

Report

on

SUMMER TRAINING PROGRAM – 2022

(A Six Week Training Workshop for Outside Participants)



01 JUNE – 13 JULY 2022

Hosted by

DEPARTMENT OF BIOTECHNOLOGY AND BIOINFORMATICS

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY

WAKNAGHAT, SOLAN, H.P. -173234

SUMMER TRAINING PROGRAM, 01 JUNE – 13 JULY 2022

Department of Biotechnology and Bioinformatics, Jaypee University of Information Technology (JUIT), Waknaghat, Himachal Pradesh, India is offering summer training for the duration of **4/6 weeks** in **June-July 2022** in different areas of Biotechnology & Bioinformatics to M.Tech./B.Tech/M.Sc./B.Sc. students. Faculty or students from any other course may also contact the coordinator for enrollment in the training program.

Students interested for 3 months/ 6 months/ 1 year training (or project) can check the details of application process or mail to biotechtp@mail.juit.ac.in.

SUMMER TRAINING APPLICATION PROCEDURE

1. Fill the **Online Application form** for the summer training program with Personal Details, Photograph. (Please DO NOT SEND ANY HARD COPIES).

FORM LINK: <https://forms.gle/9wmvZaHknErnWX2K8>

2. Confirmation of your candidature would be send within 10 days of the receipt of application form.

3. Account details for payment of Training Fee, and Hostel Fee (if opted for hostel) would be shared on mail id of all registered participants by **1 May 2022 (Last date of Fee Payment - 15 May 2022)**.

4. Fee for the training program is to be submitted by **Online Mode (RTGS/NEFT) ONLY**. No other mode of payment will be accepted.

5. Fee payment to be confirmed by the applicant by sending receipt and details of payment for allotment of training module. Your application form would be automatically rejected on non-payment of the Training Fee till 15 May 2022.

6. Module for the summer training would be allotted on First Come First Serve (FCFS) Basis, with each module having maximum 25 Seats.

7. A module with less than Five (5) seats would be cancelled and students would be allotted their second preference for the summer training.

Documents to be submitted (to be carried with you and submitted on your arrival at JUIT) at the time of Registration:

1. Training letter issued from Dean/HoD/Training Coordinator of your Institute/Department.
2. Your latest CV/Resume.
3. Three passport size photographs (For Identity Card, laundry card, registration form etc.)

LAST DATE FOR APPLICATION:

Last date for receiving completed application forms for **SUMMER TRAINING PROGRAM – 2022** (by Online mode only) – **15th May 2022**

SUMMER TRAINING CHARGES: Training and Accommodation Fee Details:

Training Duration	Total Fee	Details of the Fee
4 weeks (without Hostel) [§]	Rs 8000	Training Fee
4 weeks (With Hostel)	Rs 20,600	Rs 12,600 Hostel Fee + Rs 8000 Training Fee
6 weeks (without Hostel) [§]	Rs 10000	Training Fee
6 weeks (With Hostel)	Rs 28,900	Rs 18,900 Hostel Fee + Rs 10000 Training Fee
<i>Hostel Fee - Includes Lodging, Food (Breakfast, Lunch, Dinner, Post Dinner Milk), Gym, Sports, Internet and Laundry Facilities</i>		
<i>Training Fee – for Kits, Media, Reagents, solvents and other consumable to be used for the summer training program of the student</i>		
<i>[§]PG / Private hostel / Sharing accommodation are available around JUIT, assistance might be provided by the organizers for students who do not wish to stay in hostel.</i>		

Covid-19 Disclaimer: According to present guidelines by Himachal Pradesh Govt. the proposed Summer Training would be successfully organized on the dates mentioned. However, any Govt order due to Covid-19 scenario leading to closure of JUIT for students would impact the proposed Summer Training. In any such situation registered students would be duly informed.

