

Admissions are Open for Certificate Course in Nano Science and Nano Technology organized by the **Department of Physics**

- I. Name of the Course:** ‘Nano Science and Nano Technology’
- II. Duration:** 30 Hours (23rd Sept 2019 to 23rd Oct 2019)
- III. Course Coordinator:** Dr. R.V. Joat
- IV. Eligibility:** Students admitted to PG programme.
- V. Intake capacity:** Maximum 40 (First Come First Service)
- VI. Contact Hours:** 30 hrs.

I. Course Contents:

Theory: 30hrs

Unit-I: Introduction: Information about Nano and Nanomaterial, Definitions of Nano Science and Nano Technology, Background of Nano Science and Nano Technology, Possible applications of Nano Technology.

Unit-II: Growth and Techniques of Nanomaterial: Introduction about techniques, Top Down vs Bottom Up Technique, Lithographic Process and its applications.

Unit-III: Non-Lithographic Process: Plasma arc discharge, Sputtering, Evaporation, Chemical vapour deposition, Pulsed laser deposition, Molecular beam epitaxy, Sol-Gel Techniques, Electro deposition, Other processes.

Unit-IV: Characterization of Nanomaterials: Introduction to Scanning Probe Microscopy (SPM)
Basic Principle of SPM Technique, Introduction and classification to Electron Microscopy.

Unit-V: Tools for Nanomaterial: XRD, Working of XRD, Basic Concept of SEM, TEM and it's working.

Scheme of Examination

Theory

- I. There shall be one compulsory Theory paper of 3hrs duration.
- II. There shall be a paper of 100 marks (out of which 80 marks will be for written examination and 20 marks for internal assessment).

I. Paper		Marks
a. Theory	-	80
b. Internal assessment	-	20
	Total	100

III) Internal Assesment (Distribution of 20 marks)

- Test-10 marks
- Seminar- 10 marks

IV) The Passing Percentage Shall be 40%

Pattern of question paper

Distribution of marks

Vidya Bharati Mahavidyalaya, Amravati

Certificate Course in Nano Science and Nano Technology

Time: 3hrs

Max. Marks: 80

1. There shall be MCQs Questions based on Unit I/II/III/IV/V. Each unit will carry 16 marks

VIDYA BHARATI MAHAVIDYALAYA, AMRAVATI

C.K. Naidu Road, Camp, Amravati- 444602

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE IN NANO SCIENCE AND NANO TECHNOLOGY.

APPLICATION FORM

(Academic Year 2019-20)

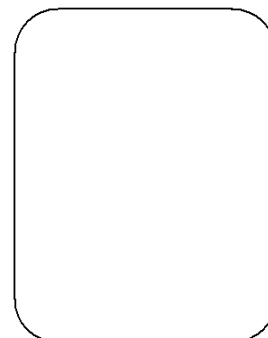
{A Part: 1st August 2019 to End of October}

Duration: 1 month

{B Part: 1st January 2020 to End of March}

1. Student ID:- _____
2. Class:- _____
3. Name of the Student: _____
4. Name of Father/Guardian:- _____
5. Address: _____

6. Email ID: _____
7. Aadhar No: _____
8. Contact No: _____
9. Religion: _____ Cast: _____ Category: _____
10. Date of Birth: _____



Signature of Applicant