name of parent/guardian) father/mother/guardian of, \_\_\_\_\_ (full name of student with admission/ registration/ enrolment number), having been admitted to \_\_\_\_\_ (name of the institution), have received a copy of the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, (hereinafter called the "Regulations"), carefully read and fully understood the provisions contained in the said Regulations.

- 1) I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
- 2) I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against my ward in case he/she is found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
- 3) I hereby solemnly aver and undertake that
  - a. My ward will not indulge in any behavior or act that may be constituted as ragging under clause 3 of the Regulations.
  - b. My ward will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulation.
- 4) I hereby affirm that, if found guilty of ragging, my ward is liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against my ward under any penal law or any law for the time being in force.
- 5) I hereby declare that my ward has not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, the admission of my ward is liable to be cancelled.

Declared this \_\_\_\_\_ day of \_\_\_\_\_ month of \_\_\_\_\_ year.

\_\_\_\_\_  
Signature of deponent  
Name:  
Address:  
Telephone/Mobile No.:

**VERIFICATION**

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at (place) \_\_\_\_\_ on this the (day) \_\_\_\_\_ of (month) \_\_\_\_\_, (year) \_\_\_\_\_.

\_\_\_\_\_  
Signature of deponent

Solemnly affirmed and signed in my presence on this the (day) \_\_\_\_\_ of (month) \_\_\_\_\_, (year) \_\_\_\_\_

after reading the contents of this affidavit

**OATH COMMISSIONER**

**XVII. RULES OF DISCIPLINE AND PROPER CONDUCT OF STUDENTS OF JNU****Preamble**

Whereas by virtue of section 5(10)\* of the JNU Act read with Statute 32(1)\*\* of the Statutes of the University, the Vice-Chancellor has been vested with all the powers relating to discipline and disciplinary action in relation to students and whereas Statute 32(5)\*\*\* empower the University to frame detailed rules of discipline and proper conduct; and now in pursuance of the same the Vice-Chancellor has approved the following rules of discipline and proper conduct among the students of the University.

**1. Short title and Commencement**

- i) These Rules shall be called "The JNU Students' Discipline and Conduct Rules", hereafter referred to as the "Rules".
- ii) These Rules shall come into force with effect from the date of notification\*\*\*\*.

**2. Application of Rules**

- i) These Rules shall apply to all students of the University (including part-time students) whether admitted prior to the commencement of these Rules or after the commencement of these Rule.
- ii) Any breach of discipline and conduct committed by a student inside or outside the JNU Campus shall fall under the purview of these Rules.
- iii) Without prejudice to the generality of the power to enforce discipline under Statue 32 of the Statutes of the University, the acts mentioned in Rules 3 shall amount to acts of misconduct or indiscipline or both.

\* *To regulate and enforce discipline among students and employees of the university and to take such disciplinary measures in this regards as may be deemed necessary.*

\*\* *All powers relating to discipline and disciplinary action in relation to students shall vest in the Vice-Chancellor.*

\*\*\* *Without prejudice to the powers of the Vice-Chancellor and the Chief Proctor as aforesaid, detailed rules of discipline and proper conduct shall be framed. The Principals or, as the case may be, the Heads of the colleges, Institutions, Departments, Special Centres or Specialised Laboratories may frame such supplementary rules as they deemed necessary for the aforesaid purposes. Every student shall provide himself with a copy of these rules.*

\*\*\*\* *These Rule shall come into force w.e.f. 19<sup>th</sup> June 2000.*

**3. Categories of misconduct and indiscipline Category-I**

- i) All acts of violence and all forms of coercion such as gheraos, sit-ins or any variation of the same which disrupt the normal academic and administrative functioning of the University and or any act which incites or leads to violence.
- ii) Gheraos, laying siege or staging demonstrations around the residence of any member of the University Community or any other form of coercion, intimidation or disturbance of right to privacy of the residents of the campus.
- iii) Sexual harassment of any kind which shall also include: unwelcome sexual proposition/ advancements, sexually graphic comments of a body unwelcome touching, patting pinching or leering of parts of the body or persistent offensive or unwelcome sexual jokes and or comments.

**Category-II**

- iv) Committing forgery, tampering with the Identity Card or University records, impersonation, misusing University property (movable or immovable), documents and records, tearing of pages of, defacing, burning or in any way destroying the books, journals, magazines and any material of library or unauthorised photocopying or possession of library books, journals, magazines or any other material.
- v) Hunger strikes, dharnas, group bargaining and any other form of protest by blocking entrance or exit of any of the academic and/or administrative complexes or disrupting the movements of any member of the University Community.

- vi) Furnishing false certificates or false information in any manner to the University.
- vii) Any act of moral turpitude.
- viii) Eve-teasing or disrespectful behaviour or any misbehaviour with a girl student, women staff member/ visitor.
- ix) Arousing communal caste or regional feelings or creating disharmony among students.
- x) Use of abusive, defamatory, derogatory or intimidatory language against any member of the University Community.
- xi) Causing or colluding in the unauthorised entry of any person into the Campus or in the unauthorised occupation of any portion of the University premises, including halls or residence by any person.
- xii) Unauthorised occupation of the hostel rooms or unauthorised acquisition and use of University furniture in one's hostel room or elsewhere.
- xiii) Indulging in acts of gambling in the University premises.
- xiv) Consuming or possessing dangerous drugs or other intoxicants in the University premises.
- xv) Damaging or defacing, in any form any property of the University or the property of any member of the University community.
- xvi) Not disclosing one's identity when asked to do so by a faculty member or employee of the University who is authorised to ask for such identity.
- xvii) Improper behaviour while on tour or excursion.
- xviii) Coercing the medical staff to render medical assistance to persons not entitled for the same or any other disorderly behaviour in the Health Centre.
- xix) Blockade or forceful prevention of any normal movement of traffic, violation of security safety rules notified by the University.
- xx) Any other offence under the law of land.
- xxi) Ragging in any form
- xxii) Accommodating unauthorized guests or other persons in the halls of residence.
- xxiii) Engaging in any attempt at wrongful confinement of any member of the faculty, staff, student or anyone camping inside the Campus.
- xxiv) Any intimidation of or insulting behavior towards a student, staff or faculty or any other person.
- xxv) Any other act which may be considered by the V.C. or any other competent authority to be an act of violation of discipline and conduct.

#### 4. Punishment

The competent authority may impose any of the following punishments on any student found guilty of any of the acts of indiscipline or misconduct mentioned in Category-I or Category-II as the case may be, in Rule 3.

##### Category I:

- 1) Cancellation of admission or withdrawal of degree or denial of registration for a specified period.
- 2) Rustication upto four semester period and/or declaring any part or the entire JNU Campus out of bounds.
- 3) Expulsion

##### Category II

- 1) Admonition/Reprimand
- 2) Fine upto Rs. 20,000/-

- 3) Recovery of any kind, such as scholarship/fellowship, any dues, cost of damages, etc.
- 4) Withdrawal of any or all facilities available to a student as per, JNU Rules (such as Scholarship/Fellowship, hostel etc)
- 5) Stoppage of any or all academic processes.
- 6) Declaring any Halls of Residence, premises, building or the entire JNU Campus out of bounds to any students.
- 7) Rustication upto two semesters.

**5. General**

- 1) No punishment shall ordinarily be imposed on a student unless he/she is found guilty of the offence for which he/she has been charged by a proctorial or any other inquiry after following the normal procedure and providing due opportunity to the student charged for the offence to defend himself.
- 2) In case the Vice-Chancellor or any competent authority is of the opinion that on the basis of the available material and evidence on record a prima facie case exists against a student he may order suspension of the student including withdrawal of any or all facilities available to a bona fide student pending proctorial or any other inquiry.
- 3) Notwithstanding any punishment mentioned in Rule 4, the Vice-Chancellor may keeping in view the gravity/nature of misconduct/act of indiscipline, the manner and the circumstances in which the misconduct/indiscipline has been committed award a punishment in excess of or less than or other than what has been mentioned thereon for reasons to be recorded.

**6. Interpretation**

In case any dispute arises with regard to the interpretation of any of these Rules, the matter shall be referred to the Vice-Chancellor, whose decision thereon shall be final.

## XVIII. FEE AND MODE OF PAYMENT

Candidates selected for various programmes of study will be required to pay the following fees:

### “A” Indian Nationals

Fee Component	Programme				
	Ph.D., M.Tech., MPH	M.A./M.Sc./MCA /B.A. (Hons.)/ B.Sc.-M.Sc. Integrated prog.	PG Diploma in Big Data Analytics (PGD)	Part-Time	
1	Tuition Fee (Annual)	Rs. 240.00***	Rs.216.00***	Rs.10000.00	Rs.120.00
2	Sports Fee (Annual)	Rs.16.50	Rs.16.50	Rs.16.50	Rs.16.50
3	Literary & Cultural Fee (Annual)	Rs.16.50	Rs.16.50	Rs.16.50	Rs.16.50
4	Library Fee (Annual)	Rs.6.00	Rs.6.00	Rs.6.00	Rs.6.00
5	Medical fee (Annual)	Rs.9.00	Rs.9.00	Rs.9.00	----
6	Medical Booklet	Rs.12.00	Rs.12.00	Rs.12.00	----
7	Students Aid Fund (Annual)	Rs.4.50	Rs.4.50	Rs.4.50	----
8	*Admission Fee	Rs.5.00	Rs.5.00	Rs.5.00	Rs.5.00
9	*Enrolment Fee	Rs.5.00	Rs.5.00	Rs.5.00	Rs.5.00
10	*Security Deposit (Refundable)	Rs.40.00	Rs.40.00	Rs.40.00	Rs.40.00
11	Identity Card Folder	Rs.10.00	Rs.10.00	Rs.10.00	Rs.10.00
12	Student Hostel and General Information Guide	Rs.15.00	Rs.15.00	Rs.15.00	----
13	National Service Scheme (NSS)	Rs.20.00	Rs.20.00	Rs.20.00	----

The fees are subject to revision

\*To be paid at the time of Enrolment in the University.

\*\*\*To be realised in two instalments.

**Students shall deposit tuition fee:**

- (i) First Instalment at the time of admission  
Second instalment at the time of registration in the Winter Semester i.e. January.
- (ii) Annual Fees shall be paid at the commencement of each academic year

•In the event of student being enrolled simultaneously for a full -time course and one part-time course, he will be charged, in addition to all the fees and other charges for the full-time course, only the tuition fee in respect of part-time course.

•If a student does not pay the fees on time, a fine shall be levied as per rules of the University.

### “B” Foreign Nationals

**For Ph.D., M.Tech., MPH, M.A., M.Sc., MCA, B.A.(Hons.), B.Sc.-M.Sc. integrated programme and Part-Time Programmes of study:**

- (i) Tuition Fee:
  - (a) @ US \$1733 per semester for courses in science disciplines;
  - (b) @ US \$1155 per semester for courses in humanities and social sciences;
- (ii) Incidental charges: @ US \$ 231 per semester will be charged from both the above categories.

**Note:**

- d. Name of the defaulter, which shall be put up on the Notice Board, shall be removed from the rolls of the University.
- e. No request for fee waiver will be considered.
- f. GST charges, as applicable will be payable over the above stated fees

**“C” The Fee Structure of School of Engineering**

The tuition fee structure for the students, admitted to the School of Engineering, is as follows.

S. No.	Head of Fee	Odd Semester & Even Semester			
		GENERAL/ OBC			SC/ST/PH
		Economically Most Backward Students (Income below Rs 1 Lac)	Other Economically Backward Students (Income Rs 1 Lac to 5 Lac)	Income above Rs 5 Lac	All
1.	Tuition Fee per semester	0	20,833.00	62,500	0

The Institute fee structure for all categories of the students, admitted to the School of Engineering, is as follows.

S. No.	Head of Fee	In Rupees
1.	Student Activity Fee (per sem.)	2500
2.	University Development Fund (per sem.)	1000
3.	Admission Fee (One Time)	1000
4.	Examination Fee (per sem.)	1000
5.	Medical Insurance (per year)	500
6.	Alumni Fee (One Time)	1000
7.	Registration Fee (per sem.)	1000
8.	Security Deposit (Refundable: One Time)	5000
9.	Medical fee (per year)	9
10.	Medical Booklet	12

**Fee Structure for Direct Admission of Students Abroad (DASA), Scheme of Ministry of Education (Government of India) for admission to 15% supernumerary seats of B.Tech. + M.Tech./MS Dual Degree Programme of School of Engineering:**

**Tuition Fee**

Category 1	Foreign Nationals (Non-SAARC–non CIWG) category (per semester)	US Dollars \$ 4000/-
Category 2	Nationals of SAARC countries (per semester)	US Dollars \$ 2000/-
Category 3	Children of Indians Working in Gulf countries (CIWG) (per semester)	INR Rs. 62500

The Institute fee structure is as follows.

S. No.	Head of Fee	In Rupees
1.	Student Activity Fee (per sem.)	2500
2.	University Development Fund (per sem.)	1000
3.	Admission Fee (One Time)	1000
4.	Examination Fee (per sem.)	1000
5.	Medical Insurance Fee (per year)	500
6.	Alumni Fee (One Time)	1000
7.	Registration Fee (per sem.)	1000
8.	Security Deposit (Refundable: One Time)	5000
9.	Medical fee (per year)	9
10.	Medical Booklet	12



**“D” Fee structure for the MBA programme (Indian Citizens)**

•The structure of tuition fees for Indian Citizens who have secured admission in the MBA programme at **Atal Bihari Vajpayee School of Management and Entrepreneurship**, JNU is as follows:

- a. General Category Students: Rs. 12 Lacs for the entire MBA Full Time Programme payable in equal instalments (4 Semesters)
- b. OBC Students (Non-creamy Layer): Rs. 8 Lacs for the entire MBA Full Time Programme payable in equal instalments (4 Semesters)
- c. SC/ST/PWD Students: Rs. 6 Lacs for the entire MBA Full Time Programme payable in equal instalments (4 Semesters)

**The University fee structure for all categories of students, who are Indian citizens and have been admitted to the MBA programme of “ABV School of Management and Entrepreneurship”, JNU, is as follows.**

S. No.	Head of Fee	In Rupees
1.	Student Activity Fee (per semester)	2500
2.	University Development Fund (per semester)	1000
3.	Admission Fee (One Time)	1000
4.	Examination Fee (per semester)	1000
5.	Medical Insurance (per year)	500
6.	Alumni Fee (One Time)	1000
7.	Registration Fee (per semester)	1000
8.	Security Deposit (Refundable: One Time)	5000
9.	Medical fee (per year)	9
10.	Medical Booklet	12

**Foreign Students:** The Tuition fees for foreign students in the MBA programme will be: \$ 32000 for 2 years (@ \$ 8000 per semester, payable at the beginning of the semester as per the notification). For the SAARC Nationals the Tuition Fee will be US \$5,000 (USD Five Thousand) per Semester.

**Ph.D. Programme Fee:**

The tuition fee for **Indian students** for Ph.D. programme is Rs.50,000/- per semester.

Tuition Fee for the **Foreign Nationals** will be US \$4,000 (USD Four Thousand) per Semester. For the SAARC Nationals the Tuition Fee will be US \$2,000 (USD Two Thousand) per Semester.

## **XIX. CERTIFICATES AND OTHER DOCUMENTS REQUIRED AT THE TIME OF VIVA VOCE AND ADMISSION**

1. **Certificates and documents required to be submitted by candidates for admission to Ph.D. at the time of viva-voce examination.**
  - (i) Testimonials from two persons one of whom should be a former teacher of the candidate;
  - (ii) A complete list of subjects/papers taken by the candidate for the certificates/degrees mentioned in Sl. No. 2;
  - (iii) A copy of at least one of the published papers of the candidate, if any, which he/she considers to be the most representative of his/her intellectual interest and ability.
  - (iv) A brief note (one copy) stating the candidate's area of specialised interest of research, if any, and his future professional goals, and such other additional information that may help his/her selection to the programme of study.
  - (v) A research proposal has to be submitted by the candidate at the time of viva-voce.
  - (vi) Foreign National candidates are required to submit statement of purpose (SoP) for Ph.D. programme.

2. **Certificates and documents required to be submitted by all candidates selected for admission to various programmes of study at the time of admission/registration.**

- (i) Enrolment Form
- (ii) Central Library Application Form
- (iii) Five copies of recent passport size photographs
- (iv) Two sets of self-attested copies of the Matriculation, Higher secondary, Pre-University or Indian School Certificate or Senior School Certificate (10+2), or an equivalent examination certificate showing the age/date of birth of the candidate.
- (v) A Character Certificate from the Head of the Institution last attended
- (vi) Two sets of self-attested copies of the statement of marks obtained by the candidate and passing certificate/degree of Senior School, Bachelor's Degree/Master's Degree examination etc; or their equivalent examination
- (vii) **For SC/ST candidates:** Two self-attested copies of SC/ ST certificate in the prescribed format in support of claim for admission against reserved quota. Candidates should bring original caste/ category certificate at the time of admission/ registration (Format is as given in Page No. 83).
- (viii) **For OBC candidates:** Two self-attested copies of OBC certificate along with recently issued OBC Non-creamy layer certificate. The validity of the non-creamy layer certificate shall be for the financial year 2020-21. Candidates should bring original caste/ category certificate at the time of admission/ registration (Format is as given in Page No. 84 & 85).
- (ix) **For PwD candidates:** Two copies of Disability certificate in the prescribed format issued by the Competent Medical Authority indicating the nature and extent (including percentage) of Physical Disability in support of their claim for admission against PwD quota. Candidate should bring original Disability as per Disability Act 2016 at the time of admission/ registration (Form No. V, VI and VII as given in Page No. 86, 87 & 88).
- (x) **For EWS candidates:** Two copies of the Income and asset certificate to be certified by an officer not below the rank of Tehsildar in the States/UTs in the prescribed format as given in Page No. 82
- (xi) Migration Certificate (in original) from the Head of the Institution/University last attended:
  - a) All those candidates who have passed their qualifying examination prior to 2021 must produce the Migration Certificate from the University from where they have passed their qualifying examination at the time of admission/registration failing which they will not be granted admission.
  - b) Candidates who have passed their qualifying examination in 2021 and are not in a position to submit the Migration Certificate at the time of admission, should submit the same as early thereafter as possible, but not later than 30<sup>th</sup> October, 2021 failing which the University reserves the right to cancel their admission.
- (xii) Two Anti-Ragging Affidavits (one to be signed by the candidate and the other to be signed by the parent/guardian of the candidate) on non-judicial Stamp Paper of Rs.10/- each as per the given format (ANNEXURE) duly attested by a Notary Public is required to be submitted at the time of registration. Candidate may retain one copy each of the Anti-Ragging Affidavit for submitting at IHA (Inter Hall Administration) Counter (For Anti-Ragging Affidavits format please see section XIX of the E-Prospectus).
- (xiii) Candidates pursuing their studies with some other University/Institution are required to submit discontinuation certificate signed by appropriate authority from their respective University/Institution at the time of registration/admission, failing which admission shall not be granted. They are also required to submit the Migration Certificate subsequently within the stipulated time.
- (xiv) Candidate submitting the internet downloaded mark sheets are advised to submit/produce the final mark sheet with due authentication/signatures of Competent Authority of their respective university/institution.
- (xv) The admission of candidates who have passed their qualifying examination from a Foreign University will be subject to their qualification being found equivalent to the qualifications prescribed by the University.
- (xvi) The candidates, enjoying employed status and selected for admission to any programme of study in the University, are required to produce **LEAVE SANCTION ORDER/RELIEVING ORDER AT THE TIME OF ADMISSION/REGISTRATION** from their employer for the duration of the programme permitting them to pursue their studies at the University, failing which the offer of admission shall stand withdrawn. In case of resignation, the candidates are required to submit Relieving Order from their employer at the time of admission/registration.

- (xvii) Online payment while filling up the pre-enrolment portal for accepting the offer of admission:

Ph.D., M.Tech., MPH	Rs. 280.00*
PGD	Rs. 10,159.50*
Master/Under Graduate	Rs. 268.00*
Part Time	Rs. 219.00*

**\* Plus GST, as applicable**

- (xviii) Following documents will be submitted by the candidate (in original) at the Admission Counter in a separate envelope while taking admission/registration:
- Provisional Certificate of the qualifying examination,
  - Migration certificate
  - Character Certificate
  - Anti-ragging Affidavits
  - Discontinuation certificate
- (xix) All the selected candidates have to upload the necessary certificates in the pre-enrolment portal while accepting the offer of admission.

**Important:** *The candidates, will be allowed to register only IN PERSON. No request for registration other than in person shall be accepted. The candidates are also required to produce all originals of the above certificates/documents for verification at the time of registration/admission. In the absence of any of the original certificates/documents, registration/admission shall not be allowed.*

## XX. ADMISSION PROCEDURE FOR FOREIGN STUDENTS

Every year foreign nationals are admitted to various programmes of study under the following categories: -

- Self-financing Students
  - through Entrance Examination and/or viva voce
  - through 'In Absentia"
- Under the Cultural Exchange Fellowship Programme of Govt. of India.
- As Casual Students to audit/credit the courses (not leading to award of any degree)

**Foreign nationals seeking admission in any of the categories under (a) and (b) above will have to satisfy the minimum eligibility criteria for admission to the various programmes of study as prescribed by the University.**

### (a) SELF FINANCING STUDENTS

#### (i) THROUGH ENTRANCE EXAMINATION AND/OR VIVA-VOCE: (For those foreign national who are in India)

**All Foreign Nationals present in India will be required to appear in the entrance examination and/or viva voce subject to their fulfilling minimum eligibility requirement as prescribed for Indian students subject to equivalence of their qualification and production of Student Visa/Research Visa, as the case may be. The candidate has to apply online for the Entrance Examination/viva-voce.**

**(II) THROUGH 'IN-ABSENTIA' CATEGORY:**

Foreign Nationals who are applying from their respective countries will be considered 'In Absentia' and there is a separate Application Form for them, which can be downloaded from the official website of JNU. They are required to send Application Form (alongwith the copies of the certificates etc. on the basis of which admission is sought by them) through post to Section Officer (Admission-II), Room No. 20, Administrative Block, Jawaharlal Nehru University, New Delhi - 110067. A Bank Draft of US \$42 (including GST) drawn in favour of **JAWAHARLAL NEHRU UNIVERSITY** payable at **NEW DELHI** is to be enclosed with the filled in downloaded Application Form towards the processing fee of application form.

**Candidates already in India during entrance examination and/or viva voce will not be considered for admission under in absentia/under Cultural Exchange programme of Government of India and they will have to go through the process of entrance examination and/or viva voce for admission to various programmes of study.**

**(b) UNDER CULTURAL EXCHANGE PROGRAMME OF GOVERNMENT OF INDIA:**

The students seeking admission under the Cultural Exchange Fellowship Programme of Government of India are required to approach the Indian Council for Cultural Relations, (ICCR), Azad Bhavan, I.P State, New Delhi-110001, India. In the event of their selection, the Council will be informed about their selection.

**(c) CASUAL STUDENTS TO AUDIT/CREDIT COURSE(S):**

Foreign Nationals may join the University for a semester or two to audit/credit the course(s) in any of the Centre/Schools of Study. If admission is given for auditing, Certificate of participation will be issued by the faculty Incharge of the course and if admission is given for credit, End-Semester Grade Sheet will be issued by the University, subject to the condition that they will be attending the semester classes and appearing in the End-Semester Examination.

**Note:** The admission of Foreign students for Ph.D. programme may be considered in compliance with UGC 2016 Regulations regarding number of research scholars faculty (i.e. Professor/Associate Professor/Assistant Professor) can supervise. Foreign students shall be offered seats only if seats are left vacant in any discipline after being offered to Indian Candidates who have appeared in JNUEE – 2021-22.

**SELECTION**

In the event of their selection, candidates will be informed about their selection and their admission will be subject to the following conditions: -

1. Equivalence of their qualifications as prescribed by the University for various programmes of study.
2. Production of Student-Visa/Research Visa (as the case may be) in accordance with the revised visa policy of Government of India as also a xerox copy of their Passport together with the original documents for verification.
3. Medical-cum-Fitness Certificate
4. Insurance of Rs.1.00 lakh (minimum)

***For any other information, please contact:***

Shri M.K. Manuj,  
Deputy Registrar (Admissions),  
Administrative Block,  
Jawaharlal Nehru University,  
New Delhi – 110067  
Phone no.: 91-11-26704047  
dr\_admissions@mail.jnu.ac.in

Ms. Sneha Rajora Asiwal  
Section Officer (Admission-II) Room No.20  
Administrative Block, Jawaharlal Nehru University,  
New Delhi - 110067  
Phone Nos.: 91-11-26704022 & 26738719  
E-mail: admission\_foreign@mail.jnu.ac.in  
Fax Nos.: 91-11-26742692, 26742898

## XXI. INTAKE FOR THE YEAR 2021-22

JNU e-Prospectus 2021-22

### Ph.D. (Through INUEE)

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
<b>I</b>	<b>School of International Studies</b>								
1	Centre for Canadian, US and Latin American Studies:								
	i) Ph.D. in United States Studies	USSH	3	1	1	0	2	1	8
	ii) Ph.D. in Latin American Studies	LAMH	4	1	1	1	3	1	10
2	Centre for European Studies								
	Ph.D. in European Studies	EUPH	4	1	1	1	3	1	10
3	Centre for East Asian Studies								
	i) Ph.D. in Japanese Studies	JPIH	1	0	0	0	1	0	2
	ii) Ph.D. in Chinese Studies	CHIH	4	2	1	1	3	1	11
	iii) Ph.D. in Korean Studies	KOIH	2	1	0	0	1	1	5
4	Centre for International Politics, Organization & Disarmament								
	i) Ph.D. in International Politics	INPH	5	2	1	1	4	1	13
	ii) Ph.D. in International Organization	ORGH	2	0	0	0	1	0	3
	iii) Ph.D. in Diplomacy and Disarmament	DADH	4	1	1	1	3	1	10
	iv) Ph.D. in Political Geography	POGH	2	0	0	0	1	0	3
5	Centre for South Asian Studies								
	Ph.D. in South Asian Studies	SASH	4	2	1	1	3	1	11
6	Centre for Inner Asian Studies								
	Ph.D. in Inner Asian Studies	IASH	2	1	1	0	2	1	7
7	Centre for West Asian Studies								
	Ph.D. in West Asian Studies	WASH	9	3	2	1	5	2	21
8	Centre for African Studies								
	Ph.D. in African Studies	AFSH	7	3	1	1	5	2	18
9	Centre for Russian & Central Asian Studies								
	Ph.D. in Russian & Central Asian Studies	RCAH	14	5	3	2	9	3	34
10	Centre for Comparative Politics and Political Theory								
	Ph.D. in Comparative Politics and Political Theory	CPTH	2	1	0	0	1	0	4

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
11	Ph.D. in Energy Studies	ESPH	1	0	0	0	0	0	1
<b>II</b>	<b>School of Social Sciences</b>								
1	Centre for Economic Studies & Planning								
	Ph.D. in Economics Studies & Planning	ECOH	6	3	1	1	4	2	16
2	Centre for Historical Studies								
	i) Ph.D. in Ancient History	ANCH	2	1	0	0	1	0	4
	ii) Ph.D. in Medieval History	MEDH	4	2	1	1	3	1	11
	iii) Ph.D. in Modern History	MODH	2	0	0	0	1	0	3
3	Centre for Political Studies								
	Ph.D. in Political Studies	POLH	12	4	2	2	8	3	29
4	Centre for the Study of Regional Development								
	i) Ph.D. in Geography	GEOH	9	3	2	1	6	2	22
	ii) Ph.D. in Economics	ECNH	4	1	1	1	2	1	9
5	Centre for Social Medicine & Community Health								
	Ph.D. in Social Science in Health	CSMH	6	2	1	1	4	2	15
	Ph.D. in Public Health	PUBH	2	1	1	0	2	1	7
6	Centre for the Study of Social Systems								
	Ph.D. in Social Systems	SOCH	6	2	1	1	4	1	14
7	Zakir Husain Centre for Educational Studies								
	Ph.D. in Educational Studies	EDUH	10	3	2	1	6	2	23
8	Centre for Studies in Science Policy								
	Ph.D. in Studies in Science Policy	SSPH	3	1	1	0	2	1	8
9	Centre for Philosophy								
	Ph.D. in Philosophy	SPHH	4	2	1	1	3	1	11
10	Centre for the Study of Social Exclusion and Inclusive Policy								
	Ph.D. in Social Exclusion and Inclusive Policy	SEIH	3	1	1	0	2	1	8
11	Centre for Media Studies								
	Ph.D. in Media Studies	CMSH	3	1	1	0	2	1	8

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
12	Centre for Informal Sector and Labour Studies								
	Ph.D. in Informal Sector and Labour Studies	ISLH	2	1	0	0	1	0	4
<b>III</b>	<b>School of Language, Literature &amp; Culture Studies</b>								
1	Centre for French and Francophone Studies								
	Ph.D. in French	FRNH	1	0	0	0	1	0	2
2	Centre for German Studies								
	Ph.D. in German	GERH	6	2	1	1	4	2	15
3	Centre for Indian Languages								
	Ph.D. in Tamil	TAMH	2	1	0	0	1	1	5
4	Centre for Russian Studies								
	Ph.D. in Russian	RSNH	2	1	1	0	2	1	7
5	Centre for Spanish, Portuguese, Italian and Latin American Studies								
	Ph.D. in Spanish	SPNH	4	1	1	1	2	1	9
6	Centre for Japanese Studies								
	Ph.D. in Japanese	JAPH	2	1	1	0	2	1	7
7	Centre for Korean Studies								
	Ph.D. in Korean	KORH	2	1	0	0	1	0	4
8	Centre for Chinese, South East Asian Studies								
	Ph.D. in Chinese	CHNH	10	4	2	1	6	2	24
9	Centre for Persian and Central Asian Studies								
	Ph.D. in Persian	PERH	10	3	2	1	6	2	23
10	Centre for Arabic and African Studies								
	Ph.D. in Arabic	ARBH	7	3	1	1	5	2	18
11	Centre for Linguistics								
	Ph.D. in Linguistics	LINH	2	1	1	0	2	1	7
<b>IV</b>	<b>School of Computer &amp; Systems Sciences</b>								
	Ph.D. in Computer Sciences	SCSH	4	1	1	1	3	1	10
	Ph.D. in Microsystems	MISH	2	0	0	0	1	0	3

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
<b>V</b>	<b>School of Environmental Sciences</b>								
	Ph.D. in Area –I	ONEH	1	0	0	0	0	0	1
	Ph.D. in Area-IV	FORH	2	0	0	0	1	0	3
<b>VI</b>	<b>School of Life Sciences</b>								
	Ph.D. in Life Sciences	SLSH							
	Group –I (GON)	GONH	2	1	0	0	1	1	5
	Group –II (GTW)	GTWH	2	1	0	0	1	0	4
	Group –IV (GFO)	GFOH	1	0	0	0	0	0	1
	Group –V (GFI)	GFIH	2	0	0	0	1	0	3
<b>VII</b>	<b>School of Physical Sciences</b>								
	Ph.D. in Physical Sciences	PHYH	7	3	1	1	4	2	17
	Ph.D. in Chemical Sciences	CHEH	6	2	1	1	4	1	14
	Ph.D. in Mathematics	MATH	1	0	0	0	1	0	2
<b>VIII</b>	<b>School of Arts and Aesthetics</b>								
	Ph.D. in Visual Studies	VSAH	3	1	1	0	2	1	8
	Ph.D. in Theatre and Performance Studies	TPSH	3	1	1	0	2	1	8
	Ph.D. in Cinema Studies	CNSH	2	1	0	0	1	1	5
<b>IX</b>	<b>School of Computational and Integrative Sciences</b>								
	Ph.D. in computational Biology and Bioinformatics	CBBH							
	Track-I	TROH	2	1	0	0	1	0	4
	Track-II	TRTH	2	1	0	0	1	1	5
	Track-III	TRDH	1	0	0	0	0	0	1
<b>X</b>	<b>School of Biotechnology</b>								
	Ph.D. in Biotechnology	SBTH	6	2	1	1	4	1	14
<b>XI</b>	<b>ABV School of Management and Entrepreneurship</b>								
	Ph.D. in Management	SMEH	2	0	0	0	1	0	3
<b>XII</b>	<b>Centre for Molecular Medicine</b>								
	Ph.D. Molecular Medicine	CMMH	6	2	1	1	4	1	14
<b>XIII</b>	<b>School of Sanskrit and Indic Studies</b>								
	Ph.D. in Sanskrit	SANH	13	5	2	2	8	3	31



Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
XIV	<b>Centre for Nano Sciences</b>								
	Ph.D. in Nano Science	NNSH	2	1	0	0	2	1	6
XV	<b>Special Centre for North East India Studies</b>								
	Ph.D. in North East India Studies	NESH	2	1	0	0	2	1	6
XVI	<b>Special Centre for National Security Studies</b>								
	National Security Studies	NSSH	4	1	1	1	3	1	10

