

COURSE PROSPECTUS

**Name of the Group:** *CAD/CAM*

**Name of the Course:** *Certificate course in “Computer Aided Design using CREO”*

**Course Code:** *CAD 100*

**Starting Date** 18<sup>th</sup> Feb 2019

**Duration:** *4 Weeks – 100 Hours (@5 hours/day)*

**Course Coordinator:** *Rameshkumar MS, STO, Mob: 9446012966*

**Preamble:** Computer Aided Design (CAD) is the most powerful tool in design and manufacturing industries with its reliability, flexibility, efficient and cost effectiveness. With the CAD one can easily visualize and see the final product at the design stage itself with the aid of computer. The final product can be modified easily according to the need of application. CREO (Formerly Pro/Engineer) is one of the most popular and powerful CAD packages available on PC platforms and also a general purpose CAD program for Part and Assembly Models. One can customize the powerful drawing tool to suit their specific application. This makes it essential for engineers to get an exposure to CREO package

**Objective of the Course:** The course is aimed at giving exposure to and enhancing the knowledge and skills of engineers involved in CAD packages and for those who want to provide training to others in this area. It gives exposure and on hand experience in the field of CAD, Part modelling, Assembly Modelling and Detailing

**Outcome of the Course:** The participants will be able to:

- Understand the concepts of CAD and CAD tools
- Design and create Part Models and Assembly Models
- Understand concepts 3D Modelling: Concepts, Wireframe, Surface, and Solid Modeling
- Create Engineering Drawings by using Part and Assembly models Share the data with other CAD Packages

**Course Structure:**

<i>Code</i>	<i>Module</i>	<i>Duration</i>	<i>Starting Date</i>
<i>CAD100</i>	<i>Computer Aided Design using CREO</i>	<i>4 Weeks</i>	<i>18th Feb 2019</i>

*Other Contents*

a. **Course Fees :**

**General Candidates:** Course fee is **₹8,000** including GST

**SC/ST Candidates:** Tuition Fees are waived for SC/ST students admitted under SCSP/TSP. However they are required to remit an amount of **Rs. 1000/- as Advance caution/security deposit**. This amount will be considered as caution/security deposit and will be refunded after successful completion of the course. If the student fails to complete the course successfully this amount along with any other caution/security deposits by the student will be forfeited.

**Modular wise Course Fee:** Not Applicable for this course

b. **Registration Fee:** Nil

c. **Course Fee Installment Structure:** Not Applicable for this course

d. Eligibility: B.E/B.Tech/Diploma/ in Mechanical, Production, Automobile, Tool & Die, Industrial engineering, Mechatronics, Electrical, Electronics and Allied branches (Final year students also may apply)

e. Number of Seats : 16

f. How to Apply :

Students are advised to apply online @<http://nielit.gov.in/content/online-registration>

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.

g. Selection of candidates : The candidates passed in the qualifying examination will be based on their marks obtained, subject to eligibility and availability of seats

h. Test/Interview: *Not Applicable*

i. Counseling/Admission : Starting date of the course

j. Spot Admission: Unfilled/vacant seats are filled through spot admission. Spot admission (if open) will close within **5** days of Counseling/Admission of a particular course. On spot admission students should provide an undertaking saying that he/she is fully aware that he/she missed so much days of class and will not ask for extra classes or further extension of course.

k. Admission Procedure :

Students who have been selected for test/interview/counseling/admission are required to report to the Institute on the prescribed day by 9:30 hrs along with the following

- **Original and attested Copies of Proof of Age, Qualifications, etc**
- **One passport size photograph and one stamp size photograph for identity card.**
- **SC/ST Certificate (Original and two attested copies, if applicable)**
- **Govt. issued photo id card (Aadhaar mandatory for SC/ST candidates. Original and one copy)**

l. Discontinuing the course: No fees (including the caution/security deposit) under any circumstances, shall be refunded in the event of a student discontinuing the course. No certificate shall be issued for the classes attended.

m. Course Timings : 11:00 Hrs to 17:00 Hrs (Excl Saturdays, Sundays and National Holidays - 13:00 Hrs to 14:00 Hrs Lunch break)

n. Location and how to reach:

NIELIT Calicut is located very close to NIT campus and is about 22Kms from the Calicut (Kozhikode) city. A number of buses (Buses to NIT via Kunnammangalam) are available from "Palayam Bus Stand and KSRTC Bus Stand". The bus stop at our Institute is called "Panthrand" and is one stop before NIT. The bus fare is around Rs.20/- from Calicut City to NIELIT.

Calicut (Kozhikode) is well connected by Rail, Road and Air form different parts of the country. The maximum and minimum temperatures range between 35°C and 20°C.

o. Course enquiries :

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

p. Important Dates:

Starting date:	<b>18.2.19</b>
Last date to submit application form:	<b>13.2.19</b>
Selection intimation in website:	<b>14.2.19</b>
Counseling/Admission	<b>18.2.19</b>
Commencement of class work:	<b>18.2.19</b>
Payment of Fee	<b>18.2.19</b>

q. Placement : Support shall be provided

r. Hostel facilities :

Hostel accommodation is available for boys and girls on monthly or daily chargeable basis. The hostel fee varies from Rs.1,400/- to Rs.1,500/- per month

depending on the type of accommodation. However, students are required to pay the hostel fees for the entire duration of the course for which they are seeking admission at the time of joining the course itself.

s. Boarding facilities :

Canteen & Mess facility is available for both boys & girls, students, those who avail mess facility should pay monthly mess fee @Rs.130/\*- per day. An amount of Rs.1,000/- should be paid as mess advance to the Canteen Contractor at the time of joining the mess which will be adjusted in the last month mess fee.

