

**HANS RAJ MAHILA MAHA VIDYALAYA, JALANDHAR**  
**e-Self Assessment/Faculty Audit Form**

**A) PERSONAL INFORMATION**

- i) Name of the Faculty [REDACTED]
- ii) Designation Assistant Professor
- iii) Subject Bioinformatics
- iv) Residential Address 235 SG Enclave Phase-1 Majitha Road, Amritsar,  
143008
- Correspondence Address Same
- v) Academic Qualification Ph. D, M. Sc., Adv. PG Diploma Bioinformatics, CSIR-  
NET, DBT-JRF  
at the time of appointment
- vi) Upgradation of qualification Obtained Ph.D. degree in 2019  
during service (if any)
- vii) Area of specialization Bioinformatics
- viii) Date of Joining the college 06-08-2009
- ix) Date of Retirement 31-08-2038
- x) Total Teaching experience 14 Years, 03 months
- xi) Teaching experience at this college 14 Years, 00months
- xii) Mobile 9888545522
- Alternate No. 9888924769
- email ID harpreetsingh05@gmail.com

**B) PROFESSIONAL INFORMATION****I) Teaching Learning and Evaluation**

a) Classes taught and work load

<b>UG</b>	<b>Theory</b> B. Sc. BIF Sem-I (3) B. Sc. BIF Sem-V(3) B. Sc. BIF Sem-IV(6) B.Sc. Biotechnology Sem-IV (3)	<b>Practical</b> B. Sc. BIF Sem-I (2) B. Sc. BIF Sem-V (4) B. Sc. BIF Sem-IV (6)
<b>PG</b>	<b>Theory</b> M. Sc. Bioinformatics Sem-I (3) M. Sc. Bioinformatics Sem-II(6) M. Sc. Bioinformatics Sem-III (8) M. Sc. Bioinformatics Sem-IV (1) M.Sc. Chemistry Sem-I (1)	<b>Practical</b> M. Sc. Bioinformatics Sem-I (2) M. Sc. Bioinformatics Sem-II (4) M. Sc. Bioinformatics Sem-III (1) M.Sc. Chemistry Sem-I (2)

b) No. of lectures delivered class wise along with student strength

Class	Theory	Practical	Strength
<b>UG</b>			
B. Sc. BIF Sem-I	21	11	10
B. Sc. BIF Sem-V	40	38	05
B. Sc. BIF Sem-IV	23	36	05
B. Sc. BIF Sem-VI	18	-	05
B.Sc. Biotechnology Sem-IV	31	-	14
<b>PG</b>			
M. Sc./PGD Bioinformatics Sem-I	48	17	06
M. Sc./PGD Bioinformatics Sem-II	35	29	06
M. Sc. Bioinformatics Sem-III	48	14	04
M.Sc. Bioinformatics Sem-IV	-	21	04
M.Sc. Chemistry Sem-I	8	14	11

- c) Average visits to Library per week: 3
- d) No. of books/journals got issued from Library: 23
- e) Development of e-Learning material:

S. No.	Topic	Category
1.	INTRODUCTION TO PROTEIN STRUCTURE	e-Module
2.	DNA REPLICATION	e-Module

3.	GRAPHICS USING LATTICE PACKAGE IN R	e-Module
4.	RNA TRANSCRIPTION	e-Module
5.	PDB_DATABASE_AND_PDB_FORMAT	e-Module
6.	PROTEIN-PROTEIN DOCKING	e-Module
7.	BIOTECHNOLOGY AND BIOINFORMATICS NURTURING BIOLOGISTS OF THE FUTURE	e-Module
8.	INTRODUCTION TO PYTHON PROGRAMMING PART-I	e-Module

f) Teaching aids used in class room

- White Board/Green Boards
- Smart Board and projector, particularly for live programming, software demonstrations, online tutorials, software manuals, animated lectures, Project work, e-modules, Video recordings (especially NPTEL courses) etc.
- Zoom, Google Meet, Games (e.g. Foldit, Geneboy)
- Paper models for creating DNA Structure

g) Innovations in teaching

Keeping in the importance of Bioinformatics, Started “**Bioinformatics for all**” mission and “**Innovations in Teaching Initiative**” in the department from this session (2022-23) and under these unique initiatives, conducted the following activities: -