**Ph.D. (Through NET-JRF)**

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
<b>I</b>	<b>School of International Studies</b>								
1	Centre for Canadian, US and Latin American Studies:								
	Ph.D. in United States Studies	USSH	2	1	0	0	1	0	4
2	Centre for International Trade & Development								
	Ph.D. in Trade & Development	ITDH	4	1	1	1	2	1	9
3	Centre for International Politics, Organization & Disarmament								
	i) Ph.D. in International Organization	ORGH	2	0	0	0	1	0	3
	ii) Ph.D. in Diplomacy and Disarmament	DADH	2	1	0	0	1	0	4
4	Centre for Inner Asian Studies								
	Ph.D. in Inner Asian Studies	IASH	2	0	0	0	1	0	3
5	Ph.D. in Human Right Studies	HRSH	1	0	0	0	0	0	1
6	Ph.D. in Energy Studies	ESPH	1	0	0	0	0	0	1
<b>II</b>	<b>School of Social Sciences</b>								
1	Centre for Economic Studies & Planning								
	Ph.D. in Economics Studies & Planning	ECOH	6	3	1	1	4	2	16

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
2	Centre for Historical Studies								
	i) Ph.D. in Ancient History	ANCH	2	0	0	0	1	0	3
	ii) Ph.D. in Medieval History	MEDH	2	1	0	0	1	1	5
	iii) Ph.D. in Modern History	MODH	1	0	0	0	1	0	2
3	Centre for the Study of Regional Development								
	i) Ph.D. in Geography	GEOH	2	1	0	0	1	0	4
	iii) Ph.D. in Population Studies	POPH	2	1	0	0	1	1	5
4	Centre for Women Studies								
	Ph.D. in Women Studies	WSPH	1	0	0	0	0	0	1
5	Centre for Media Studies								
	Ph.D. in Media Studies	CMSH	2	1	0	0	2	1	6
<b>III</b>	<b>School of Language, Literature &amp; Culture Studies</b>								
1	Centre for French and Francophone Studies								
	Ph.D. in French	FRNH	1	0	0	0	0	0	1
2	Centre for German Studies								
	Ph.D. in German	GERH	6	2	1	1	4	2	15
3	Centre for Indian Languages								
	i) Ph.D. in Hindi	HNDH	2	0	0	0	1	0	3
	ii) Ph.D. in Urdu	URDH	1	0	0	0	1	0	2
	iii) Ph.D. in Hindi Translation	HTLH	1	0	0	0	1	0	2
4	Centre for Russian Studies								
	Ph.D. in Russian	RSNH	2	1	0	0	1	1	5
5	Centre for Spanish, Portuguese, Italian and Latin American Studies								
	Ph.D. in Spanish	SPNH	3	1	1	0	2	1	8
6	Centre for Japanese Studies								
	Ph.D. in Japanese	JAPH	1	0	0	0	0	0	1
7	Centre for Chinese, South East Asian Studies								
	Ph.D. in Chinese	CHNH	2	1	1	0	2	1	7
8	Centre for Persian and Central Asian Studies								
	Ph.D. in Persian	PERH	2	1	0	0	1	0	4
9	Centre for Arabic and African Studies								
	Ph.D. in Arabic	ARBH	1	0	0	0	1	0	2

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
10	Centre for Linguistics								
	Ph.D. in Linguistics	LINH	1	0	0	0	1	0	2
11	Centre for English Studies								
	Ph.D. in English	ENGH	5	2	1	1	3	1	12
<b>IV</b>	<b>School of Computer &amp; Systems Sciences</b>								
	Ph.D. in Computer Sciences	SCSH	4	1	1	1	3	1	10
<b>V</b>	<b>School of Environmental Sciences</b>								
	Ph.D. in Area –I	ONEH	2	1	1	0	2	1	7
	Ph.D. in Area-II	TWOH	2	1	0	0	2	1	6
	Ph.D. in Area-III	THRH	2	1	0	0	1	1	5
	Ph.D. in Area-IV	FORH	1	0	0	0	1	0	2
<b>VI</b>	<b>School of Life Sciences</b>								
	Ph.D. in Life Sciences	SLSH							
	Group –I (GON)	GONH	2	1	0	0	1	0	4
	Group –II (GTW)	GTWH	2	1	0	0	1	0	4
	Group –IV (GFO)	GFOH	1	0	0	0	0	0	1
	Group –V (GFI)	GFIH	1	0	0	0	1	0	2
<b>VII</b>	<b>School of Physical Sciences</b>								
	Ph.D. in Physical Sciences	PHYH	7	3	1	1	5	2	18
	Ph.D. in Chemical Sciences	CHEH	6	3	1	1	4	2	16
	Ph.D. in Mathematics	MATH	1	0	0	0	1	0	2
<b>VIII</b>	<b>School of Computational and Integrative Sciences</b>								
	Ph.D. in computational Biology and Bioinformatics	CBBH							
	Track-I	TROH	2	1	0	0	1	1	5
	Track-II	TRTH	2	1	0	0	2	1	6
	Track-III	TRDH	2	0	0	0	1	0	3

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
IX	<b>School of Biotechnology</b>								
	Ph.D. in Biotechnology	SBTH	10	3	2	1	6	2	23
X	<b>ABV School of Management and Entrepreneurship</b>								
	Ph.D. in Management	SMEH	4	1	1	1	3	1	10
XI	<b>Centre for Molecular Medicine</b>								
	Ph.D. Molecular Medicine	CMMH	2	1	0	0	2	1	6
XII	<b>Centre for the Study of Law &amp; Governance</b>								
	Ph.D. Law and Governance	CLGH	8	3	1	1	5	2	19
XIII	<b>Centre for Nano Sciences</b>								
	Ph.D. in Nano Science	NNSH	2	1	0	0	2	1	6
XIV	<b>Special Centre for North East India Studies</b>								
	Ph.D. in North East India Studies	NESH	3	1	1	0	2	1	8
XV	<b>Special Centre for Disaster Research</b>								
	Ph.D. in Disaster Studies	DSSH	1	0	0	0	0	0	1
XVI	<b>School of Engineering</b>								
	Ph.D. in Computer Science and Engineering	CSEH	4	1	1	1	3	1	10
	Ph.D. in Electronics and Communication Engineering	ECEH	3	1	1	0	2	1	8
	Ph.D. in Mechanical Engineering	MEEH	1	0	0	0	1	0	2
XVII	<b>Special Centre for Systems Medicine</b>								
	Ph.D. in Systems Medicine	SSMH	2	1	0	0	1	1	5

**M.Tech.**

S.No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
1.	School of Computer and Systems Sciences								
	M.Tech (Computer Science & Technology)	MTCT	14	5	2	2	9	3	33
	M.Tech in Data Science	MTIT	8	3	2	1	5	2	20
2	Special Centre for Nano Sciences		0	0	0	0	0	0	0
	M.Tech in Nano Science	NNST	2	1	0	0	2	1	6
	M.Tech in Nano Electronic	NNET	2	1	0	0	2	1	6

**M.P.H.**

S.No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
1	School of Social Sciences								
	Centre for Social Medicine and Community Health								
	Master of Public Health	MPHT	4	2	1	1	3	1	11

**PG Diploma**

S.No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
1	School of Computational and Integrative Science								
	PG Diploma in Bigdata Analytics	PGD	4	1	1	1	3	1	10

**M.A./M.Sc./MCA**

S. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
<b>I. School of International Studies</b>									
1.	M.A. in Politics (with specialization in International Studies)	PISM	46	17	9	6	31	12	115
2.	Centre for International Trade & Development								
	M.A. in Economics (with specialization in World Economy)	EILM	15	6	3	2	11	4	39
3.	M.A. in International Relation and Area Studies	IRAM	21	7	4	3	13	5	50
<b>II School of Social Sciences</b>									
1.	Centre for Economic Studies & Planning								
	M.A. In Economics	ECOM	39	14	7	5	26	10	96
2.	Centre for Historical Studies M.A. In								
	i) Ancient History	ANCM	13	5	2	2	8	3	31
	ii) Medieval History	MEDM	13	5	2	2	8	3	31
	iii) Modern History	MODM	18	6	3	2	12	4	43
3.	Centre for Political Studies								
	M.A. in Political Science	POLM	39	14	7	5	26	10	96
4.	Centre for the study of Regional Development								
	M.A. In Geography	GEOM	28	10	5	4	18	7	68

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
5.	Centre for the Study of Social System								
	M.A. in Sociology	SOCM	39	14	7	5	26	10	96
6.	Centre for Philosophy								
	M.A. in Philosophy	SPHM	13	5	2	2	8	3	31
7.	Centre for Informal Sector & Labour Studies								
8.	M.A. in Development and Labour Studies	DLSM	21	7	4	3	13	5	50
<b>III</b>	<b>School of Language, Literature &amp; Culture Studies</b>								
1	Centre for French and Francophone Studies								
	M.A. in French and Francophone Studies	FRNM	8	3	1	1	5	2	19
2.	Centre for German Studies								
	i.) M.A. in German Literature	GRLM	4	1	1	1	3	1	10
	ii.) M.A. in German Translation/ Translation & Interpretation	GRTM	8	3	1	1	5	2	19
3.	Centre for Indian Languages M.A. in								
	i.) Hindi	HNDM	15	6	3	2	11	4	39
	ii.) Urdu	URDM	15	6	3	2	11	4	39
4.	Centre for Russian								
	M.A. in Russian	RSNM	4	1	1	1	3	1	10
5.	Centre for Spanish, Portuguese, Italian and Latin American Studies								
	M.A. in Spanish	SPNM	3	1	1	0	2	1	8
6.	Centre for Japanese Studies								
	M.A. in Japanese	JAPM	3	1	1	0	2	1	8
7.	Centre for Korean Studies								
	M.A. in Korean	KORM	2	1	0	0	1	1	5
8.	Centre for Chinese, South East Asian Studies								
	M.A. in Chinese	CHNM	2	1	0	0	1	0	4
9.	Centre for Persian and Central Asian Studies								
	M.A. in Persian	PERM	8	3	1	1	5	2	19
	M.A. in Pashto	PUSM	2	1	0	0	2	1	6
10.	Centre for Arabic and African Studies								
	M.A. in Arabic	ARBM	6	2	1	1	4	2	15

Sl. No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
11.	Centre in Linguistics								
	M.A. in Linguistics	LINM	15	6	3	2	11	4	39
12.	Centre for English Studies								
	M.A. in English	ENGM	15	6	3	2	11	4	39
<b>IV</b>	<b>School of Computer &amp; Systems Sciences</b>								
	MCA (Master of Computer Application)	MCAM	23	9	4	3	16	6	58
<b>V</b>	<b>School of Environmental Sciences</b>								
	M.Sc. in Environmental Sciences	SESM	15	6	3	2	11	4	39
<b>VI</b>	<b>School of Life Sciences</b>								
	M.Sc. in Life Sciences	SLSM	15	6	3	2	10	4	38
<b>VII</b>	<b>School of Physical Sciences</b>								
	i. M.Sc. in Physics	SPSM	17	6	3	2	11	4	41
	ii. M.Sc. in Chemistry	CHEM	10	4	2	1	6	3	25
	iii. M.Sc. in Mathematics	MATM	6	2	1	1	4	2	15
<b>VIII</b>	<b>School of Computational and Integrative Science</b>								
	M.Sc. in Computational and Integrative Sciences	CISM	12	5	2	2	8	3	30
<b>IX</b>	<b>School of Arts and Aesthetics</b>								
	M.A. in Arts and Aesthetics	SAAM	12	4	2	2	8	3	29
<b>X</b>	<b>School of Biotechnology</b>								
	M.Sc. in Biotechnology	BITM	12	5	2	2	8	3	30
<b>XI</b>	<b>Centre for Molecular Medicine</b>								
	M.Sc. in Molecular Medicine	CMMM	4	1	1	1	3	1	10
<b>XII</b>	<b>School of Sanskrit and Indic Studies</b>								
	M.A. in Sanskrit	SANM	26	9	5	3	17	6	63
<b>XIII</b>	<b>Special Centre for Disaster Research</b>								
	M.A. in Disaster Studies	DSSM	8	3	1	1	5	2	19

**MBA**

XIV	Intake	Sub	UR	SC	ST	PWD	OBC	EWS	Total
		Master of Business Administration	MBA	30	11	6	4	20	8

**B.A. (Hons.) 1<sup>st</sup> year and B.Sc.-M.Sc. integrated programme**

S.No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
<b>I</b>	<b>School of Language, Literature &amp; Culture Studies</b>								
1.	Centre for French and Francophone Studies								
	B.A. (Hons.) 1 <sup>st</sup> year in French	FRNU	19	7	4	2	13	5	48
2.	Centre for German Studies								
	B.A.(Hons.) 1 <sup>st</sup> year in	GERU	19	7	4	2	13	5	48
3.	Centre for Russian								
	B.A.(Hons.) 1 <sup>st</sup> year in Russian	RSNU	28	10	5	4	18	7	68
4.	Centre for Spanish, Portuguese, Italian and Latin American Studies								
	B.A.(Hons.) 1 <sup>st</sup> year in Spanish	SPNU	15	6	3	2	11	4	39
5.	Centre for Japanese Studies								
	B.A.(Hons.) 1 <sup>st</sup> year in Japanese	JAPU	19	7	4	2	13	5	48
6.	Centre for Korean Studies								
	B.A.(Hons.) 1 <sup>st</sup> year in Korean	KORU	15	6	3	2	11	4	39
7.	Centre for Chinese, South East Asian Studies								
	B.A.(Hons.) 1 <sup>st</sup> year in Chinese	CHNU	18	7	3	2	12	4	44
8.	Centre for Persian and Central Asian Studies								
	i. B.A.(Hons.) 1 <sup>st</sup> year in Persian	PERU	15	6	3	2	11	4	39
	ii. B.A.(Hons.) 1 <sup>st</sup> year in Pashto	PUSU	8	3	1	1	5	2	19
9.	Centre for Arabic and African Studies								
	B.A.(Hons.) 1 <sup>st</sup> year in Arabic	ARBU	15	6	3	2	11	4	39
<b>II.</b>	<b>School of Sanskrit and Indic Studies</b>								
	B.Sc.-M.Sc. Integrated program in Ayurveda Biology	AYBU	8	3	2	1	5	2	20



## Part-Time

S.No.	Department	Sub	Seat Matrix						
			UR	SC	ST	PWD	OBC	EWS	Total
<b>I</b>	<b>School of Language, Literature &amp; Culture Studies</b>								
1.	Centre for Indian Languages								
	ADOP (Mass Media) in Urdu	URDA	10	4	2	1	6	3	25
	COP in Urdu	URDC	10	4	2	1	6	3	25
2.	Centre for Korean Studies								
	DOP in Mongolian	MOND	8	3	1	1	5	2	19
	COP in Mongolian	MONC	8	3	1	1	5	2	19
3.	Centre for Persian and Central Asian Studies								
	i. DOP in Bhasha Indonesia	BHAD	18	7	3	2	12	4	44
	ii. COP in Bhasha Indonesia	BHAC	15	6	3	2	11	4	39
4.	Centre for Persian and Central Asian Studies								
	COP in Pashto	PUSC	8	3	1	1	5	2	19
5.	Centre for Arabic and African Studies								
	DOP in Hebrew	HEBD	5	2	1	1	4	1	13
	COP in Hebrew	HEBC	10	4	2	1	6	3	25
<b>II</b>	<b>School of Sanskrit and Indic Studies</b>								
	COP in Pali (PAL)	PALC	10	4	2	1	6	3	25
	COP in Sanskrit Computational Linguistics	SCLC	10	4	2	1	6	3	25
	COP in Sanskrit	SANC	10	4	2	1	6	3	25
	COP in Yoga Philosophy	YOPC	10	4	2	1	6	3	25
	COP in Vedic Culture	VECC	10	4	2	1	6	3	25

## XXII. ELIGIBILITY OF CANDIDATES WHO ARE DUE TO APPEAR IN THE QUALIFYING EXAMINATION

The candidates who are due to appear in their respective qualifying examination may also apply. In the event of their selection they will be entitled to admission only if they have secured the minimum prescribed percentage of marks in their qualifying examination and they submit all documents including final marks-sheet of the qualifying examination before the deadline fixed for registration.

## XXIII. TIME-TABLE FOR ADMISSION

**(Dates to be announced later)**

- |     |  |                       |
|-----|--|-----------------------|
| 1.  | Online Submission of Application Form  | -                     |
| 2.  | Correction in particulars of Application Form on website only  | -                     |
| 3.  | Downloading of Admit Card from NTA website   | -                     |
| 4.  | Date of Entrance Examination   | -                     |
| 5.  | Display of recorded responses and Answer Keys for inviting challenges on NTA website   | -                     |
| 6.  | Declaration of Ph.D. result for viva-voce  | -                     |
| 7.  | Holding of viva-voce examination   | -                     |
| 8.  | Publication of Merit Lists for Admissions to various programmes of study:<br>--where viva voce is not prescribed<br>--where viva voce is prescribed  | -<br>-                |
| 9.  | Pre-enrolment registration and payment of fee with blocking of seats<br>-- where viva voce is not prescribed<br>--where viva voce is prescribed  | -<br>-                |
| 10. | Admission/Registration Schedule of selected candidates*:<br>i) For MBA<br>ii) For B.A. (Hons.) 1 <sup>st</sup> Year, B.Sc.-M.Sc. Integrated, M.Tech., MPH PGD<br>iii) For M.A./M.Sc./M.C.A.<br>iv) For Ph.D.<br>v) For Part Time | -<br>-<br>-<br>-<br>- |
| 11. | Release of Final List after registration, wherever considered necessary  | -                     |
| 12. | Registration for Final List  | -                     |
| 13. | Deadline for Admission/Registration  | -                     |

\* B.Tech. + M.Tech./MS courses Registration as per the scheduled communicated by JOSAA. In respect of students short listed for supernumerary seats, same shall be finalized as per the schedule given by DASA coordinating office.

**Note:**

- i. The candidates invited for viva-voce/those finally selected for admission will be intimated to this effect on their e-mail account or candidates can access the intimation by logging to their registered account on the JNU website. They are advised to make timely arrangements to appear for the viva-voce and for joining the programme, as the case may be. The University will not issue any paper intimation to the candidates. Candidates are advised to regularly check JNU website for updates.
- 2 Candidates are advised to check JNU admission link regularly on website.
- 3 It will be in the interest of candidates selected for admission to report for registration and join the programme of study immediately after the commencement of registration process.
- 4 Time table for admission is tentative and subject to change under extraordinary situation.

**XXIV. EXAM CENTRE STATE WISE**

For the List of Exam Centres State Wise check “**Jawaharlal Nehru Univesity Entrance Examination information bulletin 2021-22**” available on the official website of the NTA ([www.nta.ac.in](http://www.nta.ac.in))

**XXV. DATE SCHEDULE FOR ENTRANCE EXAMINATION**

For Date Schedule for Entrance Examination check “**Jawaharlal Nehru Univesity Entrance Examination information bulletin 2021-22**” available on the official website of the NTA ([www.nta.ac.in](http://www.nta.ac.in))

**XXVI. IMPORTANT POINTS TO REMEMBER WHILE APPLYING****Please Note:**

- a) The outstation candidates admitted to the programme of study of the University will be considered for hostel accommodation as per rules of the University subject to availability of hostel accommodation. Students may please note that grant of admission in the University would not ensure automatic allotment of hostel accommodation and that the same will be offered subject to its availability.
- b) **The intake for Ph.D. indicated in the e-Prospectus is tentative and is subject to revision as per UGC Regulations issued from time to time.**
- c) **Eligibility of Candidates who are due to appear in the qualifying examination:** The candidates who are due to appear in their respective qualifying examination may also apply. In the event of their selection they will be entitled to admission only if they have secured the minimum prescribed percentage of marks in their qualifying examination and they submit all documents including final year mark-sheets of qualifying examination before the deadline fixed for registration.
- d) The permission to appear in the Entrance Examination is subject to fulfilling minimum eligibility requirements prescribed for admission to the concerned programmes of study. Candidate may therefore, appear in the Computer Based Test (CBT) only if he/she fulfils the eligibility requirements for the programmes for which he/she is seeking admission. Despite this caution, in case candidates does not meet the minimum eligibility criteria prescribed for the concerned programmes and appear in the Computer Based Test (CBT), he/she will do so at his/her own risk and cost, and if at any stage, it is found that he/she do not fulfil the minimum eligibility requirements, the admission, if granted to him/her, shall be cancelled ipso-facto.
- e) Admission/Registration to the candidate, if granted by taking an “**Undertaking for Migration Certificate**”, the candidate is required to submit the same latest by the 30<sup>th</sup> October of the year of admission, failing which the admission granted shall stand cancelled. No further time would be allowed beyond 30<sup>th</sup> October for the purpose under any circumstances.
- f) The Entrance Examination/processing fee will be charged as per decision of NTA. Please note that, if application is rejected for any reason whatsoever or candidate is not able to take the Entrance Examination or appear in the Viva-Voce, the Entrance Examination fee/processing fee paid by the candidate shall not be refunded.

- g) No request for change of category subsequent to submission of Application Form will be accepted.
- h) Applicant can opt for maximum of three fields of study of his choice for the **same level of programme** for appearing in the Entrance Examination. Single application form should indicate order of preference for admission.
- i) While selecting the Field of Study candidate should consult the schedule of examination which appears at Annexure-III of Information Bulletin of NTA available at NTA website before indicating the preference with a view to ensure that there is no clash in the entrance examination schedule. The University assumes no responsibility if the candidate, despite caution, have opted for more than one field of study for which the examinations have been scheduled simultaneously.
- j) Option(s) once exercised shall be final and no change of option(s) shall be allowed. The preference wise option given by the candidate at the time of online application will be considered as final e.g. a candidate who has been selected for a discipline falling under higher preference will have no claim for other preferences of the same level of programme. In other words, if the candidate gets selected in higher preference, he/she will be offered admission only in that.
- k) If candidate submits more than one application form **for the same level of programme**, all his/her online application form shall summarily be rejected.
- l) Please note that candidates name, parent's/guardian's name, and date of birth in all documents required in connection with admission should exactly be the same as mentioned in 10th class or first Board/Pre-University examination certificate. Any deviation, whenever discovered, may lead to cancellation of his/her candidature.
- m) A candidate who successfully completes a programme in one particular language/subject may not be entitled for admission to same level of programme (language/subject) again. The candidate may be allowed one more chance to get admission in other language/subject. Further, the candidate who fails to complete the programme successfully in the first two chances will not be given admission third time in the same language/subject under any circumstances. This will be applicable to all programmes of study being offered by the University.

**Reverse admission in a lower program of study after completing a higher program of study in the same subject would not be permitted.**

- n) Candidates who have obtained their Bachelor's degree under the pattern of education other than 10+2+3 will be considered for admission to the Master's Programme if they have successfully completed the first year of Master's degree programme or a bridge course in lieu thereof, wherever prescribed, from a recognised University with prescribed percentage of marks.
- o) No candidate admitted to a full-time programme of study in the University shall accept or hold any employment paid (Regular/Contractual/adhoc) or otherwise or shall be full time student of any other Institution/University during the course of his/her study at the University.
- p) If any information furnished by the candidate in the application form is found to be false, his/her admission, if granted on the basis of such information will be cancelled, ipso facto.
- q) Selected candidates shall be required to block the seats, as per the instructions given in the offer letter within the scheduled time. While blocking the seats, candidates shall be required to upload the required documents (as per instructions) alongwith payment of prescribed fees in online payment mode.

**Any dispute with regard to any matter relating to admission shall be subject to the jurisdiction of Delhi Courts only.**

## XXVII. SYLLABUS FOR JNU ENTRANCE EXAMINATION 2020-21

### 1. SCHOOL OF INTERNATIONAL STUDIES

**The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)**

#### Master of Arts

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of International Studies	Politics (with specialization in International Studies) – PISM (201)	Five disciplines are covered in the test – Sociology, Political Science, International Relations, History and Economics. There is sufficient choice in questions for applicants from each discipline to be able to attempt the required number of questions. The BA syllabi of these disciplines generally found in most Indian universities are kept in mind while setting questions.
2		International Relations and Area Studies – IRAM (234)	Five disciplines are covered in the test – Sociology, Political Science, International Relations, History and Economics. There is sufficient choice in questions for applicants from each discipline to be able to attempt the required number of questions. The BA syllabi of these disciplines generally found in most Indian universities are kept in mind while setting questions. The emphasis will be on Area Studies in International Relations.
3		Economics (with specialization in World Economy) – EILM (202)	The entrance examination will contain multiple choice questions and the syllabus will include Microeconomics, Macroeconomics, Mathematics, Statistics, International Trade and Development Economics taught at the Bachelor's level.

#### Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre for Canadian, US and Latin American Studies (CCUS&LAS)	Canadian Studies – CANH (826)	<b>Canadian Studies</b> <ol style="list-style-type: none"> <li>1. Multiculturalism and Ethnicity in Canada</li> <li>2. Immigration policies and Integration</li> <li>3. Environmental issues</li> <li>4. Contemporary political, social and economic issues in Canada</li> <li>5. Party System and Electoral Politics</li> <li>6. Political Culture</li> <li>7. Federalism and Provincial Government</li> <li>8. Quebec and issues of Regionalism</li> <li>9. Foreign Policy approaches and trends</li> <li>10. Canada and India relations</li> <li>11. Regional Economic Integration</li> <li>12. Inter-American relations</li> <li>13. Canada and United Nations; Peace-keeping, peace-building and peace-enforcement</li> <li>14. Canada and the Global Security: Arms Control and Disarmament</li> <li>15. Nuclear Non-proliferation, Missile Control Regime</li> </ol>
2		Latin American Studies –LAMH (828)	<b>Latin American Studies</b> <ol style="list-style-type: none"> <li>1. Government and politics in Latin America: executive, legislature, judiciary</li> <li>2. Political Culture, Parties and movements</li> <li>3. Role of Labour, peasantry and middle class</li> </ol>

			<p>4. Theories of development  5. Church  6. Military  7. Environmental issues  8. Indigenous communities  9. Independence movements and ideas  10. Social movements  11. Latin America in world affairs  12. Relations with US; Asia, Africa and Europe  13. India and Latin America  14. Latin American and Caribbean regionalism  15. Contemporary political, social and economic issues in major Latin American and Caribbean countries</p>
3		United States Studies – USSH (827)	<p><b>US Studies</b></p> <p>1. Bill of Rights – American Constitution  2. Federalism  3. Media, political parties and elections  4. Congress, judiciary and judicial review  5. Power and role of the US President and domestic factors in Foreign Policy.</p> <p>6. US Policy towards South Asian Countries  7. US Foreign policy during Cold War (Containment Policy, Marshall Plan, Alliance Building, Truman Doctrine)  8. Foreign Policy trends and patterns in Post-Cold War America (UN, West Asia, Europe, Asia, international institutions).  9. American ideals: liberty, equality, republicanism, individualism, democracy, faith-neutrality  10. Waves of immigration to America: old, new and newest  11. Ethnicity, race, religion and gender in America  12. Social problems: Gun violence, racism, abortion, teenage pregnancy, homelessness, drugs and alcoholism  13. Terrorism and counter terrorism strategy  14. US in the Post Pandemic Era</p>
4	Centre for European Studies (CES)	European Studies – EUPH (829)	<p>The test is divided into two sections, research methodology and area studies.</p> <p>Section I - Meaning and importance of Research – Types of Research Concepts in Social Research: Data, Research Methods, Techniques, Concepts and Indicators, Variables, Sample, Research Designs, Selection and formulation of Research Problem, Hypothesis, Research Questions; Issues in social research: Subjectivity and Objectivity, Reliability and Validity,</p> <p>Section II - The syllabus will be <b>on contemporary issues, discourses, debates and developments in politics, society, foreign policy, security and economy of European states/ European Union.</b></p>
5	Centre for International Legal Studies (CILS)	Int. Legal Studies – ILGH (830)	<p>The syllabus for the entrance examination will contain multiple choice questions covering two sections (50% each).</p> <p><b>Section A (Subject-specific knowledge):</b></p> <ol style="list-style-type: none"> <li>1) General Principles relating to International Law; history nature and subjects of international law; statehood and international legal personality; sources of international law; relationship between international law and municipal law; jurisdiction and state immunity; recognition of states; Diplomatic and Consular Immunities;</li> <li>2) Functions and processes of International Law; public order, global justice; human rights; trade and sustainable development; global public goods and common heritage of mankind; Antarctica, Outer Space; Atmosphere and areas beyond national jurisdiction;</li> <li>3) Law of International Organisations; United Nations, World Trade Organisation, UN Specialized Agencies;</li> <li>4) Responsibility and Enforcement in International Law; peaceful settlement of disputes; world court and other international tribunals;</li> <li>5) Law of the Sea; International Environmental Law; International Humanitarian</li> </ol>

			<p>Law; International Trade and Economic Law;</p> <p><b>Section B (Research Methodology):</b></p> <ol style="list-style-type: none"> <li>1) Meaning and scope of International Law Research;</li> <li>2) Types of Research: Descriptive, Empirical, Analytical, Historical and Doctrinal;</li> <li>3) Various approaches to study International Law;</li> <li>4) Soft and Hard Law Norms in International Law;</li> <li>5) Identifying Primary and Secondary Sources in International Law; <ol style="list-style-type: none"> <li>a. Customary International Law</li> <li>b. Treaties (multilateral and bilateral)</li> <li>c. General Principles of International Law;</li> <li>d. Declarations and Guidelines</li> </ol> </li> <li>6) Researching International Law through International Adjudicatory Institutions;</li> <li>7) Survey Research in International Law;</li> <li>8) Case Study Research in International Law;</li> <li>9) Comparative Study Research in International Law;</li> <li>10) Review of Literature and thematic survey of topics in International Law;</li> <li>11) Research Proposal; Designing Research Questions; Formulation of Hypothesis;</li> </ol>
6	Centre for International Trade & Development (CITD)	Int. Trade & Development – ITDH (831)	The entrance examination will contain multiple choice questions covering research methodology and subject-specific knowledge. The syllabus will include Mathematical Economics, Statistics, Econometrics, Microeconomics, Macroeconomics, International Trade, Development Economics <i>including advanced and applied topics in these subjects taught at the Master's level.</i>
7	Centre for East Asian Studies (CEAS)	Chinese Studies – CHIH (832)	The syllabus for the examination includes research methodology 50% and the rest 50% is tested on subjects related to broader East Asian/Global developments; China's Foreign, Economic, Political & Social Issues; Japan's Foreign, Economic, Political & Social Issues; Korea's Foreign, Economic, Political & Social Issues. Major developments in East Asia are highlighted to test the candidate's capabilities in conducting research in these areas.
8		Japanese –JPIH (833)	
9		Korean – KOIH (834)	
10	Centre for International Politics, Organisation and Disarmament (CIPOD)	International Politics – INPH (835)	<p><b>(A) International Politics (INP)</b></p> <ol style="list-style-type: none"> <li>1. Classical Realism</li> <li>2. Non-Western Realism: Thucydides, Sun Tzu, Kautilya</li> <li>3. Neorealism and the difference between Classical Realism and Neorealism</li> <li>4. Variants of Neorealism: Defensive, Offensive, Neoclassical Realisms</li> <li>5. Liberal International Theory including Complex Interdependence, Neoliberal Institutionalism, Democratic Peace Theory, Trade and Commercial Liberalism</li> <li>6. Constructivist International Theory</li> <li>7. Marxist and Gramscian International Political Theory</li> <li>8. Theories of International Society, Especially the British School</li> <li>9. Feminist International Theory</li> <li>10. Modern Non-Western International Theory</li> <li>11. Great Debates in International Theory</li> <li>12. Theories of Nonalignment</li> </ol> <p><b>(B) Political Geography (POG)</b></p> <ol style="list-style-type: none"> <li>1. Nature and scope of political geography</li> <li>2. Political Geography Approaches: Functional, Unified Field theory, Laws of Spatial Growth of States</li> <li>3. Political Geography Concepts: Space, Place, Scale, Region, Core Areas and Capital Cities, State, Sovereignty, Nation</li> <li>4. Environment, Development and Geography</li> <li>5. Geographical and Geopolitical Imaginations</li> <li>6. Theories of geopolitics: traditional, critical, postmodern, feminist</li> <li>7. Geo-strategy</li> <li>8. Geopolitics Concepts: Territory, Border, Frontier, Boundaries, Empire</li> <li>9. Issues and Concerns: Geopolitics of Resources; Geopolitics of Wars; Laws of the Sea;</li> </ol> <p>Cold War Geopolitics and multi-polar Geopolitics; Geopolitical hotspots;</p>
11		International Organisation – ORGH (837)	
12		Diplomacy and Disarmament – DADH (838)	
13		Political Geography – POGH (836)	

