

# ***INDUSTRY PROGRAM IN NANOTECHNOLOGY***



***Nano Science and Technology Consortium***  
***Consulting . Research . Outsourcing . Technology***

**Website :** [www.nstc.in/programs](http://www.nstc.in/programs)

**E-mail :** [programs@nstc.in](mailto:programs@nstc.in)

## A select list of Institutional association/ affiliation of Program participants

- ▶ Accenture
- ▶ AIIMS
- ▶ Alagappa University
- ▶ Aligarh Muslim University
- ▶ Amrita Institute of Medical Sciences
- ▶ Anna University
- ▶ Apollo Hospital
- ▶ Ashok Leyland
- ▶ BARC
- ▶ Bharat Earth Movers Ltd.
- ▶ Bharat Electronics
- ▶ BHEL
- ▶ Biocon Ltd.
- ▶ BSNL
- ▶ Central Forensic Science Laboratory
- ▶ Cognizant Technology
- ▶ Covansys
- ▶ Deloitte Consulting
- ▶ Department of Atomic Energy
- ▶ Dr. Reddys Lab
- ▶ DRDO
- ▶ Excel Hitech India Enterprises Pvt. Ltd.
- ▶ Grasim Industries Ltd.
- ▶ HCL Technology Ltd.
- ▶ Hewlett Packard
- ▶ Hindustan Lever
- ▶ Hindustan Petroleum
- ▶ Honeywell Technology Solution
- ▶ IIT Delhi
- ▶ IIT Guwahati
- ▶ Indian Agriculture Research Institute
- ▶ Indian Air Force
- ▶ Indian Army
- ▶ Indian Institute of Science
- ▶ Indian Navy
- ▶ Indian Oil Corporation Ltd.
- ▶ Infosys Technology Ltd.
- ▶ ISRO
- ▶ Johnson & Johnson
- ▶ Larsen & Turbo
- ▶ Mahindra & Mahindra Ltd.
- ▶ Manipal Institute of Technology
- ▶ MRF Ltd
- ▶ NALCO Ltd.
- ▶ National Aerospace Laboratories
- ▶ National Metallurgical Laboratory
- ▶ National Physical Laboratory
- ▶ ONGC Ltd.
- ▶ Pfizer Ltd.
- ▶ Polaris Software Labs Ltd.
- ▶ Reliance Energy Ltd.
- ▶ Robert Bosch India
- ▶ SAIL
- ▶ SAP Labs
- ▶ Siemens
- ▶ SRL Ranbaxy Ltd.
- ▶ Sterlite
- ▶ Satyam Computers
- ▶ Syntel Inc. Indian Ltd.
- ▶ Tata Consultancy Services Ltd.
- ▶ TATA Research Development and Design Centre
- ▶ Tata Steel
- ▶ TB Research Centre, ICME
- ▶ Tech Mahindra Ltd.
- ▶ Unichem Labs Ltd.
- ▶ Vellore Institute of Technology
- ▶ Vikram Sarabhai Space Center
- ▶ Wipro Technologies

## INDUSTRY PROGRAM IN NANOTECHNOLOGY (Distance Participation Program)

With E- Learning Program Management

### NSTC: An Overview

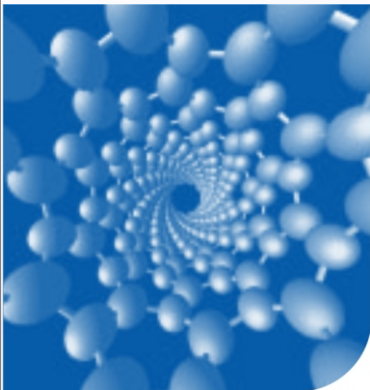
NSTC is a non-governmental, privately run body, which came in to existence in the year 2005. It aims to provide, or facilitate in providing of the services that lead to awareness creation, research and development, consultancy, partnering/ collaborations, technology transfer and commercialization of budding Nanotechnologies.

Nano Science & Technology Consortium (NSTC) endeavors to function as a platform that is conducive for the growth, promotion and partnering in the field of Nanoscience and Nanotechnology.