- Story telling competition (11-02-2023) for students of the college.
- Workshop on “**Multomics Data Integration and Visualization using CYTOSCAPE**” for students, research scholars and faculty from various institutes.
- **Short-term** Research Projects on **Computer Aided Drug Design and Digital Health Care** in collaboration with **Prof. Sonika Tyagi, RMIT, Australia** for students of the college as well as other institutes.

These activities not only made learning a fun but also helped students to improve their communication skills ultimately leading to skill development in bioinformatics at various levels.

h) No. of meetings attended as representative of academic body at University: **5**

- Attended online meeting of the “**Pre-Board of Studies UG & PG Biotechnology**” conducted by the Department of Biotechnology, GNDU Amritsar on **13-09-2022**.

- Attended the online meeting of the “**Board of Studies PG Biotechnology**” conducted by the Department of Biotechnology, GNDU Amritsar on **11-11-2022**.
  - Attended the online meeting to discuss the syllabus of B.Sc., M.Sc. Biotechnology/Bioinformatics, and PG Diploma in Bioinformatics (for colleges) according to NEP conducted by the Department of Biotechnology, GNDU Amritsar on **28-03-2023**.
  - Attended the meeting to discuss in detail the changes in the syllabus of B.Sc., M.Sc. Biotechnology/Bioinformatics and PG Diploma in Bioinformatics (for colleges) according to NEP held at the Department of Biotechnology, GNDU Amritsar on **31-03-2023**.
  - Attended of the meeting of Board of Studies (UG) of the Department of Biotechnology held on **18-04-2023** at 10:00 a.m. through online/offline (mix mode) in the office of the Head, Department of Biotechnology, GNDU, Amritsar.
- i) Contribution to curriculum development as Member of University/ Academic bodies
- Reviewed the curriculum of M. Sc. Bioinformatics, PG Diploma in Bioinformatics and B. Sc. Bioinformatics (Vocational) and changed their curriculum to add credit hours as per the instructions given by the BOS keeping view the NEP2020.

## j) No. of examination duties performed

Type of Duty	Date	Supdt./Deputy Supdt.(outside)/ Invigilator/External Examiner/Internal Examiner	Name of Institution
Theory	2022-23 Odd Semester	No duties assigned in House Tests as well as University Examinations due to Admission duties, tours etc.	-
	2022-23 Even Semester	Class Tests and Assignments. No duties assigned in University Examinations	HMV Jalandhar
Practical	25-11-2022	B.Sc. Sem-I	HMV Jalandhar
	26-11-2022	B.Sc. Sem-V	HMV Jalandhar
	29-11-2022	B.Sc. Biotechnology Sem-III	Lyallpur Khalsa College Jalandhar

	30-11-2022	B.Sc. Biotechnology Sem-III	DAV College Jalandhar
	1-12-2022 (Morning)	B.Sc. Biotechnology Sem-III	DAV College Amritsar
	1-12-2022 (Evening)	B.Sc. Sem-V	BBK DAV College Amritsar
	03-12-2022	B.Sc. Biotechnology Sem-III	BBK DAV College Amritsar
	06-12-2022	M.Sc./PGD Bioinformatics Sem-I	HMV Jalandhar
	06-12-2022	M.Sc. Bioinformatics Sem-III	HMV Jalandhar
	07-12-2023	M.Sc./PGD Bioinformatics Sem-I	HMV Jalandhar
	19-04-2023	B.Sc. Semester-II	HMV Jalandhar
	22-04-2023	M.Sc. Bioinformatics Sem-IV (Major Project)	HMV Jalandhar
	21-04-2023	B. Sc. Biotechnology Sem-IV	BBK DAV College Amritsar
	24-04-2023	B. Sc. Biotechnology Sem-IV	DAV College Amritsar
	27-04-2023	B.Sc. Semester-VI	HMV Jalandhar
	28-04-2023	B.Sc. Semester-VI	BBK DAV College Amritsar
	04-05-2023	M.Sc. Bioinformatics Sem-II	HMV Jalandhar
	12-05-2023 (Morning and Evening)	M.Sc./PGD Bioinformatics Sem-II	HMV Jalandhar