			<p>10. Contemporary issues and concerns in Political Geography and Geopolitics  11. Research Methodology: GIS and its Applications  12. Qualitative and Quantitative Methods in International Relations  13. Research Design</p> <p><b><u>(C) International Organization (ORG)</u></b></p> <ol style="list-style-type: none"> <li>1. Concept, definition and classification of international organization(s)</li> <li>2. Roles, functions and powers of international organizations</li> <li>3. Theoretical approaches to international organization</li> <li>4. International organizations in world politics</li> <li>5. Historical development of international organization during 19th and early 20th centuries</li> <li>6. League of Nations</li> <li>7. The second generation international organizations: The United Nations and its system - establishment, activities, problems</li> <li>8. Global problems (like war and peace, development, human rights, environment) with reference to the role of the United Nations</li> <li>9. Reform and restructuring of the United Nations including the Security Council</li> </ol> <ol style="list-style-type: none"> <li>10. Economic and financial organizations - the IMF, the IBRD and the WTO</li> <li>11. Regional organizations of Europe, Africa, Asia, Americas</li> <li>12. India's role in various international organizations</li> <li>13. Globalization, global governance and international organizations</li> </ol> <p><b><u>(D) Diplomacy and Disarmament (DAD)</u></b></p> <ol style="list-style-type: none"> <li>1. Diplomacy: history, theory and practice</li> <li>2. Diplomacy: bilateral, multilateral, regional and global</li> <li>3. Economic and trade diplomacy</li> <li>4. Paradiplomacy or constituent diplomacy</li> <li>5. Negotiations: theory and practice</li> <li>6. Climate change and environmental negotiations</li> <li>7. Nuclear politics including arms control, non-proliferation and disarmament</li> <li>8. Theories of deterrence</li> <li>9. Chemical and biological weapons</li> <li>10. War: concept, theory and evolution</li> <li>11. Peace: concept and theory in mainstream and critical-theoretical perspectives</li> <li>12. Revolution in military affairs</li> <li>13. Conflict management and resolution</li> <li>14. Security: concept, theory and evolution</li> <li>15. National security</li> <li>16. Terrorism including nuclear terrorism and counter-terrorism</li> <li>17. Non-traditional security including human security</li> <li>18. Environmental security</li> <li>19. Technology and global politics</li> <li>20. Critical theory and Critical Security Studies including the Copenhagen, Paris and Aberystwyth schools of thought</li> <li>21. Critical Terrorism Studies</li> <li>22. Critical Military Studies</li> </ol> <p><b><u>(E) Research Methodology (Common)</u></b></p> <ol style="list-style-type: none"> <li>1. Inductive and deductive reasoning</li> <li>2. Ontology and epistemology</li> <li>3. Philosophy of science especially the contribution of Bertrand Russell, Karl Popper, Thomas Kuhn, Imre Lakatos and Paul Feyerabend</li> </ol>
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14	Centre for Russian and Central Asian Studies (CR&CAS)	Russian & Central Asian Studies – RCAH (839)	<p>The syllabus will cover an overview of the History, Politics, Foreign Policy, Economy and Sociology of the fifteen countries comprising the former Soviet Union, namely the Russian Federation, Belarus, Ukraine, Moldova, Georgia, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan, Azerbaijan, Armenia, Lithuania, Latvia and Estonia. The focus is on following thematic areas:</p> <ol style="list-style-type: none"> <li>1. Comparative Politics and Theories of International Relations</li> <li>2. Research Methods in Social Sciences</li> <li>3. Bolshevik Revolution, Soviet Politics, industrialization debates, collectivization, Five-year plans, Soviet Economy, Social System and Foreign Policy</li> <li>4. Glasnost, Perestroika, Nationalist Movements in the late 1980s', disintegration of USSR, end of Cold War</li> <li>5. Post-Soviet Transition: Socio-political, Economic Developments, Nation and State-building Processes in the former Soviet Space</li> <li>6. Impact of Globalisation, liberalization on former Soviet States</li> <li>7. India's Relations with the post-Soviet States</li> <li>8. Geopolitics, Energy Security, Foreign Policy, and Strategic Culture of the post-Soviet Space</li> <li>9. Gender, Environment, Water, Migration, Human Security, Civil Society and Media in the post-Soviet Space/States</li> <li>10. New Regionalism in the post-Soviet Space.</li> </ol>
15	Centre for South Asian Studies (CSAS)	South Asian Studies – SASH (840)	<p>Questions for the Entrance Examination will be drawn from the following areas:</p> <ol style="list-style-type: none"> <li>1. Society and social issues in South Asia</li> <li>2. Modern history of South Asia</li> <li>3. Contemporary international politics</li> <li>4. Politics and political system in South Asian countries.</li> <li>5. Foreign, security and economic policies of the South Asian States.</li> <li>6. Economic growth and development of South Asian countries.</li> <li>7. Environmental issues in South Asia</li> <li>8. Regional cooperation and economic integration issues in South Asia.</li> <li>9. Research methods in Social Sciences.</li> </ol>
16	Centre for Indo-Pacific Studies (CIPS)	Indo-Pacific Studies –IPSH (841)	<p>The Centre for Indo-Pacific Studies broadly covers the areas of Southeast Asia and Southwest Pacific.</p> <p>The entrance will be based on a syllabus covering the following areas:</p> <ol style="list-style-type: none"> <li>1) Regional History of Southeast Asia and Southwest Pacific.</li> <li>2) Government and Politics in the region.</li> <li>3) Economic issues in the region.</li> <li>4) Security issues in the region.</li> <li>5) India's relations with the region of Southeast Asia and Southwest Pacific.</li> </ol>

			6) Regionalism multilateralism and institutional mechanisms.
17	Centre for Inner Asian Studies (CIAS)	Inner Asian Studies – IASH (842)	<p><b>The test will comprise both research methodology and area studies. The following components include the syllabus:</b></p> <p><b>Research Methodology</b></p> <ol style="list-style-type: none"> <li>1. Types of Research: descriptive; empirical; analytical; historical and doctrinal</li> <li>2. Survey research</li> <li>3. Case study research</li> <li>4. Comparative study research</li> <li>5. Review of literature for research</li> <li>6. Primary and secondary sources; use of libraries and archives</li> <li>7. Inductive and deductive methods of reasoning</li> <li>8. Qualitative and Quantitative methods: characteristics and application</li> <li>9. Sampling: concept, logic and types</li> <li>10. Observation including participant and non-participant</li> <li>11. Research proposal and designing, research questions and hypothesis formulation</li> <li>12. Research ethics</li> </ol> <p><b>Area Studies</b></p> <ol style="list-style-type: none"> <li>1. Strategic Dimensions and Geopolitics of Central Asia, Mongolia and Afghanistan</li> <li>2. International relations of Central Asia, Afghanistan and Mongolia,</li> <li>3. Ethnicity and Religion in Central Asia, Afghanistan, Xinjiang, Inner Mongolia and Tibet.</li> <li>4. Religious Extremism and Terrorism in Afghanistan, Central Asia and Xinjiang.</li> <li>5. Society, Culture and Politics in Xinjiang, Inner Mongolia and Tibet.</li> <li>6. Human Security and Gender Issues.</li> <li>7. China's Nationalities Policy in Xinjiang, Tibet and Inner Mongolia.</li> <li>8. Nation-building process in Central Asia, Mongolia and Afghanistan.</li> <li>9. Social, Political and Economic Issues in Central Asia, Mongolia and Afghanistan</li> <li>10. Energy Resources in Central Asia and Mongolia</li> <li>11. Transportation Networks and trade linkages</li> </ol>
18	Centre for African Studies (CAFS)	African Studies – AFSH (843)	<p>Geo-cultural Aspects: Land, People, Ecology, Environment, Languages and Culture</p> <p>Historical Aspects: Ancient African Empires Indigenous political systems Atlantic slave trade-its impact and implications Industrial Revolution and the elimination of slave trade</p> <p>Colonialism in Africa: European partition of Africa Asian (Indian) migration into Africa Patterns of Colonial rule in Africa Legacy of Colonialism Growth of nationalism and Liberation Movements in Africa</p> <p>Political Aspects: Political independence and Constitutional changes in Africa Growth of political parties and party-systems The role of military Democratisation process in Africa Rise and fall of Apartheid in South Africa Concepts of Pan-Africanism and African socialism</p> <p>Economic Aspects: Nature of African Economy Underdevelopment and Dependency patterns in Africa Neo-colonial penetration and problems of economic independence Development strategies in post-independence period</p>

			<p>Structural adjustment programmes in Africa-an evaluation          Problem of poverty in Africa          Africa's debt crisis          Globalisation and its impact of Africa          Regional economic cooperation and development (ECOWAS, SADC, COMESA, EAC and AEC)</p> <p>Social Aspects:          Problems of nation-building in Africa          Role of education          State of Human Rights in Africa          Role of civil society and women          Problem of AIDS in Africa          Ethnic conflicts in Africa          Social change and structural transformation</p> <p>Africa and the World:          Africa and the emerging International System          Africa and European dominance          Africa and the Cold War          Post-Cold War scenario in Africa          Africa and the New World Order          Africa and the United Nations          Inter-regional Cooperation          Role of the Organization of African Unity (OAU)          Africa and the Non-aligned Movement (NAM)          The Role and Relevance of the African Union (AU) 2001          India-Africa Relations</p>
19	Centre for West Asian Studies (CWAS)	West Asian Studies –WASH (844)	Syllabus for Entrance Examination covers research methodology and domain knowledge of West Asia and North Africa (WANA) region including its geographical area ; Political and Social Systems; Military and Politics; Arab Nationalism, Turkish Nationalism; Zionism; Islamism & Islamist Movement; Political Economy of GCC States, Rentier Economy, Inter and Intra-State Conflicts; Regional Conflicts; Intellectual Traditions in Arab World and Iran; Foreign Policy analysis of major regional powers of the area, notably Egypt, Turkey, Syria, Israel, Saudi Arabia and Iran will be covered. In addition, the syllabus will also focus on the role of global powers in the region along with India's West Asia Policy, its interests and objectives.
20	Centre for Comparative Politics and Political Theory (CCPPT)	Comparative Politics and Political Theory –CPTH (845)	Questions are set keeping in mind the MA syllabi of disciplines in the Social Sciences and Humanities from which candidates may apply to the Centre. Questions are broad enough for candidates to apply their knowledge of the discipline in which they have their MA degree. It is expected that candidates are widely read in their respective disciplines.

#### Ph.D.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of International Studies	Energy Studies Programme – ESPH (847)	<ol style="list-style-type: none"> <li>1) Energy Security: A Conceptual Study</li> <li>2) Energy Security and International Relations</li> <li>3) Political Economy of Energy Security</li> <li>4) Energy and Geopolitics</li> <li>5) India's Energy Security: Policies and Politics</li> <li>6) Energy in Foreign policy</li> <li>7) Energy Security and Energy Governance</li> <li>8) Global energy trends and scenarios</li> <li>9) Debating Energy Security Transition: Role of Renewable Energy</li> <li>10) Energy Security and Global South</li> <li>11) Energy and Environment</li> <li>12) Energy Security and Cooperation: South Asia, Gulf, Central Asia and European Energy</li> <li>13) Methodology of Energy Security Studies: Comparative, Historical and Mixed Method Research, quantitative and qualitative variable analysis in Energy Security.</li> </ol>

## 2. SCHOOL OF LANGUAGE, LITERATURE AND CULTURE STUDIES

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through

**Computer Based Test (CBT)**

**Part-time courses**

### CERTIFICATE OF PROFICIENCY

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre for Korean Studies (CKS)	COP-Mongolian – MONC (702)	Entrance exam of COP in Bahasa Indonesia is conducted as a joint test with other part time programme; Urdu, Pashto, Mongolian and Hebrew. The eligibility is 10+2 or equivalent exam pass. The examination is conducted in English. The syllabus covers: 1. General Knowledge; 2. GK of the country of the languages; 3. Aptitude test and General English.
2	Centre for Chinese, South East Asian Studies (CCSEAS)	COP-Bhasha Indonesia – BHAC (703)	
3	Centre for Indian Languages (CIL)	Urdu – URDC (704)	
4	Centre for Persian and Central Asian Studies (CPCAS)	COP in Pashto – PUSC (701)	
5	Centre for Arabic and African Studies (CAAS)	COP in Hebrew – HEBC (710)	

### ADVANCE DIPLOMA OF PROFICIENCY

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre for Indian Languages (CIL)	ADOP-Mass Media in Urdu – URDA (502)	<p>By and large the syllabus will cover the topics related to the general awareness and basic knowledge of Mass Media which will be based on the following topics:</p> <ol style="list-style-type: none"> <li>a. Types of Mass Media</li> <li>b. Language of Mass Media</li> <li>c. Social relevance of Mass Media</li> <li>d. Journalism</li> <li>e. Origin and development of Print Media</li> <li>f. Origin and development of Electronic Media/Social Media</li> <li>g. Major Mass Media Genres</li> </ol>

**B.A. (Hons.) 1<sup>st</sup> year**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre for Persian and Central Asian Studies (CPCAS)	Persian – PERU (401)	The entrance test for this programme is a common test for all languages. Questions pertaining to general knowledge, artificial language, language aptitude and general English would be covered in the syllabus. The test will be conducted in the English language as a Computer Based Test (CBT).
2		Pushto – PUSU (410)	
3	Centre for Arabic and African Studies (CA&AS)	Arabic – ARBU (402)	
4	Centre for Japanese Studies (CJS)	Japanese – JAPU (403)	
5	Centre for Korean Studies (CKS)	Korean – KORU (404)	
6	Centre for Chinese, South East Asian Studies (CCSEAS)	Chinese – CHNU (405)	
7	Centre for French and Francophone Studies (CFFS)	French – FRNU (406)	
8	Centre for German Studies (CGS)	German – GERU (407)	
9	Centre for Russian Studies (CRS)	Russian – RSNU (408)	
10	Centre for Spanish, Portuguese, Italian and Latin American Studies (CSPI&LAS)	Spanish – SPNU (409)	

**Master of Arts**

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre for Persian and Central Asian Studies (CPCAS)	Persian – PERM (203)	<ol style="list-style-type: none"> <li>1. Translation based on the vocabulary of newspapers, journals and magazines.</li> <li>2. Essays, short stories, novels from the different authors</li> <li>3. (a) History of Persian Language with special reference to Avesta, Old Persian and Pahlavi scripts and Literature. (b) Literary History of Persian starting from Arab Invasions up to the end of - Pahlavi period with special reference to Samanid, Ghaznavid, Saljuk, Mongol, Safavid, Qajar and Pahlavi periods. (c) A special study of Persian Literature produced in India.</li> <li>4. Geography and systems of Government in the Persian speaking world (i.e. Iran, Afghanistan, Tajikistan.)</li> <li>5. (a) A detailed account of new trends in Modern/Contemporary Persian Prose</li> </ol>

			<p>and Poetry.</p> <p>(b) Comparison between classical and Modern Persian Poetry.</p> <p>(c) Selection of poems from Modern/Contemporary Persian Literature.</p> <p>6. A Comparative study of the contemporary Persian dialects with a special reference to Modern Persian, Dari and Tajik.</p> <p>7. Indo-Persian Relations from the pre-historic days up to the Modern times with special reference to the following: (a) Historical, (b) Cultural, (c) Linguistics, (d) Literary, (e) Trade, scientific &amp; technological relations with special reference to Modern times.</p>
2		Pashto - PUSM (236)	The test is conducted in Pashto and objective type questions pertaining to Afghanistan & Pashto speaking countries, Pashto Language and literature, Pashto history, culture and tradition, Pashto grammar, Translation, Pashto terminologies and general awareness on Indo- Afghan relations.
3	Centre for Arabic and African Studies (CA&AS)	Arabic – ARBM (204)	<ol style="list-style-type: none"> <li>1. History of Arabic literature – pre-Islamic, Islamic, Umayyid, Abbasid and modern periods</li> <li>2. Modern prose and poetry</li> <li>3. Arabic studies in India</li> <li>4. Criticism</li> <li>5. Major Arab and Indian writers</li> <li>6. Advanced Arabic grammar</li> <li>7. Translation (Arabic-English-Arabic)</li> </ol>
4	Centre for Japanese Studies (CJS)	Japanese – JAPM (205)	<ol style="list-style-type: none"> <li>1. <b>General Awareness on topics such as Japan's</b> <ul style="list-style-type: none"> <li>• Geography</li> <li>• History</li> <li>• Society and Culture</li> <li>• Famous Works of Literature</li> <li>• Current affairs</li> </ul>           (Course list for B.A. programme given below for reference)  <a href="http://www.jnu.ac.in/SLL/CJS/BACoursesJapanese.asp">http:// www.jnu.ac.in/SLL/CJS/BACoursesJapanese.asp</a> </li> <li>2. <b>Language ability in Japanese</b></li> </ol>
5	Centre for Korean Studies (CKS)	Korean – KORM (206)	The test is conducted in Korean and objective type questions pertaining to Korea, Korean language, basic Korean literature, Korean culture (both traditional and modern) are covered. Questions may also test their knowledge of basic Hanja (Chinese characters). The test is Computer Based in Korean.
6	Centre for Chinese, South East Asian Studies (CCSEAS)	Chinese – CHNM (207)	The test will be conducted in Chinese. Questions on Chinese and Chinese literature, history, civilization and culture of China and Sinophone countries, linguistics and language, translation and didactics of teaching a foreign language are some of the areas covered in the syllabus.
7	Centre for French and Francophone Studies (CFFS)	French and Francophone Studies – FRNM (208)	The test will be conducted in French. Questions on French & Francophone literature, history, civilization and culture of France and Francophone countries, linguistics and language, translation and didactics of teaching a foreign language are some of the areas covered in the syllabus.
8	Centre for German Studies (CGS)	German Literature – GRLM (209)	<ol style="list-style-type: none"> <li>1. <b>Common for both:</b> <ul style="list-style-type: none"> <li>• German history from 1750 till 1914</li> <li>• German history after 1945. (Two German states; Reunification)</li> <li>• Basic Linguistics (Word Formation in German; Dependenzgrammatik; IC-analysis; speech act theory etc.)</li> </ul> </li> <li>2. <b>For candidates opting for German literature:</b> <ul style="list-style-type: none"> <li>• Trends in German Literature post 1945 till 2000</li> <li>• History of German Literature from 1750 till 1900. Representative authors and texts - an overview of the different periods from the Enlightenment to Realism</li> <li>• An overview of the main genres in German literature</li> <li>• The ability to interpret given texts from these periods.</li> </ul> </li> </ol>
9		German Translation – GRTM (230)	

			<p style="text-align: center;"><b>3. For candidates opting for German translation:</b></p> <ul style="list-style-type: none"> <li>• Good knowledge of German and English</li> </ul>
10	Centre for Indian Languages (CIL)	Hindi – HNDM (210)	<p>Syllabus covers the courses prescribed in B.A./B.A.(Hons.) in various Colleges/Universities all over the Country, comprising the following topics:</p> <ul style="list-style-type: none"> <li>• History of Hindi Literature.</li> <li>• Major Literary Genres, Works, Movements and trends.</li> <li>• Major Writers and Critics of Hindi Literature.</li> </ul>
11		Urdu – URDM (211)	<p>By and large syllabus will cover the curriculums/ syllabuses of B.A./B.A. (Hons.) of Urdu as prescribed in various Universities/Colleges all over the Country. Which will commonly be based on the following topics:</p> <ul style="list-style-type: none"> <li>• History of Urdu Literature : (From beginning till 20th century)</li> <li>• Classical Urdu Poetry: (Major classical Urdu poets and their selected works)</li> <li>• Classical Urdu Prose: (Major classical Urdu Prose writers and their selected works)</li> <li>• Modern Urdu Poetry: (Major Modern Urdu Poets and their selected works)</li> <li>• Modern Urdu Prose: (Major Modern Urdu Prose writers and their selected works)</li> <li>• Major Genres of Urdu Poetry Prose</li> <li>• Major literary movements and trends of Urdu Literature.</li> </ul>
12	Centre for Russian Studies (CRS)	Russian – RSNM (212)	<p>The Entrance Examination for this level is Computer Based Test (CBT) in Russian Language. The questions will be based on Advanced Russian Grammar, which may include cases, direct-indirect speech, aspects of verbs, use of verbs with and without prefixes, participles, gerund, active &amp; passive voice etc. It also includes translation from Russian into English and English into Russian and works of prominent authors of 19<sup>th</sup> &amp; 20<sup>th</sup> Century Russian Literature.</p>
13	Centre for Spanish, Portuguese, Italian and Latin American Studies (CSPI&LAS)	Spanish – SPNM (213)	<p>The test will be conducted in Spanish. Questions on Spanish and Latin American literature, history, civilization, culture, linguistics and language, translation are some of the areas covered in the syllabus.</p>
14	Centre for Linguistics (CL)	Linguistics – LINM (214)	<p>In order to get admitted into the Centre for Linguistics to do an M. A., the students are tested for their aptitude for language, general awareness about language and its function, holistic and scientific approach towards the knowledge of language, analytical abilities, grammatical judgment tasks, linguistics data analysis.</p> <p>The examination will be computer based test and will be conducted in English.</p>
15	Centre for English Studies (CES)	English – ENGM (215)	<p>Candidates will be examined in Literature in English, Literature in India and Other Parts of the World, English in India, Literary and Cultural Theories, Non-Literary Artistic Forms, the Relationship between Literature, Culture and Society, and Practical Criticism of given literary pieces. The objective of the test is to select those who demonstrate not just in -depth knowledge of literature and culture, but literary sensibility and a capacity for original thinking.</p>

## Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre for Persian and Central Asian Studies (CPCAS)	Persian –PERH (848)	<p><b>1. Research Methodology</b></p> <p>i) References ii) Applied Mechanisms of Research- iii) Research Writings iv) Use of Manuscripts, Archives and Texts in Research Works</p> <p><b>2. Trends in Persian Literature: Prose and Poetry</b> This will cover major works of the contemporary authors/poets, their age and society in which they lived. The texts of literary works shall be studies from political, historical and sociological point of views to discern the currents and cross currents of society. The contributions of authors/poets to bring positive upheaval in society shall be the focal point of study.</p> <p><b>3. History of Persian Literature</b> This will cover the history of Persian Literature in which the major works, their influences and movements caused by them in the Persian speaking world will be taken into account. The entire study shall be undertaken within the framework of socio-political history and the major events of the country having literary relevance will be properly emphasized.</p> <p><b>4. Indo-Persian Cultural Interactions</b> This will briefly cover Indo-Persian Cultural interactions under the following broad topics: i) Contacts between Indian &amp; Persian Courts and their impact on life and letters of the countries. ii) Translation of Indian texts and traditions in Persian and vice versa. iii) Literary interactions between India and the Persian World iv) Cultural events of literary significance, etc. v) Cultural Exchange Programme after 1947 and diplomatic contacts between India and the Persian world.</p> <p><b>5. Literary Interactions</b> a) Persian literary translations in Indian languages and European language. b) European works of universal significance in Persian Language. c) Indian literature etc. in Persian language. d) Contemporary themes and subjects in Persian literature vis a vis world literature.</p> <p><b>6. Indo-Persian Literature:</b> Historiography, Mysticism, Indian Style of writing (Prose &amp; Poetry) etc.</p>
2	Centre for Arabic and African Studies (CA&AS)	Arabic –ARBH (849)	<ol style="list-style-type: none"> <li>1. History of Arabic literature - pre-Islamic, Islamic, Umayyid, Abbasid and modern periods, literature of Al Maghreb, emigrant literature.</li> <li>2. Criticism – schools and trends</li> <li>3. Major works of Indian writers in Arabic studies</li> <li>4. Major centre of Arabic and Islamic learning in India</li> <li>5. Classical and Modern Prose</li> <li>6. Classical and modern poetry</li> <li>7. Theory of translation</li> </ol>
3	Centre for Japanese Studies (CJS)	Japanese –JAPH (850)	<ul style="list-style-type: none"> <li>• Major literary works in Japanese literature</li> <li>• In depth Knowledge to discuss about some literary works and authors such as Kawabata Yasunari, Akutagawa Ryunosuke, etc in Japanese</li> <li>• Literary trends in Japan</li> <li>• Current affairs in Japan</li> <li>• Indo-Japanese relations in social, cultural, economic, political spheres</li> <li>• Cultural, and social history of Japan, contemporary society in Japan.</li> <li>• The research theme in which the candidate is interested, Details of the area in which the candidate would like to pursue research.</li> </ul>
4	Centre for Korean Studies (CKS)	Korean –KORH (851)	The questions for the exam will cover research methodology, Korean language, linguistics, literature, culture, history, current affairs of Korea and translation studies. The examination will be in Korean language. The exam will be Computer Based Test (CBT) in Korean.



5	Centre for Chinese, South East Asian Studies (CCSEAS)	Chinese –CHNH (852)	The questions for the exam will cover research methodology, Chinese and Chinese literature, history, civilization and culture, linguistics & language, translation studies, didactics of teaching a foreign language, etc. the examination will be conducted in the Chinese language.
6	Centre for French and Francophone Studies (CFFS)	French –FRNH (853)	The questions for the exam will cover research methodology, French & Francophone literature, history, civilization and culture, linguistics & language, translation studies, didactics of teaching a foreign language. The examination will be conducted in the French language.
7	Center for German Studies (CGS)	German Literature – GERH (854)	<p><b>1. Common for all streams</b></p> <ul style="list-style-type: none"> <li>• Research methodology</li> <li>• Research Interest</li> <li>• Research proposal</li> </ul> <p><b>2. Particular streams</b></p> <ul style="list-style-type: none"> <li>• German Literature</li> <li>• German Linguistics</li> <li>• Translation</li> <li>• German History</li> <li>• Didactics / German as Foreign Language</li> </ul>
8	Centre for Indian Languages (CIL)	Hindi –HNDH (855)	<p>Ph.D. programme syllabus of the entrance test shall consist of 50% of Research Methodology and 50% shall be Subject specific.</p> <p>M.A. (Hindi) in various Colleges/Universities all over the country in general comprising the following topics:</p> <ul style="list-style-type: none"> <li>• Origin and development of Hindi Language &amp; Literature</li> <li>• Major literary works and Authors, Genres, Movements, trends of Hindi Literature</li> <li>• Research Methodology</li> </ul>
9		Urdu –URDH (856)	<p>Ph.D. programme syllabus of the entrance test shall consist of 50% of Research Methodology and 50% shall be Subject specific.</p> <p>M.A. (Urdu) in various Colleges/Universities all over the country in general comprising the following topics:</p> <ul style="list-style-type: none"> <li>• Research Methodology</li> <li>• Textual Criticism</li> <li>• Origin and development of Urdu Language</li> <li>• History of Urdu Literature</li> <li>• Dakkani Urdu Literature</li> <li>• Classical Urdu Poetry and Prose</li> <li>• Major genres of Urdu Poetry and Prose</li> <li>• Major Literary movements and trends</li> <li>• Major Critical Theories, Ideas and Critics</li> <li>• Major works of research in Urdu and Researchers</li> <li>• Major literary schools (dabistan) of Urdu.</li> </ul>
10		Tamil –TAMH (857)	<p>Ph.D. programme syllabus of the entrance test shall consist of 50% of Research Methodology and 50% shall be Subject specific.</p> <ul style="list-style-type: none"> <li>• Basic Research Methodology.</li> <li>• History of Tamil Literature: Sangam period to Modern period.</li> <li>• History of Tamil Language: Sangam Period to Modern period and Calduvel concept.</li> <li>• History of Tamil Grammar: Tolkaappiyam, Yappruglakarigai, Iriyanar Akaporull, Thandiyalgram, Nannul, Purapporul venpaa, Maalai, Pannirupaattiyal.</li> <li>• History of Tamil Criticism: Commentators, Modern Criticism.</li> <li>• History of Tamil Folklore: Tales, Ballads, Proverbs.</li> <li>• History of Tamil Journals: Colonial Period, Post Colonial Period.</li> <li>• History of Tamil Drama and Film: Puranic/ Dravidian Movement / Social Oriented.</li> <li>• History of Comparative Literature: Reception and Influence Theory, Parallel Theory, Genres, Translations.</li> </ul>

			<ul style="list-style-type: none"> <li>History of Tamil Nadu and Culture: Sangam Period to Post Colonial Period.</li> <li>History of Fine Arts in Tamil Nadu: Painting, Music, Sculptures.</li> </ul>
11		Hindi Translation –HTLH (858)	<p>Ph.D. programme syllabus of the entrance test shall consist of 50% of Research Methodology and 50% shall be Subject specific.</p> <p>Candidates seeking admission in Hindi Translation are expected to have detailed knowledge of the tradition of translation in India, specially the tradition of translation in Hindi—</p> <ul style="list-style-type: none"> <li>Basic knowledge of Research Methodology</li> <li>Basic knowledge of Hindi/Indian Literature</li> <li>Knowledge of the different forms of translation,</li> <li>Introduction and critical views on translation theories</li> <li>Major translation thinkers and their contribution</li> <li>Cultural aspects of translation</li> <li>Methodology of translation</li> <li>Translation and structure of language</li> <li>Major works of translation</li> <li>Indian Multilingualism and Translation</li> <li>Role of Translation in Social Change</li> <li>Technology and Translation</li> <li>Emerging issues in Translation</li> <li>Translation of Technical Terminology</li> <li>Computer Assisted Translation Tools</li> <li>Idea of Indian Literature/World Literature and Translation</li> <li>Role of Translation in Comparative Literature</li> </ul>
12	Centre for Russian Studies (CRS)	Russian –RSNH (860)	<p>The Entrance Examination for this level is Computer Based Test (CBT) in Russian Language. The questions will be based on the Post graduate syllabi of the Centre of Russian Centre. The Test will consist of 50% questions on Research Methodology in the fields of Linguistics, Literature and Theory of Translation and 50% questions on Russian Grammar, 19th &amp; 20th Century Soviet &amp; Russian Literature, Translation of phrases &amp; sentences and Culture.</p> <p>Candidates who qualify the CBT will be invited for a viva-voce which will be conducted in Russian. The candidate will be required to prepare a brief research proposal for the viva-voce based on his/her area of interest.</p>
13	Centre for Spanish, Portuguese, Italian and Latin American Studies (CSPI&LAS)	Spanish –SPNH (861)	<p>The questions for the exam will cover research methodology, Spanish &amp; Latin American literature, history, civilization and culture, linguistics &amp; language, translation studies, didactics of teaching a foreign language. The examination will be conducted in Spanish language.</p>
14	Centre for Linguistics (CLIN)	Linguistics –LINH (863)	<p>In order to get admitted into the Centre for Linguistics to do an M. Phil. &amp; Ph.D., the students are tested for their knowledge that they acquire during their post-graduation in Linguistics from various Universities. The students are also tested for their very basic understanding of research aptitude which also involves critical thinking.</p> <p>The examination will be computer based test and will be conducted in English.</p>
15	Centre for English Studies (CES)	English –ENGH (864)	<p>Candidates will be examined in Literature in English, Literature in India and Other Parts of the World, English in India, Literary and Cultural Theories, Non-Literary Artistic Forms, and the Relationship between Literature, Culture and Society. The objective of the test would be to specifically assess the research aptitude of the candidates, and their suitability for a rigorous research programme.</p>

### 3. SCHOOL OF LIFE SCIENCES

**The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)**

**M.Sc.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1.	School of Life Sciences (SLS)	Life Sciences – SLSM (225)	<ol style="list-style-type: none"> <li>1. Candidates will be tested in their basic knowledge in the core subjects of Life/Biological Sciences.</li> <li>2. The test would contain subject-specific questions encompassing different branches of Life/Biological Sciences taught at the under graduate level in various UGC affiliated colleges /institutions in the country.</li> <li>3. There is no specific syllabus designed for the test, but the candidates are advised to follow the UGC approved syllabus in their respective subjects for guidance.</li> </ol>

**Ph.D.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Life Sciences (SLS)	Life Sciences – Group-I GONH (892)	<ol style="list-style-type: none"> <li>1. Candidates will be tested in their basic knowledge on research methodology and core subjects of Life/Biological Sciences.</li> <li>2. The test will contain questions based on research methodology/experimental techniques related to Life/Biological Sciences research. The test would also contain subject-specific questions encompassing different branches of Life/Biological Sciences taught at the postgraduate level in various UGC affiliated universities/ institutions in the country.</li> <li>3. There is no specific syllabus designed for the test, but the candidates are advised to consult CSIR/UGC-NET JRF syllabus for guidance.</li> </ol>
		Life Sciences Group-II – GTWH (893)	
		Life Sciences Group-III – GTRH (894)	
		Life Sciences Group-IV – GFOH (895)	
		Life Sciences Group-V – GFIH (896)	

## 4. SCHOOL OF SOCIAL SCIENCES

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

### Master of Arts

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre for Economics studies and Planning (CESP)	Economics-ECOM (216)	<p>Applicants will be tested for their analytical abilities and awareness of national and international economic issues of importance at present and in the recent past. Candidates are expected to be familiar with the content of a standard Economics course taught at the B.A. level. Especially for the benefit of applicants without an undergraduate degree in Economics, an enumeration of the areas to be covered is given below:</p> <p>(a) (i) Micro-economics (Demand Curves, Price and Income Elasticity of Demand, Cost Curves, Equilibrium of Firm under Perfect Competition and Monopoly) (ii) Macroeconomics (National Income, Theories of Income Determination, Monetary Policy, Trade and Balance of Payments)</p> <p>(b) Descriptive Statistics (Mean, Median and Mode, Standard Deviation, Correlation Coefficient), Elementary Probability Theory, Mathematics for Economists (Elementary Algebra, Coordinate Geometry and Elementary Calculus)</p> <p>(c) Problems of Economic History, Underdevelopment and Growth: (i) India's Economic Development prior to Independence: India's Planning and Development experience since Independence; Basic indicators of Development. (ii) International Economics Issues of Contemporary Relevance.</p>
2	Centre for Historical Studies (CHS)	Modern History-MODM (217)	<p>The MA exam is structured to test the students on:</p> <p>A. General comprehension</p> <p>B. A broad understanding of the social sciences and</p> <p>C. Themes related to political, economic and social history and on aspects of religion and culture pertaining to Indian and World history for the ancient, medieval, modern and contemporary periods.</p>
3	Medieval History – MEDM (218)		
4	Ancient History – ANCM (219)		
5	Centre for Political Studies (CPS)	Political Science – POLM (220)	<p>The M.A. in Political Science continues to be distinctive in its commitment to teaching through lectures and tutorials in order to maintain high standards of excellence in the discipline. Candidates are expected to be familiar with the content of a standard B.A. course in Political Science. Applicants will be tested from areas given below:</p> <p style="text-align: center;">Unit I</p> <p>a) Social and Political Thought of Modern India b) Western Political Thought c) Concepts and Approaches in Political Theory</p> <p style="text-align: center;">Unit II</p> <p>d) Constitution and Political Institutions of India e) State and Politics in India f) Political Processes and Public Policies in India</p> <p style="text-align: center;">Unit III</p> <p>g) Comparative Government and Politics h) International Relations</p> <p>Applicants will be require to show familiarity with each Unit.</p>