### NSTC Activities

- ▶ Conducting Nano Sensitization Program, Industry Program in Nanotechnology, PG program in scientific & technical writing, PG program in patents & IPR.
- ▶ Content Development Services
- ▶ Event and Product Promotion Services
- ▶ Conducting Nanotechnology Workshops ,
- ▶ Consultancy, Outsourcing, Technology Transfer
- ▶ Partnering and Collaboration Publication of online (bimonthly) journal, 'NanoTrends: A Journal of Nanotechnology and Its Applications'
- ▶ Publication of online newsletter, 'NanoSpectacle: A Monthly 10<sup>-9</sup> Newsletter'
- ▶ Publication of other nanotechnology documents





## About Nanotechnology

Nanotechnology is the manipulation of matter on a nanometer scale in order to engineer new materials and devices with superior chemical, physical, optical, electronic and/or biological properties. It is a domain where new functional properties of matters are achieved by manipulating the structures in the nanometer range.

Nanoscience and Nanotechnology comprise one of the fastest-growing research and development areas in the world. The use of Nanotechnology is generating revenue in the industries associated with Automobiles, Biotechnology, Chemicals, Food, Electronics & Computing, Environment, IT (in general), Pharma, Medicine-Healthcare, Textiles, etc.

## Nanotechnology Career & Job Opportunities

Nanotechnology is grabbing the attention of employers as well as the jobseekers. Current applications of nanoscale science and technology, and thus career opportunities, exist in areas such as: electronics/semiconductor industry, materials science including textiles, polymers, packaging, auto and aerospace industries, sports equipment, pharmaceuticals including drug delivery, cosmetics, among others, biotechnology, medical fields, optoelectronics, environmental monitoring and control, food science including quality control and packaging, forensics, university research, national security, military, and many more.

According to the National Science Foundation (USA), Nano-related business could be a \$1 trillion market by 2015, making it one of the fastest growing industries in the history. As per a study by Nanotechnology Victoria, the number of Nanotechnology skilled personnel needed by 2015 in order to support Nanotechnology research based industry is more than 1 million.

## Industry Program in Nanotechnology

### Course overview:

The course comprises four assessed modules, and an individual project. The modules include online tutorials and assessments, and are assessed through project work and assignments. These provide the 'tools' required for individual projects. For participants from nanotechnology related field, a self work-based project may replace the individual assigned project.

The individual thesis project provides you with the opportunity to develop and demonstrate independent research ability, working within agreed objectives, and deadlines.

### Course Aim :

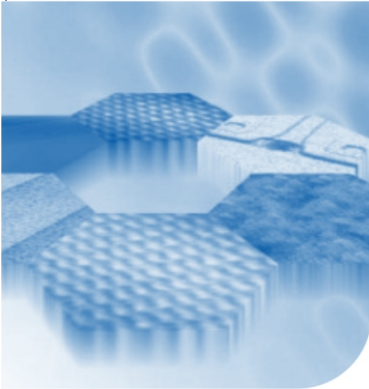
The innovative Industry program in nanotechnology aims to give participants a thorough grounding in the skills necessary for a technically-based career in the new high-tech industries.

The course covers technologies used to design, realise and analyse micro and nano-scale devices, materials and systems, coupled with general and technology management. This, supported by project work, ensures graduates emerge trained in a wide range of technical and management skills, and have a sharp appreciation of the relevance of the subject to industrial needs.

### Career Opportunities :

Successful students will secure positions in the newly developing nanosystems and nanotechnology-based industries as well as more traditional industries, such as microelectronics and precision engineering, requiring skills related to those taught. Graduates are able to pursue careers in a diverse range of industries including automotive, aerospace, cosmetics and pharmaceutical.





## Course Structure

The course comprises four assessed modules, and an individual research project.

- **NANO STRUCTURES**
- **NANO MATERIALS**
- **CHARACTERIZATION & MANIPULATION**
- **SYNTHESIS & FABRICATION**

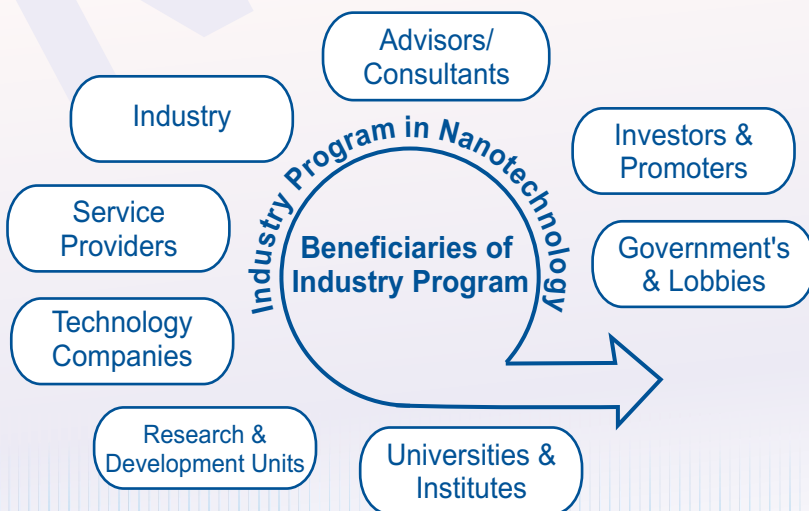
The modules include online lectures and tutorials, and are assessed through practical work, written examinations, case studies, essays, presentations and tests. These provide the 'tools' required for the group and individual projects.