FEE PAYMENT:

Payment of the fees can be made by ONLINE MODE ONLY (RTGS/NEFT) in favor of “**Jaypee University of Information Technology**”, as per details below:

Name of the University	Jaypee University of Information Technology
Address:	P.O. Waknaghat, Teh. Kandaghat, Distt. Solan-173234
Bank Name:	Punjab National Bank
Branch Address:	Waknaghat Branch, Jaypee University of Information Technology, Waknaghat
Account No.:	0427032100000010
IFSC Code:	PUNB0637100
Type of Account:	Current
MICR Code:	171024077

REFUND POLICY:

Fee once submitted will NOT BE REFUNDED; as the Kits, Chemicals and Media etc required for the training would already been purchased. Hence, please ensure that you would be able to attend the training before application and fee deposit.

MODULE DESCRIPTION

Following are the training modules for the upcoming Summer Training Program - 2022:

- **Microbial Biotechnology & Bio-energy:** General Microbiology Techniques – handling, isolation, preservation and staining. Screening and isolation of computer munching microbes. Bioreactor design, fabrication and working.
- **Molecular Biology Techniques:** Plasmid isolation, Genomic DNA Isolation, DNA and RNA gel electrophoresis, DNA quantification, Demonstration of Restriction and DNA ligase enzymes, Preparation of Competent Cells and Transformation, TA Cloning, Primers designing For PCR, PCR amplification of a given gene, Annotation of given sequences.
- **Microbial Pathogens & Medical Genomics:** Handling of BSL1 & 2 organism, Mutation, Immunodiagnostic techniques – Double Diffusion, Rocket Immunoelectrophoresis etc, ELISA, Agglutination and PCR based (DNA) Diagnostic Techniques, Identification of SNP through RFLP, DNA fingerprinting for forensics, cDNA synthesis, Quantitative real-time PCR.
- **Industrial Plant Tissue Culture:** Establishment of callus/cell suspension cultures/somatic embryogenesis/artificial seeds; Different micropropagation techniques & technologies for different plant species; *In vitro* production and quantification of medicinally important secondary metabolites.
- **Bioinformatics:** Bioinformatics: Fundamental concepts of bioinformatics, Information retrieval from biological databases, biological sequence analysis through computational methods, sequence alignments (pairwise, multiple, global, and local), phylogenetic analysis, Structure prediction and validation, Docking, Introduction to functional and computational Genomics, Perl/Python, HTML, MySQL and Computational Systems Biology.

- **Industrial Biotechnology & Food Biotechnology:** Food fruit juice fermentation, Food analysis and quality control (Sugar content, pH, phenolic content, anti-oxidant content, ethanol content), Downstream processing. Monod's Growth kinetic parameters, Immobilization of whole yeast cells.
- **Enzyme Technology:** Folin-Lowry's and Bradford Method for protein concentration estimation, Michaelis Menten kinetic parameters (V_{max} , K_M , K_s , K_{cat}), Ammonium sulphate precipitation, Enzyme Dialysis, SDS-PAGE, Enzyme Immobilization.
- **Nanobiotechnology:** Introduction, Nanomaterial synthesis: Synthesis of silver, zinc and copper nanoparticles, Nanomaterial characterization using various analytical technique such as UV-vis spectroscopy, Functionalization of nanoparticles using various biocompatible ligand, Nanomaterial-ligand interaction, Applications: antimicrobial activity and MIC calculation.
- **Proteomics Technologies:** Protein extraction from different biological samples, quantitative estimation of protein, spectroscopic analysis of proteins, in-gel and in-solution protein digestion, protein profiling methods using One dimensional gel electrophoresis, comparative proteome analysis using two dimensional gel electrophoresis and quantification software.

SUMMER TRAINING 2022 FLYER



SUMMER TRAINING PROGRAM, 1 JUNE – 13 JULY 2022
DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS
JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY
WAKNAGHAT, SHIMLA HILLS, H.P. -173234



ABOUT THE PROGRAM

Department of Biotechnology and Bioinformatics, Jaypee University of Information Technology (JUIT), Wagnaghat, Himachal Pradesh, India is offering Summer Training for the duration of 4/6 weeks in June-July 2022 in different areas of Biotechnology & Bioinformatics to M.Tech./B.Tech/M.Sc./B.Sc. students. Please go through the webpage <http://www.juit.ac.in/summer-training-program-june-july-2022> to know more about the training program along with details of the Training Modules, Application Procedure, Fee and Other Details.