6	Centre for the Study of Regional Development (CSR D)	Geography- GEOM (221)	<p><b>Unit-I Physical Geography:</b> Geomorphology, climatology, oceanography, hydrology, bio-geography, Environmental Geography.</p> <p><b>Unit-II: Human Geography:</b> Economic geography, political geography, Population geography, human ecology and human settlements</p> <p><b>Unit-III: Regional Geography:</b> Regional geography of India- physiographic divisions, patterns and levels of development of agriculture and industries, growth of population, urbanization, and socio-culture diversity.</p> <p><b>Unit-IV: Cartographic Techniques, Remote Sensing &amp; Geographic Information Science and Quantitative Statistical Methods</b></p> <ol style="list-style-type: none"> <li>1. Maps &amp; Cartography; Maps; Scales; Map Projections/ Survey of India Topographic maps, methods of data Representation</li> <li>2. Remote Sensing and Geographical Information System</li> </ol> <p>Statistical Methods: frequency distribution, measures of central tendency and dispersion, Correlation</p>
7	Centre for the Study of Social Systems (CSSS)	Sociology- SOCM (222)	<p><b>Applicants are expected to have a fair understanding of Social Sciences and Indian Society and Culture</b></p> <p><b>Broad themes</b></p> <ol style="list-style-type: none"> <li>1. Thinkers: Karl Marx, Emile Durkheim, Max Weber, Georg Simmel, C. Wright Mills, George Herbert Mead, Claude Levi-Strauss</li> <li>2. Indian Sociologists: G.S. Ghurye, M. N. Srinivas, Iravati Karve, Yogendra Singh, Andre Beteille, T.K. Oommen</li> <li>3. Basic Concepts and Social Institutions</li> <li>4. Tools and Techniques Research and Research Methodology</li> <li>5. Social Structure and Social Change</li> <li>6. Social Stratification: Gender, Caste, Class, Tribe, Disability</li> <li>7. Economy and Society</li> <li>8. State, Polity and Society</li> <li>9. Family, Marriage and Kinship</li> <li>10. Sociology of Religion</li> <li>11. Environment and Society</li> <li>12. Social Movements</li> <li>13. Social Issues</li> <li>14. Understanding Indian society</li> <li>15. Modernization, Globalization and Development</li> </ol>
8	Centre for Philosophy (CP)	Philosophy- SPHM (229)	<p><b>The entrance test will be based in a standard BA (major) Philosophy course taught in UGC accredited Indian universities. Students are expected to be familiar with the following problems, themes, and issues. There are five Sections in the syllabus. Each Section will have 20 percent representation (20%) in the total number of questions.</b></p> <p><b>Section: I</b></p> <p><b>Metaphysics</b></p> <p>Questions will be from both Indian and Western philosophical perspective. Within this section, both the perspectives will have equal representation (50-50%) in terms of the number of questions.</p> <ol style="list-style-type: none"> <li>1. Proofs for Existence of God</li> <li>2. Free Will and Determinism</li> <li>3. Self and No-self</li> <li>4. Consciousness</li> <li>5. Personal Identity</li> <li>6. Substance and Qualities</li> <li>7. Being and Becoming</li> <li>8. Actuality and Potentiality</li> <li>9. Appearance and Reality</li> <li>10. Mind and Body Problem</li> <li>11. Universals</li> <li>12. Realism and Idealism</li> </ol>

			<p style="text-align: center;">13. Essence and existence</p> <p><b>Section: II</b></p> <p><b>Epistemology</b></p> <p>Questions will be from both Indian and western philosophical perspective. Within this section, both the perspectives will have equal representation (50-50%) in terms of the number of questions.</p> <ol style="list-style-type: none"> <li>1. Theories of Truth</li> <li>2. Theories of Error</li> <li>3. Gettier Problem</li> <li>4. Definitions of Knowledge</li> <li>5. Knowledge by acquaintance and Knowledge by Description</li> <li>7. Sources of Knowledge</li> <li>8. Skepticism</li> <li>9. Justification of Knowledge: Foundationalism, Anti-foundationalism, and Coherentism</li> <li>10. Knowledge that and knowledge How</li> <li>11. Problem of Induction</li> <li>12. Apriori Knowledge</li> </ol> <p><b>Section: III</b></p> <p><b>Ethics</b></p> <p>Questions will be from both Indian and Western philosophical perspective. Within this section the Indian ethical perspective will have twenty five percent representation (25%) in terms of the number of questions.</p> <ol style="list-style-type: none"> <li>1. Theories of Normative Ethics: Utilitarianism, Kantian Deontology, Virtue ethics, Social contract theory, care ethics</li> <li>2. Theories of Metaethics: Relativism, Non-naturalism, Emotivism, Universal Prescriptivism,</li> <li>3. Themes of Applied Ethics: Abortion, Euthanasia, Surrogacy, Capital punishment, Animal and Environment ethics</li> <li>4. Thoughts of Indian ethical tradition: Nature of Dharma, Morksa, Purusharthas, Rta, Rina, and themes from Buddhist and Jaina ethics</li> </ol> <p><b>Section: IV</b></p> <p><b>Symbolic Logic</b></p> <p>Questions will be from both Indian and western philosophical perspective. Within the section, the area of Indian Logic will have twenty percent representation (20%) in terms of the number of questions.</p> <ol style="list-style-type: none"> <li>1. Inductive Logic <ol style="list-style-type: none"> <li>a. Analogical Reasoning</li> <li>b. Causal Reasoning</li> <li>c. Probability</li> </ol> </li> <li>2. Deductive Logic <ol style="list-style-type: none"> <li>a. Categorical proposition</li> <li>b. Categorical syllogisms</li> <li>c. Symbolic Logic</li> <li>d. Methods of Deduction</li> <li>e. Quantification Logic</li> </ol> </li> <li>3. Informal Fallacies: Indian and Western</li> <li>4. Types of Arguments</li> </ol>
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			<p><b>Section: V</b></p> <p><b>Social and Political Philosophy</b></p> <p>Questions will be from both Indian and Western philosophical perspective. Within this section, both the perspectives will have equal (50-50%) representation in terms of the number of questions.</p> <ol style="list-style-type: none"> <li>1. Theories of Justice</li> <li>2. Liberty and Equality</li> <li>3. Democracy</li> <li>4. Feminism</li> <li>5. Global justice</li> <li>6. Marginalization and Discrimination</li> <li>7. Gandhi: Non-violence, Satyagraha, Swaraj, Nationalism, State</li> <li>8. Ambedkar: Genesis of Caste and Annihilation of Castes</li> <li>9. Tagore: Nationalism, Education and Religion of Man</li> <li>10. Amartya Sen: Justice (Niti and Nyaya)</li> </ol>
9	Centre for Informal Sector and Labour Studies (CIS&LS)	Development and Labour Studies-DLSM (231)	The applicants for the M.A. programme will be examined in the light of their knowledge on themes and issues studied in a standard social science bachelor programme. The purpose of entrance exam is to test the candidates' general awareness on issues related to development and labour studies, their capacity to comprehend and reflect on academic articles, and their ability in analytical reasoning on the contemporary issues of informal sector. Students will be tested in the broad thematic areas of major social science disciplines: Political Economy, Theories and Contemporary History of Development, Development Economics, Indian Economy, Society and Politics in India, Sociological and Political Theories. The purpose of the test is to select candidates who demonstrate aptitude for analytical skills and ability for original thinking.

### MPH

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre of Social Medicine and Community Health (CSMCH)	Master of Public Health - MPHT (145)	<p>Public health is an interdisciplinary field and shall require the candidates appearing for the MPH entrance examination to have basic knowledge about important health problems in the country, their determinants, and health interventions. Along with biomedical aspects of important health problems, understanding of social determinants of health and health care shall also be assessed.</p> <ol style="list-style-type: none"> <li>1. History of Public Health</li> <li>2. Concepts in Public Health</li> <li>3. Epidemiology</li> <li>4. Epidemiology of Specific Diseases</li> <li>5. Biostatistics</li> <li>6. Entomology</li> <li>7. Health planning, policy and Public Health Administration</li> <li>8. Health Management</li> <li>9. Health economics</li> <li>10. Nutrition</li> <li>11. Environmental Sanitation</li> <li>12. Demography and Family Planning</li> <li>13. Mental Health</li> <li>14. Application of Social Sciences in Health</li> <li>15. Impact of urbanisation on health and disease.</li> <li>16. School Health</li> <li>17. Urban health</li> </ol>

## Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Centre for Economics studies and Planning (CESP)	Economics- ECOH (865)	In the examination, the applicants will be examined in the topics covered by a standard M.A. Economics programme These would broadly include Micro-economics, Macro-economics, Economic Development, Indian Economy and Statistical and: Mathematical Methods in Economics. The distribution of questions in the examination would be in conformity with UGC Regulations, 2016.
2	Centre for Historical Studies (CHS)	Modern History- MODH (866)	The exam is structured to test the students on:  A. Historical methods  B. Historiographical debates and discussions  C. Themes related to political, economic and social history and on aspects of religion and culture pertaining to Indian history for the ancient, medieval, modern and contemporary periods (including World history).
3		Medieval History –MEDH (867)	
4		Ancient History – ANCH (868)	
5	Centre for Political Studies (CPS)	Political Science –POLH (869)	Applicants for the programme will be examined for their analytical ability in topics covered by an M.A. programme in Political Science. These would broadly include Philosophy and Methods of the Social Sciences, Traditions of Political Inquiry, Key Concepts in Political Science, Contemporary Debates in Political Philosophy, Indian Politics (Institutions, Processes and Policies) Key Debates in Indian Politics, Issues in Comparative Politics, and International Relations.  Questions in the entrance test will include recent political debates. In addition, questions based on the various Masters level courses will also be asked. Questions on the various quantitative and qualitative research methods commonly used in social science research will also feature in the entrance test. For more details about our programme and courses, please visit the website. The Ph.D. programme syllabus of the entrance test shall consist of 50% of Research Methodology and 50% shall be Subject Specific. The distribution of questions in the examination would be in conformity with UGC Regulations, 2016. For more details about our programme and courses, please visit te website: <a href="http://www.jnu.ac.in/sss/cps">http://www.jnu.ac.in/sss/cps</a>
6	Centre for the Study of Regional Development (CSR D)	Population Studies- POPH (870)	Students will be tested on research methodology and the relevant areas pertaining to the streams they apply for. The syllabus for the JNUEE has been framed keeping in mind the post graduate programs taught in most Indian universities. <b>(i) Regional Development: Geography (code: GEO)</b> Syllabus: (A) <b>Research Methodology:</b> Recent trends in geographical thought and research concerns in the field; Cartographic methods; descriptive statistics; sampling techniques; correlation and regression analysis, geographical information system, Remote sensing, and GPS; Morphometric techniques in areal and liner analysis, hydrograph and runoff estimation, evapotranspiration, methods of soil analysis, ground water mapping and estimation, RS in LU-LC and biodiversity mapping, magnitude-frequency classification of natural disasters, methods of graphical representation of economic loss of disasters, age estimation of landforms. Methods of landscape surveying and mapping; socio-economic field survey methods. (B) <b>i. Physical Geography:</b> Geomorphology, Oceanography, climatology, climate change, Hydrology, Biogeography, Ecosystems, Natural Resources and Natural Disasters (with special reference to India) <b>ii. Human Geography:</b> Population distributed and growth: human settlements, urbanization, migration rural and agricultural geography: Spatial structure and temporal trends of economic activity; Social groups and communities, tourism; (with special reference to India) <b>iii. Regional Development:</b> Concepts, strategies of regional development regional imbalances and levels of development in India; inclusive exclusions and exclusive inclusions, Globalization, natural resources and changing spatial division of labour.
7		Geography- GEOH (871)	
8		Economics- ECNH (872)	



			<p><b>(ii) Regional Development: Population Studies (Code: POP)</b></p> <p><b>(A) Research Methodology:</b> Basic and advanced statistics, Quantitative methods in population analysis, basic demographic data in India, methods of demographic data analysis, population survey (primary and secondary) methodologies and designs.</p> <p><b>(B) Nature and scope of population studies; sources of demographic data; Global and regional population trends, growth, distribution, and density; population composition; components of population dynamics namely fertility, mortality and migration; Population growth in relation to economic and social development. India's population policy and family planning programme, population theories, Demographic methods (may need the use of scientific calculator), Population, environment and development, urbanization, Human habitat, human ecology, Food security, Programs related to Population Health and Development, gender and population.</b></p> <p><b>(iii) Regional Development: Economics (Code: ECN)</b></p> <p><b>(A) Research Methodology:</b> Basic Statistics, Quantitative methods in Economics, Sources of Data on the Indian Economy.</p> <p><b>(B) Economic theory and development theory (at the Master level); basic issues in Indian economy around themes like poverty, inequality, employment, banking, public finance, industry, agriculture, trade etc; India's development and policy choices; made over the years to address those challenges.</b></p>
9	Centre of Social Medicine and Community Health (CSMCH)	Social Sciences in Health- CSMH (873)	<p>PhD in Social Sciences and Health at the Centre of Social Medicine and Community Health is an interdisciplinary programme. The candidates are expected to have an understanding of diseases, health and wellbeing through the study of social, behavioural, economic, political, regional, spatial, cultural and environmental influences on health, health planning, policies and programmes and the application of social epidemiology and social science theories, concepts and methodologies for research in public health.</p> <p><b>Basic concepts in Social Sciences and its relevance to public health</b></p> <ol style="list-style-type: none"> <li>1. Social Stratification</li> <li>2. Social Institutions and Groups</li> <li>3. Culture</li> <li>4. Characteristics of Rural and Urban Society</li> <li>5. Sanskritisation</li> <li>6. Social Capital and Cultural Capital</li> <li>7. Poverty</li> <li>8. Inequality</li> <li>9. Globalization, liberalization, privatization</li> <li>10. Motivation</li> <li>11. Attitude, Perception and Behavior</li> <li>12. Socialisation</li> <li>13. Power</li> <li>14. Conflict</li> <li>15. Civil Rights, Democratic Rights and Human Rights</li> <li>16. Social change</li> <li>17. Social movements and civil society</li> <li>18. Understanding Interconnections Between Economy, Polity And Society</li> <li>19. Current Debates in Health</li> </ol> <p><b>2. Application of Social Sciences to Health</b></p> <ol style="list-style-type: none"> <li>1. Social Determinants of Health</li> <li>2. Development and Health</li> <li>3. Social inequalities and marginalisation in health</li> <li>4. Climate change and its impact on health</li> <li>5. Population and development</li> <li>6. Social exclusion, discrimination and health</li> <li>7. Importance of large data sets for public health</li> <li>8. Health promotion and Illness prevention</li> <li>9. Mental Health and Disability</li> <li>10. Medical Pluralism</li> <li>11. Accessibility, Availability and Affordability of Health Care</li> </ol>

			<p>12. Universal Health Care 13. Recent social issues and their implications for health</p> <p><b>3. Research Methodology</b> 1. Qualitative methods in Social Sciences 2. Quantitative methods in Social Sciences 3. Importance of Qualitative and quantitative research methods used in public health 4. Mixed methods 5. Ethics in Research 6. Statistical Methods</p>
10		Public Health – PUBH (874)	<p>PhD in Public Health at the Centre of Social Medicine and Community Health is an interdisciplinary programme. The candidates are expected to have an understanding of diseases, health and wellbeing through the study of Biomedical, social, behavioural, economic, political, regional, spatial, cultural and environmental influences on health, health policies and programmes and the application of public health and health systems research concepts and methodologies.</p> <p><b>1. Basic concepts in public health</b> 1. History of Public Health 2. Concepts in Public Health 3. Epidemiology 4. Epidemiology of Specific Diseases 5. Health planning, policy and Public Health Administration 6. Health Management 7. Health economics 8. Nutrition 9. Environmental Sanitation 10. Demography and Family Planning 11. Mental Health 12. Application of Social Sciences in Health 13. Impact of urbanisation on health and disease. 14. School Health 15. Urban health</p> <p><b>2. Research Methodology</b> 1. Qualitative methods in Social Sciences 2. Quantitative methods in Social Sciences 3. Importance of Qualitative and quantitative research methods used in public health 4. Mixed methods 5. Ethics in Research 6. Statistical Methods</p>
11	Centre for the Study of Social Systems (CSSS)	Social Systems - SOCH (875)	<p><b>Candidates are expected to display a good research aptitude, analytical skills and usage of social science perspectives in answering questions from the following list of themes.</b></p> <p>1. Thinkers Classical Thinkers: a. Karl Marx, Emile Durkheim, Max Weber b. Advanced Social Theories: Postmodernism, Postcolonialism and Poststructuralism c. Study of Monographs: Evans-Pritchard, Bronislaw Malinowski, Edmund Leach, Margaret Mead, Clifford Geertz 2. Philosophical Foundation of Theories and Methodology 3. Social Research/Research Methodology: Quantitative and Qualitative, Positivism, Interpretivism 4. Social Structure, Continuity and Change 5. Theories of Culture 6. Social Stratification: Gender, Caste, Class, Tribe, Ethnicity, Disability 7. Kinship, Family and Marriage 8. Social Inequalities and Movements 9. Education and Society 10. Religion and Society 11. State, Polity and Society 12. Economy and Society 13. Social Issues 14. Agrarian and Urban Sociology 15. Indian Sociology</p>

			<p>16. Industrial/Corporate Sociology 17. Modernization, Globalization and Development 18. Media Studies</p>
12	Zakir Husain Centre for Educational Studies (ZHCES)	Educational Studies- EDUH (876)	<p><b>Research Methodology:</b> Research methods and research methodology - nature of the field and their distinct concerns; methods of the sciences, social sciences and humanities; qualitative and quantitative research methods, kinds of theories and the structure of theories: hypothesis, concepts and variables, sampling procedures, data gathering; testing and experimentation, procedures of validation; steps in the research process; research paradigms and frameworks.</p> <p>Measures of Central Tendency and Dispersion (Mean, Median, Mode, Standard Deviation, Variance), Skewness and Kurtosis, Correlation Coefficient, Regression Analysis, Basic Probability Theory, Sampling Theory, Testing of Hypothesis, Data Interpretation, Sources of Data on the Indian Education.</p> <p><b>Zakir Husain Centre for Educational Studies</b> is a multi-disciplinary centre which approaches the field of education from four social science disciplines such as Economics, Sociology, History and Psychology. The students are expected to fit into any one of these disciplinary areas to carry out their research. The syllabus for the entrance examination under each of these areas of specialization is as follows (the list is only indicative, not exhaustive):</p> <p><b>A. History of Education</b> Historical method and historiography; Modern Indian history; The educational database; Woods Despatch; The Revolt of 1857; Establishment of modern universities; The Hunter Commission; India's freedom movement; Imperialism and nationalism. European History; Enlightenment; Reformation; Revolutions; Global History of modernization; introduction of modern sciences and science education. Education and knowledge-systems in pre-colonial India.</p> <p><b>B. Sociology of Education</b> Classical and contemporary sociological theory and thinkers; Themes and issues in the Indian society; Rural and urban Sociology; Sociology of backward classes and marginalized; Sociology of education; sociology of development; Methodology and methods in Sociological research.</p> <p><b>C. Psychology of Education</b> 1. Fundamental Psychological Processes: Attention, Perception, Learning, Memory, Thinking and Problem Solving, Emotion and motivation; Intelligence: Theories and Measurement; Personality Theories; Theories of Human Development: Cognition, Emotion, Moral, and Social; 2. Social Psychology: Social Influence Process, Social Cognition, Group Processes, Intergroup Relations; Research Methods in Psychology: Survey, Experiment, Case Study, Qualitative Approach: Narrative, Discourse Analysis, Interview; Cross-cultural indigenous, and critical perspectives in Psychology.</p> <p><b>D. Economics of Education</b> 1. Microeconomics: Theory of Consumer Behaviour Theory of Production and cost functions. Theory of the Market Structure. Neo-classical theory of distribution; Welfare Economics and General Equilibrium 2. Macroeconomics: National Income Accounting, Theories of consumption and investment- Models of income determination; Theories of supply of and demand for money; Phillips curve and theories of inflation; Open economy macroeconomics; Theories of growth and development, international trade. 3. Theories of growth and development and the Indian Economy: Employment and labour, income Inequality and poverty; Globalization and Internationalization; New Economic Policy and its impact on social sector and physical infrastructure in the context of India; Human development in India.</p>

13	Centre for Studies in Science Policy (CSSP)	Studies in Science Policy-SSPH (877)	<p>Question in the entrance test will be based on the current affairs on science, technology, innovations and related policy debates. To test the domain knowledge of students, questions based on the various Masters level courses will also be asked. Questions on the various quantitative and qualitative research methods commonly used in social science research will also feature in the entrance test. For more details about our programme and courses, Please visit: <a href="http://www.jnu.ac.in/sss/cssp-programme_of_study">http://www.jnu.ac.in/sss/cssp-programme_of_study</a></p> <p><b>The Centre is pursuing research in areas/fields such as:</b></p> <ol style="list-style-type: none"> <li>Science and technology policies including various sectors of economy, S&amp;T in government and S&amp;T policies and development issues in India and other countries;</li> <li>Sociological and Historical Studies on S&amp;T; Social shaping of technology; Scientists in laboratories and organizations; Scientific communities and professionalization of science;</li> <li>Frugal and Grassroots Innovations;</li> <li>Responsible Research and Innovation (RRI);</li> <li>Waste Management;</li> <li>Law, Science and Technology; Cyber &amp; Information Technology Law; Intellectual Property Rights; International S&amp;T Treaties;</li> <li>Economics of technological change and innovation studies; national, sectoral and regional innovation systems; clusters and technological change;</li> <li>Technology Foresight and Assessment; Risk R&amp;D and technology; Technology and hazards including disaster management related to technical change, innovation, methodologies, etc.;</li> <li>Gender issues in S&amp;T;</li> <li>Globalisation and Emerging Technology; TNCs, FDI and impact on R&amp;D; International affairs and relations in S&amp;T for development; Area studies in science and technology policies and development covering developing and developed countries.</li> </ol>
14	Centre for Philosophy (CP)	Philosophy-SPHH (878)	<p>Questions would be based on the M.A syllabus taught at the Centre for Philosophy. Please visit <a href="http://www.jnu.ac.in/sss/cop-mphil">http://www.jnu.ac.in/sss/cop-mphil</a> Each Unit will have 20 percent representation (20%) in the total number of questions.</p> <p>Please note that as per admission policy 50% of questions in the entrance examination for the Ph.D. Program will be from Research Methodology and rest 50% from domain knowledge.</p> <p>Apart from the above the candidate is expected to have sufficient knowledge of the following:</p> <p><b>UNIT –I</b></p> <p><b>Research Methodology:</b></p> <ol style="list-style-type: none"> <li>Inductive, Deductive and probabilistic reasoning</li> <li>Fallacies formal and informal</li> <li>Logical positivism</li> <li>Dialectics</li> <li>Positivism</li> <li>Hermeneutics</li> <li>Deconstruction s</li> <li>Pragmatism</li> <li>Sceptical method</li> <li>Linguistic analysis</li> <li>Phenomenology and existentialism</li> <li>Thought experiments</li> <li>Principles of Verifiability and Falsifiability</li> <li>Holism and methodological individualism</li> <li>Types of arguments in Indian philosophy</li> <li>Nature of inference (<i>Anumāna</i>) in Indian philosophy</li> <li>Types of inferences</li> </ol>

18. Nature of concomitance (*vyāpti*) according to different schools of Indian philosophy  
 19. Hypothetical reasoning (*arthāpatti*)

### UNIT – II

#### Philosophical Theories and Concepts

#### 1. Metaphysics

- i. Theories of mind and consciousness
- ii. Theories of meaning and truth
- iii. Realism and anti-realism
- iv. Freewill: Determinism, Indeterminism and Compatibalism
- v. Form and matter
- vi. Theories of Self
- vii. Theories of Causation
- viii. Problem of personal identity
- ix. Problem of other minds
- x. Problem of matter
- xi. Essentialism
- xii. Atomism
- xiii. Dualism
- xiv. Epiphenomenalism
- xv. Anomalous Monism
- xvi. Eliminative Materialism
- xvii. Behaviourism
- xviii. Substance Dualism
- xix. Nature of Relations
- xx. Critique of metaphysics

#### 2. Epistemology

- i. *Theories of perception*
- ii. *Theories of knowing*
- iii. *Theories of Justification: Internalism and Externalism*
- iv. *Gettier Problem*
- v. *Definition of knowledge (Pramā) in Classical Indian philosophy*
- vi. *Theories of Error in Classical Indian philosophy*
- vii. *Sources of knowledge Classical Indian philosophy*
- viii. *Theories of Justification in Classical Indian philosophy (pramānyavāda)*

### UNIT –III

#### Ethics

#### a. Normative Ethics

- i. Consequentialism
- ii. Kantian Deontology
- iii. Virtue Theoretical Ethics
- iv. Contractarianism and Contractualism
- v. Natural Rights Theory
- vi. Feminist Ethics

#### b. Theories of Metaethics

- i. Cognitivism and Non-cognitivism
- ii. Moore's Non-naturalism
- iii. Error Theory
- iv. Prescriptivism

			<ul style="list-style-type: none"> <li>v. Relativism</li> <li>vi. Moral Realism and anti-realism</li> </ul> <p>c. Applied Ethics</p> <ul style="list-style-type: none"> <li>i. Bio-medical Ethics</li> <li>ii. Animal Ethics</li> <li>iii. Theories of Punishment</li> <li>iv. Environmental Ethics</li> <li>v. Business Ethics</li> </ul> <p>d. Indian Ethical Tradition</p> <ul style="list-style-type: none"> <li>i. Mīmāṃsā Theory of <i>Dharma</i>, <i>itikartavyatābodha</i>, <i>artha</i> and <i>bhāvnā</i>,</li> <li>ii. Buddhist Ethics</li> <li>iii. Jaina Ethics</li> <li>iv. Theory of Obligation in Bhagvad Gītā</li> </ul> <p><b>UNIT- IV</b></p> <p>Social and Political Philosophy</p> <ul style="list-style-type: none"> <li>a. Political Ideas: Equality, Justice, Liberty, Freedom, Rights</li> <li>b. Individual and State</li> <li>c. Democracy</li> <li>d. Socialism</li> <li>e. Marxism</li> <li>f. Secularism</li> <li>g. Sarvodaya</li> <li>h. Gender equality</li> <li>i. Contemporary theories and debates: Utilitarianism, Rawls's Justice as Fairness,</li> <li>j. Libertarianism, Communitarianism, Political liberalism, Multiculturalism, Feminism</li> </ul> <p><b>UNIT -V</b></p> <p>Contemporary Indian Philosophy:</p> <ul style="list-style-type: none"> <li>i. Gandhi, Ambedkar, Tagore, Aurobindo, Vivekananda</li> <li>ii. Gandhi Tagore Debate</li> <li>iii. Gandhi Ambedkar Debate</li> <li>iv. Radhakrishnan</li> <li>v. K. C. Bhattacharyya</li> <li>vi. Jyotiba Phule</li> <li>vii. Mohammad Iqbal</li> <li>viii. Amartya Sen</li> </ul>
15	Centre for Women Studies (CWS)	Women Studies –WSPH (879)	<p>Since Women's Studies is interdisciplinary in nature, the entrance exam will expect candidates to bring their disciplinary and interdisciplinary training in historical, political, economic, sociological, cultural, literary and representational perspectives in the way women, gender, and sexuality have been constituted as objects of study. Students are expected to have a thorough understanding of the relationship between gender and other analytical categories like class, caste, ethnicity, sexuality, community and nationality not only in a national, but also a cross cultural and transnational context. The candidates are expected to be broadly aware of different dimensions of women, gender and sexuality studies in Feminist Theory; Women's Movements; Gender, Labour and Political Economy; Sexuality Studies; Law; Politics; Development; Globalization and its implications; Religion and Faith Practices; Caste, Ethnicity and Race; Gender and Space; Culture and Modernity; Literature, Art and Performance, and Visuality Studies.</p> <p>Candidates are expected to have knowledge of feminist methodology, especially qualitative research methods such as ethnography, discourse analysis, oral history, archival research, and literary methods, but not just limited to these.</p>

16	Centre for the Study of Social Exclusion and Inclusive Policy	Social Exclusion and Inclusive Policy - SEIH (880)	<p>The examination will deal with topics which are covered in any standard Masters level course pertaining to History, Anthropology, Economics, Political Science and Sociology.</p> <p>In addition, the candidates are expected to have comprehensive understanding on the various dimensions of discrimination and exclusion faced by Scheduled Castes (SC), Scheduled Tribes (ST) and various Minority groups in India. The interpretation of these societal dimensions can only be understood through a proper knowledge of research methodology. The definition of research methodology in itself is a difficult task, divided in terms of approaches ranging from the qualitative to quantitative. In addition to research methods the candidate acquainted in their respective subject at the Master level, is also expected to be familiar with the methods and measurement of Discrimination and exclusion.</p> <p>The candidates are expected to be aware of analysis based on large datasets published periodically by the Government and non-governmental agencies. These would include, but not limited to, <i>Decennial</i> Census reports, National Sample Survey Organisation reports (NSSO), National Family and Health Surveys (NFHS), National Crime Records Bureau reports (NCRB) and other alternative reports covering issues of discrimination and exclusion like Sachar Committee Report, Indian Exclusion reports, International Organisational reports like UN, ILO etc. Further the candidates should be aware of reports published by National Commission for Scheduled Castes (NCSC), National Commission for Scheduled Tribes (NCST), National Commission for Backward Classes (NCBC), National Human Rights Commission (NHRC).</p> <p>The candidates should have an indepth understanding of various facets of the Indian Constitution, Governmental policies for inclusion and developmental schemes addressing the issues of inter-sectionalities of Gender, SCs, STs, disabled and Minority groups.</p>
17	Centre for Media Studies (CMS)	Media Studies- CMSH (881)	<p>Envisaged primarily as a centre for research and academic study, the syllabus for the Entrance Examination will cover broader fields of media studies, which include: Histories of media, Political economy of Media, Media and issues of language, Media, democracy, and dimensions of rights and justice, Violence and media, Media, technologies and cultural industries, Media and the nature of connectivities, Visual culture, Theories and methods in media studies.</p>

### Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Group of Adult Education (GAE)	Adult Education- GAEH (883)	<p>We insist that the student/candidates should have exposure, understanding and knowledge in wide ranging issues related to adult, continuing education and extension. The main thrust areas include 'Literacy studies' (e.g., basic literacy, adult literacy, digital literacy, financial literacy, consumer literacy, legal literacy, health family, media, citizenship literacy etc.), adult, lifelong education, vocational/skill education, sustainable livelihood education, entrepreneurship education and other related continuing education in India and abroad. Moreover, GAE focuses on problems of contemporary youth &amp; their lifestyles; the impact of globalization and market practices on the local communities and society with special emphasis on consumer rights, movements and awareness. We try to enrol students who have interest do research in areas of formal/non-formal education, policy studies and practice in all these areas. GAE makes special efforts in enhancing learning, and improving professionalism among the students in social and education sectors to play constructive roles in nation-building.</p>
2	Centre for Informal Sector & Labour Studies (CISL)	Informal Sector & Labour Studies- ISLH (884)	<p>The test is intended to evaluate the candidate's general awareness in the following areas. The Ph.D. programme focuses on interdisciplinary research on Indian informal sector and labour scenario. The programme encourages to work on themes such as—Political Economy of State, Development and Underdevelopment in the contemporary world, Labour History, Globalization and the changing forms of Labour, Global Production Systems, Informalisation in various sectors, Labour Market, Forms of Employment, Poverty, Migration, Urbanisation, Labour Rights and Regulation, Workers' Organizations and Politics, Trade Unions, Resistance, Peasant Production, Non-farm Economy, Agrarian Change and Rural Development, Political Economy of Care, Discrimination on the basis of Caste, Gender and</p>

		Community, Common Property Resources, Public Policies in the Unorganised Sector, and Sustainable Development. The objective of the programme is to enable students to understand the linkages between the formal and the informal sectors and between theory and empirical investigations in research work.
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## 5. SCHOOL OF ENVIRONMENTAL SCIENCES

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

### Master of Science

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Environmental Sciences (SES)	Environmental Sciences – SESM (223)	The questions will be of multiple choice type. The questions will be in two parts. <b>Part I:</b> This will have questions from the different areas of Science and Mathematics at the 10+2 level. <b>Part II:</b> This will have questions, in the areas of Physics, Chemistry, Mathematics, Geology, Botany and Zoology at the B.Sc. level.

