SUMMER INTERNSHIP in Biological Sciences for College students, 2026
ICFRE-Institute of Forest Genetics and Tree Breeding, Coimbatore
Module 2: Advanced Instrumentation Techniques for Plant and Soil Analysis
1st to 12th June, 2026

The ICFRE-Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore, organized a Summer Internship on Biological Sciences 2026 for undergraduate and postgraduate students. Module 2 of the programme, titled **"Advanced Instrumentation Techniques for Plant and Soil Analysis,"** was conducted from 1st to 12th June, 2026. The objective of the training programme was to provide students with real-time laboratory experience, expert mentorship from scientists and technical staff, and hands-on exposure to advanced analytical and molecular biology techniques. The internship was designed to strengthen both theoretical understanding and practical skills in contemporary biological sciences research. A total of eight students from Bharathidasan University, Tiruchirappalli, and Bharathiar University, Coimbatore, pursuing their masters in Biotechnology, participated in this module.

The programme commenced with laboratory and museum visits, providing participants with an overview of the Institute's research facilities and ongoing scientific activities. Students were subsequently trained in soil sampling methods, sample processing, and analysis of soil parameters including pH, electrical conductivity (EC), organic carbon (OC), and nutrient content. Sessions were also conducted on the analysis of macro and micronutrients in plant samples and interpretation of plant and soil analytical data. Further sessions focused on molecular biology techniques including DNA extraction, agarose gel electrophoresis, Polymerase Chain Reaction (PCR), and enzyme activity assays. These practical exercises enabled students to gain experience with modern laboratory instrumentation and analytical procedures, commonly used in biological and environmental research. Training on laboratory safety practices, preparation of solutions and buffers, spectrophotometric estimation of sugars, proteins and nucleic acids, and Thin Layer Chromatography (TLC) was also provided. Participants received hands-on training in plant material collection, extraction and purification techniques, bioactive compound analysis using High-Performance Liquid Chromatography (HPLC) and Gas Chromatography–Mass Spectrometry (GC-MS/MS).

The resource persons for the training programme included Dr. A.C. Surya Prabha, Scientist-E & Training Co-ordinator, Dr. N. Senthilkumar, Scientist-G, Dr. D. Thangamani, Scientist- E, Smt. R. Sumathi, CTO & Training Co-ordinator, Shri S. Pragadeesh, STA, Shri D. Daniel Davidson, Smt. Aghila Samji, SRF, and Shri. Abhijith S.S. The internship concluded with a group mini-project involving data analysis, presentation of results, and assessment. During the valedictory session, Shri.T. Rabi Kumar, IFS, Director, ICFRE-IFGTB addressed the students and motivated them to master advanced techniques. Participants actively engaged in all training sessions and demonstrated keen interest in learning advanced laboratory methodologies and scientific concepts. Students expressed that the internship significantly enhanced their understanding of plant and soil analysis, biotechnology, and molecular research techniques. The programme provided an excellent platform for the students to acquire practical skills, develop scientific aptitude, and explore interdisciplinary applications of biological sciences. The exposure to advanced instrumentation and research methodologies is expected to contribute positively to their future academic and research career. Dr. A.C. Surya Prabha, Scientist-E & Training Co-ordinator and Smt. R. Sumathi, CTO & Training Co-ordinator distributed participation certificates to the students. The programme concluded with the formal vote of thanks by the Student Co-ordinator, Dr. A. Balasubramanian, Scientist-B.

Shri. T. Rabi Kumar, IFS, Director, ICFRE-IFGTB addressing the interns

Dr. A.C. Surya Prabha, Scientist- E & Training Co-ordinator detailing soil analyses

Shri. S. Pragadeesh, STA demonstrating Atomic Absorption Spectrophotometer facility

Dr. D. Thangamani, Scientist-E with students in the molecular characterization session

Dr. N. Senthilkumar, Scientist-G detailing GC/MS/MS techniques

Smt. R. Sumathi, CTO & Training Co-ordinator explaining HPLC techniques

Smt. Aghila Samji, SRF detailing biochemical analysis

Shri. S.M. Paulraj, Senior Technician demonstrating macro-propagation techniques

Dr. C. Rajesh, Technical Assistant explaining forest protection activities

Interns visiting Gass Forest Museum facility

Course completion ceremony