School of Biotechnology, JU conducts workshop on Bioinstrumentation for M. Sc. students

School of Biotechnology, University of Jammu conducted fifteen days workshop on Bioinstrumentation, from 3rd June to 18th June 2025, for Master's second semester students as a part of their curriculum. The workshop successfully concluded with active participation and enthusiastic learning by all students.

Prof. Yash Pal Sharma, Dean Faculty of Lifesciences, University of Jammu was the chief guest on the valedictory function. He remarked that quality is the key to such events which helps in the overall growth of the students in professional life. He talked about the importance of bioinstrumentation and stressed that workshops and internships are not only about academic knowledge but about practical learning and hands – on experience thereby enhancing students' skills. He said NEP 2020 supports overall and multi-disciplinary growth, aiming skill based learning. He emphasized that students trained on high-end equipments can handle other instruments confidently because the basic approach remains the same. Workshop on bioinstrumentation must have not only helped in exposure to advanced research techniques but also in experimental design , data analysis and interpretation. Such workshops enhance research skills , foster innovation and prepare students for career in academia, industry and research institutions. He complemented the School for equipping the students at masters level with such skill oriented programmes and thanked the director for giving such a great opportunity to the students to learn and grow.

Earlier, Prof. Sanjana Kaul, Director, School of Biotechnology, addressed the audience with encouraging words, emphasizing the vital role of bioinstrumentation in modern biological research and daily life. She expressed her gratitude to the research scholars and faculty members of the School for the smooth conduct of the workshop and highlighted how such initiatives are essential for fostering curiosity and academic engagement among students. Prof. Kaul underscored that hands-on exposure to advanced bioinstrumentation not only helps students understand the technological depth and scientific advancements in the field but also raises awareness about the critical role these instruments play in ensuring a healthy and sustainable environment. She stressed that familiarity with high-end equipment is key to developing practical skills, which are often missing in routine classroom learning. She expressed gratitude to Prof. Umesh Rai, Vice Chancellor, University of Jammu for stressing on experiential learning beyond the boundaries including field visits, internships, workshops and

industrial visits in the M. Sc. course curriculum. Additionally, the director proudly mentioned the selection of Masters students from the School for prestigious summer internships this year under IASc -INSA - NASI Summer Research Fellowship program to be availed at IISc Bangalore, Jamia Milia Islamia University, N. Delhi and CSIR-National Institute of Oceanography, Goa—further reflecting the School's growing emphasis on skill-based learning and robust curriculum.

Dr. Yashpal Khajuria and Dr Ankit Mahajan assistant professors in the School were the coordinators of the workshop and presented the detailed report. During the fifteen days internship programme, the students were equipped with high end equipments. The workshop commenced on 3rd of June and lasted for 15 days wherein M. Sc second semester students were acquainted with the bioinstrumentation facility in the school. They were trained on those equipments which otherwise are not a part of their routine practicals. The programme aimed to provide students with hands-on experience and exposure to advanced laboratory instruments and techniques beyond their routine coursework. Throughout the internship, students were trained in a variety of cutting-edge tools and technologies. Besides the use and application of basic equipments like thermal cycler, centrifuge, the key sessions included semiquantitative PCR, Sanger Sequencing and data analysis, High Performance Liquid Chromatography (HPLC), and demonstration on biofuel production, biomass conversion, and bioreactors. Further topics included instruments used for secondary metabolite extraction and isolation of compounds such as rotavapor, Flash chromatography, microscopes, besides animal cell culture facility, including the use of flow cytometers and fluorescent microscopes. The programme also included sessions on Next Generation Sequencing (PGM-Ion Torrent and Illumina Miseq) and a dedicated day for bioinformatics analysis using Linux-based command-line tools. Students received practical training in plant tissue culture, including callus induction. The students were required to submit a report at the conclusion of the workshop.

On the last day of the workshop a visit of the students' to CSIR-Indian Institute of Integrative Medicine instrumentation facility was organised wherein they were aquainted with the high end equipments like Scanning and Transmission Electron Microscopes, NMR, and other advanced setups, along with a tour to the animal house and other research labs.

Wrap up session included distribution of certificates to students, research scholars and faculty members. The event was attended by research scholars and faculty members of the School Prof. B. K. Bajaj, Prof. Madhulika Bhagat , Dr. Ritu Mahajan, Dr. Nisha Kapoor, Dr. Sheetal

Ambardar, Dr. Bharatiraja and Dr. Mridhu. Formal vote of thanks was delivered by Dr. Yash Paul Khajuria, Assistant Professor, School of Biotechnology. Ms Itika Sharma research scholar in the School conducted the proceedings.