SCHOOL OF COMPUTATIONAL AND INTEGRATIVE SCIENCES
JAWAHARLAL NEHRU UNIVERSITY

INSTRUCTIONS FOR VIVA-VOCE - Admission 2018

Dear Candidates,

Congratulations on your selection for the viva-voce to the programs run at the School of Computational and Integrative Sciences. Please read the following instructions carefully, so that you understand the marking scheme.

M.Sc:

Selection of candidates will be in two tracks. The viva-voce is designed to test your **domain expertise (10 marks)** and **analytical understanding (10 marks)**. The marks for the viva-voce will be out of 20, and added to your performance in the written examination along with other university mandated deprivation points to generate the final list.

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

Selection of candidates will be in three tracks. The viva-voce will be structured to test your **domain expertise (10 marks) and analytical understanding (10 marks).** The marks for the viva-voce will be out of 20, and added to your performance in the written examination along with other university mandated deprivation points to generate the final list. Audio recording of the interview may take place for official purpose.

PhD:

Selection of candidates will be in three tracks. The final selection will be based on the *viva-voce* only. Audio recording of the interview may take place for official purpose.

The viva-voce will be structured to test your **domain expertise, analytical understanding** and **research proposal.**

You are advised to study the faculty research profiles at https://jnu.ac.in/scis_faculty and/or details mentioned in the following page for individual research areas.

The SCIS has two formal programmes of "Computational Biology" and "Complex Systems". The broad domains covered under these programmes are in the areas of **Applied Mathematics and Statistics, Algorithms and Data Science, Computational Biophysics, Bioinformatics/Computational Biology, and Computational Electromagnetics/Wireless Communications**

Please choose one of the areas that best matches your prior education and future interest. The candidates will be required to submit the completed proforma (given below) giving the choice of the Track and names of three potential supervisors from the school for the Ph.D. programme based on their research interests.

Each candidate will be required to submit a one-page research proposal along with the proforma. The purpose of the research proposal is to evaluate the candidate's thinking ability and research aptitude to serve as a base for discussion. You are advised to organize a short presentation of your research proposal to focus on the objectives, analytical approach and expected outcome using the writing board provided. Please note that on joining, there is no commitment that the topic of your research will be the same as your research proposal.

Proforma

Name of the candidate:

Registration no.:

Programme Applied/interested (please tick):

Ph. D.	☐	**Advanced Diploma in Big Data Bioinformatics**	☐

Preferred Area/Track for viva-voce (Please tick):

Area 1	Physical Sciences: Physics/Chemistry/Mathematics	☐
Area 2	Computational Biology/Bioinformatics/Life Science	☐
Area 3	Computer/Engineering Sciences	☐

List names of three potential faculty members of SCIS for the Ph.D. programme in the order of preference*:

1. _____
2. _____
3. _____

Research Proposal attached: Yes/No

Date:

Signature:

*Final decision on the allocation of the supervisor will be subject to the approval from the Graduate Advisory Committee of the School and university rules.

Research Areas of SCIS Faculty

S. No.	Faculty Name	Designation	Ph.D Intake to be taken*			
			Track 1 (PCM)	Track 2 (LB)	Track 3 (EC)	Research areas / Link to webpage
1	Andrew Lynn	Professor		1		https://www.jnu.ac.in/Faculty/andrew/ Although the group works with sequence, structure and systems bioinformatics, the present focus expected from this position is in downstream analysis of high-throughput 'omics data and big data analytics with specific reference to health informatics. Skills in machine learning are expected.
2	Anirban Chakraborti	Professor	1			https://www.jnu.ac.in/Faculty/anirban/index.html Statistical Physics, Econophysics, sociophysics and Computational Finance
3	Pradipta Bandyopadhyay	Professor	1			http://ccbb.jnu.ac.in/pradipta/ Computational biophysics. Proteins, nucleic acid structure, dynamics. Machine learning. Water structure, thermodynamics and dynamics.
4	Shandar Ahmad	Professor		1	1	http://sciwhylab.org/ We are interested in multi scale statistical and machine learning applications of biological data. Our analyses harness data sets for meta analysis and to collaborate with experimental biologists. Students with strong inter disciplinary outlook and skills in either bioinformatics or physics/computer science will be considered for doctoral positions. Programming skills in at least one language will be essential.
5	Binod Kanaujia	Professor	1		1	www.jnu.ac.in/content/bkkanaujia http://www.researchgate.net/profile/Binod_kanaujia2 Computational Electromagnetics, Wireless Communication, RF and Microwave
6	Narinder Sahni	Associate Professor	1		1	Statistical Modelling, Big Data Applied to Metabolomics and Lipidomics
7	Naidu Subbarao	Associate Professor		1		https://scholar.google.co.in/citations?user=P8-AGu0AAAAJ&hl=en Structure Based Drug Designing for Infectious Disease and Cancer

8	Mukesh Jain	Associate Professor		2		http://ccbb.jnu.ac.in/mjain/ Computational Biology (Genomics), Functional Genomics, Next Generation Sequencing, Gene/Genome Analysis, Gene Regulatory Networks, Plant Biology
9	Sapna Ratan Shah	Associate Professor	1		1	https://www.jnu.ac.in/content/sapnarshah Applied Mathematics, Mathematical Biology, Biomechanics, Mathematical Modelling of Biological systems.
10	R.K.Brojen Singh	Associate Professor	1			http://ccbb.jnu.ac.in/brojen/ Mathematical biology, Stochastic Systems, Non-linear dynamics, Systems biology and Netwok theory: Pre-requisite: Good understanding of compuattional concepts, mathematics and Physics
11	A.Krishnamachari	Assistant Professor		1		https://www.jnu.ac.in/content/chari Computational genomics, Characterisation (statistical) and Analysis of large scale omics data across the three domains of Life : Emphasis on machine learning, signal processing, information theoretic and other computational methods
12	Gajendra Pratap Singh	Assistant Professor	2			Graph Theory, mathematical biology, Stochastic process and Petri nets, Software Reliability, , Big data & Cloud computing,
13	Arnab Bhattacherjee	Assistant Professor	1			http://ccbb.jnu.ac.in/arnab/
	TOTAL		**8**	**6**	**4**	

** subject to rules and regulations of university*