ctures and tutorials, and are assessed through practical work, written examinations, case studies, essays, presentations and tests. These provide the 'tools' required for the group and individual projects.

The elements of the course are assessed as follows:

Taught modules: 50%

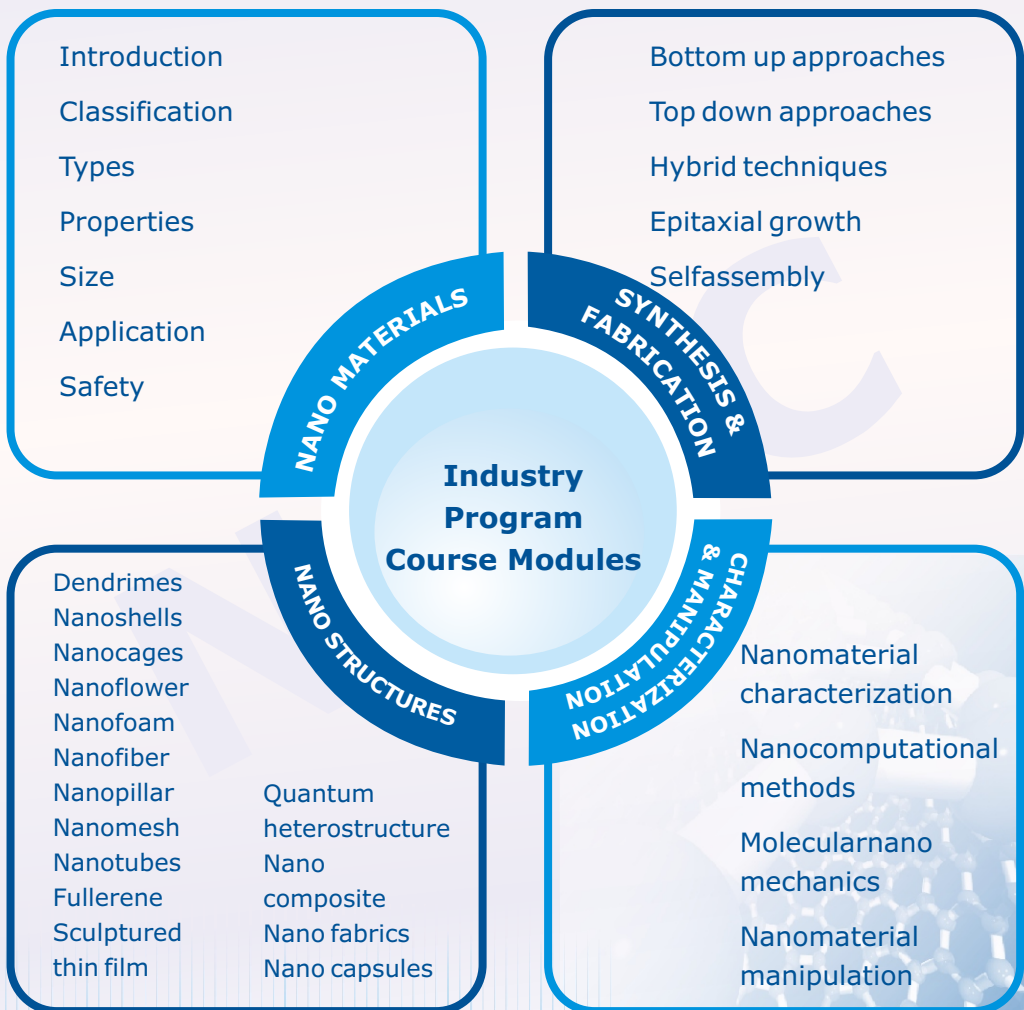
Individual project: 50%



## Industry Program in a Nutshell

The industry program in nanotechnology is a unique kind of program for the professionals, scientists, academicians, students in higher scientific domains.