- k) No. of answer books/project reports/assignments evaluated, during previous session
- |               |                         |                           |
|---------------|-------------------------|---------------------------|
|               | Semester I, III, V, VII | Semester II, IV, VI, VIII |
| a) College    | 50                      | -                         |
| b) University | 189                     | 296                       |

l) Leave availed during the year

Casual Leave	Medical Leave	Privilege Leave	Compensatory Leave	Duty Leave
10	NIL	NIL	1	35

ii) **Research, Innovation and Consultancy** (2022-23)

- a) Academic qualification upgraded  
NIL

- b) Research Papers published with details
- **UGC – enlisted (UGC Care List, Scopus, Web of Science) journals**
    - Suri, A., **Singh, H.**, Kaur, K., Kaachra, A., & Singh, P. Genome-wide characterization of FK506-binding Proteins, Parvulins and Phospho-tyrosyl Phosphatase Activators in wheat and their regulation by heat stress. *Frontiers in Plant Science*, 13, 5077. (SCOPUS, Web of Science indexed, Impact factor: 6.627 as on 15-12-2022). ISSN 1664-462X (Online)
    - Dutta, T., **Singh, H.**, Edkins, A. L., & Blatch, G. L. (2022). Hsp90 and Associated Co-Chaperones of the Malaria Parasite. *Biomolecules*, 12(8), 1018. (SCOPUS, Web of Science indexed, Impact factor: 6.064 as on 05-08-2022).
    - Almaazmi, S.Y., **Singh, H.**, Dutta, T., and Blatch, G.L. 2022. Exported J domain proteins of the human malaria parasite. *Front. Mol. Biosci.* 995. DOI: 10.3389/fmolb.2022.978663. (SCOPUS, Web of Science indexed, Impact factor: 6.113 as on 05-08-2022). ISSN: 2296-889X (Online).
    - Joshi Ridhi, Rakhra Gurseen, **Singh Harpreet** and Rakhra Gurmeen (2023). Intrinsic disordered nature and prediction of the secondary structure in wheat dehydrins. *Research Journal of Biotechnology*, 18 (5), 8-13.
    - Almaazmi, S. Y., Kaur, R. P., **Singh, H.**, & Blatch, G. L. The Plasmodium falciparum exported J domain proteins fine-tune human and malarial Hsp70s: Pathological exploitation of proteostasis machinery. *Frontiers in Molecular Biosciences*, 10, 1216192. (SCOPUS, Web of Science indexed, Impact factor: 6.113 as on 05-07-2023). ISSN: 2296-889X (Online).
    -
  - **Other journals: NIL**
  - **Conference proceedings with ISBN/ISSN number: NIL**
- c) **Text books/reference books published with ISBN Number: NIL**
- d) **Chapters in books**
- Jaspreet Kaur and **Harpreet Singh (2023)**. Role of Internet of Behavior in shaping Customer Services. In: *Internet of Behaviors (IOB)*, edited by R. Dhaya and R. Kanthavel. **CRC Press, Taylor & Francis Group. 60-84, (eISBN: 9781003305170)**.
  - **Purnima Sharma, Harpreet Singh, Rupinder Preet Kaur, Kamini, Rakhi, Taniya, Nandni Kanwar (2023)**. Experimental and Bioinformatics approaches to predict Off-Targeting of programmable nucleases (ZFNs, TALENs, and CRISPR-Cas9). In: *Genome Editing for Crop*

Improvement, edited by Rahul Kumar, Ashutosh Sharma, Yogesh Kumar, and Indu Sharma, *Nova Science Publishers, New York, USA. (Accepted for Publication).*