### Ph.D.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Environmental Sciences (SES)	Research Area I- ONEH (885)	All questions would be of the multiple choice type. The questions will be divided into two parts: <b>Part-A</b> This part will have questions on Research Methodology broadly covering the topics such as Judging the ability of Searching libraries, web-based information etc., Structuring of articles, referencing etc., Describing visual, audio or written images, Writing review of book/Report etc., importance of seminar/workshop/conference, General idea of plagiarism, Concept of logbook, workbook, field book etc., Names of journals, Important publishers, Site selection criteria, sample number criteria, sample storage methods, sample extraction and digestion methods, Mean, median, mode, standard deviation, standard error, correlation, time series, scatter plots, bars, line diagram, error bars, area plots, contours etc., Accuracy, precision, null hypothesis, errors, uncertainty, Knowledge about software: statistical, GIS and RS etc. <b>Part-B</b> This part will have questions of M.Sc. level from Physics, Chemistry, Geology, Biology and Environmental Sciences.
2		Research Area II- TWOH (886)	
3		Research Area III- THRH (887)	
4		Research Area IV- FORH (888)	



## 6. SCHOOL OF COMPUTER & SYSTEMS SCIENCES

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test

(CBT)

MCA

Sl. No.	Name of School	Sub. Code & Sub. Code (Number)	Syllabus for Entrance Examination
1	School of Computer & Systems Sciences (SC&SS)	Master of Computer Applications- MCAM (224)	General Aptitude, Reasoning, Computer Science and Mathematics, as per the topics specified as under: <b>Maths:</b> Differential and Integral Calculus, Algebra, Trigonometry, 2D-3-D Geometry, Probability & Statistics, Matrices and Determinants <b>Computer Science:</b> Digital Systems Design, C Programming Language, Data structures, Discrete mathematics

Ph.D.

The School will have two separate streams namely "Computer Science" stream and "Microsystems" stream in the JNU entrance examination for the admissions to the PhD programme. An applicant for the PhD programme should clearly mention only one stream in the application form. The candidature of those applying for both the streams is likely to be rejected. Therefore, the applicants are advised in their own interest not to apply for both the streams. Admission is offered to candidates based on their performance in the Computer Based Test (CBT) and the viva-voce examination, as per University rules. In the entrance examination, besides the common part (PART A), the applicants must answer questions only for the part meant for their choice of stream (PART B). On the basis of the candidates' performance in the entrance examination and as per University rules, the candidates would be called for the viva-voce examination. Separate viva-voce examination would be conducted for "Computer Science" stream and "Microsystems" stream. Admission to the PhD Programme will be based on the merit in entrance and viva-voce examination.

Sl. No.	Name of School	Sub. Code & Sub. Code (Number)	Syllabus for Entrance Examination
1	School of Computer & Systems Sciences (SC&SS)	Computer Science - SCSH (890) Microsystems - MISH (915)	50% of the questions will be from Research Methodology and remaining from the other specified topics. <b>PART A</b> <b>Common Syllabus for the Computer Science and Microsystems Stream:</b> <b>Research Methodology:</b> Experimental Design; Fundamentals of Sampling; Data: types, quality measurement; Processing and Analysis of data; Hypothesis Testing (parametric, non-parametric), Theory of Probability. <b>Mathematics:</b> Integral and Differential Calculus, Linear Algebra, Numerical Analysis, Modern Algebra. <b>PART B</b> <b>Specific Syllabus for the Computer Science Stream:</b> Data Structures and Algorithms, Programming Languages (C, C++), Operating Systems, Discrete Mathematics, Automata Theory, Computer Architecture, Computer Networks, Database Management System. <b>Specific Syllabus for the Microsystems Stream:</b> Digital logic, electrons in solids, energy band theory, charge carriers in semiconductors, drift-diffusion theory, p-n junctions, MOS transistor, Basics of CMOS analog circuits, Basics of CMOS digital VLSI circuits, Basics of MEMS and VLSI Technology.

**MTech PROGRAMMES**

There will be a common JNUEE paper for admission to both M.Tech. Programme in "Computer Science and Technology" and M.Tech. Programme in "Data Science". An applicant should clearly mention the order of preference amongst the two MTech programmes in the application form. The eligibility and syllabus for the JNU entrance examination for both M.Tech. Programme in "Computer Science and Technology" and M.Tech. Programme in "Data Science" would be the same. Further, admission to the M.Tech. Programme in "Computer Science and Technology" and M.Tech. Programme in "Data Science" will be based on the Computer Based Test (CBT) and the preference of the candidate. Separate merit lists for M.Tech. Programme in "Computer Science and Technology" and M.Tech. Programme in "Data Science" will be prepared. These two programmes are terminal degree programmes.

**M.Tech.**

Sl. No.	Name of School	Sub. Code & Sub. Code (Number)	Syllabus for Entrance Examination
1	School of Computer & Systems Sciences (SC&SS)	<b>Computer Science &amp; Technology- MTCT (157)</b>	General aptitude, reasoning and Bachelor's/Master's level Mathematics and Computer Science as per the topics as under: <b>Maths:</b> Differential and Integral Calculus, Linear Algebra, Numerical Analysis, Modern Algebra, Probability and Statistics.
2		Data Science - MTIT (192)	<b>Computer Science:</b> Data structures, Programming Languages (C, C++), algorithms, Operating Systems, Database Management System, Computer Architecture, Computer Network, Discrete Mathematics, Automata Theory.

**7. SCHOOL OF PHYSICAL SCIENCE**

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

**Master of Science**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Physical Sciences (SPS)	Physics- SPSM (226)	<b>Mathematical Methods:</b> Calculus of single and multiple real variables. Fourier and Laplace transforms. Vector Calculus, Divergence theorem, Green's theorem, Stokes' theorem. First order and linear second order differential equations with constant coefficients. Matrices and determinants. Complex numbers. <b>Mechanics and General Properties of Matter:</b> Newton's laws of motion and applications. Motion under a central force, and Kepler's laws. Elastic and inelastic collisions. Rigid body motion. Principal moments and axes. Kinematics of fluids. Bernoulli's theorem. <b>Oscillations, Waves and Optics:</b> Simple harmonic motion. Damped and forced oscillators. Resonance. Wave equation. Group and phase velocities. Sound waves in media. Doppler Effect. Interference and diffraction. Diffraction gratings. Polarization: linear, circular and elliptic polarization. Double refraction and optical rotation. <b>Electromagnetism:</b> Coulomb's law. Gauss's law. Electric field and potential. Solution of Laplace's equation for simple cases. Conductors, capacitors, dielectrics. Electrostatic energy. Biot-Savart law, Ampere's law, Faraday's law of electromagnetic induction. LCR circuits. Maxwell's equations and plane electromagnetic waves, Poynting's theorem.

			<p>Transmission and reflection coefficients (normal incidence only). Lorentz Force and motion of charged particles in electric and magnetic fields.</p> <p><b>Thermal and Statistical Physics:</b> Maxwell-Boltzmann distribution. Equipartition of energy. Ideal gas law. Specific heat. van-der-Waals gas and equation of state. Laws of thermodynamics. First law and its consequences. Isothermal and adiabatic processes. Second law and entropy. Maxwell's thermodynamic relations. Thermodynamic potentials. Fermi-Dirac and Bose-Einstein distributions.</p> <p><b>Modern Physics:</b> Basics of special relativity. Length contraction. Time dilation. Relativistic velocity addition theorem. Mass-energy equivalence. Blackbody radiation. Photoelectric effect. Compton effect. Bohr's atomic model. Pauli exclusion principle. Wave-particle duality. Uncertainty principle. Superposition principle. Schrödinger equation. Particle in a box problem in one, two and three dimensions. Solution of the Schrödinger equation for one dimensional harmonic oscillator. Structure of atomic nucleus, mass and binding energy. Radioactivity.</p> <p><b>Solid State Physics, Devices and Electronics:</b> Crystal structure, Bravais lattices and basis. Miller indices. X-ray diffraction and Bragg's law. Intrinsic and extrinsic semiconductors, variation of resistivity with temperature. Fermi level. p-n junction diode, I-V characteristics, Zener diode and its applications. Transistor characteristics. R-C coupled amplifiers. Operational Amplifiers: Inverting and non-inverting amplifier. Boolean algebra: Binary number systems; binary addition and subtraction. Conversion from one number system to another. Logic Gates AND, OR, NOT, NAND, NOR, X-OR. Truth tables. Combination of gates.</p>
2		Chemistry – CHEM (227)	<p><b>PHYSICAL CHEMISTRY</b></p> <p><b>Basic Mathematical Concepts:</b> Functions; maxima and minima; integrals; ordinary differential equations; vectors and matrices; determinants; elementary statistics and probability theory.</p> <p><b>Atomic and Molecular Structure:</b> Fundamental particles; Bohr's theory of hydrogen-like atom; wave-particle duality; uncertainty principle; Schrödinger's wave equation; quantum numbers; shapes of orbitals; Hund's rule and Pauli's exclusion principle; electronic configuration of simple homonuclear diatomic molecules.</p> <p><b>Theory of Gases:</b> Equation of state for ideal and non-ideal (van der Waals) gases; Kinetic theory of gases; Maxwell-Boltzmann distribution law; equipartition of energy.</p> <p><b>Solid state:</b> Crystals and crystal systems; X-rays; NaCl and KCl structures; close packing; atomic and ionic radii; radius ratio rules; lattice energy; Born-Haber cycle; isomorphism; heat capacity of solids.</p> <p><b>Chemical Thermodynamics:</b> Reversible and irreversible processes; first law and its application to ideal and nonideal gases; thermochemistry; second law; entropy and free energy; criteria for spontaneity.</p> <p><b>Chemical and Phase Equilibria:</b> Law of mass action; <math>K_p</math>, <math>K_c</math>, <math>K_x</math> and <math>K_n</math>; effect of temperature on <math>K</math>; ionic equilibria in solutions; pH and buffer solutions; hydrolysis; solubility product; phase equilibria–phase rule and its application to one-component and two-component systems; colligative properties.</p> <p><b>Electrochemistry:</b> Conductance and its applications; transport number; galvanic cells; EMF and free energy; concentration cells with and without transport; polarography; concentration cells with and without transport; Debye-Huckel-Onsagar theory of strong electrolytes. <b>Chemical Kinetics:</b> Reactions of various order; Arrhenius equation; collision theory; transition state theory; chain reactions – normal and branched; enzyme kinetics; photochemical processes; catalysis.</p> <p><b>Adsorption:</b> Gibbs adsorption equation; adsorption isotherm; types of adsorption; surface area of adsorbents; surface films on liquids.</p> <p><b>Spectroscopy:</b> Beer-Lambert law; fundamental concepts of rotational, vibrational, electronic and magnetic resonance spectroscopy.</p> <p><b>ORGANIC CHEMISTRY</b></p> <p><b>Basic Concepts in Organic Chemistry and Stereochemistry:</b> Electronic effects; resonance, inductive, hyperconjugation, aromaticity, tautomerism; organic acids and bases; optical isomerism in compounds with and without any stereocenters (allenes, biphenyls); conformation of acyclic systems (substituted ethane/<i>n</i>-propane/<i>n</i>-butane) and cyclic systems (mono- and di-substituted cyclohexanes).</p> <p><b>Organic Reaction Mechanism and Synthetic Applications:</b> Chemistry of reactive intermediates (carbocations, carbanions, free radicals, carbenes, nitrenes, benzynes); Hofmann-Curtius-Lossen rearrangement, Wolff rearrangement, Simmons-Smith reaction, Reimer-Tiemann reaction, Michael reaction, Darzens reaction,</p>

		<p>Wittig reaction and McMurry reaction; Pinacol-pinacolone, Favorskii, benzilic acid rearrangement, dienone-phenol rearrangement, Baeyer-Villiger reaction; oxidation and reduction reactions in organic chemistry; organometallic reagents in organic synthesis (Grignard, organolithium and organocopper); Diels-Alder, electrocyclic and sigmatropic reactions; functional group inter-conversions and structural problems using chemical reactions.</p> <p><b>Spectroscopic Analysis:</b> Identification of functional groups by UV, IR and <math>^1\text{H}</math> NMR spectroscopic techniques as tools for structural elucidation.</p> <p><b>Natural Products Chemistry:</b> Chemistry of alkaloids, steroids, terpenes, carbohydrates, amino acids, peptides and nucleic acids.</p> <p><b>Aromatic and Heterocyclic Chemistry:</b> Monocyclic, bicyclic and tricyclic aromatic hydrocarbons, and monocyclic compounds with one hetero atom: synthesis, reactivity and properties.</p> <p><b>INORGANIC CHEMISTRY</b></p> <p><b>Periodic Table:</b> Periodic classification of elements and periodicity in properties; general methods of isolation and purification of elements.</p> <p><b>Chemical Bonding and Shapes of Compounds:</b> Types of bonding; VSEPR theory and shapes of molecules; hybridization; dipole moment; ionic solids; structure of NaCl, CsCl, diamond and graphite; lattice energy.</p> <p><b>Concepts of Acids and Bases:</b> Bronsted and Lewis acids and bases; Gas phase versus solution phase acidity; solvent levelling effects; hardness and softness.</p> <p><b>Oxidation and Reduction:</b> Redox potentials; Nernst equation; influence of complex formation; precipitation; change of pH and concentration on redox potentials; analysis of redox cycles; redox stability in water; disproportionation/comproportionation.</p> <p><b>Main Group Elements (s and p blocks):</b> General concepts on group relationships and gradation in properties; structure of electron deficient compounds involving main group elements.</p> <p><b>Transition Metals (d block):</b> Characteristics of 3d elements; oxide, hydroxide and salts of first row metals; coordination complexes: structure, isomerism, reaction mechanism and electronic spectra; VB, MO and Crystal Field theoretical approaches for structure, color and magnetic properties of metal complexes; organometallic compounds having ligands with back bonding capabilities such as metal carbonyls, carbenes, nitrosyls and metallocenes; homogenous catalysis.</p> <p><b>Bioinorganic Chemistry:</b> Essentials and trace elements of life; basic reactions in the biological systems and the role of metal ions, especially <math>\text{Fe}^{2+}</math>, <math>\text{Fe}^{3+}</math>, <math>\text{Cu}^{2+}</math> and <math>\text{Zn}^{2+}</math>; structure and function of hemoglobin and myoglobin and carbonic anhydrase.</p> <p><b>Instrumental Methods of Analysis:</b> Basic principles; instrumentations and simple applications of conductometry, potentiometry and UV-vis spectrophotometry.</p> <p><b>Analytical Chemistry:</b> Principles of qualitative and quantitative analysis; acid-base, oxidation-reduction and complexometric titrations using EDTA; precipitation reactions; use of indicators; use of organic reagents in inorganic analysis.</p>
3	Mathematics – MATM (237)	<p><b>Set Theory and related topics:</b> Elementary set theory, Finite, countable and uncountable sets, Equivalence relations and partitions</p> <p><b>Real Numbers, Sequences and Series:</b> Real number system as a complete ordered field, Archimedean property, supremum, infimum, Sequence of real numbers, convergence of sequences, bounded and monotone sequences, convergence criteria for sequences of real numbers, Cauchy sequences, subsequences, Bolzano-Weierstrass theorem. Series of real numbers, absolute convergence, tests of convergence for series of positive terms - comparison test, ratio test, root test, Leibniz test for convergence of alternating series</p> <p><b>Real Analysis:</b> Interior points, limit points, open sets, closed sets, bounded sets, connected sets, compact sets. Power series (of a real variable), Taylor's series, radius and interval of convergence, term-wise differentiation and integration of power series</p> <p><b>Functions of One Real Variable:</b> Limit, continuity, intermediate value property, differentiation, Rolle's Theorem, mean value theorem, L'Hospital rule, Taylor's theorem, maxima and minima</p> <p><b>Functions of Two and Three Real Variables:</b> Limit, continuity, partial derivatives, differentiability, maxima and minima</p> <p><b>Integral Calculus:</b> Integration as the inverse process of differentiation, definite integrals and their properties, fundamental theorem of calculus. Double and triple integrals, change of order of integration, calculating surface areas and volumes using double integrals, calculating volumes using triple integrals</p> <p><b>Vector Calculus:</b> Scalar and vector fields, gradient, divergence, curl, line integrals, surface integrals, Green, Stokes and Gauss theorems</p>

			<p><b>Group Theory:</b> Groups, subgroups, Abelian groups, non-Abelian groups, cyclic groups, permutation groups, normal subgroups, Lagrange's Theorem for finite groups, group homomorphism and basic concepts of quotient groups, Cayley's theorem, class equations</p> <p><b>Linear Algebra:</b> Finite dimensional vector spaces, linear independence of vectors, basis, dimension, linear transformations, matrix representation, range space, null space, rank-nullity theorem. rank and inverse of a matrix, determinant, solutions of systems of linear equations, consistency conditions, eigenvalues and eigenvectors for matrices, Cayley-Hamilton theorem, Inner product spaces, Orthonormal basis</p> <p><b>Miscellaneous:</b> Logical reasoning, elementary combinatorics</p>
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## Ph.D.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Physical Sciences (SPS)	Mathematical Sciences – MATH (897)	<p><b>Analysis:</b> The structure of the real numbers as an ordered field with the least upper bound property, archimedean property, Bolzano-Weierstrass theorem, Heine-Borel theorem, extended real number system, complex field, Euclidean spaces. Definition and examples of metric spaces, completeness, compactness, connectedness, continuous functions and related properties. Convergence of sequences in a metric space, subsequences, Cauchy sequences. Limits of functions, continuity of functions, uniform continuity, continuity and compactness, continuity and connectedness. Pointwise and uniform convergence, uniform convergence and continuity, uniform convergence and integration, uniform convergence and differentiation, equicontinuity, Arzela-Ascoli theorem, Stone-Weierstrass theorem. Differentiation of functions of several real variables (directional derivatives, partial derivatives, differentiability and the total derivative, chain rule, Jacobian, higher derivatives, interchange of the order of differentiation, Taylor's theorem), inverse function theorem, implicit function theorem, rank theorem, differentiation of integrals. Lebesgue measure and Lebesgue integral, convergence Theorems.</p> <p><b>Linear Algebra:</b> Vector Spaces, subspaces, linear independence, bases, dimension, algebra of linear transformations, rank-nullity theorem, dual spaces, double dual, eigenvalues and eigenvectors, characteristic polynomial and minimal polynomial, Cayley-Hamilton theorem. Diagonalizability and diagonalization, primary decomposition theorem, generalized eigenvectors, Jordan canonical form, rational canonical form. Bilinear forms, symmetric and skew-symmetric bilinear forms, groups preserving bilinear forms, reduction and classification of bilinear forms.</p> <p><b>Algebra:</b> Definition and examples of groups - dihedral, symmetric and permutations groups, matrix groups such as <math>GL(n)</math>, <math>SL(n)</math>, abelian and cyclic groups, subgroups, normal subgroups, quotient groups, centralizer and normalizer of a group, Lagrange's theorem, isomorphism theorems, group actions, class equation, counting orbits, Cayley's theorem, Sylow's theorems, simplicity of alternating groups. Rings and subrings, isomorphisms, ideals, prime and maximal ideals, quotient rings, polynomial rings, unique factorization domain, principal ideal domain, Euclidean domain, Gauss's lemma, irreducibility criteria. Definition and examples of fields, extension of fields, finite and infinite extensions, algebraic and transcendental extensions, homomorphisms, isomorphisms and automorphisms, separable and normal extensions, splitting field of a polynomial, extending field morphisms, algebraic closure of a field, finite fields, cyclicity of the multiplicative group of a finite field, Galois theory.</p> <p><b>Complex Analysis:</b> Algebra of complex numbers, conjugates, modulus, argument, roots. Continuity and derivative of a function of one complex variable, holomorphic functions, Cauchy-Riemann equations, harmonic functions. Polynomial and rational functions, transcendental functions such as exponential, trigonometric and hyperbolic functions, logarithm. Paths and contours, contour integral, Cauchy's theorem, Cauchy's integral formula, Liouville's theorem, fundamental theorem of algebra, maximum modulus principle, open mapping theorem, Schwarz's lemma, Taylor series and Laurent series. Classification of singularities, orders of zeros and poles, winding number, meromorphic</p>

		<p>functions, Cauchy's residue theorem, computation of definite integrals using residue theorem, argument principle. Linear fractional transformations, conformal mappings.</p> <p><b>Topology:</b> Definition and examples of topological spaces, basis and subbasis of a topological space, subspace topology, limit points, closure and interior, continuous functions, homeomorphisms, product topology, metric topology, quotient map and quotient topology. Connectedness, path-connectedness, compactness, local compactness and one point compactification.</p> <p>First and second countable spaces, separable spaces, separation axioms, Urysohn lemma, Tietze extension theorem, Tychonoff theorem and Stone-Čech compactification.</p> <p><b>Functional Analysis:</b> Examples of normed spaces (sequence spaces: <math>c</math>, <math>c_0</math>, <math>l_p</math> spaces; function spaces: <math>C[0, 1]</math>, <math>C(\mathbb{R})</math>, <math>L_p([0, 1])</math>, <math>L_p(\mathbb{R})</math>), finite dimensional normed spaces, continuous linear maps, Hahn-Banach Theorem, Hilbert spaces, inner product, linear functionals, orthonormal sets.</p> <p><b>Research Methodology:</b> Elementary set theory, finite, countable and uncountable sets, logic, relations and functions, axioms. Elementary combinatorics, combinatorial probability, pigeon-hole principle, inclusion-exclusion principle.</p> <p><b>Miscellaneous Topics:</b> Fundamental theorem of arithmetic, divisibility</p>
2	Physical Sciences – PHYH (898)	<p><b>I. Mathematical Physics</b> Linear vector spaces. Eigen values and eigen vectors. Linear ordinary differential equations of first &amp; second order. Special functions. Partial differential equations. Green's function. Fourier and Laplace transforms. Complex analysis: analytic functions, poles and residues, series expansion, and evaluation of integrals.</p> <p><b>II. Classical Mechanics</b> Lagrangian and Hamiltonian formalism. Equations of motion. Central force problem. Conservation laws. Small oscillations and normal modes. Special theory of relativity.</p> <p><b>III. Electromagnetic Theory</b> Gauss's law. Laplace and Poisson equations, boundary value problems. Ampere's law. Electromagnetic induction. Maxwell's equations. Scalar and vector potentials. Gauge invariance. Conservation laws for electromagnetic fields. Electromagnetic waves in free space. Dielectrics and conductors. Reflection and refraction of electromagnetic waves. Dynamics of charged particles in static and uniform electromagnetic fields.</p> <p><b>IV. Quantum Mechanics</b> Wavefunctions and operators. Heisenberg uncertainty principle. Schrödinger equation (time-dependent and time-independent). Eigenvalue problems (particle in a box, harmonic oscillator, hydrogen atom). Tunneling. Orbital and spin angular momenta. Addition of angular momenta. Time-independent perturbation theory. Variational method. Time dependent perturbation theory: Fermi's golden rule and selection rules. Identical particles and indistinguishability.</p> <p><b>V. Thermodynamics and Statistical Physics</b> Laws of thermodynamics and their consequences. Thermodynamic potentials. Legendre transformation. Maxwell relations. Chemical potential, phase equilibria. Micro-canonical, canonical and grand-canonical ensembles and partition functions. Free energy and its connection with thermodynamic quantities. Classical and quantum statistics. Ideal Bose and Fermi gases. Blackbody radiation and Planck's distribution. First- and second-order phase transitions.</p> <p><b>VI. Atomic &amp; Molecular Physics</b> Quantum states of electrons in an atom. Relativistic corrections of atomic energy levels. LS &amp; JJ couplings. Zeeman, Paschen-Bach &amp; Stark effects. Magnetic resonance. Born-Oppenheimer approximation. Electronic, rotational, vibrational and Raman spectra of diatomic molecules. Lasers: spontaneous and stimulated emission, Einstein A &amp; B coefficients. Optical pumping, population inversion, rate equation.</p> <p><b>VII. Condensed Matter Physics</b></p>

		<p>Bravais lattices. Reciprocal lattice. Diffraction and structure factor. Bonding of solids. Elastic properties, phonons, lattice specific heat. Free electron theory of metals and electronic specific heat. Drude model of electrical and thermal conductivity. Hall effect and thermoelectric power. Band theory of solids: metals, insulators and semiconductors. Superconductivity: Type-I and type-II superconductors. Magnetism: types of magnetic ordering and Curie-Weiss law.</p> <p><b>VIII. Nuclear and Particle Physics</b></p> <p>Basic nuclear properties: size, shape and charge distribution, spin and parity. Binding energy, semi-empirical mass formula, liquid drop model. Nuclear force. Single-particle shell model, its validity and limitations. Rotational spectra. Elementary ideas of alpha, beta and gamma decays and their selection rules. Fission and fusion. Nuclear reactions. Classification of fundamental forces. Elementary particles and their quantum numbers (charge, spin, parity, isospin, strangeness, etc.).</p> <p><b>IX. Electronics</b></p> <p>Semiconductor devices (diodes, junctions, transistors, and field effect devices), device characteristics. Operational amplifiers and their applications. Digital techniques and applications (registers, counters, comparators and similar circuits).</p> <p><b>X. Research Methodology and Experimental Methods</b></p> <p>Data analysis. Error estimation. Measurement of electrical resistivity, Hall coefficient, magnetic susceptibility and thermal conductivity. Interference and diffraction experiments. Spectroscopic measurements such as Zeeman effect, Electron Spin Resonance, and Raman effect. Experimental determination of fundamental constants such as Planck's constant, <math>e/m</math>, and Boltzmann constant.</p>
3	Chemical Sciences – CHEH (899)	<p><b>Research Methodology</b></p> <p>Analytical chemistry, chromatographic separation, crystallization, spectroscopic techniques, electro-and thermoanalytical methods. Data analysis: Mean and standard deviation; absolute and relative errors; linear regression; covariance and correlation coefficient.</p> <p><b>Organic Chemistry</b></p> <ol style="list-style-type: none"> <li>IUPAC nomenclature of organic molecules including regio - and stereoisomers.</li> <li>Principles of stereochemistry: Configurational and conformational isomerism in acyclic and cyclic compounds; stereogenicity, stereoselectivity, enantioselectivity, diastereoselectivity and asymmetric induction.</li> <li>Aromaticity: Benzenoid and non - benzenoid compounds – generation and reactions.</li> <li>Organic reactive intermediates: Generation, stability and reactivity of carbocations, carbanions, free radicals, carbenes, benzyne and nitrenes.</li> <li>Organic reaction mechanisms involving addition, elimination and substitution reactions with electrophilic, nucleophilic or radical species. Determination of reaction pathways.</li> <li>Common named reactions and rearrangements – applications in organic synthesis.</li> <li>Organic transformations and reagents: Functional group interconversion including oxidations and reductions; common catalysts and reagents (organic, inorganic, organometallic and enzymatic). Chemo, regio and stereoselective transformations.</li> <li>Concepts in organic synthesis: Retrosynthesis, disconnection, synthons, linear and convergent synthesis, umpolung of reactivity and protecting groups.</li> <li>Asymmetric synthesis: Chiral auxiliaries, methods of asymmetric induction – substrate, reagent and catalyst controlled reactions; determination of enantiomeric and diastereomeric excess; enantio-discrimination. Resolution – optical and kinetic.</li> <li>Pericyclic reactions – electrocycloisatation, cycloaddition, sigmatropic rearrangements and other related concerted reactions. Principles and applications of photochemical reactions in organic chemistry.</li> <li>Synthesis and reactivity of common heterocyclic compounds containing one or two heteroatoms (O, N, S).</li> <li>Chemistry of natural products: Carbohydrates, proteins and peptides, fatty acids, nucleic acids, terpenes, steroids and alkaloids. Biogenesis of terpenoids and alkaloids.</li> <li>Structure determination of organic compounds by IR, UV - Vis, <math>^1\text{H}</math> &amp; <math>^{13}\text{C}</math> NMR and Mass spectroscopic techniques.</li> </ol> <p><b>Inorganic Chemistry</b></p> <ol style="list-style-type: none"> <li>Chemical periodicity: Classification of elements and periodicity in properties.</li> <li>Molecular Structure and Bonding: Valence bond theory, molecular orbital Theory, VSEPR theory.</li> <li>Acids and Bases: Lewis acids and bases, HSAB concept, Gas phase versus solution acidity, Solvent levelling effects, Surface acidity.</li> </ol>

		<p>4. Oxidation and Reduction: Analysis of redox cycles, Redox stability in water, Disproportionation/Comproportionation, Frost, Latimer and Pourbaix diagrams.</p> <p>5. Main group elements and their compounds: Allotropy, synthesis, structure and bonding, industrial importance of the compounds.</p> <p>6. Transition elements and coordination compounds: structure, bonding theories, spectral and magnetic properties, reaction mechanisms.</p> <p>7. Inner transition elements: spectral and magnetic properties, redox chemistry, analytical applications.</p> <p>8. Organometallic compounds: synthesis, bonding and structure, and reactivity. Organometallics in homogeneous catalysis.</p> <p>9. Cages and metal clusters.</p> <p>10. Bioinorganic chemistry: photosystems, porphyrins, metalloenzymes, oxygen transport, electron-transfer reactions; nitrogen fixation, metal complexes in medicine.</p> <p>11. Nuclear chemistry: nuclear reactions, fission and fusion, radio- analytical techniques, activation analysis, principles of determination of age of rocks and minerals, and Radio-carbon dating.</p> <p>12. Characterisation of inorganic compounds by IR, Raman, NMR, EPR, Mössbauer, UV-vis, NQR, MS, electron spectroscopy and microscopic techniques.</p> <p><b>Physical Chemistry</b></p> <p>1. Basic principles of quantum mechanics: Postulates; operator algebra; exactly-solvable systems: particle-in-a-box, harmonic oscillator and the hydrogen atom, including shapes of atomic orbitals; orbital and spin angular momenta; tunnelling.</p> <p>2. Approximate methods of quantum mechanics: Variational principle; perturbation theory up to second order in energy; applications.</p> <p>3. Atomic structure and spectroscopy; term symbols; many-electron systems and antisymmetry principle.</p> <p>4. Chemical bonding in diatomics; elementary concepts of MO and VB theories; Huckel theory for conjugated <math>\pi</math>-electron systems.</p> <p>5. Chemical applications of group theory; symmetry elements; point groups; character tables; selection rules.</p> <p>6. Molecular spectroscopy: Rotational and vibrational spectra of diatomic molecules; electronic spectra; IR and Raman activities – selection rules; basic principles of magnetic resonance.</p> <p>7. Chemical thermodynamics: Laws, state and path functions and their applications; thermodynamic description of various types of processes; Maxwell's relations; spontaneity and equilibria; temperature and pressure dependence of thermodynamic quantities; Le Chatelier principle; elementary description of phase transitions; phase equilibria and phase rule; thermodynamics of ideal and non-ideal gases, and solutions.</p> <p>8. Statistical thermodynamics: Boltzmann distribution; kinetic theory of gases; partition functions and their relation to thermodynamic quantities—calculations for model systems.</p> <p>9. Electrochemistry: Nernst equation, redox systems, electrochemical cells; Debye-Huckel theory; electrolytic conductance – Kohlrausch's law and its applications; ionic equilibria; conductometric and potentiometric titrations.</p> <p>10. Chemical kinetics: Empirical rate laws and temperature dependence; complex reactions; steady state approximation; determination of reaction mechanisms; collision and transition state theories of rate constants; unimolecular reactions; enzyme kinetics; salt effects; homogeneous catalysis; photochemical reactions.</p> <p>11. Colloids and surfaces: Stability and properties of colloids; isotherms and surface area; heterogeneous catalysis.</p> <p>12. Solid state: Crystal structures; Bragg's law and applications; band structure of solids.</p> <p>13. Polymer chemistry: Molar masses; kinetics of polymerization.</p>
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## 8. SCHOOL OF COMPUTATIONAL AND INTERGRATIVE SCIENCES

