

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 Dates**      7<sup>th</sup> October 2024

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

**Course Coordinator:** Rameshkumar MS, STO, Mob: 9446031433

**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

**Expected Job Roles:**

- Designer - CAD
- Product designer
- Technician - CAD

## Course Structure:

Sl. No	Module Title	Duration (Hours)			Credits	
		Theory	Lab	Total	Theory (Hrs/15)	Lab (Hrs/30)
1.	Introduction to CAD	2	8	10		
2.	Feature based modelling	7	28	35		
3.	Detailing	2	18	20		
4.	Design assembly	2	18	20		
5.	Data exchange	1	9	10		
6.	Internal Test	1	4	5		
	<b>Total Duration/Credits</b>	15	85	100	4 (Theory 1 + Practical 3)	

## Other Contents

### I. Course Fees :

Course fee is Rs **10,000** including GST

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

### II. Registration Fee:

An amount of Rs.1000/- (including **all taxes as applicable**) (nonrefundable) should be paid at the time of registering for the course.

This fee shall be considered as part of course fee, if the student joins the course. If a student register and pay for more than one course and join for any one course, all such amount will be adjusted against the course fee payable.

If the student does not join for the registered course / any of the registered courses, fee paid shall be forfeited.

However above the registration fee shall be refunded on few special cases as given below

- Course postponed and new date is not convenient for the student
- Course cancelled in advance, well before the admission date

### III. Course Fee Installment Structure:

Not Applicable for this course

### IV. 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)

### V. Number of Seats :16

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

**VII.** Test/Interview (*if applicable*) : *Not Applicable*

**VIII.** Counseling/Admission : Starting date of the course

**IX.** Important Dates (if applicable) :

Starting date:	<b>07.10.2024</b>
Last date to submit application form:	<b>02.10.2024</b>
Selection intimation in website:	<b>04.10.2024</b>
Counseling/Admission	<b>07.10.2024</b>
Commencement of class work:	<b>07.10.2024</b>
Payment of Fee	<b>07.10.2024</b>

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

**XI.** Placement : Support shall be provided

**XII.** Lab Facilities Air-conditioned lab consists of CNC Machines Tools (Lathe and Milling), Industrial Robots, Image Inspection System, CREO 8.0, CIM software, PCs with higher RAM and Graphics cards

## Course Contents:

### **Course Brief – CAD100 Certificate course in Computer Aided Design using CREO**

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

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