The program upgrades the knowledge and skill sets of the candidates from the exciting world of atoms and molecules to the manipulation at  $10^{-9}$  scale that is nano scale, resulting in the superior applications in diverse discipline, from cutting edge technologies to foster competitive advantage in the challenging economy.





The science of manipulating atoms and molecules, which is called as nanotechnology, offers wide range of functionality for many industries to improve materials that are more versatile and that have chemically, mechanically, physically and thermally better performance characteristics.



## Project Work

The individual research project is either industrially or NSTC driven. Students select the individual project in consultation with the Course Coordinator. It provides students with the opportunity to demonstrate independent research ability working within agreed objectives, and deadlines.

## Program Duration

Duration to complete the program is six months. However the candidates have maximum of nine months to complete the program. (it is inclusive of a grace period of three months against a re-registration fee of Rs. 2000 / US\$ 75).

## Eligibility

This is a industry program which any enthusiastic student / professional pursuing a diploma/ under-graduate /post-graduate course/ corporate profile, in any discipline/ industry can join. Experienced professionals, academicians and researchers too are advised to join this program.

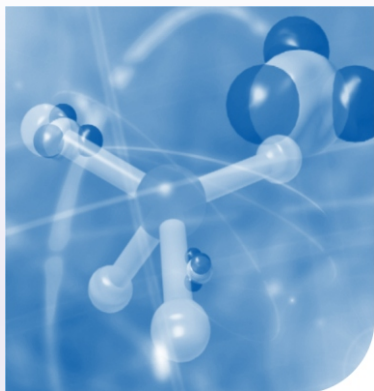
## Fee structure and payment norms

The program fee should be sent along with duly completed application form. The fee should be paid through a Demand Draft/ Managers Cheque, issued in favor of "Nano Science and Technology Consortium", payable at "Delhi/ New Delhi".

### Fee Details

Fee Details	Indian Students	Overseas Students
Program Fee*	Rs. 15,000=00	US\$ 500 =00





## Scholarships

Applicants shall be awarded scholarships on the basis of aggregate marks in diploma /graduation/ post-graduation degree. Aspirants with scores of (60 - 70)%, (71-80)%, (81-90)% and above 90% in diploma/ graduation/ post-graduation degree are eligible for 10%, 15%, 20% and 25% discount on the program fee respectively. Under-graduates those who have passed intermediate/ higher secondary/ 10+2 examination with above mentioned marks will also be considered for the scholarship accordingly. NSTC can change the academic scholarship criteria from time to time.

1. Women Candidates - 10% fee waiver
2. Group Scholarships - (a) three and above - 20% (b) five and above - 30 % (c) ten and above - 40% (Single DD Payment)
3. Academic Scholarships-based on marks in last board/university exam passed, as given below.

**Candidates as per their eligibility may apply for scholarship by writing a separate application.** Please attach an attested copy of qualifying mark sheet as a proof of fulfilling the scholarship criteria.

## Re-despatch and Administration Charges

Indian Students	Overseas Students
Rs. 500=00	US\$ 50 =00

## Despatch of study material and the certificates

The above program fee is inclusive of the charges towards the dispatch of Kit (study material) and the Certificate. However, in case of return of these documents owing to incorrectness/ insufficiency in the address or change of postal address, provided by the participant, the second time dispatch of the aforesaid material is charged as per the following norms:

## Program implementation methodology

Join the program by submitting the application form along with the necessary fee.

Receive Industry Program In Nanotechnology study kit (books & CDs), and assignment(s) at your postal address.

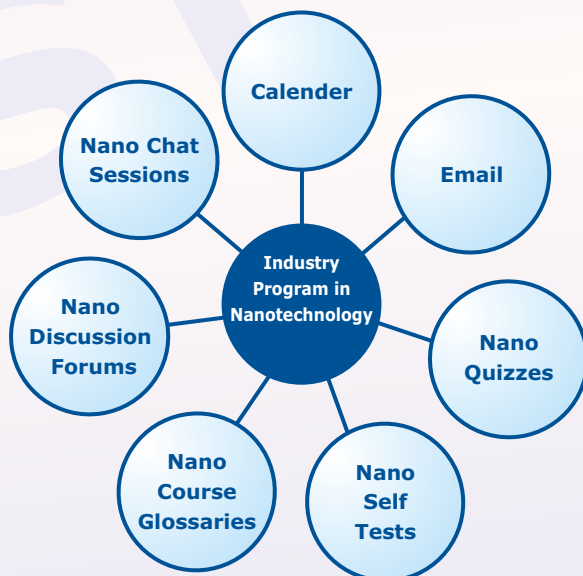
Self study of Industry Program kit. Have comfort/ pleasure of studying and completing the program, right from the commencement to the conclusion without any need to physically present yourself to us-NSTC.