- Jaspreet Kaur and **Harpreet Singh (2022)**. Reserved quotas for women in corporate boardrooms: Are they enough to crack the glass ceiling, or are they merely a show?. In Gender Diversity in Corporate Boardrooms Myths, Realities, Experiences and Expectations, edited by Sumanta Dutta and Jasveen Kaur. *Bharti Publications. (Accepted for Publication).*
- e) Major/Minor research project with grant from UGC/DST/DBT/Industry/Any other agency: co-
  - Co-investigator in the “**Interdisciplinary Research Grant (IRG)**” by **Higher Colleges of Technology (HCT), UAE** on the project “**Heat shock proteins: The new frontier for anti-malarial drug discovery**”. This grant is of worth 2,00,000 AED (Rs. 43,22,000/- approx.).
- f) Ph.D. candidate guided
  - Thesis submitted: NIL
  - Degree awarded: NIL

However, I guided five students from M.Sc. Bioinformatics for their Major Research Projects.

- g) Fellowships/Awards by Academics Bodies
  - Elected as an **ExCo member** and **Vice President** of the APBioNET for the term 2022-2024.
  - Received **certificate of appreciation** in recognition of my contribution to APBioNET as Secretary to the Executive Committee Member (2020 – 2022).
  - Appointed as a member of the **Board of Studies of Biotechnology (PG)** from 2022 to 2024.
  - Received **letter of appreciation** from the **Sub Divisional Magistrate Jalandhar-I, Sh. VikasHira (PCS)** for outstanding work done during the Lok Sabha Elections 2023 for the Assembly Constituency 035-Jalandhar Central.
  - Acted as an Editor for “Frontiers in Genetics: Computational Biology” research topic on “21st International Conference on Bioinformatics (Incob 2022) - Accelerating Innovation to Meet Biological Challenges: The Role of Bioinformatics” ([21st International Conference on Bioinformatics \(Incob 2022\) - Accelerating Innovation to Meet Biological Challenges: The Role of Bioinformatics | Frontiers Research Topic \(frontiersin.org\)](#)).
- h) Participation in Seminars/Conferences/Workshops (with details)
  - Resource person

- Acted as a **judge** for the parallel session-2, day 1 (21st November 2022) during the International Conference on Bioinformatics 2022 (InCoB2022) held from 21st to 23rd November 2022 (Virtual mode).
- Acted as a **resource person** and delivered a talk on “**Protein-Protein Docking: A Demonstration**” during the **online “Computer Aided Drug Design”** workshop conducted by **BSIR, Jaipur** on 19-10-2022.
- Acted as a **session chair** (“Session 2: keynote talks 1 and 2) on November 5, 2022, during the International Symposium on Bioinformatics 2022 (InSyB2022) hosted by APBioNET society in collaboration with MABBI, in conjunction with their flagship conference, BBC2022.
- Acted as a **resource person** and delivered a talk on “Protein Structure Basics, PDB database, PDB format and its Conversion” during the **online “Computer Aided Drug Design”** workshop conducted by **BSIR, Jaipur** on 04-10-2022.
- Acted as a **speaker** on the topic “**Introduction to Machine Learning for Biologists**” on October 14, 2022, as a part of the **1<sup>st</sup> Colloquium of Bioinformatics Learning, Education and Training (CoBLET) 2022** held from October 11-14, 2022.
- Delegate
  - Attended XXXII AIFUCTO Academic Conference 2022-23 organized by the All India Federation of University & College Teachers’ Organizations from March 17-19, 2023 at Kurukshetra, Haryana.
  - Attended webinar on “**NAAC Self Study Report**” on the topic “Students Related Information and Data” conducted by the IQAC, GNDU, Amritsar on **August 17, 2022**.
  - Attended “**Cell Stress Society International Second Virtual International Symposium on Cellular & Organismal Stress Responses**” organized by Upstate Medical University and Cell Stress & Chaperones, a Springer Nature journal from **September 8-9, 2022**.
  - Attended **1<sup>st</sup> Colloquium of Bioinformatics Learning, Education and Training (CoBLET) 2022** held from **October 11-14, 2022**.
  - Attended workshops on “**Quantum computing 101**”, “**Teaching how to FAIRify training materials**” and “**Good practices for collaborative writing: stop working for the computer, make the computer work for you**” on **13-10-2022** as a part of the **1<sup>st</sup> Colloquium of Bioinformatics Learning, Education and Training (CoBLET) 2022** held from **October 11-14, 2022**.

