



# Internship Programme by Central Research Facility-NCU



## 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. Chetna Tyagi** (9911429599)

**Prof. Hukum Singh** (8920831275)

**Dr. Arjun Singh** (9289258982)

### 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 practise.

### 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.

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.

#### 4 Week Programme

Any One Section with above work:

#### Section 1 - Prof. Hukum Singh

- Optical image processing based on MATLAB simulation work

#### Section 2 - 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 3 - 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.

Any One Section with above work:

### Section 1 - Prof. Hukum Singh

- Optical image processing based on MATLAB simulation work

### Section 2 - 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 3 - Dr. Chetna Tyagi

- Synthesis of Nanomaterial and Nanocomposites.
- Centrifugation Method.
- Spin Coating Method.

DURATION	AMOUNT
2 WEEKS	₹ 2000/-
4 WEEKS	₹ 3000/-
6 WEEKS	₹ 4000/-

## Eligibility Criteria

- » UG/PG/PhD students and Industry Professionals from Science disciplines
- » Completed at least the first year of bachelor's degree (minimum)

## Batch Details, Application Procedure and Payment

- » Program will start from July 2024, (Program 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://forms.gle/5JQUUU3zoYexUAuRA>

**Programme Coordinator:-**

**Dr. Chetna Tyagi**

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