THE NORTHCAP UNIVERSITY

Formerly ITM University, Gurugram

Internship Programme by

Central Research Facility-NCU

30 YEARS OF EXCELLENCE

NAAC Accredited

Central Research Facility

Central Research Facility of The NorthCap University, Gurugram is mainly developed with the objective of providing a central facility of the latest and advanced analytical instruments for research in the areas of Physics, Chemistry, Engineering, and interdisciplinary sciences. The trainee will learn about the instrument in depth and acquire the needed expertise through practical instruction and practice.

Faculty Coordinators:

- **Dr. Arjun Singh** (arjunsingh@ncuindia.edu)
- **Dr. Chetna Tyagi** (chetnatyagi@ncuindia.edu)
- **Dr. Aditya Sharma** (adityasharma@ncuindia.edu)
- **Dr. Raman Yadav** (ramanyadav@ncuindia.edu)

About the Course

The programme covers organic, inorganic, analytical, physical chemistry modules, material synthesis, characterization instruments training and data analysis and interpretation as well as relevant mathematics, engineering, and industrial practice.

Highlights of Course

» Students who successfully complete this programme are going to have a comprehensive understanding of the molecular approach, the fundamentals of nanomaterial synthesis, the functioning of instruments, and the practical use of physics and chemistry in the marketplace.

» Graduates of the degree programmes in physics, chemistry, biotechnology, and life sciences will be prepared for successful careers in their fields as well as for further study at the Master's or Ph.D. levels by having the knowledge, research skills, and problem-solving ability required.

» Provision of certificates to all successful trainees.

» The Internship program offer certification course of 2 week, 4 week and 6 week.

2 Week Programme

1. Hands on training of instruments
   - UV Visible Spectrophotometer (Liquid Sample)
   - Current Voltage Characteristics
   - Rotary Evaporator
   - Separation Method
2. Data Interpretation Understanding
3. Scanning Electron Microscopy Demonstration and Analysis.
4. Explore Applications of Computer Generated Holography

4 Week Programme

1. Hands on training of instruments
   - UV Visible Spectrophotometer (Liquid Sample)
   - Current Voltage Characteristics
   - Rotary Evaporator
   - Separation Method (Thin Layer Chromatography)
2. Data Interpretation Understanding
3. Scanning Electron Microscopy Demonstration and Analysis.

Any One Section with above work:

Section 1 - Dr. Arjun Singh

- Machine learning based studies on solar cell materials.
- Study on optical properties of thin films.
- Electrical and optical properties of solar cell materials.

Section 2 - Dr. Aditya Sharma

- Fundamentals of electrochemical analysis (CV, DPV, EIS)
- Study of the redox system
- Effect of scan rate on voltammograms

Section 3 - Dr. Raman Yadav

- Computational image processing using MATLAB

Section 4 - Dr. Chetna Tyagi

- Synthesis of Nanomaterial by wet Chemical Synthesis Method.
- Centrifugation Method.

6 Week Programme

1. Hands on training of instruments
   - UV Visible Spectrophotometer (Liquid Sample)
   - Current Voltage Characteristics
   - Dielectric Measurements
   - Rotary Evaporator
   - Separation Method
2. Data Interpretation Understanding
3. Scanning Electron Microscopy Demonstration and Analysis.
4. Explore Applications of Computer Generated Holography

Any One Section with above work:

Section 1 - Dr. Arjun Singh

- Device simulation and performance analysis of thin film transistors.
- Numerical simulation and performance analysis of solar cell devices.
- Charge transport studies of electron transport materials and hole transporting materials.

Section 2 - Dr. Aditya Sharma

- Electrochemical study of conductive polymers
- Label-free electrochemical immunosensors
- Molecularly imprinted polymer-based electrochemical sensors

Section 3 - Dr. Raman Yadav

- Computational image processing using MATLAB

Section 4 - Dr. Chetna Tyagi

- Synthesis of Nanomaterials and Nanocomposites.
- Centrifugation Method.
- Spin Coating Method.
- Nanoparticles by Green synthesis.

DURATION	AMOUNT
2 WEEKS	₹ 2500/-
4 WEEKS	₹ 3500/-
6 WEEKS	₹ 5000/-

Eligibility Criteria

» UG/PG/PhD students and Faculty/Industry Professionals.
» Completed at least the first year of bachelor's degree (minimum)

Batch Details, Application Procedure and Payment

» Program will start from August 2025, (Programme will run throughout the year).
» Interested students can apply directly by filling the application form. (Annexure 1)
» Requisite fee is to be deposited in full advance and details should be filled in the registration form.
» The application will be opened throughout the year.
» The seat will be allotted on a first come first serve basis. After successful registration, your seat, section, and slot will also be confirmed via email.

NEFT Details

Account Name : THE NORTH CAP UNIVERSITY
Account No. : 82472010013980
Bank Name : Canara Bank
Bank's Address : NCU, Sector-23A, Gurgaon
IFSC Code : CNRB0018247

Scan to register

https://docs.google.com/forms/d/e/1FAIpQLScC2GvzrwwF-jWdrt83_nfNSN6ShbCAD6g-Acl7tewBR1Y9AQ/viewform?usp=header

Programme Coordinator -

Dr. Chetna Tyagi

Central research facility (ncuindia.edu)

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Contact: 9911429599.

CRF Web Page-

https://www.ncuindia.edu/central-research-facility/

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