



JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY
WAKNAGHAT, P.O. – WAKNAGHAT,
TEHSIL – KANDAGHAT, DISTRICT – SOLAN (H.P.)
PIN – 173234 (INDIA) Phone Number- +91-1792-257999
 (Established by H.P. State Legislature vide Act No. 14 of 2002)



Two-weeks workshop on Advanced Molecular Biology and Plant Tissue Culture Techniques

Organized by
Department of Biotechnology & Bioinformatics
Jaypee University of Information Technology (JUIT), Wagnaghat, Solan

PATRONS

Shri Manu Bhaskar Gaur
Chief Executive officer, JUIT, Solan

Prof. R.K. Sharma
Vice Chancellor, JUIT, Solan

Prof. (Dr.) Ashok Kumar Gupta
Dean (A&R), JUIT, Wagnaghat

Brigadier R.K. Sharma, SM (Retd.)
Registrar and Dean of Students, JUIT, Wagnaghat

Prof. (Dr.) Sudhir Kumar
Professor and Head, Department of Biotechnology & Bioinformatics, JUIT, Wagnaghat, Solan (H.P.)

Conveners

Prof. (Dr.) Jata Shankar
Professor (Genomics)
Department of Biotechnology & Bioinformatics,
JUIT, Wagnaghat, Solan (H.P.)
Phone No. 01792-239225, Mob. 99882628534
Email Id: jata.shankar@juitsolan.in

Prof. (Dr.) Hemant Sood
Professor (Plant Biotechnology)
Department of Biotechnology & Bioinformatics,
JUIT, Wagnaghat, Solan (H.P.)
Phone No. 01792-239274, Mob. 9418689098
Email Id: hemant.sood@juitsolan.in

Training Modules & Resource Persons

Prof. (Dr.) Jata Shankar
Module 1 :- Advanced Molecular Biology, DNA & RNA extraction, Use of Nanodrop, cDNA synthesis, PCR, RT-PCR, etc.

Prof. (Dr.) Hemant Sood
Module 2 :- Plant Tissue Culture Techniques, Micropropagation, Artificial Seed Production & Hydroponics

* Target Audience

B.Tech. Biotechnology (4th year) students from the College of Horticulture and Forestry, NERI, Hamirpur (HP)

DATE & TIME

24th March – 5th April 2025

Time: 9:30 AM - 4:30 PM

<https://www.juit.ac.in/biotechnology-bioinformatics>





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Department of Biotechnology and Bioinformatics

Two-week workshop on
‘Advanced Molecular Biology and Plant Tissue Culture Techniques’
(24th March – 5th April 2025)

| Week-1 | Group-1 (9 students) (Advanced Molecular Biology) | Group 2 (9 students) (Plant Tissue Culture) |
|--|---|--|
| Day-1 24 th March Monday | Orientation, Grouping, about the workshop, interaction with PhD & M.Tech students associated with the workshop | |
| | Introduction to Molecular Biology/Genomics Preparation of media, Culture of <i>Saccharomyces boulardii</i> | Introduction to plant tissue culture and basic knowledge about setting up a plant tissue culture laboratory. Preparation of stock solutions, hormones required for nutrient media. |
| Day-2 | DNA & RNA extraction from <i>Saccharomyces boulardii</i> Microscopic observation of the yeast cells | Preparation of basal/specific nutrient MS medium for commercially important plant species with details of procedure and its sterilization by autoclaving. |
| Day-3 | DNA and Quantification, Use of Nanodrop/Spectrophotometer Agarose Gel electrophoresis (Thermo Fischer) | Establishment of cultures of medicinal plants for direct organogenesis under in vitro conditions |
| Post-lunch: Interaction with Faculties BT & BI (CR-3) | | |
| Day-4 | Preparation/synthesis of cDNA & PCR (Applied Biosystem) | Establishment of Callus cultures and regeneration of plants and formation of artificial seeds |
| Day-5 | Quantitative PCR of the following genes (Aldehyde dehydrogenase, heat shock proteins, tubulin, ITS etc) (Biorad) | Establishment of suspension cultures and upscaling to bioreactors |
| Day-6 | Qualitative and quantitative analysis of the qRT-PCR | Media preparation and establishment of plants under the hydroponic system And hardening of plants |