**The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)**

### Post-Graduate Diploma in Big Data Analytics (PGD)

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Computational and Integrative Sciences (SC&IS)	Post-Graduate Diploma in Big Data Analytics – PGDT (191)	<p>(Separate merit lists of students for Track 1 (Non-biological sciences) and Track 2 (Biological sciences) will be used for final admissions. The categorization in Tracks will be based on students' choice in the application form irrespective of his/her academic background and section of questions he/she attempts. Total number of seats will be equally divided into the two tracks)</p> <p>PG Diploma course will have a single entrance test of <b>Data Science Aptitude (Biological data)</b> with the following break up.</p> <p>General reasoning, Computer programming in Python and C, Basic statistics, Bioinformatics/ Life Science,</p> <p><b>The syllabus for respective sections is as follows:</b></p> <p><b>1. General Reasoning</b> This section is designed to assess the analytical and quantitative skills of the students acquired throughout their academic career.</p> <p><b>2. Computer programming in Python and C</b> Fundamentals of Programming in Python: File handling. Basic python libraries. Functions. Loops. Numerical functions in python. Basic operations in Python for matrices, algebra, numerical and string manipulations. Regular expressions and text processing. Fundamentals of C programming: Loops. Data types. Arrays. Libraries. Functions. I/O functions. Pointers and Structures.</p> <p><b>3. Basic statistics</b> General aspects: Randomness. Randomization. Random number generation. Statistical dispersion. Observational error. Central tendencies. Mean, median, mode. Relative frequency. Variance. Standard deviation. Maximum likelihood. Bayesian probability. Information entropy. Foundations of probability theory. Probability theory. Standard probability space. Normalizing constant. Event and Complementary event. Mutually exclusive events. Probability density function. Cumulative distribution function. Bayes theorem. Prior probability. Posterior probability. Random variables, Statistical independence. Conditional independence. Pairwise independence. Covariance and Correlation. Theory of probability distributions. Probability distribution. Probability distribution function. Probability density function. Quantile. Moment about the mean. Standardized moment. Skewness. Kurtosis. Properties of probability distributions. Normal distribution. Poisson distribution. Binomial distribution.</p> <p><b>4. Bioinformatics/Life Sciences</b> Sequence analysis and alignment, Phylogenetic Analysis, Database Management System, Structural bioinformatics &amp; drug designing, Databases and tools for biological data mining and pathway analysis, Biomolecules &amp; Cellular Organization, Fundamental Processes: Replication, Transcription and Translation, Gene structure, Transcriptional and post-transcriptional Gene Regulation, Genome Organization, Metabolic engineering and Systems Biology, gene regulatory</p>

			networks, Basic Techniques in Molecular Biology, Fundamentals of Genomics, transcriptomics, proteomics and metabolomics, Next Generation Sequencing Technologies and data analysis
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**Ph.D.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Computational and Integrative Sciences (SC&IS)	Computational Biology and Bioinformatics – Track 1 – TROH (903); Track 2 – TRTH (909) & Track 3 – TRDH (910)	<p><b>Section 1: Physics:</b>  <b>Mathematical Physics:</b> Linear vector space; matrices; vector calculus; linear differential equations; elements of complex analysis; Laplace transforms, Fourier analysis, elementary ideas about tensors. <b>Classical Mechanics:</b> Conservation laws; central forces, Kepler problem and planetary motion; collisions and scattering in laboratory and Centre of mass frames; mechanics of system of particles; rigid body dynamics; moment of inertia tensor; noninertial frames and pseudo forces; variational principle; Lagrange's and Hamilton's formalisms; equations of motion, cyclic coordinates, Poisson bracket; periodic motion, small oscillations, normal modes; special theory of relativity – Lorentz transformations, relativistic kinematics, mass- energy equivalence.  <b>Electromagnetic Theory:</b> Solution of electrostatic and magnetostatic problems including boundary value problems; dielectrics and conductors; Biot-Savart's and Ampere's laws; Faraday's law; Maxwell's equations; scalar and vector potentials; Coulomb and Lorentz gauges; Electromagnetic waves and their reflection, refraction, interference, diffraction and polarization. Poynting vector, Poynting theorem, energy and momentum of electromagnetic waves; radiation from a moving charge.  <b>Quantum Mechanics:</b> Physical basis of quantum mechanics; uncertainty principle; Schrodinger equation; one, two and three dimensional potential problems; particle in a box, harmonic oscillator, hydrogen atom; linear vectors and operators in Hilbert space; angular momentum and spin; addition of angular momenta; time independent perturbation theory; elementary scattering theory.  <b>Thermodynamics and Statistical Physics:</b> Laws of thermodynamics; macrostates and microstates; phase space; probability ensembles; partition function, free energy, calculation of thermodynamic quantities; classical and quantum statistics; degenerate Fermi gas; black body radiation and Planck's distribution law; Bose-Einstein condensation; first and second order phase transitions, critical point.  <b>Atomic and Molecular Physics:</b> Spectra of one- and many-electron atoms; LS and jj coupling; hyperfine structure; Zeeman and Stark effects; electric dipole transitions and selection rules; X-ray spectra; rotational and vibrational spectra of diatomic molecules; electronic transition in diatomic molecules, Franck- Condon principle; Raman effect; NMR and ESR; lasers.</p> <p><b>Section 2: Chemistry:</b>  Organic Chemistry, Stereochemistry  Properties of gases, kinetic theory  Thermodynamics  Chemical Bonding, Oxidation states, electrochemistry  Molecular Structure, spectroscopy  Chemical Kinetics  Quantum Mechanics  Statistical Mechanics</p> <p><b>Section 3: Mathematics/Statistics:</b>  <b>Hydrodynamics:</b> Classification of fluids, the continuum model, Lagrangian and Eulerian approach of description. Lagrangian and Eulerian methods. Equation of continuity. Boundary surface. Stream lines. Path lines and streak lines. Velocity potential. Irrotational and rotational motions. Vortex lines, vorticity vector, equi-potential surface streamlines, pathlines, Mass flux density, conservation of mass leading to equation of continuity, conservation of momentum and its mathematical formulation, Lagrange's and Euler's equations of motion, Bernoulli's theorem, Equation of motion by flux method. Equations referred to moving axes Impulsive actions, Stream function. Viscous flow, stress and strain analysis, stokes hypothesis, The Navier-stokes equation of motion, Poiseuille flow.</p>

**Advanced Differential Equations:** Existence and uniqueness theorem, Sturm comparison and separation theorem, homogeneous linear system, Nonhomogeneous linear system, linear system with constant coefficient. Two-point boundary value problems, Green function, Construction of green function, Sturm-Liouville system, Non-linear Differential Equation, Solution of PDEs by method of integral transforms (Laplace and Fourier), Boundary value problem, Maxima and minimum principles, Uniqueness and continuity Theorem.

**Special Function:** Calculus of Variation-Functional and its properties, Variational problems with fixed boundaries, Legendre polynomial and functions, Christoffel's summation formula, Bessel's Function, Modified Bessel's function, Bessel's equations. Hermite polynomials, Laguerre polynomials.

**Linear Algebra:** Vector spaces, Sub spaces, linearly dependent & linearly independent vectors, Basis, Dimension, linear transformation, Matrix representation of a linear transformation, Rank & Nullity theorem. Finite dimensional vector spaces, Existence theorem for basis, Quotient space and its dimension. Rank of a matrix, Eigen values & Eigen vectors. Change of basis, Canonical forms, Diagonal forms, Triangular forms, Jordan forms, Quadratic forms, reduction and classification of quadratic forms, Orthogonal transformations, Unitary transformations, Positive semi definite matrices, Semi definite matrices.

**Operational Research and Networking:** Introduction to Linear Programming. Problem formulations. Linear independence and dependence of vectors. Convex sets. Extreme points. Hyperplanes and Half spaces. Directions of a convex set. Convex cones. Polyhedral sets and cones. Theory of Simplex Method. Simplex Algorithm. Transportation problem. Assignment problem.

**Graph Theory and Petri nets:** Selected topics in graph theory: basic definitions and notions, characterization of trees, vector vacuum of a graph, planarity of graphs, Hamiltonian and Eulerian cycles. Edge – and vertex colourings of graphs: chromatic number, chromatic index, map colour theorem, four – colour problem. Independence theory in combinatory. Directed digraphs. Flow networks. Applications. Petri nets and their types.

**Probability and Statistics:** Measures of central tendency and dispersion, Skewness and kurtosis, Probability, Conditional probability, Theorem of total probabilities, Bayes theorem, Random variables, Probability mass and density functions, Mathematical expectation and its properties, Moment generating functions, Binomial, Poisson, Geometric, Exponential and Normal distributions and their properties, Method of least squares, Correlation and regression.

#### **Section 4: Computer Science and Programming**

##### **Computer Organization and Architecture**

Machine instructions and addressing modes. ALU, data-path and control unit. Instruction pipelining. Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).

##### **Programming and Data Structures**

Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.

##### **Algorithms**

Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide-and-conquer. Graph search, minimum spanning trees, shortest paths.

##### **Theory of Computation**

Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and context-free languages, pumping lemma. Turing machines and undecidability.

##### **Compiler Design**

Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation.

##### **Operating System**

Processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU scheduling. Memory management and virtual memory. File systems.

##### **Databases**

ER-model. Relational model: relational algebra, tuple calculus, SQL. Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.

**Computer Networks**

Concept of layering. LAN technologies (Ethernet). Flow and error control techniques, switching. IPv4/IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control. Application layer protocols (DNS, SMTP, POP, FTP, HTTP). Basics of Wi-Fi. Network security: authentication, basics of public key and private key cryptography, digital signatures and certificates, firewalls.

**Section 5: Life Sciences/Biotechnology**

Biomolecules & Cellular Organization, Fundamental Processes, Basic Concepts in Genetics & Immunology, Developmental Processes, Genome Structure & Organization, Gene Expression and Regulation, Basic Techniques in Molecular Biology and Recombinant DNA Technology

**Section 6: Bioinformatics**

Sequence analysis and alignment algorithms, Phylogenetic Analysis, Sequencing Technologies, Structural Bioinformatics, Advanced concepts in sequence analysis, Genomics and Transcriptomics

**Section 7 Electronics Engineering****Networks, Signals and Systems**

Network solution methods: nodal and mesh analysis; Network theorems: superposition, Thevenin and Norton's, maximum power transfer; Steady state sinusoidal analysis using phasors; Time domain analysis of simple linear circuits, Laplace transform, Linear 2-port network parameters: driving point and transfer functions.

Continuous-time signals: Fourier series and Fourier transform representations, sampling theorem and applications; Discrete-time signals, Z-transform, LTI systems: definition and properties, causality, stability, impulse response, convolution, poles and zeros, parallel and cascade structure.

**Electronic Devices**

Energy bands in intrinsic and extrinsic silicon; Carrier transport: diffusion current, drift current, mobility and resistivity; Generation and recombination of carriers; Poisson and continuity equations; P-N junction, Zener diode, BJT, MOS capacitor, MOSFET, LED, photo diode, Integrated circuit fabrication process: oxidation, diffusion, ion implantation, photolithography.

**Analog Circuits**

BJTs and MOSFETs; Simple diode circuits: clipping, clamping and rectifiers; Single-stage BJT and MOSFET amplifiers: biasing, bias stability, BJT and MOSFET amplifiers: multi-stage, differential, feedback, power and operational; Simple op-amp circuits; Active filters; Sinusoidal oscillators: criterion for oscillation, single-transistor and opamp configurations; Function generators, wave-shaping circuits and 555 timers.

**Digital Circuits**

Number systems; Combinatorial circuits: Boolean algebra, minimization of functions using Boolean identities and Karnaugh map, logic gates, arithmetic circuits, code converters, multiplexers, decoders,

Sequential circuits: latches and flip-flops, counters, shift-registers, Data converters: sample and hold circuits, ADCs and DACs; Semiconductor memories: ROM, SRAM, DRAM; 8-bit microprocessor (8085): architecture, programming, memory and I/O interfacing.

**Communications**

Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, superheterodyne receivers, Information theory: entropy, mutual information and channel capacity theorem

; Digital communications: PCM, DPCM, digital modulation schemes, amplitude, phase and frequency shift keying (ASK, PSK, FSK), QAM, calculation of bandwidth, SNR and BER for digital modulation; Fundamentals of error correction, Hamming codes; Timing and frequency synchronization, inter-symbol interference and its mitigation; Basics of TDMA, FDMA and CDMA.

**Satellite communication:** Introduction, need, satellite orbits, advantages and disadvantages of geostationary satellites. Satellite visibility, satellite system – space segment, block diagrams of satellite sub systems, up link, down link, cross link, transponders (C- Band)

**Local area networks (LAN):** Primary characteristics of Ethernet-mobile IP, OSI model, wireless LAN requirements-concept of Bluetooth, Wi-Fi and WiMAX.

**Electromagnetics**

Electrostatics; Maxwell's equations: differential and integral forms and their interpretation, boundary conditions, wave equation, Poynting vector; Plane waves and properties: reflection

		<p>and refraction, polarization, phase and group velocity, propagation through various media, skin depth; Transmission lines: equations, characteristic impedance, impedance matching, impedance transformation, S-parameters, Smith chart; Waveguides: modes, boundary conditions, cut-off frequencies, dispersion relations; Antennas: antenna types, radiation pattern, gain and directivity, return loss, antenna arrays; Basics of radar; Light propagation in optical fibers.</p> <p><b>Microwave and Antennas</b>  Introduction &amp; Wave Propagation Review of Maxwell's equations, Integral and Point forms; Boundary conditions; Power flow and Poynting vector; Propagation of uniform plane waves, Wave equation; Polarization. Scalar and Vector Potential functions, Retarded Potentials; Radiation phenomenon and equation, Basic antenna parameters: radiation resistance, Gain, directivity, Effective length, Radiation pattern; Radiation from short current element, Radiation from small current loop, radiation from arbitrary current distribution, half wave dipole antenna; Antenna impedance, Monopole antenna, Baluns, Antenna array: Broadside array and end-fire arrays, long wire antenna; Few antenna types: Folded dipole, Loop antenna, Yagi-Uda Antenna; Wave propagation, Travelling waves, Lossless and Lossy transmission lines, pulse propagation; Principle, construction and working of Microwave solid state devices: Transferred Electron devices: Gunn Diode (Gunn Effect), IMPATT diode, PIN diode Attenuators, Terminators, Directional couplers; Hybrid Circuits</p>
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## 9. SCHOOL OF ARTS & AESTHETICS

**The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)**

### Master of Arts

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Arts & Aesthetics (SA&A)	Arts & Aesthetics-SAAM (235)	<p><b>Note:</b> Candidates attempting the entrance exam of the integrated MA should have a broad sense of the areas listed under all the three streams of the School – Visual Studies, Cinema Studies and Theatre and Performance Studies. Questions set by the School typically ask questions that assess the candidate's ability to reflect upon and critically engage with themes and issues related to art.</p> <p><b>Visual Studies</b>  Broad knowledge of the history of world art in general, and of art in South Asia, from Indus Valley Civilization till the present, in particular. Candidates should have an understanding of formal, stylistic and iconographic aspects of South Asian art and be able to place them in their literary, cultural, historical, religious and liturgical context. In addition, a broad knowledge of the history of Western Art, from the Renaissance to the present day, and of the history of Asian art, including Far Eastern and Islamic art, are valuable. An awareness of current debates and new developments around art, heritage, museums and exhibitions is important, with an emphasis on the ability to critically engage with issues and themes related to art.</p> <p><b>Cinema Studies</b>  Broad knowledge of World Cinema, Film movements, <b>Digital Media Cultures and, Film/Media Practice</b>. There should be awareness of film media's status as an aesthetic practice, a mass cultural form and an instigator of public debates. Candidates should display their knowledge of the public presence of cinema/media and the way certain film practices get linked to political controversies, festival bans, censorship debates and vandalism at exhibition venues. Some knowledge of the role of film criticism and writing about cinema in the popular press will be helpful.</p> <p><b>Theatre and Performance Studies</b>  Broad knowledge of the history of theatre and dance including classical Greek theatre, Elizabethan theatre, classical Indian theatre, music, dance and performance</p>

			<p>cultures, <i>bhakti</i> performance traditions in India, modern theatre and contemporary performance practices. Some familiarity with dance in the larger context of Indian dance history, relationship of dance and society. Likewise, an engagement with musical traditions, both classical and popular.</p> <p>Some awareness of basic concepts like <i>rasa</i> and catharsis, the dynamics of body, space and time in different theatrical and dance traditions, the role of the actor/performer and spectator. Basic knowledge of the theoretical writings of Bharata, Bhatkhande, Kapila Vatsyayan, Susan Foster, Stanislavski, Brecht, Augusto Boal, Badal Sircar. An ability to see performances critically with an awareness of their social and political contexts. Emphasis on the capacity to describe the performances of everyday life, including festivals, rituals and ceremonies experienced at a local level within specific regional contexts.</p>
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### Ph.D.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Arts & Aesthetics (SA&A)	Ph.D. : Visual Studies – VSAH (900)	<p>Note: The programme is suited for students who come from a background in Visual Studies/ Art History and related disciplines. Candidates are expected to already be familiar with the discipline of art history and its theoretical concerns in general and with the development of Indian art and architecture in particular. To appear for the entrance exam, prospective candidates should have a broad understanding of the intellectual history of the discipline and key philosophical concerns of image theories. They should be familiar with the topics listed below which are areas covered by Masters-level programmes. Questions set by the School are designed to assess the candidate's ability to reflect upon and critically engage with themes and issues related to art and visual culture.</p> <p>Candidates appearing for the entrance examination should be familiar with the following:</p> <p>Contribution of theorists whose work has shaped/ impacted art historical, critical and anthropological discourse on the visual arts and visual culture.</p> <p>Research Methodology and Historiography of the discipline: art criticism and art history writing and archival structures as subjects of inquiry and meta-critical practices.</p> <p>Artworks as modes of symbolic communication and methodologies of decipherment of visual codes and visual language systems.</p> <p>Methodological approaches to interpreting the visual: iconography, semiotics, formalism, cultural materialism, psychoanalysis, narratology, phenomenology, affect theory, theories of gender, feminist and post-colonial critiques.</p> <p>The entanglements of ethno-nationalism and art history</p> <p>The interrelationship of textual and visual traditions in Indian art.</p> <p>The social and political and conditions that govern the agency of art and artists and impact visual representations.</p> <p>The relationship between political, economic and liturgical institutions and monumental built forms.</p> <p>Current debates about the agency and representation of caste, class and gender in pre-modern arts.</p> <p>Capitalism, individualism and the relationship with artistic authorship.</p> <p>Debates around authorship in Indian art.</p> <p>Concepts of space and place in architecture and spatiotemporal understanding of built form including relationships between architecture and ritual performance.</p> <p>The network of institutional agencies in which art works are embedded. Institutional critique and its own institutionalization.</p> <p>Iconophilia, iconopraxis and iconoclasm.</p> <p>Sectarian competitiveness and the "clash of icons."</p> <p>Technologies of art-making, intentionalities of choice and theoretical understanding of creative labour.</p> <p>Interactivity, community art and relational aesthetics in contemporary visual culture.</p> <p>The construction of heritage vis a vis national and global framework.</p> <p>Photography theory, digital convergence and "remediation".</p>

2	Ph.D. : Theatre & Performance Studies- TPSH (901)	<p>Note: Theatre and Performance Studies covers a wide range of subjects, including the history of theatre, dance and music with a particular focus on the study of embodied performance. Students appearing for the entrance exam for the Theatre and Performance Studies stream should have some broad knowledge of the intellectual concerns and issues linked to the discipline. They should be familiar with the topics listed below which are areas covered by Masters level programmes. Questions set by the School are designed to assess the candidate's ability to reflect upon and critically engage with themes and issues related to theatre and performance.</p> <p>Candidates appearing for the entrance examination should be familiar with the following:</p> <p>Concepts related to performance and aesthetics, such as <i>rasa</i>, <i>dhvani</i>, catharsis, tragedy, alienation, corporeality, embodiment, liminality, efficacy;</p> <p>Basic knowledge and understanding of the discourse around primary texts such as <i>Natyasastra</i>, <i>Dhvanyaloka</i>, <i>Abhinaya Darpana</i> and <i>The Poetics</i>;</p> <p>Institutions of performance such as National School of Drama, Sangeet Natak Akademi, Ninasam, Kalakshetra, Kalamandalam;</p> <p><i>Sufi</i> and <i>bhakti</i> performing arts traditions;</p> <p>Regional culture and performance practices (theatre, dance, music, puppetry and others) in India;</p> <p>Histories and theories of political theatre;</p> <p>Histories of Indian musical traditions;</p> <p>Histories of traditions and transitions in dance;</p> <p>Feminism, gender and performance;</p> <p>Comic traditions in performance;</p> <p>Nation, nationalism and performance;</p> <p>Post-colonial performances;</p> <p>Debates in modern Indian theatre, music and dance.</p> <p>Applied theatre and performance;</p> <p>Street theatre;</p> <p>Globalisation and performance;</p> <p>Performance art</p> <p>Discourses, theories and research methodologies around the emergence of disciplines of theatre and performance studies, dance studies, music studies.</p>
3	Ph.D. : Cinema Studies - CNSH (902)	<p><u>Note:</u> The programmes draw students either from a background in Cinema/Film Studies or from other disciplines with an interest in the subject. Students appearing for the entrance exam for the Cinema Studies stream should have some broad knowledge of the intellectual concerns and issues linked to the discipline. They should be familiar with the topics listed below which are areas covered by Masters level programmes. Questions set by the School are designed to assess the candidate's ability to reflect upon and critically engage with themes and issues related to cinema including:</p> <p>Indian Cinema History</p> <p>Globalization and Indian Cinema</p> <p>National Cinema Debates</p> <p>International Film Movements (Added)</p> <p>Issues and Debates in Research Methodology</p> <p>Media and Cultural Studies</p> <p>Sound and Colour in the History of Cinema (Added)</p> <p>Authorship Debates</p> <p>Theories of Genre</p> <p>Melodrama: Forms and Histories (Added)</p> <p>Film Stardom and Celebrity Culture</p> <p>Early Debates and Discourses on Film</p> <p>Modernism, Mass Culture and Cinema</p> <p>Media Aesthetics</p> <p>Space, Architecture and Cinema (Added)</p> <p>Film/Media: Sound and Colour (changed from Sound and Colour in the History of cinema)</p> <p>Theories of the Cinematic Avant Garde</p> <p>The Cinematic Apparatus</p> <p>Cinema and the Postmodern</p> <p>Television and Video Theory</p> <p>Post Cinematic and Post Celluloid Debates</p> <p>Media Sensorium and Media Archaeology Debates</p>

			Embodiment and Affect in Film/Media The Cultural Politics of Speed, Surveillance and Forensics in Cinema/Media The Archive Effect and Memory Digital Culture and the Internet Questions on research methodology have to be posed in the context of these issues.
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## 10. SCHOOL OF BIOTECHNOLOGY

**The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)**

**Ph.D.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Biotechnology	Biotechnology – SBTH (904)	<p><b>Biophysical Chemistry:</b></p> <ol style="list-style-type: none"> <li><b>1. Interactions in Biological Systems:</b> Intra and inter molecular forces, electrostatic interactions and hydrogen bonding interactions; van der Waals and hydrophobic interactions; Disulfide bridges; Role of water and weak interactions</li> <li><b>2. Structure of Proteins:</b> Conformational properties of polypeptides; Primary and secondary structure (<math>\alpha</math>-helix and <math>\beta</math>-sheet structures etc.); Tertiary and quaternary structure; Structural features of membrane proteins; Secondary and tertiary structure prediction of protein conformation</li> <li><b>3. Multiple equilibrium:</b> Titrations of proteins to evaluate net and total charge; Scatchard and Hill plots; Folding-unfolding equilibrium and denaturation of proteins; Effect of temperature and solvent conditions on the thermodynamics of protein folding-unfolding equilibrium and Kinetics of protein folding.</li> <li><b>4. Techniques for the study of Macromolecular structure:</b> Analytical Ultracentrifugation: Sedimentation velocity and equilibrium, determination of molecular weights; Microcalorimetry (DSC and ITC) and its applications; Circular Dichroism spectroscopy; UV, Visible and Fluorescence spectroscopy; X-ray diffraction; Nuclear Magnetic Resonance (NMR) and Mass Spectrometry.</li> </ol> <p><b>Biochemistry &amp; Enzymology</b></p> <ol style="list-style-type: none"> <li><b>1. Enzyme Kinetics and Inhibition:</b> Introduction about enzymes, classification, activity, cofactors; Chemical Kinetics; Regulation of enzyme activity by various factors such as pH, temperature etc.; Enzyme Inhibition-various types with examples; Kinetics of enzyme inhibition; Enzyme activity and purification-subcellular fractionation and specific activity</li> <li><b>2. Enzymes: Mechanism, Structure and Regulation:</b> Substrate specificity of enzymes; Functional Groups Essential for Catalysis; Reaction Mechanism of Enzyme Active sites; Regulatory Enzymes; Allosteric Enzymes; Covalently modulated regulatory enzymes; Covalent Activation of Zymogens; Isozymes</li> <li><b>3. Regulatory Strategies of Enzymes:</b> Aspartate Transcarbamylase, Protein Kinase A, Myosin, Restriction Enzymes, Lactate Dehydrogenase, Ser/Thr Kinases, Tyr Kinases; Proteolysis Activation, Blood clotting Factors</li> <li><b>4. Glycobiology:</b> Sugars, glycoproteins, glycoconjugates, glycosylation of biomolecules, disorders associated with glycosylation defects</li> <li><b>5. Introduction to Metabolism:</b> Metabolic Pathways; Organic Reaction Mechanisms;</li> </ol>



		<p>Experimental Approaches to the study of Metabolism; Thermodynamics of Phosphate compounds; Oxidation-Reduction Reactions</p> <ol style="list-style-type: none"> <li>6. <b>Carbohydrate Metabolism:</b> Glycolysis; Fermentation: The Anaerobic Fate of Pyruvate; Metabolism of Hexoses Other than Glucose; Glycogen; Breakdown &amp; Synthesis; Gluconeogenesis; Pentose Phosphate Pathway; Metabolic Regulation and Control</li> <li>7. <b>Citric Acid Cycle:</b> Cyclic Overview; Metabolic Sources of Acetyl; Coenzyme A; Enzymes of the Citric Acid Cycle; Regulation of the Citric Acid Cycle</li> <li>8. <b>Electron Transport and Oxidative Phosphorylation:</b> The Mitochondrion; Electron Transport; Oxidative Phosphorylation; Control of ATP Production</li> <li>9. <b>Lipid metabolism:</b> Lipid Digestion, Absorption and Transport; Fatty Acid Oxidation &amp; Biosynthesis; Ketone Bodies; Regulation of Fatty Acid Metabolism</li> <li>10. <b>Amino Acid Metabolism:</b> Role of essential amino acids; Amino Acid Deamination; The Urea Cycle; Metabolic Breakdown of Individual Amino Acids; Amino Acids as Biosynthetic Precursors; Amino Acids Biosynthesis; Nitrogen Fixation</li> <li>11. <b>Nucleotide Metabolism:</b> Synthesis of Purine Ribonucleotides; Synthesis of Pyrimidine Ribonucleotides; Formation of Deoxyribonucleotides; Nucleotide Degradation; Biosynthesis of Nucleotide Coenzymes</li> </ol> <p><b>Bio-organic Chemistry:</b></p> <ol style="list-style-type: none"> <li>1. <b>Introduction to organic compounds:</b>  <b>Classification of organic compounds</b>            To familiarize the students with the basic notations used in organic chemistry to describe the name, structural representation, and orientation of organic compounds            To familiarize the students with the basic understanding of the various functional groups those are present in many organic compounds, their synthesis and properties  <b>Stereochemistry of organic compounds:</b>            To understand the perspective and spatial orientation of atoms in an organic molecule, to compare and contrast the different arrangement of atoms or groups around carbon</li> <li>2. <b>Reaction Mechanisms:</b> To understand the mechanistic pathways of organic reaction            To understand the importance of steric and electronic influences of both reactant and reagents on the product formation or distribution            The aim of this unit is to provide detailed exposure to some of the key areas of organic chemistry namely aliphatic and aromatic nucleophilic and electrophilic substitution reactions, elimination reactions and free radical reactions. The students will be able to recognize the direction of electron flow (use of curly arrows) in reaction mechanisms and knowledge of the relative stability of intermediates, prediction and/or explaining the products of reactions</li> <li>3. <b>Name reactions and Spectroscopy:</b> To understand the importance of specific reagents for a specific transformation            To understand how the organic compounds can be characterized            To understand how to identify the various functional groups those are present in organic compounds            To enhance the working knowledge and understanding of some of the synthetic reactions that are widely used in organic chemistry            Name reactions will be very much useful to help them gain insights into the numerous approaches that are used in various complex synthetic transformations.</li> <li>4. <b>Heterocyclic Chemistry of Bioorganic Compounds:</b> To identify and name the mono cyclic and bicyclic systems containing hetero atoms (atoms other than C and H); To understand how different heterocycles can be prepared from simple starting materials; To study how heterocycles can be interconverted.            The study of heterocycles (their nomenclature, synthesis and reactions) will allow the students to learn the reactions that are useful for designing and interconverting therapeutically important compounds.</li> </ol>
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**5. Chemical Synthesis of Biomolecules:** To identify and draw the carbohydrates structure using Fischer, Haworth and chair projection and their inter conversions; To understand how glycosylation reactions occurs and neighbouring group participation effects; To study how Glucose structure was elucidated by Fisher (Kiliani-Fisher synthesis, Ruff degradation, osazone formation, oxidation); Nucleic acid synthesis (phospho diester, triester methods, phosphoramidite chemistry, protection-deprotection strategies, modification of 2' OH); Peptide synthesis (SPPS), Protein synthesis.

**Mathematics and Statistics:**

- 1. Basic study of Calculus:** Functions and Graphs, Limits and Continuity, Introduction to Differential equations and Integrations, definite and indefinite integrals, Integration by parts
- 2. Basic Algebra and Trigonometry:** Determinant and Matrix, Arithmetic and geometric Progressions, Compound, Multiple and sub multiple angles
- 3. Basic coordinate Geometry:** Straight line, circle, ellipse, parabola
- 4. Basic concept of computer Programming:** Logical operations, Simple mathematical algorithms, Looping and Concept of rows and column operations
- 5. Introduction to MATLAB:** Basic syntaxes, Analysis of Matrix using MATLAB, Analysis of the Data obtained from simple biological experiments using self-written programs (Data from UV-Vis spectra, Fluorescence spectra) Image analysis using simple microscopic images, analysis of basic mathematical models (radioactive decay functions, logistic growth etc.).

**Bioinformatics:**

- 1. Biological data:** Nature of biological data and its structure; High-throughput data, it's generation and analysis basics.
- 2. Biological database:** Bioinformatics basics, Introduction to Unix and Linux systems and basic commands; Database concepts; Protein and nucleic acid databases; Sequence file formats; databases and search tools: searching of databases similar sequence; NCBI; publicly available tools; resources at EBI; resources on web; database mining tools.
- 3. Sequence Analysis:** Introduction to sequence alignment; substitution matrix; pairwise alignment; Scoring matrices, FASTA, BLAST; Statistical significance of alignment; motif discovery and gene prediction
- 4. Multiple Sequence Alignment:** Multiple sequence alignment, CLUSTAL, MUSCLE, MAFFT, T-Coffee, distance matrix
- 5. Phylogenetic Analysis:** Phylogenetic analysis; tree building methods, UPGMA, NJ; Maximum Parsimony; Maximum Likelihood; Software for phylogenetic analysis
- 6. Structural Biology:** Structural databases; PDB File format; Peptide Bond, Phi-psi and chi torsion angles; Ramachandran Plot; Introduction to force field methods; Structural Classification; fundamental of protein modelling; homology modelling; ab initio modelling
- 7. Biological Data security, privacy, safty and sharing:** Need for data security, Data privacy, Responsible sharing of biological data, Data ownership, Socio-legal issues around biological data.
- 8. Future of Biological Data:** Where is the field going? Data size implications and its implications in future biological science research, New methods to deal with biological data complexity.

**Molecular Biology of Prokaryotes:**

**Brief introduction to molecular biology & processes:** Denaturation and renaturation of DNA.  $T_m$ . GC content from  $T_m$ . Renaturation kinetics of DNA and complexity of DNA. Cot curves. DNA-DNA hybridization-relatedness of difference genes and species.