DEPARTMENT OF BIOTECHNOLOGY AND BIOINFORMATICS

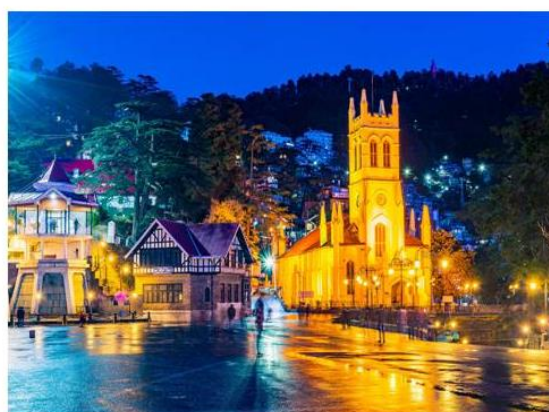


The Department of Biotechnology & Bioinformatics has gained National and International distinction in Biotechnology education and research through its UG and PG programs. The Department of Biotechnology & Bioinformatics has been **ranked 1st among all private universities and Institutions in India**. In 2013, the Association of Biotech Lead Enterprises (ABLE) has honoured us as one of the best private biotech and bioinformatics education institutions in the country for doing outstanding research and education due to its strong R&D program, modern laboratory infrastructure, highly qualified faculty, IPR & patents, and placements of graduates. Department also ranked in top 10 private Universities/ Institutes of India by BioTecNika magazine (2019). *The Department offers B.Tech, and Ph.D courses in Biotechnology and Bioinformatics, M.Tech in Biotechnology, M.Sc. in Microbiology and Biotechnology.*



PLACES OF TOURIST ATTRACTION

The University is situated in the neighborhood of Shimla, 3 KM off the NH22 (Ambala-Kalka-Wagnaghat-Shimla road). It is just half an hour drive to Shimla from campus. June in Shimla is pleasing climate with temperature between 15°C to 30°C, perfect for learning as well as visiting places of tourist attraction. The nearby places of tourist attractions are Shimla (24 Km), Chail (45 Km), Kufri (45 Km), Kasauli (50 Km) and many more.



Dr. Rahul Shrivastava

Summer Training Coordinator - 2022, Department of Biotechnology & Bioinformatics
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PARTICIPANTS & MODULES ALLOTTED

S.N.	Name of Applicant	Gender	Educational Qualification	Affiliation (Name of University/ College)	Training Duration	Module Allotted
1	Abhijit Swain	Male	M.Sc.	Chandigarh University	Six Weeks	Bioinformatics
2	Akanksha Rawat	Female	B.Sc.	Delhi University, Delhi	Four Weeks	Molecular Biology and Genetic Engineering Techniques
3	Bishal Tiwari	Male	B.Sc.	Government Science College, Jabalpur	Six Weeks	Molecular Biology and Genetic Engineering Techniques
4	Chaudhari Chaitanya Vitthal	Male	M.Sc.	Chandigarh University	Six Weeks	Bioinformatics
5	Diksha	Female	M.Sc.	DAV University	Four Weeks	Molecular Biology and Genetic Engineering Techniques
6	Dingiri Srivatsa	Male	M.Sc.	Chandigarh University	Six Weeks	Bioinformatics
7	Jeffin jose	Male	M.Sc.	Shri Shankaracharya Mahavidyalaya Junwani, Bhilai, Durg, Chhattisgarh	Four Weeks	Industrial Biotechnology & Food Biotechnology
8	Keshav Kaushik	Male	B.Sc.	Delhi University/ Deshbandhu College & New Delhi	Four Weeks	Industrial Biotechnology & Food Biotechnology