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Two Weeks Workshop on Advanced Molecular Biology and Plant Tissue Culture Techniques

Organised by : Department of BT and BI

Place: Jaypee University of Information Technology, Wagnaghat

Coordinators: Prof. & HOD Jata Shankar and Prof. Hemant Sood

Date : 24th March-05th April 2025

Resource Person: Dr Jata Shankar for Advanced Molecular Biology Techniques
Dr Hemant Sood for Plant Tissue Culture Techniques

Supporting Staff: Mrs Mamta Mishra, Ms. Sonika, Mrs Somlata, Mr Ismail and
Mr Baleshwar Miss Kritika Singh, Miss Priya Gautam, Miss Shailza Thakur and Miss Aarika Jain

The Department of Biotechnology and Bioinformatics, JUIT organized a Two Weeks Workshop on Advanced Molecular Biology and Plant Tissue Culture Techniques at JUIT Wagnaghat for 18 students of B.Tech (Biotechnology) 4th Year students from NERI Hamirpur. Workshop sessions were stated as per the mentioned schedule where Dr Hemant Sood took sessions on Plant tissue culture by demonstrating the techniques and providing short notes. Students have their hands on practices on culturing of different plant species, Production of Artificial seeds and working for hardening of plants under Hydroponic system etc.. Dr Jata Shankar took sessions on Advanced Molecular Techniques by demonstrating DNA & RNA extraction from *Saccharomyces boulardii*, Preparation/synthesis of cDNA & PCR (Applied Biosystem) and Qualitative and quantitative analysis of the qRT-PCR etc. The students were provided with one session of HPLC by Ismail ji and Professor Tirathraj Singh took one exclusive session of Utilization of Bioinformatics tools for the research and development. Faculty interaction sessions were also conducted with students to provide insight and knowledge enrichment of different domains of research and projects rolling in the department by experts of the department. The successful culmination of the workshop



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happened with the valedictory ceremony graced by our Honourable Vice Chancellor Prof. RK Sharma. VC sir motivated the students by citing the importance of team work and mentioned its significance for the holistic growth of the society and individuals. The conveners of the workshop extended the acknowledgments for NERI and JUIT administrations, staff and research scholars, faculty members of the Department of BT and BI for their unconditional support.

(Glimpses of the events and news coverage are as follows)





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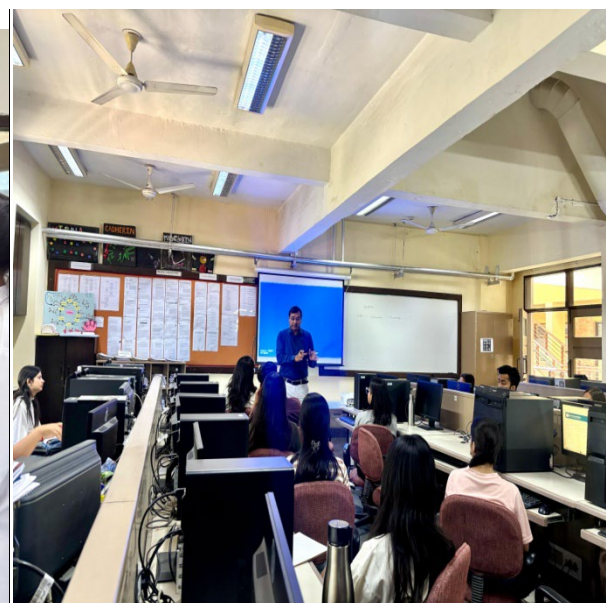




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Demonstration of Techniques and Hands-on Practise Session





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News Coverage:

“Advanced Molecular Biology and Plant Tissue Culture Techniques” workshop held
👉 <https://crazynewsindia.com/advanced-molecular-biology-and-plant-tissue-culture-techniques-workshop-held/admin/>

<https://himachaltonite.com/himachal/juit-concludes-workshop-on-molecular-biology-tissue-culture/https://www.livenews24tv.com/?p=13017>

उन्नत आणविक जीव विज्ञान और पादप ऊतक संवर्धन तकनीक” पर दो सप्ताह की कार्यशाला का सफल समापन <https://asarnewz.com/?p=50809>