**Bacterial Genome organization:** Evolution of genome, Genome content, C-value paradox,

		<p>Packing ratio, density of genome. Bacterial genome. Short- and long range organization, Proteins associated with bacterial genome &amp; their function.</p> <p><b>Bacteriophages: Genome and infection and Biology:</b> Bacteriophage T4: Unique properties of genome, Presence of modified bases. Terminal redundancy &amp; Circular permutation. Genetic map of T4 is circular. T4 life Cycle; Transcription: Temporal expression of genes. Replication: Degradation of host genome and generation of modified cytosine for its own perpetuation in T even phages. Assembly of Phage particles. T4 DNA polymerase and regulation of transcription; Bacteriophage T7: Gene organization and Infection Controlled Injection of DNA; Transcriptional regulation; Classes of genes. Taking over cells &amp; production of T7 Polymerase. Differential affinity with Class II and III promoters; Bacteriophage <math>\phi</math>X174: Genome. Circularity of genome. Infection and Growth. Conversion of single stranded circular DNA viruses into double stranded RF form. Synthesis of viral plus strand from RF DNA. Packaging of genome in phage head. Transcriptional regulation, Overlapping genes.</p> <p><b>Plasmids:</b> Microscopic and Genetic-F plasmid first plasmid to be detected. Counter-selection, Transfer accompanied by replication, Purification of plasmids. Mobilizable and non-mobilizable plasmids. Incompatibility- reasons of incompatibility. Copy number control. Replication of Plasmids: Use of host and plasmid encoded proteins. Uni- and Bi directional replication, Butterfly mode of replication. Replicon. Control of plasmid replication- Iteron regulated and RNA regulated replication. Antisense RNA for primer RNA and replicase protein. Role of replication on incompatibility in Iteron regulated. Drug-resistance plasmid: R- and RTF determinant. Colicin plasmid: Types of plasmids. Action of colicins. Colicin genes. Immunity and Lysis proteins. Export and Action</p> <p><b>Insertion sequences and Transposons:</b> Significance of moving elements of the genome. Bacterial transposable element: General organization of simple insertion sequence &amp; transposable elements. Mechanisms of transposition: Non-Replicative and Replicative transposition, IS transposition a regulated event? Bacteriophage Mu: Replication by transposition.</p> <p><b>Replication:</b> Elucidation of DNA structure and lead to copying mechanism. Models for DNA replication, Meselson and Stahl experiment 1957. Replication of the <i>E. coli</i> genome: John Cairns experiments: Single origin of replication, and bidirectional replication, Ross Inman's experiment- denaturation mapping studies, Mechanism of replication: Theta, rolling circle (sigma), D-loop, Semi discontinuous replication: Pulse chase experiment, Okazaki's experiment on T4 bacteriophage DNA, Use of T4 ligase mutants. Origin of replication- Commonality among <i>E. coli</i>, yeast and SV40 origin of replication  Enzymes of DNA replication: DNA polymerases: DNA polymerase I not the primary enzyme: Its other role in maintenance of DNA integrity. Processivity, direction of DNA polymerization, fidelity, <i>E. coli</i> DNA polymerase I and its components, Klenow fragment and other domains. DNA polymerase II and its function in DNA replication and repair DNA polymerase III: subunit structure and function: core and holoenzyme. DNA polymerase IV and V. Stages of DNA replication: Initiation- role of DNA methylases, types of <i>E. coli</i> methylases; elongation and proteins involved in elongation, termination. Priming: Mechanisms of priming. RNA primed DNA synthesis – experimental evidences, <i>E. coli</i> primase, Types of primosomes <i>E. coli</i> type and PhiX174 type, PAS sequences, Prepriming proteins Endonucleolytic priming: PhiX 174 gene A protein dual activity. Terminal protein priming. Other proteins of replication. DNA helicase, SSB protein &amp; its effect on replication, DNA ligase, topoisomerases Types I &amp; II, Nick translation.</p> <p><b>DNA recombination:</b> Definition, applications of natural recombination, Classification of recombination, Various possibilities of recombination, Models of homologous recombination, Steps involved in homologous recombination, Recombination events during Single and double strand breaks, Holliday Junction and resolution, Protein machinery of recombination, branch migration and resolution</p> <p><b>Mutations and Repair:</b> Mutants, Mutations and Mutagenesis: definition, reasons, measuring mutagenicity. Classifications of mutations: On the basis of location, structure, function and phenotype. Conditional, spontaneous and induced mutations, Missense, nonsense, frameshift mutations, Reversions. Mutagenic agents_ high energy, chemical and natural, Suppressor tRNA, missense repressors, frameshift suppressors  Repair: DNA repair: Mismatch repair, Base excision repair, nucleotide excision repair, direct repair, enzyme of repair, Error prone repair, SOS response</p> <p><b>Transcription:</b> Flow of information from DNA to protein. Organization of genes in bacteria. Collinearity of genes and proteins. Operon concept. Process of transcription: RNA polymerase subunit structure and function role of sigma factor in differential expression of genes in bacteria.</p>
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		<p>Transcription units and Cis elements.  Promoter: Consensus sequences affecting the promoter function. Constitutive and inducible promoters. Operator sequences as regulatory <i>cis</i> sequences. Initiation: Interaction of polymerase with the promoter and control at initiation. Attenuation. Elongation. Termination: Rho dependent and Rho independent termination. Control at termination: Attenuation, Antitermination. Processing of primary transcripts in prokaryotes:  Processing of tRNA &amp; rRNA. Cleavage of T7 early mRNAs by RNase III. Control at processing level. Regulation of transcription in bacteria: Introduction and repression. Represser as a regulatory molecule. Coordinated control of gene clusters. Positive and negative regulation: Regulation of transcription of <i>lac</i>, <i>trp</i>, <i>ara</i>, <i>his</i>, &amp; <i>gal</i> operons. Regulation through catabolite repression. CAP protein as a positive control factor. Transcriptional regulation in bacteriophage Lambda: Lytic and Lysogenic switch. role of various regulatory proteins.</p> <p><b>Translation:</b> Genetic code. Origin of genetic code. Essential components of translation. Ribosome: the site for translation, subunit composition and assembly. Role of ribosomal RNA in translation. tRNA: Salient features of tRNA. Aminoacyl tRNA synthetases. Difference between initiator fmet-tRNA and met-tRNA, Suppressor tRNAs, frameshift suppression. Codon-Anticodon recognition: Wobble hypothesis. Process of translation: Activation, Initiation, elongation translocation and termination. Factors involved in various steps. Peptidyl transferases. Co-translational and Post – translational mechanisms. Control of gene expression at translational level.</p> <p><b>Immunology:</b></p> <ol style="list-style-type: none"> <li><b>1. Introduction to the Immune System:</b> Historical background, cellular and molecular components of immune system</li> <li><b>2. Innate Immunity:</b> Innate immune cells, Pathogen associated molecular pattern (PAMP), Pathogen recognition receptors (PRR), Type 1 IFN, Interferon Stimulated Genes (ISGs), Complement system.</li> <li><b>3. The Recognition of Antigen:</b> Structure of a typical antibody molecule, Antigen recognition by T cell and B cells, Generation of lymphocyte antigen receptors, TCR gene rearrangement, Antigen presentation to lymphocytes, MHC/HLA complex.</li> <li><b>4. The Development and Survival of Lymphocyte:</b> The development of T lymphocytes in the thymus, Development of B lymphocytes, Positive and negative selection of T cells, Maturation of lymphocytes in peripheral lymphoid tissue</li> <li><b>5. The Adaptive Immune Response:</b> T cell mediated immunity, Entry of naïve T cells and APCs into peripheral lymphoid organs, Naïve T cells priming by pathogen-activated dendritic cells, T cell-mediated toxicity, Macrophage activation by TH1 cells, humoral immune response, Immunological memory, Cytokines.</li> <li><b>6. Immune system in Disease:</b> Self-tolerance, autoimmune diseases, transplant rejection, allergy and anaphylactic shock, AIDS immunology</li> <li><b>7. Immune aging:</b> Immunosenescence, Immune-exhaustion during aging and chronic infection, Mucosal Immunology</li> <li><b>8. NK cells and Cancer:</b> Inhibitory receptors, KIR receptors, CTL responses in cancer, Immunotherapy</li> <li><b>9. Characterization of lymphocytes specificity, frequency and function:</b> Lymphocyte isolation, ELISPOT assay, Multicolor flow cytometry, HLA-tetramer assay</li> <li><b>10. Vaccines:</b> History of vaccinology, attenuated vaccine, heat killed vaccine, subunit vaccine, recombinant vaccine, DNA vaccine, dendritic cell based vaccine, VLPs, T-cell based vaccine, edible and therapeutic vaccines. Vaccine against cancer, Adjuvants and their role in vaccine.</li> </ol> <p><b>Plant biotechnology:</b></p> <ol style="list-style-type: none"> <li><b>1. Prologue to Plant's World:</b> Plant and human society; Growth and development; Plant hormones; Photosynthesis</li> <li><b>2. An Introduction to Plant Genetics:</b> Plant genome organisation; Organellar Genome, Polyploidy; Genetic diversity; Molecular markers and mapping;</li> </ol>
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		<p>Phylogenetics and genomics; Breeding and methods; Forward vs. reverse genetics; Discussion;</p> <ol style="list-style-type: none"> <li>3. <b>Basic Aspects/Techniques of Plant Tissue Culture:</b> Introduction; Totipotency and Regeneration; Nutritional media and growth regulators; Haploid production, Problems in plant tissue culture; Discussion.</li> <li>4. <b>Transgenic Crops:</b> Plant Transformation methods, Agrobacterium Biology, Molecular characterization of transgenic plants, Global status of transgenic crops; Traits under development; Case Studies; Challenges; Discussion</li> <li>5. <b>Applications:</b> Crop improvement; Plant Molecular farming (Bioreactors); Renewable energy; Bio-fortification for Human Health; Discussion</li> <li>6. <b>Safety and Regulations:</b> Understanding issues encountered in plant biotechnology; Risk assessment; Environmental impact and gene flow; Regulation and labelling; Discussion.</li> </ol> <p><b>Microbiology:</b></p> <ol style="list-style-type: none"> <li>1. <b>Bacterial diversity</b> How to classify Bacteria; Chemical/Biochemical reactions; Nutrient preference and other biochemical properties; 16s rRNA base classification; Three domains of microorganisms.</li> <li>2. <b>Diversity of bacterial flora in humans</b> Diversity of microorganisms associated with different anatomical areas in humans; Alterations in microbiome diversity with diseases.</li> <li>3. <b>Structure and functions of the prokaryotic cells</b> Peptidoglycan structure and biosynthesis; Cell surface proteins and their role in bacterial pathogenesis; Structure and biosynthesis of cell surface organelles; Chaperone –usher pili in gram negative bacterial; Covalent anchorage of cells surface proteins in gram positive bacteria.</li> <li>4. <b>Bacterial host pathogen interaction</b> Mechanisms of bacterial pathogenesis; Bacterial structure in relation to pathogenicity; Bacterial proteins toxins/endotoxins.</li> <li>5. <b>Antimicrobial agents used in the treatment of infectious diseases</b> Mechanism of antibiotic actions; Antibiotic resistance.</li> <li>6. <b>Basic concepts of virus structure</b> Helical Symmetry; Icosahedral Symmetry.</li> <li>7. <b>Origin of viruses</b> Different hypothesis; Viral eukaryogenesis.</li> <li>8. <b>Emerging and re-emerging viral diseases</b> Emerging viral infections as public health threats; Factors effecting re-emergence of viruses.</li> <li>9. <b>Viral genome replication</b> Double stranded DNA virus; Single stranded DNA virus; Single stranded RNA virus; Double stranded RNA virus; Retrovirus.</li> <li>10. <b>Molecular genetics of viruses</b> Mutation rates and outcomes; Phenotypic variations by mutations; Recombination</li> <li>11. <b>Molecular pathogenesis</b> Animal models; Methods for the study of viral pathogenesis</li> <li>12. <b>Viral immune evasion strategies</b> Innate immunity; Adaptive immunity.</li> <li>13. <b>Antiviral chemotherapy- Mechanism of action</b> Viral genome replication inhibitors; Viral entry, exit and maturation inhibitors</li> <li>14. <b>Modern approaches to virus control</b> Antisense RNA, siRNA, ribozymes and miRNA</li> <li>15. <b>Construction of recombinant viruses for therapeutic purpose</b></li> </ol>
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Replication incompetent virus; Replication competent virus.

**Eukaryotic Molecular biology and Genetics:**

1. **Introduction to molecular genetics:** Basic concepts for gene, gene analysis, gene-function and genome of different model organisms (Archaea to Human). General genome characteristics of the model organisms, Comparative genome structure analysis of the prokaryotes and eukaryotes.
2. **Fundamentals of human genetics:** Physical structure of the gene, Mendel's laws, alleles & genotypes, Segregation patterns, Deviations from mendelian principles, Penetrance and Expressivity, Statistical methods used in genetics, Organization of the human genome, Techniques to study human chromosomes, DNA methylation and histone code.
3. **Modern tools of Human Molecular Genetics:** Concepts in the molecular genetics, Basic knowledge of the mammalian transcriptomics, Transcriptomic analysis of mammalian cell and its importance in human physiology, Basic nucleic acid hybridization assay, Factors affecting nucleic acid hybridization, Common hybridization probes and methods of probe labelling, Microarray hybridization, Applications of microarray hybridization in functional genomics and biotechnology.
4. **Genes in pedigrees and population:** General concepts of the genetics and gene inheritance, interdisciplinary (e.g. Mathematical, statistical, computational approaches etc). Inherited disease symptoms to genetic analysis. Early days of gene hunting: Use of microsatellite markers for identifying disease genes for monogenetic diseases such as haemophilia and cystic fibrosis, Mendelian pedigree patterns, Factors affecting gene frequencies, Hard-Weinberg relationship.
5. **Genomics: The mapping and sequencing of genomes:** Approaches and milestones in genetic and physical mapping of the human genome, Disadvantages of advantageous previous gene hunting methods for complex disorders such as type 2 diabetes, Human genome project, HapMap project 1000 genome project, linkage disequilibrium, Role of genome wide association studies (GWAS) in understanding complex disease genomics, Advantages and limitations of association studies, Genomic libraries, DNA sequencing and analysis of DNA, Comparative genomics: Tools and applications.
6. **Genetic models for studying mammalian development and diseases:** Study of model organisms, comparative genomics and evolution, Concept of G-value paradox. Selection. Invertebrate model & vertebrate model (one each example).
7. **Basics human epigenetics and its applications:** Basic concepts, Chromatin conformations: DNA methylation and the histone code, Epigenetic memory & Imprinting in humans, ENCODE project, Different available methods and their comparisons.
8. **Pharmacogenetics, personalized medicine and population screening:** Pharmacogenetics, Pharmacogenomics, Genetic differences affecting metabolism of drugs taking warfarin as an example, Personalized medicine, Testing for susceptibility to complex diseases, Population screening.
9. **Introduction to Eukaryotic Molecular Biology:** How to read a paper. The evolution of a Cell with Nucleus, Hypothesis vs speculation in science, Rationalization of hypothesis, Experimental tools, Eukaryotic genome, gene expression and cell fate.
10. **Dynamic genome – 3 D cell, dynamic genome architecture in nuclear space, chromatin movement, microscopes, microarrays and chromosome capture assays chromatin mobility and principle of nuclear organization, Nuclear architecture and gene-gene interaction, gene kissing, transcription factories, structural constraints on chromatin mobility** (5L)
11. **Nuclear Matrix and gene regulation:** Nuclear matrix, nuclear matrix proteins, nuclear-matrix, structure and function, DNA Binding Properties of the Nuclear Matrix

and Individual Matrix Prote.

12. **Association of chromosome territories with the nuclear matrix:** Disruption of human chromosome territories correlates with the release of a subset of nuclear matrix proteins, nuclear matrix targeting, signal, higher order chromatin structure and nuclear matrix, transcriptional repression & nuclear lamina, nuclear matrix & expression of globin gene.
13. **Principle of eukaryotic Gene regulation:** gene regulating sequences, promoter, enhancers, regulatory elements, locus control region, gene activation and gene repression, transcription activators and repressors, TBP, GTFs, TBP associated factors (TAFs), RNA polymerases I, II, III, structure and function, mediators, general transcription factors, classes of transcription factors, structure and function, DNA-protein recognition in genome, Transcriptional regulatory networking, gene expression and Cancer progression
14. **Programmed cell death:** Apoptotic and necrotic cell death, apoptotic and anti-apoptotic genes, tumour suppressor genes, cell fate through decision between cell cycle arrest and apoptosis.
15. **Gene regulation and disease:** Order vs disorder in transcriptional regulation, network dysfunction and disease, transcriptional therapeutics in diseases control.

#### Cell Biology:

1. **Composition and organization of biological membranes:** Membrane lipids: Types, properties and how they affect the curvature and fluidity of the membrane; lipid rafts: composition, a platform for organization of signalling complexes  
Membrane proteins: Properties and orientation in biological membranes; membrane composition and curvature, Membrane asymmetry, methods to study diffusion in membranes
2. **Cellular transport mechanisms:**  
Principles of transport of small molecules across membrane: Organization and functioning of carriers and channels, membrane potential, action potential and membrane excitability  
Protein transport across membranes: Transport across the nuclear pore; Transport across ER and from ER to other organelles by vesicular transport; Post-translational modifications of proteins and their role in protein transport; Endocytosis, phagocytosis, exocytosis
3. **Cell Cycle:** Components of cell cycle regulatory mechanisms: Cyclin-CDK complexes, CKIs and ubiquitin ligases in cell cycle regulation; Cell Cycle control mechanisms: Checkpoints, Regulation and maintenance of G1, control of genome replication, DNA damage and cell cycle regulation; Cell cycle defects and cancer: Key defects in cell cycle regulation and transformation)
4. **Cell Signaling and Crosstalk:** Introduction: General Principles of cell communication, cell surface receptors and nuclear receptors, intracellular signalling and mechanisms.  
Cell Surface Receptors: regulation and signaling of G-protein-coupled receptors, G-proteins, cAMP dependent & c-GMP dependent pathways.  
Receptor Tyrosine kinase mediated signalling pathways- EGFR and IGFR mediated cell signalling and effects to cell apoptosis and cell proliferation. The pathway involving Ras and MAPK will be discussed in detail.  
Phosphoinositide & PI3Kinase- AKT signalling pathway, Ser/Thr Kinase mediated signalling, His-Kinase mediated signalling pathway and two component signalling pathway.  
Proteolysis based signaling (Wnt, Notch, Hedgehog): Structural and functional basis for normal and abnormal signalling.  
Cross-Talk Between Different Intracellular Pathways: Interactions between GPCRs and tyrosine kinase receptors; cross-cascade signaling of proteins involved in gene transcription. (Example: Cross talk between pattern-recognition receptors and Toll-like receptors.
5. **Cytoskeletal Network:** Cytoskeletal network Proteins and their role: actin, microtubules and intermediate filaments. Extracellular Matrix components

Cytoskeletal Protein Signaling network affecting cell adhesion and migration phenomenon of the cell.

- 6. Cellular Mechanisms:** Pathways of cell apoptosis, intrinsic and extrinsic, pathways for cell proliferation; Pathways for autophagy; ER stress and UPR pathways; Effect of glycosylated proteins on cellular Mechanisms of cell.

**Genetic Engineering and its Applications:**

- 1. Methods, Tools and Molecular Strategies in Genetic Engineering:** Introduction to genetic engineering, general work flow, potentials and its limitations; Host, vector and steps in cloning. Cloning of cDNA, and construction of cDNA library; Analysis of a cloned DNA fragment using restriction digestion and DNA sequencing; Concept, strategies, general workflow and variant of the PCR; The use of PCR in gene recombination, deletion, insertion and site directed mutagenesis; PCR in molecular diagnostics: Defection of the pathogens, and its potentials; PCR based diagnostics of the minimum residual disease (MRD) with case study; Application of real time (RT) PCR in the study of gene expression; Use of genetic engineering for recombinant protein technology; Expression of foreign gene in E. coli, Baculovirus and Pichia expression systems; Strategies for the production of soluble proteins; Role of integrated OMICS in the genetic engineering; Importance of computational tools and system biology for genetic engineering.
- 2. Animal Genetic Engineering:** Methods of introduction of DNA into mammalian cells and Cell synchronization and its importance in the genetic engineering; Transient and stable integration of foreign DNA into mammalian cells; The viral vectors and their use in gene delivery and packaging of retroviral vectors and helper cells for gene therapy; The Adeno viral vector, unarmed Herpes and vaccinia viral vectors and their importance; Principles and methods of the gene targeting for model organism; Strategies for Gene knockouts in animals; Gene disorder and Gene therapy; Development of animal models for gene therapy; Detection of mutations in neoplastic diseases; Immuno - Suicide gene therapy in neoplastic diseases; Somatic and germ line gene therapy in vivo and ex-vivo experiments, Bioethics; Use of genome wide screening in the functional genomics; Recent breakthrough and advances in the genome engineering; Recent trends and development in the gene therapy.
- 3. Plant Genetic Engineering:** Introduction to plant tissues culture, Plant transformation (Agrobacterium-mediated, Microprojectile bombardment-mediated and Floral-dip method of plant transformation), cointegrate and binary vector system, CRISPR/Cas9-based precise genome engineering, Transgenic Selection and Regeneration, optimization of transgenic expression, Applications of plant genetic engineering, understanding issues encountered in plant biotechnology, Discussion.

**Downstream Processing:**

- 1. Thermodynamic requirements of separation:** Classification of separation processes-equilibrium and non-equilibrium processes. Chief characteristics of bio-separation processes. RIPP: removal of in-solubles, isolation of products, purification and polishing.
- 2. Cell harvesting:** Cell disruption – ball mill, chemical lysis, homogenization, selection of unit operation for insoluble removal. Centrifugation – general theory of centrifugation-final settling velocity, critical particle diameter, sigma factor. Types of centrifuges: tubular bowl, disc stack, basket, Sharples super-centrifuge. Theory of disc-stack centrifuges. Filtration. Types of filtration –rotary vacuum drum, plate and frame, leaf filters. Compressible cakes and filter aids. Theory of filtration.
- 3. Product isolation:** Extraction, principle of extraction, partition coefficient, extraction factor, batch extraction, cascades, idealized stage operation, differential extraction, height of a transfer unit, number of transfer units, adsorption, adsorption isotherms, batch adsorption, adsorption in a CSTR. Aqueous Two Phase Extraction, Supercritical extraction, Foam based separation.
- 4. Product Purification:** Chromatography, yield and purity and resolution, Principles of elution chromatography, ion-exchange, hydrophobic interaction, reverse-phase chromatography, gel-filtration chromatography. The concept of resolution, plate height. Protein purification. Synthesis of chromatography trains. Scaling-up



chromatography using PAT/QbD approach.

5. **Membrane filtration:** Tangential flow filtration, micro-filtration, ultra-filtration, reverse osmosis
6. **Polishing:** Crystallization – separation, purity, nucleation, crystal growth, characteristic length, crystal size distribution, dominant crystal length.
7. **Lyophilisation and drying**
8. **Case study of Monoclonal antibody purification**

#### **Bioprocess Engineering:**

1. **Basics of bioprocess engineering:** Introduction to bioprocess engineering, Microbial growth and death kinetics; Strain improvement strategies; Ideal and non-ideal reactors; Residence Time Distribution; Elements in bioreactor design- overview of bioreactor, specialised bioreactors, Construction materials, types of bioreactors, components of bioreactors and importance
2. **Stoichiometry and Models:** Stoichiometry of cellular reactions, reaction rates, dynamic mass balance, yield coefficient and linear rate equations; Material balances and data consistency (the Black box model, elemental balances, heat balance, over determined systems); Metabolic Flux Analysis and Metabolic control analysis: concept and applications.
3. **Bioreactor design and analysis:** Upstream processing: media formulation and optimization; sterilization (medium and air)-thermal death kinetics of microorganisms; aeration, agitation in bioprocess; Analysis of batch and continuous culture; Multiphase bioreactor system; Scale-up, scale-down. Developments using microbial processes (SmF and SSF), mammalian cell culture, plant cell culture, photobioreactor and CART-cell culture; Gas fermentation: Overview of conversion of gasified biomass and industrial gaseous into value added chemicals.
4. **Monitoring of Bioprocesses:** On line data analysis for measurement and control of important physicochemical and biochemical parameters, parameter estimation techniques for biochemical processes, Techno-economic feasibility of bioprocess. Challenges in biotherapeutics manufacturing.

#### **Emerging Technologies:**

1. **Systems Biology:** Bimolecular network models, virtual cells, cytoscape
2. **Synthetic Biology:** Standards in biology, logic gates, oscillators, synthetic genes & proteins, synthetic cells
3. **Neurosciences:** Brain computer interface and consciousness: basic concepts & technological review
4. **Photoreceptor Biotechnology:** Development of climate-smart crops with photoreceptor biotechnology, Photoreceptor biotechnology for carbon sequestration and biorefinery, value added products, Artificial illumination for increasing yield and nutritional index of the crops
5. **Optobiology:** Photoimmunology, Photodynamic therapy, optogenetics therapy, opto-pharmacology and optogenetics for controlling neural networks, behavioral and neuropathies
6. **Genome Biology:** Introduction to Next Generation Sequencing technologies, Whole Genome Assembly and challenges, Sequencing and analysis of large genomes, Gene prediction, Functional annotation, Comparative genomics, Human genome project, Human Genomics Databases, Functional genomics case studies
7. **Data in biology:** Usefulness of data in biology, emerging technology like machine learning and artificial intelligenc
8. **Introduction to Microfluidics:** Importance of low volume measurement, Design and fabrication of microfluidic devices, Applications in biomedical sciences
9. **Biosensors and Bioelectronics:** Different types of sensors, optical and electronic biosensor, Nanoparticle plasmonic based optical sensing, fabrication of electronic sensors for impedimetric detection of biomolecules, cyclic voltammetry and immobilization of biomolecules on electrodes for electronic sensing

			<p><b>10. Nanotechnology and its Application:</b> What is Nanotechnology? Different types of Nano materials; their synthesis and characterization; applications in biotechnology and other fields.</p> <p><b>Bioentrepreneurship:</b></p> <ol style="list-style-type: none"> <li><b>1. Innovation and entrepreneurship in bio-business:</b> Introduction and scope in Bio-entrepreneurship, Types of bio-industries and competitive dynamics between the sub-industries of the bio-sector (e.g. pharmaceuticals vs. Industrial biotech), Strategy and operations of bio-sector firms: Factors shaping opportunities for innovation and entrepreneurship in bio-sectors, and the business implications of those opportunities, Alternatives faced by emerging bio-firms and the relevant tools for strategic decision, Entrepreneurship development programs of public and private agencies (MSME, DBT, BIRAC, Make In India), strategic dimensions of patenting &amp; commercialization strategies.</li> <li><b>2. Bio markets - business strategy and marketing:</b> Negotiating the road from lab to the market (strategies and processes of negotiation with financiers, government and regulatory authorities), Pricing strategy, Challenges in marketing in bio business (market conditions &amp; segments; developing distribution channels, the nature, analysis and management of customer needs), Basic contract principles, different types of agreement and contract terms typically found in joint venture and development agreements, Dispute resolution skills.</li> <li><b>3. Finance and accounting:</b> Business plan preparation including statutory and legal requirements, Business feasibility study, financial management issues of procurement of capital and management of costs, Collaborations &amp; partnership, Information technology.</li> <li><b>4. Technology management:</b> Technology – assessment, development &amp; upgradation, managing technology transfer, Quality control &amp; transfer of foreign technologies, Knowledge centers and Technology transfer agencies, Understanding of regulatory compliances and procedures (CDSCO, NBA, GCP, GLA, GMP).</li> <li><b>5. India, Asian and Global Status of Bioentrepreneurship:</b> Challenges in the entrepreneurship training, Mentoring and nurturing the business of biotechnology, Current status of Bioentrepreneurship in India, State of the Asian Bioentrepreneurship, An emerging and re-emerging model of European Bioentrepreneurship. Standard models strategies of Bioentrepreneurship around the world, Policies and rights for Bioentrepreneurs, surviving in the valley of death for Bioentrepreneurs.</li> </ol> <p><b>Intellectual Property Rights, Bioethics and Biosafety:</b></p> <ol style="list-style-type: none"> <li><b>1. Introduction to IPR:</b> Introduction to intellectual property; types of IP: patents, trademarks, copyright &amp; related rights, industrial design, traditional knowledge, geographical indications, protection of new GMOs; International framework for the protection of IP; IP as a factor in R&amp;D; IPs of relevance to biotechnology and few case studies; introduction to history of GATT, WTO, WIPO and TRIPS; concept of 'prior art': invention in context of "prior art"; patent databases - country-wise patent searches (USPTO, EPO, India); analysis and report formation.</li> <li><b>2. Patenting:</b> Basics of patents: types of patents; Indian Patent Act 1970; recent amendments; WIPO Treaties; Budapest Treaty; Patent Cooperation Treaty (PCT) and implications; procedure for filing a PCT application; role of a Country Patent Office; filing of a patent application; precautions before patenting-disclosure/non-disclosure - patent application- forms and guidelines including those of National Biodiversity Authority (NBA) and other regulatory bodies, fee structure, time frames; types of patent applications: provisional and complete specifications; PCT and conventional patent applications; international patenting-requirement, procedures and costs; financial assistance for patenting introduction to existing schemes; publication of patents-gazette of India, status in Europe and US; patent infringement- meaning, scope, litigation, case studies and examples; commercialization of patented innovations; licensing – outright sale, licensing, royalty; patenting by research students and scientists-university/organizational rules in India and abroad, collaborative research - backward and forward IP; benefit/credit sharing among parties/community, commercial (financial) and non-commercial incentives</li> </ol>
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high throughput screenings.

#### **Environmental Biotechnology:**

1. **Introduction to Environment:** Introduction to environment; pollution & pollution indicators; waste management: domestic, industrial, solid and hazardous wastes; Biodiversity and its conservation; microbiology of water, air and soil: types, importance and diseases; microorganisms and biogeochemical cycles; Role of microbes in biogeochemical cycles - Carbon cycle; Sulphur cycle; Nitrogen cycle and Phosphorus cycle.
2. **Bioremediation:** Bioremediation: Fundamentals, methods and application; bio stimulation & bioaugmentation; bioremediation of heavy metals & organic pollutants like pesticides, Polycyclic aromatic hydrocarbons etc. Biodegradation: types, microbial basis and role in environment.
3. **Role of microorganisms in bioremediation:** Application of bacteria & fungi in bioremediation: White rot fungi vs specialized degrading bacteria: examples, uses and advantages vs disadvantages; Phytoremediation: Fundamentals, methods (phytoaccumulation, phytovolatilization, rhizofiltration, phytostabilization) & applications.
4. **Biotechnology and Agriculture:** Bioinsecticides: *Bacillus thuringiensis*, Baculoviruses, etc; genetic modifications, applications and safety in their use; Biofertilizers: Symbiotic systems between plants – microorganisms (nitrogen fixing symbiosis, mycorrhiza fungi symbiosis), Plant growth promoting rhizobacteria (PGPR) – classification, PGPR and plant root interactions; mechanism of action, applications & challenges; Biofungicides: Description of mode of actions and mechanisms.
5. **Biofuels:** Environmental Biotechnology and biofuels: biogas, bioethanol, biodiesel, biohydrogen; Biomass resources: lignocellulosic and algae; genetic engineering for feedstock improvement; microorganisms and biotechnological interventions; Improvement of biological strains,

#### **Infectious Disease Biology:**

1. **Microbial mechanisms of establishment and persistence (Strategies of pathogens to establish acute and chronic infections):** Role of key microbial proteins and metabolic functions in persistence (bacterial toxins, secretion systems and virulence), Microbial variability and persistence: sub-typing of pathogens (including WGS), genetic regulation and exchange of virulence determinants, emerging infections, the microbiome, antibiotics and resistance, Biofilm formation and microbial intercellular communication
2. **Principles of Molecular Biology, Pathogenesis, & Control of Human Viruses:** Basic principles of infection, transmission, tropism of human viruses, Biology of individual pathogenic human viruses, including influenza, HIV, Herpes, Polio, Hepatitis, RSV and Dengue viruses. Evolution of viruses and viral strategies for the evasion of the natural and adaptive immune system.
3. **Host response to infection and microbial modulation of host responses:** Host genetic susceptibility (Coevolution and coadaptation), Cellular responses to persistent infection (interaction with array of host receptor), Escape of pathogens from innate and adaptive immunity (microbial manipulation of host inflammatory responses)
4. **Virus-host interaction in Infectious diseases:** Co-evolution and adaptation between viruses and hosts. (post-entry viral inhibitors, natural versus non-natural hosts), Resident viruses and their interaction with host immune system: Significance of “host-virobiota” interaction and “Virome” study., Early Virus-Host Interaction: How they predict the course of a persistent infection.
5. **Epigenetic modifications and viral infection:** Epigenetic remodelling of host genes in human viral infection., Methods of Epigenetic Analysis (DNA methylation, Amplification of Inter-Methylated Sites, Methylated DNA Immunoprecipitation (MeDIP), NSG., Endogenous retroviruses and their association with diseases: PERV and Xenotransplantation. Host epigenetic/cellular responses to control the

expression of endogenous retroviruses in the cell.

6. **New Threats: Emerging Viral Diseases:** Epidemiology and cross species viral infection, Virus fitness and host switching., Virus and Nervous system: Debut of Zika virus in the Medical science., Computational approach to predict virus resistance, immunogenic epitopes, and vaccine design. (Introduction to Los Alamos HIV Database, and NetCtI), Severe Acute Respiratory Syndrome (SARS) and Human Coronaviruses (HCoVs): Transmission and disease pathogenesis.
7. **Systems analysis of host-pathogen interactions (introduction to PHI database):** Host - Pathogen Interaction Database, Hi-Jack: A novel computational framework for pathway-based inference of host-pathogen interactions, Host-Pathogen Interactions Alignment (HPIA) algorithm
8. **Viruses and Human Cancers:** Viral mechanisms of transformation and tumorigenicity, Interactions between human cancer viruses and the immune system, Use of high-throughput genomics in Tumour virology. Oncolytic viruses (OVs) and car

#### **Molecular and Cell Biology of Viral Oncohenesis:**

1. **Genomic Integrity and development of cancer:** Replication errors, mutagens, inherited defects in DNA repair mechanisms, alterations in chromosomal structure
2. **Oncogenes:** Activation by endogenous retroviruses, changes in structure and expression leading to oncogene activation
3. **Tumor suppressor genes:** Role in cancer development and prevention, epigenetic regulation of expression of TSGs
4. **Hallmarks of cancer:** Different cell types in cancer, progression, characteristics of cancer cells
5. **Signaling receptors and cancer:** Growth factors and signaling proteins as oncogenes (e.g. Src, EGFR, Integrin receptors), alteration of cell signaling in cancer (Ras, Akt/PKB, JAK-STAT, Wnt/ $\beta$ -
6. **Cell cycle and cancer:** Role of p53 and retinoblastoma in cell cycle regulation, interplay between phosphorylation, dephosphorylation and ubiquitylation in regulation of cell cycle and aberrations in these mechanisms
7. **Cell Biology of invasion and metastasis:** Epithelial to mesenchymal transition (ETM), TFs in ETM, role of Ras-like GTPases in cell adhesion, shape and motility, factors affecting metastasis
8. **Viral carcinogenesis:** Discovery of oncogenic viruses; The origin and nature of transforming gene; Functions of viral transforming genes
9. **Molecular biology of RNA and DNA tumor viruses:** Direct acting and indirect acting tumor viruses
10. **Activation of cellular signal transduction pathways by viral oncogene:** Viral mimics cellular signaling molecules; Altering the activity of signal transduction proteins
11. **Disruption of cell cycle control pathway by viral oncogene products:** Abrogation of restriction point control exerted by Rb proteins; Production of virus specific cyclins; Inactivation of CDK inhibitors
12. **How viruses counteract the barriers of tumor growth:** Telomerase activity; Cell polarity and attachment; Epigenetic control
13. **Viruses as novel cancer therapeutic agents:** Generation of recombinant viruses to selectively target and lyse the cancer cells; Various strategies to arm the recombinant virus to enhance its oncolytic ability.

