राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान,चेन्नई

National Institute of Electronics and Information Technology, Chennai

Autonomous Scientific Society of Ministry of Electronics & Information Technology (MeitY), Govt. of India

ISTE Complex, 25, Gandhi Mandapam Road, Chennai - 600025

COURSE PROSPECTUS

3D Printing: Design and Development Fundamentals (NSQF - Level 3.5)

Mode: Blended

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Course Prospectus

Name of the Group: 3D Printing Group

Course Name: 3D Printing: Design and Development Fundamentals

Course Code: 3D201

NQR CODE: NG-3.5-EH-02638-2024-V1-NIELIT

NSQF LEVEL: 3.5

Duration: 60 Hours

Last Date of Registration: 01-09-2026

Course Start Date: 08-09-2026

Preamble

This course provides a comprehensive introduction to product design and additive manufacturing. It equips participants with the knowledge and practical skills required to create, model, slice, and manufacture 3D printed products using industry-standard tools and techniques. Learners gain hands-on experience in 3D printer operation, design optimization, safety practices, and troubleshooting. The course emphasizes innovation, problem-solving, and entrepreneurship, preparing participants for applications across industries such as healthcare, aerospace, education, manufacturing, and product development.

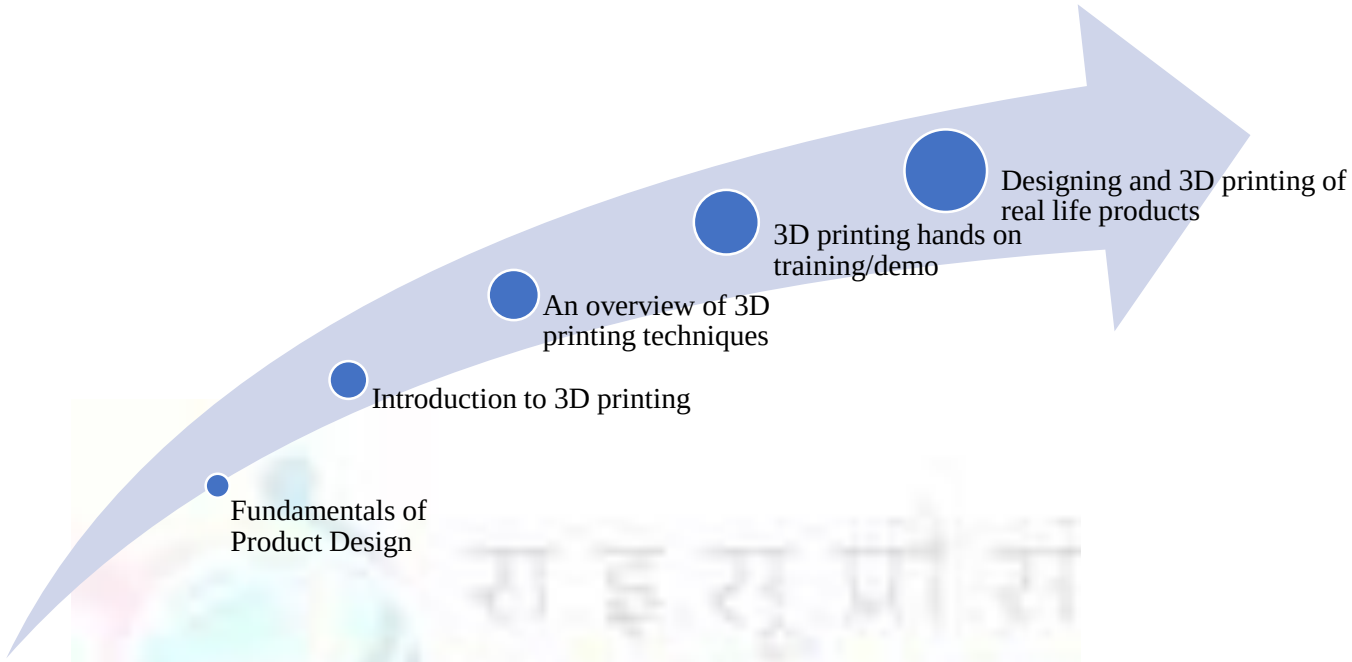
Objective of the Course

The primary objective of this course is to equip students with knowledge and tools to create 3D Printed innovative prototypes. Students can design and develop real-life products for different industry verticals leveraging the unique approach of CAD & Additive Manufacturing.

Outcome of the Course:

Students will learn about the impact of 3D printing across different sectors such as healthcare, aerospace, arts, architecture, and education. They will acquire skills in 3D printing technologies, including SLA/DLP, SLS, and FDM, and explore design concepts, slicing techniques, and post-processing methods. They will learn to use 3D modelling software to create 3D models for different industries and all about handling printers.