- Acted as a **session chair** at the **3<sup>rd</sup> Bioinformatics and Biodiversity Conference (BBC)x** and **6<sup>th</sup> International Symposium on Bioinformatics (InSyB)** held from November 5-6 2022 (Virtual mode).
- Attended **International Conference on Bioinformatics 2022 (InCoB2022)** held from **November 21-23, 2022** (Virtual mode).
- Paper Presenter: **NIL**
- i) Invited talks:
  - Presented research work during the **HCT International Conference on Advancements in Health Sciences (ICAHS) 2023**, held from 8-9 March 2023 at the **HCT-Dubai Men’s Campus, UAE**.
  - Invited as a **speaker** during the **National Seminar on “Post-COVID-19 Impact: New Challenges and Scope in Biotechnology & Bioinformatics”** to be held on 20<sup>th</sup> February, at Guru Nanak Girls College Ludhiana.
- j) Participation in Orientation Programmes/Refresher Courses/FDP or any other training
  - Attended workshops on **“Quantum computing 101”**, **“Teaching how to FAIRify training materials”** and **“Good practices for collaborative writing: stop working for the computer, make the computer work for you”** on **13-10-2022** as a part of the 1<sup>st</sup> Colloquium of Bioinformatics Learning, Education and Training (COBLET) 2022 held from **October 11-14, 2022**.
  - Attended one day DBT sponsored workshop on **“Multiomics Data Integration and Visualization using CYTOSCAPE”** conducted by the Departments of Bioinformatics & Biotechnology, HMV Jalandhar on 11-03-2023.
- k) Consultancy rendered: **NIL**
- l) Patents generated: **NIL**
- iii) **Contributions towards Co-Curricular/Extra Curricular Activities (Give Details)**
  - Part of the organizing team for the Mega Inter-School Competitions **“Yuvan-2022”** held on 17-12-2022 in which more than 600 students from various schools participated in different competitions.

- Acted as the organizing secretary for the “**Story telling competition**” held on 11-02-2023 under the aegis of DBT Star College Scheme as a part of the “Innovative Teaching Pedagogies” initiative.
- Acted as the organizing secretary for the one day **DBT sponsored** workshop on “**Multomics Data Integration and Visualization using CYTOSCAPE**” on 11-03-2023 as a part of the “**Innovative teaching Pedagogies**” initiative, under the aegis of ‘DBT Star College Scheme’.
- Co-in charge for Part of the team of Career Counseling Cell & Admission committee which represented the college at the Mega Education Fare, SPARK 202 held from 24<sup>th</sup> and 25<sup>th</sup> Match organized by the District Administration Jalandhar.
- Acted as a judge during the competitions organized by the Department

iv) **Leadership, Management and Governance**

a) Membership in various administrative bodies of the college

- Head, Department of Bioinformatics
- Co-Dean Research & Innovation
- In charge AQAR Criteria-II
- Co-In charge Prospectus Committee
- Incharge MOOCs Society
- Member Admission Committee
- Member Grants Committee and In charge DST Grants
- Member Research Promotion Cell
- Member stock checking

In addition, I have been elected as Vice President of the APBioNET society  
(<https://www.apbionet.org/current-exco-members-2022-2024/>).

b) Contribution made to the committee/s in which you were a member.