*\*as per the present rate of contract agreement*

An amount of Rs.3,000/- should be paid as caution deposit (hostel & mess) at the time of joining the hostel which will be refunded/adjusted at the end of the course. For students not availing hostel facility, Rs.1,000/- will be the caution deposit

t. Lab Facilities: Air-conditioned lab consists of CNC Machines Tools (Lathe and Milling), Industrial Robots, Image Inspection System, CREO 2.0, CIM software, PCs with higher RAM and Graphics cards

**Course Contents : Course Brief – CAD100 Certificate course in Computer Aided Design using CREO (Pro/Engineer)**

In today's competitive global market place, successful manufacturing industries find that the Computer Aided Design tools are no longer enough to maintain a competitive edge. Human element with specialized engineering and technical knowledge and skills has become the essential part of the equation. Hence we are offering this specialized training program on CAD for fresh graduate/diploma engineers to enhance their engineering knowledge and problem solving skills to help them become successful professionals in the respective fields.

The course is intended to bridge the gap between theoretical knowledge gained from the formal education and the sound practical approach with theoretical support required for an engineer in industry. The course enhances knowledge and skills in various aspects of CAD.

Computer Aided Design (CAD) is the most powerful tool in design and manufacturing industries with its reliability, flexibility, efficient and cost effective. With the CAD one can easily visualize and see the final product at the design stage itself with the aid of computer. The final product can be modified easily according to the need of application. CREO is one of the most popular and powerful CAD packages available on PC platforms and also a general purpose CAD program for preparing part modelling and assembly modelling. One can customize the powerful drawing tool to suit their specific application. This makes it essential for engineers to get an exposure to CREO package.

CREO (Pro/Engineer) is one of the most widely used CAD/CAM software programs in the world today. CREO (Pro/Engineer) is a parametric, feature based, associative solid modeler. It allows fully detailed, parametric designs to be built,

and provides facilities for handling all the associated drawings and materials. The complete package consists of a base module together with a large number of specialized modules addressing problems in different areas of engineering.

PTC positions CREO (Pro/Engineer) as the next generation of its flagship CAD/CAM/CAE solution. It includes a number of new and important capabilities that are described below. CREO (Pro/Engineer) represents a significant investment by PTC that has led to many new enhancements in their already strong product line. The strategy PTC has taken with CREO (Pro/Engineer) is to enhance the products suite's usability while adding capabilities that allow product developers to work more creatively in a number of areas.

## **Computer Aided Design**

The CAD course consists of the following sub modules:

### **CREO FUNDAMENTALS – 10 Hrs**

Fundamentals discusses the basic tasks in using CREO (Pro/Engineer), such as collaboration, managing data, working with the user interface, working with the model, design conferencing, and so on. Fundamentals introduce you to the basic terminology, tasks, and procedures so you can build your models efficiently and share information, ideas, and processes in real time. You will learn how to use data management tools, customize the user interface, work with your models, manage model composition, and use design conferencing.

### **PART MODELING – 40 Hrs**

Part Modeling lets you create a part from conceptual sketching through solid feature-based modeling, including the ability to build and modify your parts through direct and intuitive graphical manipulation. The Part Modeling area introduces you to the terminology, basic design concepts, and procedures that you must know before you start building your part. Part Modeling shows you how to draft your part's 2D conceptual layout, create precise geometry using basic geometric entities, and dimension and constrain your geometry. You will learn how to build a 3D parametric part out of a 2D sketch by combining basic and advanced features like extrusions, sweeps, cuts, holes, slots, rounds, and so on. Finally, Part Modeling provides procedures for modifying your part's features and resolving failures.

### **DETAILING – 20 Hrs**

Detailing lets you create and manipulate detailed engineering drawings that use your 3D model as a geometry source. With Detailing, you can pass dimensions, notes, and other elements of design between the model and its views on the plotted sheet. Use the Detailing area to learn about creating drawings directly from the solid model, customizing the drawings with sketched geometry, and making cosmetic changes to the drawings. Detailing shows you how to manipulate items in a drawing, annotate your drawings, and add different kinds of textual and symbolic information. You will learn how to create views and custom formats and how to use logic statements to control the look of the drawing.

### **ASSEMBLIES – 20 Hrs**

Assembly lets you design and manage assemblies, their features, and their components. With Assembly you can work with large, highly complex models. Use the Assembly area to learn about creating and manipulating your assemblies. Assembly shows you how to form assemblies by combining component parts designed specifically to fit together, model simple and compound in your assembly, and modify, analyze, or reorient your assembly. You will also learn to use specialized tools-such as skeletons, simplified representations, and interchange capabilities-to manipulate very large, complicated assemblies.

## **DATAEXCHANGE – 10 Hrs**

Data Exchange lets you share data with users of different CAD/CAM systems so that you can work together on a design. With Data Exchange, you can transfer data between CREO (Pro/Engineer) releases and modules, various PTC software applications, and other CAD products, such as CATIA. Use the Data Exchange area to learn about opening models from other CAD packages in CREO (Pro/Engineer), and about verifying and repairing imported data. Data Exchange shows you how to manipulate the imported models and automatically receive any changes made to the original models. In addition, you learn about numerous data formats that CREO (Pro/Engineer) supports.