Full Flow of Course



Course Structure

Sl. No.	Module Name	Duration (in hours)
1	Introduction to Product Designing	1
2	Why learn 3D Printing	1
3	Impact of 3D printing in different industries and how it is enabling job opportunities?	1
4	Understanding what 3D printing is, Traditional manufacturing vs 3D printing	2
5	Fundamental Building Blocks of 3D printing	2
6	3D Printing Technologies and Materials- SLA/DLP, SLS, FDM	2
7	Academic Concepts using Design Tools- 3D Shapes, Edges and vertices, Co-ordinates and Axes, Height -Width -Depth, Angles, Distances, Types of Views	2
8	How to use 3D Printer: parts, operation procedure, safety precaution, troubleshooting and maintenance	2
9	Design and Slicing Considerations	2
10	Designing and printing – Basics to real life products	45
	Total Duration	**60 hours**

Course Fees

Fees	General Candidates/OBC/EWS	SC-ST Candidates	Last Date
Course fees	Rs. 4300/-	**Nil/-**	01-09-2026

Eligibility

- ✓ 1st year of 3-year diploma after 10th in Electronics and Commutation Engineering/ Electrical Engineering/ Computer Science/ Information Technology/ allied branches
- ✓ 11 or equivalent
- ✓ 10th grade pass and pursuing continuous schooling
- ✓ 8th grade pass with two years of NTC plus 1 year NAC/CITS
- ✓ NSQF Level 3 in Electronics and Commutation Engineering/ Electrical Engineering/ Computer Science/ Information Technology/ allied branches with 1.5-year relevant experience

Registration Procedure

All interested candidates are required to fill the Registration form online at **https://nva.nielit.gov.in/** and pay the course fee before **01st September 2026** with all the necessary information.

- ✓ The candidates have to upload their documents on registration portal for online verification.
  - Original copies of Proof of Age, Qualifying Document (Consolidated Mark sheet or Course Completion Certificate), 10th and 08th mark sheets.
  - Self-attested copy of community certificate.
  - One passport size photograph.
  - AADHAR Identity proof.

Payment details

- ✓ After registration, the candidates have to pay fees of **Rs. *4300/-*** (for General/OBC/EWS) on or before 01-09-2026 by payment mode mentioned below.
- ✓ Payment towards course fee can be paid through the following mode:

Online transaction:

Account No: 31185720641

Branch: Kottur (Chennai)

IFSC Code: SBIN0001669

Note: *The Institute will not be responsible for any mistakes done by either the bank concerned or by the depositor while remitting the amount into our account*

Selected candidates are requested to upload the proof of remittance of fee on registration portal and also send the proof of remittance of fee as email to **trng.chennai@nielit.gov.in**.

Selection Criteria of candidates

The selection to the course shall be based on the following criteria:

Selection of candidates will be based on their marks in the qualifying examination subject to eligibility.

- ✓ The list of Selected Candidates will be published on NIELIT Chennai website (www.nielit.gov.in/chennai) on **04-09-2026** by **5:00 PM**.

Admission

All selected candidates whose documents are verified and paid the fees will be verified by accounts section of NIELIT Chennai. They will get a welcome message in their Login ID provided during registration. The credential and URL for online portal will be shared through WhatsApp or Email.

Course Fee – Refund Policy

(Non-Refundable if candidate is selected for admission but did not join and if a candidate has applied but not eligible.)

However, the course fee shall be refunded on few special cases as given below

- ✓ Candidates are eligible but not selected for admission.
- ✓ Course postponed and new date is not convenient for the student.
- ✓ Course cancelled.

Discontinuing the course

- No fees under any circumstances, shall be refunded in the event of a student who have completed the process of admission or discontinuing the course in between. No certificate shall be issued for the classes attended.
- If candidates are not uploading consecutive 3 assignments within assigned time, then their candidature will be cancelled without any notice and all fees paid will be forfeited.
- If candidates are not appearing for any internal examinations/practical their candidature will be cancelled without any notice and all fees paid will be forfeited.

Course Timings

The classes will be held online from 10:00 AM to 01:00 PM and Monday to Friday.

Address

National of Electronics and Information Technology

ISTE Complex, No. 25, Gandhi Mandapam Road, Chennai – 600025

Email: trng.chennai@nielit.gov.in / Phone: 044-24421445

Contact Person: Mr. Mallikarjuna S / Mobile: +91 9444070860

Course enquiries

Students can enquire about the various courses either on telephone or in-person between 9.15 A.M. to 5.15 P.M. (Lunch time 1.00 pm to 1.30 pm) Monday to Friday.

Placement: Placement assistance is provided to students who qualify our courses

Students who have completed the course successfully and qualified, Placement guidance and career counselling will be given to crack their interviews.

Examination & Certification

- ✓ Candidates will have to attend 1 theory and 1 practical exam as per QF
- ✓ For getting certificate, a candidate has to get 50% marks in each exam as per QF
- ✓ Certification Body: Examination Section, NIELIT HQ

Grading Scheme

Following Grading Scheme (on the basis of total marks) will be followed:

Grade	S	A	B	C	D	Fail
Marks Range (in %)	85 to 100	75 to 84	65 to 74	55 to 64	50 to 54	Below 50

Faculty

Mr. Mallikarjuna S	**Dr. Riyaz Ahmed A**	**Mr. Leonard Ignatius P L**
Scientist 'D'	Project Engineer (3DPAM)	Project Engineer (3DPAM)
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Note

- ✓ The design part of the course will be taught in Creo software.
- ✓ Participants can download Creo student version for practice.
- ✓ Participants are requested to make sure they possess necessary system requirements for installing Creo software, before joining the course.