- Apart from the administrative work as a head of the department, I have performed various duties as a head including curriculum planning, workload distribution, action plan development as well as implementation, mentoring students for research projects, summer trainings, providing recommendation letters to students applying for fellowships, Ph. d., and

other courses in India and abroad. In addition, I prepared documents for Academic Audit, DST FIST Grant, and DST Curie Grant for 2022-23 and along with my team. Also presented the college during the DST FIST interface meeting held online. It is notable to mention that, I have played a key role in getting a Research Collaboration MOU with the University of Malaya, Malaysia.

- As Co-Dean Research & Innovation as well part of the research promotion cell, I have been motivating my fellow colleagues for various research activities and skill development initiatives through my networks of APBioNET, Bioclues and GALAXY community. I have myself contributed about 11 publications (5 published, 4 accepted and 2 communicated). Two of the book chapters involve collaboration with one of my colleague from the PG Department of Commerce & Management. Moreover, keeping in view the tradition of the department, book chapters on CRISPR-Cas9 systems and DNA Barcoding have been contributed by other faculty members from my department as well as my students from the UG as well as PG students of my department.
- part of career counseling cell, I motivated students to be a part of various initiatives of the cell including trainings, seminars, and education fairs. Coordinated two day “Education Fair and Talent Hunt” program conducted by Career Counseling Cell from 4<sup>th</sup> to 5<sup>th</sup> August, 2021.
- Along with Dr. Nitika Kapoor and Mrs. Ramandeep Kaur, I prepared and presented data for the AQAR Criteria-II.
- As a co-in charge of the prospectus committee, I worked for the overall concept, design and development of various sections of the Information Brochure 2023 while specifically taking care of the curriculum part.
- Played important role in Admission committee by planning various aspects of admissions including tours, brochures, lists, strategies etc. Visited a number of Schools to promote admissions as well managed visits of the students from various schools time to time specifically taking care of the career counseling of the students. In addition, I am handling the portal for sending promotional content through WhatsApp and SMS.
- Coordinated with other team members for planning and preparation for proposals related DST FIST grant 2022-23, DST CURIE grant.
- As In charge of the MOOCs society, I got elected the first students representative body of this society. All of our team members promoted MOOCs courses and other online

education/training initiatives. Many students from various departments have been enrolled for a variety of courses on SWAYAM/NPTEL portal.

c) **Seminars/Conferences/Workshops/FDPs organized**

- Organizing “**Story telling competition**” held on 11-02-2023 under the aegis of DBT Star College Scheme.
- Organized one day **DBT sponsored** workshop on “**Multimics Data Integration and Visualization using CYTOSCAPE**” on 11-03-2023.
- Conducting **Short-term** Research Projects on **Computer Aided Drug Design and Digital Health Care** in collaboration with **Prof. Sonika Tyagi, RMIT, Australia.**

● **Any other relevant information**

I have been assigned election duty as a Master trainer in the Jalandhar Central (35) Vidhan Sabha constituency for the Lok Sabha By election 2023, where I have received a letter of appreciation from the respected SDM.

● **Your departmental best practices**

- Dedication towards the students and the subject
- Promoting Research & Development
- Collaboration and team work
- Meticulously maintaining all the data using different online tools and resources
- On time performance of duties
- Giving opportunities and recognition other team members, students, technical staff and supporting staff
- Introducing innovative teaching pedagogies

● **Suggestion for Best practices of the institution**

- Interested faculty should be given chance to go for higher studies including Post Doc.
- Faculty interested in research should be given exemption from other duties so that they can contribute more in R & Activities. Moreover, they should be appreciated for their quality publications and exceptional research work.

- A culture of open science and collaborative research work should be encouraged. It will not only help in improving their skills but also will help to bring quality publications and funding to the organization.
- If possible, duties should be assigned based on one's interest in a specific area. Also, a person should be motivated to a task by rewarding his/her achievements and giving due recognition. Instead of giving many duties to many people, a limited number of specific duties should be given to a faculty member so that the goals are achievable without compromising with academic and personal life.

I hereby certify that I have completed my syllabus in both the semesters as per the curriculum assigned.

**(Dr. Harpreet Singh)**  
**Head**  
**PG Department of Bioinformatics**