Participate on web portal activities (<http://nstc.celnet.in>), receive Internet based support.

## Participate on e-learning portal <http://nstc.celnet.in>

### And benefit by:

- Online course material and learning
- Online student support
- Online guidance and tutoring



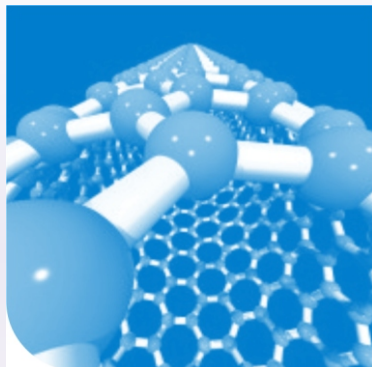
'State of the art' Online Teaching Methodology

### Calender

The course calender keeps you on track regarding the upcoming chat sessions and due date of assignments.

## Chat Sessions

Instructors will hold a chat session with the class to discuss any issues regarding the provided course material /assignments.



## Email Support

Instructors use email to communicate any relevant information and all important administrative circulars with the class as a whole you can also use email to obtain one - to - one help from your instructor when you have queries about material / assignment

## Discussion Forums

Discussion Forums are an excellent way for you to interact with your class and share your thoughts and ideas. In order to stimulate the sharing of ideas between students & professionals you are encouraged to post items to the discussion board during the program. A participant can post a question to the class via the discussion board. In some classes, the discussion board is used to post work items so that they can be shared by your course mates.

## Quizzes

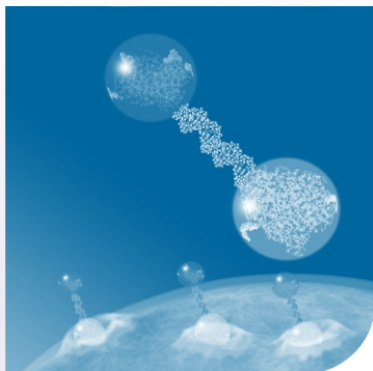
To guide the performance of the participants during the course of the program regular quizzes are added. Creating a little mini-test for each reading assignment encourages participants to do the reading so they can do well on the quiz. It also gives the students participants feedback on how well they understood the reading assignment.

## Nano Course Glossary

Glossary will provide a list of definitions related to the program, like a dictionary. This will facilitate quick reference to any term related to the program.

Receive the certificate from "Nano Science and Technology Consortium" after submission of the compulsory final assignment - paper.

Receive on going support from "**Nano Science & Technology Consortium**".



## Enrollment Procedure

Aspirants who wish to apply for the Industry Program in nanotechnology can download the free application form from our

**website: [www.nstc.in/programs](http://www.nstc.in/programs)**

Duly filled application form (enclosing a Bank Draft issued in favor of "**Nano Science and Technology Consortium**", payable at "Delhi/ New Delhi"), along with a copy of the

certificate/ mark sheet of the highest Degree/ Diploma and a copy of passport size photograph.

- Participants must provide and e-mail address for accessing the online course modules.
- One can apply any time of the year the registration will be provided for the current or the ongoing batch.
- Participant can register for more than one program at the time.

## Examination and Certification

Examination for course shall be conducted periodically both online as well as through written assignment. The time duration required to complete the program is six months. Students are instructed to complete and ensure submission of the said assignment to NSTC within a stipulated time period of 6 months. Failing to meet this time-line requires a re-registration in the same program, by remitting a re- registration fee of Rs. 2000=00/ US\$75=00. This facilitates an extension of three months (maximum) period for the submission of final assignment/ paper.

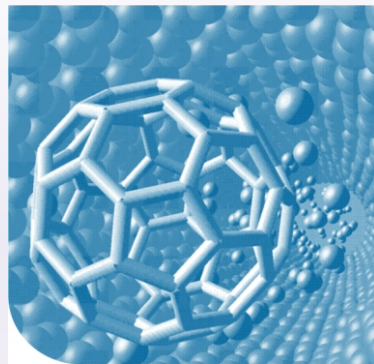
Every student passing being the course shall be provided certificate by **Nano Science and Technology Consortium** in hard copy by registered post.

## Note

NSTC reserves the right to change the commencement/ conclusion dates of the program, with or without notice to the participants. NSTC strives to make the kit (study material) available to the participants in time, however, in the exceptional events of any delay from NSTC's side (not the delay on

account of postal/ courier agencies), in providing the study material, the participant will be compensated with an extended timeline accordingly.