9	Nandini Singh	Female	M.Sc.	Shri Shankaracharya Mahavidyalaya Junwani, Bhilai, Durg, Chhattisgarh	Four Weeks	Industrial Biotechnology & Food Biotechnology
10	Rimple Borpatra Gohain	Female	M.Sc.	Amity University, Noida Uttar Pradesh	Four Weeks	Molecular Biology and Genetic Engineering Techniques
11	Sanwardhini Pantawane	Female	M.Sc.	University of Bayreuth, Germany	Four Weeks	Bioinformatics
12	Satyaprakash Das	Male	M.Sc.	Chandigarh University	Six Weeks	Bioinformatics
13	Saumya Pandey	Female	M.Sc.	Chandigarh University	Six Weeks	Bioinformatics
14	Smriti Philip	Female	M.Sc.	Shri Shankaracharya Mahavidyalaya Junwani, Bhilai, Durg, Chhattisgarh	Four Weeks	Industrial Biotechnology & Food Biotechnology
15	Tuhin Mallik	Male	M.Sc.	Chandigarh University	Six Weeks	Bioinformatics
16	Vinaya Vinod Shinde	Female	M.Sc.	Chandigarh University	Six Weeks	Bioinformatics

MODULES & MODULE COORDINATORS

Following Modules were offered to the participants as per their request and selection:

Module Name	Module Coordinator	Tel/E-mail
Molecular Biology and Genetic Engineering Techniques	Dr. Anil Kant	Tel: 01792-239343
		anil.thakur@juit.ac.in
	Dr. Rahul Shrivastava	Tel: 01792-239355
		rahul.shrivastava@juit.ac.in
Industrial Biotechnology & Food Biotechnology	Dr. Hemant Sood	Tel: 01792-239274
		hemant.sood@juit.ac.in
	Dr. Saurabh Bansal	Tel: 01792-239222
		saurabh.bansal@juit.ac.in
Bioinformatics	Dr. Tiratha Raj Singh	Tel: 01792-239344
		tiratharaj.singh@juit.ac.in
	Dr. Raj Kumar	Tel: 01792-239305
		raj.kumar@juit.ac.in
	Dr. Shikha Mittal	Tel: 01792-239224
shikha.mittal@juit.ac.in		



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GLIMPSES OF SUMMER TRAINING – 2022

PARTICIPANTS PERFORMING LABORATORY EXPERIMENTS



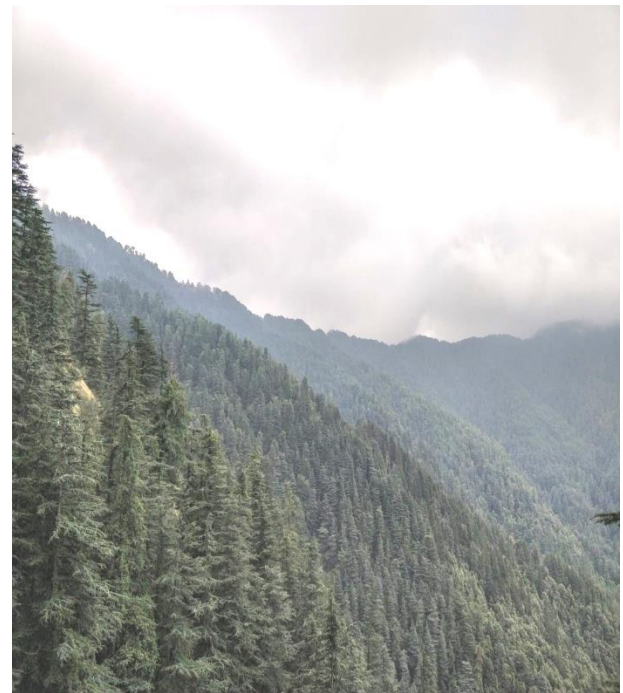
**GET TOGETHER TEA PARTY WITH ALL PARTICIPANTS
&
MEMBERS OF THE DEPARTMENT OF BIOTECHNOLOGY AND
BIOINFORMATICS, JUIT**



HERITAGE VISIT – A TRIP TO SHIMLA



FUN VISIT – A TRIP TO KUFRI BIRD SANCTUARY



TREKKING TO PANDAV GUFA & DOMEHAR VILLAGE





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Report prepared by:



Dr. Rahul Shrivastava

Summer Training Coordinator - 2022

Department of Biotechnology & Bioinformatics

Jaypee University of Information Technology

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