#### **Nanobiotechnology:**

1. **Introduction to Nanotechnology:** Current status, Different types of nano materials their importance and applications, Different methods for the synthesis of nanomaterials and characterization processes including basic instrumentation.
2. **Nano Biotechnology:** Role in nanomedicine including toxicity, ethical & regulatory issues, nanoparticle-based drug delivery strategies, advantages & disadvantages of

			<p>different nano-materials used for drug delivery</p> <p><b>3. Nanotechnology for diagnostics:</b> Optical diagnostics, Fabrication of electrodes, Applications of Biosensor, role of nanomaterials and nanostructures in the enhancement of sensitivity</p> <p><b>4. Light induced nanostructures:</b> Light induced nanostructures formation and their biomedical applications</p> <p><b>5. Biosynthesis of nanoparticles:</b> Molecular machinery of biosynthesis of metal Nanoparticles by microorganisms and their use. Green biosynthesis of nanoparticle and sustainable development. Bio-Inspired nanotechnology and its importance\</p>
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## 11. SCHOOL OF SANSKRIT AND INDIC STUDIES

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

### SYLLABUS

#### I. REGULAR COURSES

##### B.Sc.-M.Sc. Integrated program in Ayurveda Biology

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Sanskrit and Indic Studies (SSIS)	Ayurveda Biology - AYBU (411)	<b>Syllabus:</b> The syllabus is 10+2 level CBSE for Sanskrit, Science and General Aptitude questions.

#### M.A.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Sanskrit and Indic Studies (SSIS)	Sanskrit – SANM (228)	<b>Syllabus:</b> Test may cover the following areas: Vedic & Agamic Studies, Sanskrit language and literature, Indian Philosophical Systems, Sanskrit Poetics and Aesthetics, Sanskrit and Modern Indian Languages, Sanskrit Linguistics including Computational Linguistics, Indian Intellectual and Cultural Traditions, Social thought, Polity, Economy, Architecture, Fine Arts, Environmental Awareness, Sanskrit Grammar, Indian Logic, Astronomy and Mathematics, Science and Technology, Argumentation and Interpretation, and Role and Place of Sanskrit in Indo European Studies.

#### Ph.D.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Sanskrit and Indic Studies (SSIS)	Sanskrit Studies – SANH (906)	<b>Syllabus:</b> The test will cover the following areas: Indian Philosophical Systems; Traditions of Yoga & Sādhanā, Sanskrit literature and Poetics; Sanskrit Grammar and Grammatical Theory; Modes of Disputation and Interpretation of Texts; Sanskrit Linguistics including Computational Linguistics; Vedic, Agamic and Purānic Studies; Pali and Prakrit Studies; Indian Social Thought, Religious Studies; Sanskrit Manuscriptology; Issues in Sanskrit Studies and Researches; Research Methodology & Research Aptitude.

## II. Part-time Courses

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Sanskrit and Indic Studies (SSIS)	Pali – PALC (705)	Candidates seeking admission shall be examined on the basis of the Computer Based Test (CBT). The questions shall be objective type and shall be within the broad spectrum of General Knowledge, general aptitude for the subject and English Language.
2		Sanskrit Computational Linguistics – SCLC (706)	
3		COP in Yoga Philosophy – YOPC (707)	
4		COP in Vedic Culture – VECC (708)	
5		COP in Sanskrit – SANC (709)	

## 12. School of Engineering

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

S. No	Program	Branch	Syllabus
1.	Ph.D.	Computer Science and Engineering	<p><b>Syllabus:</b> 50% of the questions will be from research methodology and remaining 50% from bachelor's/master's level computer science engineering</p> <p><b>Research Methodology:</b> Experimental design; fundamentals of sampling; data types, quality measurement; processing and analysis of data; hypothesis testing (parametric, nonparametric), theory of probability.</p> <p><b>Computer Science:</b> Engineering mathematics, Digital logic, Computer organisation and architecture, Programming and data structure, Algorithms, Theory of computation, Compiler design, Operating system, Database, Computer networks.</p>
2.	Ph.D.	Electronics and Communication Engineering	<p><b>Syllabus:</b> 50% of the questions will be from research methodology and remaining 50% from bachelor's/master's level electronics and communication engineering</p> <p><b>Research Methodology:</b> Experimental design; fundamentals of sampling; data types, quality measurement; processing and analysis of data; hypothesis testing (parametric, nonparametric), theory of probability.</p> <p><b>Electronics and Communication:</b> Engineering mathematics, Networks, Signal and systems, Electronic device, Analog circuits, Digital circuit, Control systems, Communications, Electromagnetics</p>



### 13. ATAL BIHARI VAJPAYEE SCHOOL OF MANAGEMENT AND ENTREPRENEURSHIP (ABVSME)

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

Ph.D.

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Atal Bihari Vajpayee School Of Management And Entrepreneurship (Abvsme)	Ph.D. in Management – SMEH (914)	<p><b>Reserach Methodology:</b> - Foundation of Research, Types of Reserach, Research design, Literature Review, Data measurement and scaling, Sampling design, Data Collection, Data Analysis &amp; Tools, Report Writing, Ethics in research.</p> <p>Sustainable Development Goals (SDGs) Managemnt, Public Policy Management, Industrial Procurement &amp; Supply Chain, Scenario Planning, Rurban Planning and Infranstructure Management, Rural Management, Climate Change, Renewable Energy Management, Spirituality and Indian Ethos, Design Thinking, Intellectual Property Management (IPM), Innovation Management, Entrepreneurship, Venture Capital, Incubation Management, Decision Science, Innovation Economics, Spiriuual Economics, Knowledge Management, Healthcare Managemnt, Pharmaceutical Management, Public Sector Management, Legal and Judiciary Systems.</p>

### 14. SPECIAL CENTRE FOR STUDY OF NORTH EAST INDIA

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Special Centre for the Study of North East India (SCSNEI)	North East India Studies- NESH (882)	<ul style="list-style-type: none"> <li>• Understanding North East India and its neighbouring areas: history, culture, society, politics, economic development, ecology and contemporary policies</li> <li>• Research Methodology: Various interdisciplinary methods such as approaches to social sciences, qualitative, quantitative, interpretative and historical methods</li> <li>• In addition to the above, the syllabus covers themes pertaining to North East India, such as religion and society, tribes and ethnicity, government and politics, economic development, frontiers and borderlands, and cultural histories.</li> </ul>

## 15. SPECIAL CENTRE FOR MOLECULAR MEDICINE

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

### M.Sc. Programme

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Special Centre for Molecular Medicine (SCMM)	Molecular Medicine-CMMM (233)	<p style="text-align: center;"><b>Part A</b></p> <ol style="list-style-type: none"> <li>1. Basic Maths; 10<sup>th</sup> level geometry, PC, statistics, Arithmetic, Log, Basic knowledge of Computer science.</li> <li>2. Chemistry: Concept of Molarity, Normality, Periodic Table, Organic Chemistry, Synthesis, Thermodynamics, Entropy, Enthalpy, Free energy, Law of Mass action, Reaction kinetics</li> <li>3. Physics: Newton's law, radioactivity, Electricity, capacitance, optics, sound, gravity, spectroscopy.</li> <li>4. Basic Biology: Zoology/Botany - classification/Evolution Biology/Population Biology.</li> <li>5. General Aptitude and reasoning.</li> <li>6. General awareness.</li> </ol> <p style="text-align: center;"><b>Part B</b></p> <p><b>Section 1;</b> Biochemistry: Metabolism, Nutrition, Biomolecules, Hormones, Enzymes, Omics.  <b>Section 2;</b> Microbiology: Bacterial genetics, Antibiotics mode of action, Infectious disease, Industrial Biotechnology.  <b>Section 3;</b> Physiology, Diseases, Pharmacology, Genetics, Molecular Biology, Developmental biology, Zoology, Population genetics.  <b>Section 4;</b> Botany: Molecular Biology.  <b>Section 5;</b> Advanced Chemistry, Spectroscopy, Molarity/Normality, Radioactivity, Atomic Structure, Acid base, pH.  <b>Section 6;</b> Medicinal Chemistry: Drug-receptor interaction, DNA, Protein, Hormones as receptor, Pharmacokinetics, G-protein coupled receptor, Pharmacodynamics.  <b>Section 7;</b> Cell biology: Organelles, Cell-Cell interaction, Cell signalling/ trafficking, Cell cycle.  <b>Section 8;</b> Drug/ Drug resistance.  <b>Section 9;</b> Immunology: Basic immunology.  <b>Section 10;</b> Aptitude, Bioinformatics ,Others .</p>

### Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	Special Centre for Molecular Medicine (SCMM)	Molecular Medicine-CMMH (905)	<p><b>Section A; General Aptitude/Research Methodology</b>  <b>Section B; Different Subject Areas of Molecular Medicine</b></p> <p style="text-align: center;"><b>Section A</b></p> <p><b>Aptitude / Research Methodology</b>  <b>Basic Maths;</b> geometry, statistics, Arithmetics, Log, Basic knowledge of Computer science.  <b>Chemistry:</b> Concept of Molarity, Normality, Related to Periodic Table, Organic Chemistry, Synthesis, Thermodynamics, Entropy, Enthalpy, Free energy, Law of Mass action, Reaction kinetics <b>Physics;</b> Newton's law, radioactivity, Electricity, capacitance, optics, sound, gravity, spectroscopy. <b>Basic Biology;</b> Zoology/Botany - classification/Evolution Biology/Population Biology, General Aptitude and reasoning.</p> <p style="text-align: center;"><b>Section B</b></p> <p><b>Biochemistry:</b> Metabolism, Nutrition, Biomolecules, Hormones, Enzymes, Omics.  <b>Microbiology:</b> Bacterial genetics, Antibiotics mode of action, Infectious disease, <b>Industrial</b></p>

			<p><b>Biotechnology. Physiology, Diseases, Pharmacology, Genetics, Molecular Biology, Developmental Biology, Zoology, Population genetics. Botany, Molecular Biology, Advanced Chemistry;</b> Spectroscopy, Molarity/Normality, Radioactivity, Atomic Structure, Acid base, pH. <b>Medicinal Chemistry:</b> Drug-receptor interaction, DNA, Protein, Hormones as receptor, Pharmacokinetics, G-protein coupled receptor, Pharmacodynamics. <b>Cell biology: Organelles, Cell-Cell interaction, Cell signalling/ trafficking, Cell cycle. Drug resistance. Immunology</b></p> <p><b>Entrance test will contain questions on research methodology/experimental techniques in the relevant areas.</b></p>
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## 16. CENTRE FOR THE STUDY OF LAW & GOVERNANCE

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	<b>Centre for the Study of Law &amp; Governance (CSL&amp;G)</b>	<b>Law &amp; Governance – CLGH (907)</b>	<p>The test will have a 50% weight for social science research methods and 50% weight for domain knowledge covering the disciplines of Economics, Political Science, Sociology, Public Administration, Anthropology, and Law. The questions will be at the level of an advanced Masters and all candidates will be required to attempt questions from all these disciplines.</p> <p>The broad coverage of the subject areas of these disciplines are as follows:"</p> <ul style="list-style-type: none"> <li>• <b>Political Science:</b> concept and theories of governance; theories of the State, democracy and development; decentralisation; global governance; politics of identity; multilevel governance; civil society and social capital; neoliberalism and globalisation; social justice; gender, development and governance; and, public administration.</li> <li>• <b>Law:</b> Constitution and administrative law, criminal law, law and technology, environmental law, corporate laws and labour laws.</li> <li>• <b>Economics:</b> Microeconomics, macroeconomics, development economics, political economy, basic of institutional economics and law and economics with particular focus on transactions costs and property rights, Economic Policy.</li> <li>• <b>Sociology:</b> Sociological Theory, Kinship, Sociological Perspectives on Caste, Gender and Race; Sociology of Law; Culture and Society, Visual Culture. New Social Movements, Urban studies.</li> </ul>

## 17. SPECIAL CENTRE FOR NANO SCIENCES

**The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)**

### M.Tech Programme in Nanoscience (NNST-182) & Nanoelectronics (NNET-190)

1	Special Centre for Nano Sciences	Nanoscience – NNST (182)	<p style="text-align: center;"><b><u>NNST (182) Nanoscience</u></b></p> <p><b><u>Chemical Sciences:</u></b>            Periodic Table and periodicity in properties. Chemical bonding and shapes of compounds, VSEPR theory, lattice energy. Main group elements (s and p blocks). Transition metals and inner transition metals (d and f block). Allotropes. Coordination compounds. Organometallic compounds. Stoichiometry. Acids and bases. Oxidation reduction and precipitation reactions. Radioactivity. Nuclear reactions: fission and fusion.            Quantum mechanics. Chemical bonding. Chemical thermodynamics. Kinetic theory of gases. Electrochemistry &amp; Chemical kinetics: Conductance, EMF, Free energy, Nernst equation, redox systems, electrochemical cells, Reactions of various order, Arrhenius equation, Enzyme kinetics, Catalysis. Solutions. Ionic equilibria in solutions, pH and buffer solutions, Hydrolysis, Solubility product, Phase equilibria–Phase rule. Vapour pressure and Osmotic pressure. Molecular weight determination.            IUPAC nomenclature. Stereochemistry. Organic reactive intermediates: Generation, stability and reactivity of carbocations, carbanions, free radicals, carbenes, benzyne and nitrenes. Organic reaction mechanisms involving addition, elimination and substitution reactions with electrophilic, nucleophilic or radical species. Common named reactions and rearrangements – applications in organic synthesis. Polymers.</p> <p><b><u>Physical Sciences:</u></b>            Interference. Diffraction. Polarization. Quantum mechanics: Postulates; Wave-particle duality. Commutators and Heisenberg uncertainty principle. Schrödinger equation (time-dependent and time-independent). Exactly- solvable systems: particle-in-a-box, harmonic oscillator and the hydrogen atom. Tunneling through a barrier. Electrostatics: Gauss's law and its applications, Laplace and Poisson equations, boundary value problems. Magnetostatics: Biot-Savart law, Ampere's theorem. Electromagnetic induction. Scalar and Vector potentials, Maxwell equations. First and second laws of thermodynamics, Thermodynamic functions, Heat capacity, enthalpy, entropy. Bonding in solids, Crystal structures. Bravais lattices. Miller indices. Reciprocal lattice. Bragg's law and applications; Diffraction and the structure factor. Elastic properties, phonons, lattice specific heat. Free electron theory and electronic specific heat. Drude model of electrical and thermal conductivity. Hall Effect and thermoelectric power. Electron motion in a periodic potential, Band theory of solids: metals, insulators and semiconductors. Dielectrics. Ferroelectrics. Magnetic materials. Superconductivity: type-I and type-II superconductors.</p> <p><b><u>Biological Sciences:</u></b>  <b>Biomolecules:</b> Biomolecules (carbohydrates, lipids, proteins, nucleic acids and vitamins). Stabilizing interactions (Van der Waals, electrostatic, hydrogen bonding, hydrophobic interaction, etc.). Biophysical chemistry (pH, buffer, reaction kinetics, thermodynamics, colligative properties). Bioenergetics, glycolysis, oxidative phosphorylation. Catalysis, enzymes and enzyme kinetics.  <b>Cell Biology:</b> Membrane structure and function; Cell organelles; Cell division and cell cycle. Microbes, infectious disease biology and microbial diseases.  <b>Fundamental Processes:</b> DNA replication, repair and recombination, RNA synthesis and processing and Protein synthesis  <b>Immunology:</b> Innate and adaptive immunity, antigens, antibody, antigen-antibody interactions, immune responses, congenital and acquired immune deficiencies, vaccines.  <b>Genetics:</b> Mendelian principles, Gene: Allele, multiple alleles, mutation types and cause.  <b>Human Physiology:</b> Blood, coagulation, blood groups, Heart, Endocrine glands, Hormones and diseases.</p>
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2		Nanoelectronics – NNET (190)	<p style="text-align: center;"><b><u>NNET (190) Nanoelectronics</u></b></p> <p><b>Unit-I</b> Electronic Transport in semiconductor, PN Junction, Diode equation and diode equivalent circuit. Breakdown in diodes, Zener diodes, Tunnel diode, Semiconductor diodes, characteristics and equivalent circuits of BJT, JFET, MOSFET, IC fabrication-crystal growth, doping, bonding, Thin film active and passive devices. Rectifiers, Voltage regulated ICs and regulated power supply, Biasing of Bipolar junction transistors and JFET. Single stage amplifiers, Multistage amplifiers, Feedback in amplifiers, oscillators, function generators, multivibrators, Operational Amplifiers (OP AMP): Characteristics and Applications, Computational Applications, Integrator, Differentiator.</p> <p><b>Unit-II</b> Network theorems, Network graphs, Nodal and Mesh analysis. Time and frequency domain responses. Image impedance and passive filters. Two-port Network Parameters. Transfer functions, Signal representation. State variable method of circuit analysis, AC circuit analysis, Transient analysis. Logic families, flip-flops, Gates, Boolean algebra and minimization techniques, Multivibrators and clock circuits, Counters-Ring, Ripple. Synchronous, Asynchronous, Up and down shift registers, multiplexers and demultiplexers, Arithmetic circuits, Memories, A/D and D/A converters. Modulation index, frequency spectrum, generation of AM (balanced modulator, collector modulator), Amplitude Demodulation (diode detector Other forms of AM: Double side band suppressed carrier, DSBSC generation (balanced modulator), Single side band suppressed carrier, SSBSC generation and Phase modulation, modulation index.</p> <p><b>Unit-III</b> Electrostatics: Gauss's law and its applications, Laplace and Poisson equations, boundary value problems. Magnetostatics: Biot-Savart law, Ampere's theorem. Electromagnetic induction. Maxwell equations. Reflection and refraction, polarization.</p> <p><b>Unit-IV</b> Microprocessor: INTRODUCTION TO 8085, Basic Concepts of Microprocessors, CENTRAL PROCESSING UNIT: CPU, I/O devices, clock, memory, bussed architecture, tristate logic, address bus, data bus and control bus. Development of semiconductor memory, internal structure and decoding, memory read and write timing diagrams, MROM, ROM, EPROM, EEPROM, DRAM: Intel 8085 microprocessor.</p>
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### Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	<p style="text-align: center;"><b>Syllabus for Entrance Examination</b> [Type of Questions for Entrance Examination: Multiple choice questions]</p>
1	Special Centre for Nano Sciences	Nano Sciences – NNSH (908)	<p style="text-align: center;"><b><u>NNSH (908) Nanoscience</u></b></p> <p style="text-align: center;"><b><u>Part-A: Research Methodology (Common for all)</u></b></p> <p><b>1. General Science:</b> General appreciation and understanding of science including matters of everyday observation and experience.</p> <p><b>2. Environmental awareness:</b> Pollution and its impacts, climate change, sustainable development. 3. Current events: Knowledge of significant national and international events.</p> <p><b>4. General mental ability and reasoning:</b> Reasoning and analytical abilities.</p> <p><b>5. Elementary Computer Science:</b> Basic computer awareness and its uses.</p> <p><b>6. Interactive English:</b> Grammar, vocabulary, sentence completion, usage, synonyms, antonyms, one word substitute, idioms/phrases, error detection and comprehension.</p> <p><b>7. Information and Communication Technology (ICT):</b> Terminology and abbreviations used in ICT, applications of ICT in academics and research.</p> <p><b>8. Research aptitude:</b> Basic Concepts- 1. Meaning, nature, significance and types of research. 2. End to end process of research, Formulation of research problem, Design strategies in Research- Descriptive Studies, Analytic Studies, Experimental studies, Intervention trials etc., research proposal, Synopsis, Hypothesis, Data collection, Literature survey, Sampling, Interviewing, questionnaire, Data processing, Interpretation, Report writing, Bibliography, Data presentation and summarization, Graphical presentation of data,</p>

Research Ethics. 3. Thesis/ Dissertation writing. 4. Article, research paper, seminar, conference, symposium, workshop etc. 5. Role of governing bodies/research organizations like UGC, CSIR, ICAR, ICSSR, ICPR, ISRO, DRDO etc. in research and development. 6. Role and use of computers in research.

**9. Basic concepts of Statistical methods for research** (Probability, Test of significance, Standard deviation, Measures of central tendency, Measures of variability, Measures of Relationship – Correlation, Hypothesis Testing – parametric and non-parametric tests; Proportions, Relative risk, Odds ratio, Student t test, Anova, Error bars)

**Part-B: Subject Specific**

**In Part-B, candidate can choose any one of the Subject Streams: (Physical Sciences) or (Biological Sciences) or (Chemical Sciences) or (Engineering Sciences) for appearing in the Entrance Exam**

**Physical Sciences**

Interference. Diffraction. Polarization. Basic principles of quantum mechanics: Postulates; Wave-particle duality. Commutators and Heisenberg uncertainty principle. Schrödinger equation (time-dependent and time-independent). Exactly- solvable systems: particle-in-a-box, harmonic oscillator and the hydrogen atom. Tunneling through a barrier. Electrostatics: Gauss's law and its applications, Laplace and Poisson equations, boundary value problems. Magnetostatics: Biot-Savart law, Ampere's theorem. Electromagnetic induction. Scalar and Vector potentials, Maxwell equations. The first and second laws of thermodynamics, Thermodynamic functions, Heat capacity, enthalpy, entropy. Bonding in solids, Crystal structures. Bravais lattices. Miller indices. Reciprocal lattice. Bragg's law and applications; Diffraction and the structure factor. Defects in Solids, Elastic properties, phonons, lattice specific heat. Free electron theory and electronic specific heat. Drude model of electrical and thermal conductivity. Hall effect and thermoelectric power. Electron motion in a periodic potential, band theory of solids: metals, insulators and semiconductors. Dielectrics. Ferroelectrics. Magnetic materials. Superconductivity: Type-I and type-II superconductors.

**Biological Sciences**

**Biomolecules and their relevant interactions:** Biomolecules (carbohydrates, lipids, proteins, nucleic acids and vitamins). Stabilizing interactions (Van der Waals, electrostatic, hydrogen bonding, hydrophobic interaction, etc.). Biophysical chemistry (pH, buffer, reaction kinetics, thermodynamics, colligative properties). Bioenergetics, glycolysis, oxidative phosphorylation, coupled reaction, group transfer, biological energy transducers. Principles of catalysis, enzymes and enzyme kinetics, enzyme regulation and isozymes.

**Cell Biology:** Membrane structure and function. Cellular organization and function of organelles. Cell division and cell cycle. Cell communication and cell signalling. Microbes and infectious disease biology.

**Fundamental Processes:** DNA replication, repair and recombination. RNA synthesis and processing. Protein synthesis.

**Immunology:** Innate and adaptive immunity, antigens, antibody, antigen-antibody interactions, immune responses, immune response during bacterial (tuberculosis), parasitic (malaria) and viral (HIV) infections, congenital and acquired immunodeficiencies, vaccines.

**Genetics:** Gene, Allele, mutation types, cause and inheritance biology.

**Human Physiology:** Blood, coagulation, blood groups, haemoglobin. Endocrine glands, hormones and diseases, neuroendocrine regulation.

**Chemical Sciences**

**Stereochemistry:** IUPAC nomenclature, Configuration, Chirality, Isomerism. Conformational analysis and its effect on reactivity. Organic Reaction mechanisms, Free radicals, mechanism of nucleophilic substitution (SN1 and SN2) and elimination (E1 and E2). Addition to carbon-carbon multiple bonds, addition to alkenes and alkynes, transition metal organometallics. Addition to carbon-hetero multiple bonds. Oxidation and Reduction.

**Spectroscopy:** Structure elucidation using UV-Vis, IR, <sup>1</sup>H and <sup>13</sup>C NMR. **Photochemistry and pericyclic reactions:** Features, classification. **Natural Products and drugs of natural origin. Solutions:** Ideal and non-ideal, methods of expressing concentrations of solutions, activity and activity coefficient, Raoult's law, relative lowering of vapour pressure, molecular weight determination, Osmotic pressure, Elevation of boiling point and depression of freezing point.

**Theory of Gases:** Kinetic theory of gases, Maxwell-Boltzmann distribution law. **Chemical Thermodynamics:** Reversible and irreversible processes, First, second and third laws of thermodynamics, Ideal and non-ideal gases, Gibbs and Helmholtz energy, Free energy

change and spontaneity. **Chemical and Phase Equilibria:** Law of mass action, Effect of temperature on K, Ionic equilibria in solutions, pH and buffer solutions, Hydrolysis, Solubility product; Phase equilibria–Phase rule. **Electrochemistry:** Conductance, Transport number, Galvanic cells, EMF and Free energy. **Chemical Kinetics:** Reactions of various order, Arrhenius equation, Collision theory, Theory of absolute reaction rate, Chain reactions, Enzyme kinetics, Catalysis.

**Periodic Table:** Periodic classification of elements and periodicity in properties. **Chemical bonding and shapes of compounds:** Types of bonding; VSEPR theory and shapes of molecules, hybridization, dipole moment, lattice energy. **Main group elements (s and p blocks):** Group relationship and gradation in properties. **Transition metals and inner transition metals (d and f block):** Characteristics of 3d elements, oxide, hydroxide and salts of first row metals, coordination complexes, metal complexes.

**Analytical Chemistry:** Principles of qualitative and quantitative analysis, acid-base, oxidation reduction and precipitation reactions, use of indicators and organic reagents in inorganic analysis, radioactivity, nuclear reactions, applications of isotopes.

**Engineering Sciences**

**Unit-I:** Electronic Transport in semiconductor, PN Junction, Diode equation and diode equivalent circuit. Breakdown in diodes, Zener diodes, Tunnel diode, Semiconductor diodes, characteristics and equivalent circuits of BJT, JFET, MOSFET, IC fabrication-crystal growth, epitaxy, oxidation, lithography, doping, etching, isolation methods, metalization, bonding, Thin film active and passive devices.

**Unit-II:** Superposition, Thevenin, Norton and Maximum Power Transfer Theorems, Network elements, Network graphs, Nodal and Mesh analysis, Zero and Poles, Bode Plots, Laplace, Fourier and Z-transforms. Time and frequency domain responses. Image impedance and passive filters. Twoport Network Parameters. Transfer functions, Signal representation. State variable method of circuit analysis, AC circuit analysis, Transient analysis.

**Unit-III:** Rectifiers, Voltage regulated ICs and regulated power supply, Biasing of Bipolar junction transistors and JFET. Single stage amplifiers, Multistage amplifiers, Feedback in amplifiers, oscillators, function generators, multivibrators, Operational Amplifiers (OP AMP) -characteristics and Applications, Computational Applications, Integrator, Differentiator, Wave shaping circuits, F to V and V to F converters. Active filters, Schmitt trigger, Phase locked loop.

**Unit-IV:** Logic families, flip-flops, Gates, Boolean algebra and minimization techniques, Multivibrators and clock circuits, Counters-Ring, Ripple. Synchronous, Asynchronous, Up and down shift registers, multiplexers and demultiplexers, Arithmetic circuits, Memories, A/D and D/A converters.

**Unit-V:** Modulation index, frequency spectrum, generation of AM (balanced modulator, collector modulator), Amplitude Demodulation (diode detector Other forms of AM: Double side band suppressed carrier, DSBSC generation ( balanced modulator), Single side band suppressed carrier, SSBSC generation (filter method, phase cancellation method, third method), SSB detection, Frequency and Phase modulation, modulation index and frequency spectrum, equivalence between FM and PM, Generation of FM (direct and indirect methods), FM detector (slope detector)

## 18. SPECIAL CENTRE FOR DISASTER RESEARCH

**The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)**

### M.A. Programme

Sl. No.	Name of Centre	Sub. Code & Sub. Code (Number)	Syllabus for Entrance Examination
1	Special Centre for Disaster Research (SCDR)	Disaster Studies - DSSM (239)	<ul style="list-style-type: none"> <li>• Social Science Perspectives of Disasters, Constitution, Law, Governance and Sustainable Development Goals(SDGs)</li> <li>• Definition, Concepts and Theories around the key terms in disaster studies [Understanding of 'Disaster', 'Risk', 'Hazard', 'Vulnerability', 'Resilience']</li> <li>• Development and Disasters, Geography of Disasters and GIS Application [Regional Imbalance, Health Issues, Fragile areas and Critically Endangered Zones]</li> <li>• Computer, Information and Communication Technologies, Artificial Intelligence, Database Systems [Application of modern scientific tools in early warning systems, relief, rehabilitation and appropriate measurement of damages and losses]</li> <li>• Ecology and Environment [Dams, Pollution, Climate Change, Effluent Discharges, Human Consumption as cause of environmental destruction and increased vulnerability of ecosystems]</li> </ul>

### Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code (Number)	Syllabus for Entrance Examination
1	Special Centre for Disaster Research (SCDR)	Disaster Studies - DSSH (911)	<p><b>Syllabus for Entrance Exam:</b></p> <p><b>PART A:</b> Research Methodology in Disaster Studies, Surveys, Statistical Tools &amp; Analysis, Data Management, Techniques of pre and post-disaster needs assessment (PDNA), Comparative Case Study Methods for evaluating governance and community capacity for last mile service delivery.</p> <p><b>PART B:</b></p> <ol style="list-style-type: none"> <li>1. Constitutional Law, Laws related to Disasters, Governance and Implementation of Disaster Risk Reduction Policies.</li> <li>2. Social Sciences and Anthropology of Disasters; Vulnerable communities in fragile environmental and ecological regions; Geography, Environment and Disasters; Geospatial Mapping and human security.</li> <li>3. Disaster Economics, Planning and Preparing against economic losses, Role of Macro and Micro level economic institutions.</li> <li>4. Database, Artificial Intelligence and Early Warning Systems in the management of rescue and relief operations.</li> <li>5. Public Health, Emergency Preparedness and Disasters.</li> </ol>



## 19. Special Centre for National Security Studies (SCNSS)

The pattern of JNUEE 2021-22 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

### Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code (Number)	Syllabus for Entrance Examination
1	Special Centre for National Security Studies (SCNSS)	National Security Studies – NSSH (916)	<ol style="list-style-type: none"> <li>1. Domestic/Internal Security Studies of India               <ol style="list-style-type: none"> <li>a. Insurgencies in the North East</li> <li>b. Left Wing Extremism</li> <li>c. Terrorism in Heartland</li> <li>d. Coastal Security</li> </ol> </li> <li>2. External Security Studies of India               <ol style="list-style-type: none"> <li>a. India-Pakistan-China Military Balance</li> <li>b. International Terrorism</li> <li>c. Maritime Security</li> <li>d. Geopolitics &amp; Geoeconomics and National Security</li> <li>e. Nuclear doctrine, regime &amp; security</li> </ol> </li> <li>3. Indian Strategic Thoughts and Military History of India               <ol style="list-style-type: none"> <li>a. Kautilya's Arthashastra</li> <li>b. The Kural</li> <li>c. Kamandaka's Nitishastra</li> <li>d. Panchtantra and Hitopdesa</li> <li>e. India-Pakistan War of 1965, 1971, 1999</li> <li>f. India-China Border War of 1962</li> </ol> </li> <li>4. Emerging Technology and National Security               <ol style="list-style-type: none"> <li>a. Science and Technology and National Security</li> <li>b. Science Diplomacy</li> <li>c. Biological Warfare, Chemical Warfare, Cyber warfare</li> <li>d. Artificial Intelligence, Genetic Engineering, Quantum Computing, Nanotechnology, Unmanned Aerial Vehicles</li> </ol> </li> <li>5. Studies of External Border of India               <ol style="list-style-type: none"> <li>a. Frontiers &amp; Boundaries</li> <li>b. Border disputes</li> <li>c. India-Pakistan border</li> <li>d. India-Bangladesh border</li> <li>e. India-China border</li> <li>f. India-Myanmar border</li> <li>g. India-Nepal border</li> <li>h. Maritime border</li> </ol> </li> <li>6. Non-traditional Security Studies of India               <ol style="list-style-type: none"> <li>a. United Nation and Human Security</li> <li>b. Contemporary Non-Traditional Security Discourses</li> <li>c. Environmental Security (Health, Food and Water Security)</li> <li>d. Terrorism and Transnational Crime</li> <li>e. Migration and Demography</li> </ol> </li> <li>7. Research Methodology for National Security Studies of India               <ol style="list-style-type: none"> <li>a. Research Methods, Types and formulation of Research Design</li> <li>b. Hypotheses: Functions, Characteristics and Types; Formulation of Research Problem; Review of Literature; Concepts and Variables.</li> <li>c. Sampling: Types of sampling; Data Collection-Primary and Secondary sources; tools of data collection</li> <li>d. Introduction to Basic Statistics</li> <li>e. Research ethics and plagiarism</li> </ol> </li> <li>8. Remote sensing and GIS</li> </ol>