The Director NSTC is the final authority in all matters pertaining to this program.



## Change in Information Policy

NSTC reserves the right to change the commencement/ conclusion dates of the program.

## Disclaimer

NSTC strives to make the study material and assignment papers available to the candidates in time, however, in the exceptional events of delay from NSTC's side (not the delay on part of postal/ courier agencies if any), in providing the study material or the assignment papers to the candidates, NSTC assumes the responsibility to compensate the candidates by allowing extra time period on the above account.

## Legal

In case of any dispute, the jurisdiction is only Noida district and the dispute has to be resolved only through arbitration and the sole arbitrator is Director NSTC.

### Queries/ Concerns

**Telephone No.** 0120- 4781200

**Mobile No.** 09818206463 (Program Co-ordinator)

**Web:** [www.nstc.in/programs](http://www.nstc.in/programs) **E-mail:** [programs@nstc.in](mailto:programs@nstc.in)



A Nanotechnology platform

# Nano Science and Technology Consortium

A-105, Level III, Sector 63, Noida, UP,  
INDIA 201 301

**Mob.09818206463** (Program Co-ordinator)

## APPLICATION FORM

### Industry Program in Nanotechnology

#### (A Distance Participation Program)

With E- Learning Program Management

Form No: .....

Affix your latest  
passport size  
photograph duly  
signed by you

(for office use only)

Enrolment No.

1. Name (Mr./Ms.) \_\_\_\_\_  
First Middle Last

2. Father's Name \_\_\_\_\_

3. Postal Address (Capital Letters Only) \_\_\_\_\_  
\_\_\_\_\_

City: \_\_\_\_\_ Pin Code:

State: \_\_\_\_\_ Email: \_\_\_\_\_

Phone No. with STD Code: \_\_\_\_\_ Date of Birth   
DD MM YYYY

Mobile No: \_\_\_\_\_

Examination	Board/University	Year of Passing	% of Marks
Graduation			
Post Graduation			
Any other			

[www.nstc.in/programs](http://www.nstc.in/programs)

Nano Science and Technology Consortium



### 5. Experience:

Present company (Name & Address )	Designation	Total Experience	Present Responsibility

6. (a) **Nationality:** \_\_\_\_\_ (b) **Country of Residence:** \_\_\_\_\_

7. General information ( ✓ ) mark only relevant column

**Sex**

Male

Female

8. Are you an existing student or alumini of NSTC if yes, Enrolment No.

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Course Name: .....

9. Crossed Demand Draft/Cheque No. \_\_\_\_\_ date \_\_\_\_\_

Drawn on \_\_\_\_\_ for Rs./ \$ \_\_\_\_\_

(Bank draft must be drawn in favour of "Nano Science and Technology Consortium". Payable at Delhi or New Delhi)

Candidates are advised to write their name and address at the back of demand draft/ Cheque)

10. Applied for Scholarship (tick any one) [Applicant must ensure that they have read scholarship terms & conditions given online at <http://www.nstc.in> before sending the application form and fee.]

Female candidate

Academic Scholarship

Group Discount (Minimum 3 applicants with single DD are eligible)

Please attached relevant documents for support.

11. Documents to be attached with application form:

i) Total Program Fee draft at the time of submitting application form

ii) Certificate & marksheet of the latest Degree / Diploma, Documents in support of scholarship

iii) Passport size photograph

iv) NSTC accepts payable at par cheques only, other cheque are not entertained.

#### **Important Information**

The program in which you are seeking participation, is NSTC's independent knowledge enhancement training program. The program neither promises any job guarantee nor provides any specific eligibility to pursue higher studies. In case of any dispute, it would have to be resolved through arbitration, under Arbitration and Conciliation Act 1996, by the sole arbitrator appointed by the NSTC, Noida. The jurisdiction of the same will be the Court of the District Gautam Buddha Nagar, Noida, India only.

#### **Declaration by the Applicant**

I hereby declare that I have read and understood the details of the program for which I seek admission. I have read scholarship & program terms & conditions given online and agree by the same. I have provided the necessary information in this regard. In the event of any information found incorrect or misleading, my candidature shall be liable to cancellation by NSTC at any time and I shall not be entitled to refund of any fee paid by me to NSTC. I fully understand and agree that fee once paid is not refundable in any circumstances and is also non transferable.

Place:

Signature of Candidate

Date: