**Shri. Balasaheb Mane Shikshan Prasarak Mandal, Ambap‟s**

# ASHOKRAO MANE GROUP OF INSTITUTIONS

***Faculty of Engineering***

***VatharTarfVadgaon, Tal.Hatkanangle, Dist.Kolhapur***

**2021-2022**

**DEPARTMENT OF FINAL YEAR B.Tech**

**MECHANICAL ENGINEERING**



**A**

**SEMINAR REPORT ON**

**“CREO SOFTWARE”**

**Submitted by:**

**Name** Roll No.

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**Under Guided by :** Prof.M.G.Reddy

**Shri. Balasaheb Mane Shikshan Prasarak Mandal, Ambap‟s**

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# CERTIFICATE

Certified that the Seminar entitled **“CERO SOFTWARE”** a bonafide work carried out by**, PATIL AJAY DINKAR,** a partial fulfillment for the award of Degree of Bachelor of Technology in VII Semester of the **“DR.**

**BABASAHEB AMBEDKAR TEHNOLOGICAL UNIVERSITY, LONERE”** during the year **2021-2022**. The Seminar report has been approved as it satisfies the Academic requirement in respect of Seminar work prescribed for

**„BACHELOR OF TECHNOLOGY DEGREE‟**.

**Prof.M.G.Reddy Prof.Dr.H.V.Shete Prof.P.B.Ghevari**

**(Guide) (HOD) (Principal)**

**ACKNOWLEDGEMENT**

The sense of contentment and relation that accompanies the successful completion of the seminar “**Cero Software**” would be incomplete without mentioning the names of those people who helped us in accomplishing the seminar. Those people whose Constant guidance and encouragement resulted in its realization.

We take this opportunity to thank our Executive Director **Prof.P.B.Ghevari** for providing a healthy environment in the college that helped us in concentrating on the task.

We express a deep sense of gratitude to HOD **Prof.Dr.HV.Shete** for providing the inspiration required for taking the Seminar to its completion.

We convey our heart full thanks to our guide **Prof. M.G.Reddy** for the guidance and inspiration they had given during the course of completion of our seminar. We also thank all the staff member, teaching and non-teaching for helping us to accomplish this seminar.

Mr. Ajay Dinkar Patil

**Introduction:**

##### What Is Design?

Design is the human power to conceive, plan, and realize products that serve human beings in the accomplishment of any individual or collective purpose.

Usually considered in the context of applied arts, engineering. architecture, and other creative endeavors. Design is the creation of a plan or convention for the construction of an object or a system (as in architectural blueprints, engineering drawings, business processes, circuit diagrams and sewing patterns). [1] Design has different connotations in different fields (see design disciplines below). In some cases the direct construction of an object (as in pottery, engineering, management, cowboy coding and graphic design) is also considered to be design.

Designing often necessitates considering the aesthetic, functional, economic and sociopolitical dimensions of both the design object and design process. It may involve considerable research, thought, modeling, interactive adjustment, and re-design. Meanwhile. diverse kinds of objects may be designed, including clothing. graphical user interfaces, skyscrapers, corporate identities, business processes and even methods of designing.

Thus "design" may be a substantive referring to a categorical abstraction of a created thing or things (the design of something), or a verb for the process of creation, as is made clear by grammatical context.

### Types Of Design:

##### Adaptive Design

##### Development Design

##### New Design

##### Adaptive Design:

In most cases, the designer's work is concerned with adaptation of existing designs. This type of design needs no special knowledge or skill and can be attempted by designers or ordinary technical training. The designer only makes minor alternation or modification in the existing designs of the product

Example: the commonly used standard-model car is manufactured in different models to obtain high speed, style and various sizes. Similarly the different models of watches, clocks, televisions etc. In this adaptive design the initial product and final product are basically similar in their structures.

##### Development Design:

This type of design needs considerable scientific training and design ability in order to modify the existing designs into a new idea by adapting a new material or different method of manufacture.

Example: For example, by imposing I.C Engine principle to a cycle, motor cycle is invented. Similarly by combining the properties of some electronic goods, electronic watches are designed, then the motor cycles and electronic watches are developed designers. The final product in developed design may differ quite markedly from the initial product.

##### New Design:

The type of design needs lot of research, technical ability and creative thinking. Here, whatever be the product which has been designed in the first time is coming under new design.

Example: inventions of cycle, airplane etc. was all considered as new products (i.e. new designs) in their beginning period. Similarly, the invention of any new product in future may also be considered as new design.

**What Is Designing Software/Tools:**

Mechanical drafting is a specialist profession based on technical drafting and computer-aided drafting (CAD) that concentrates on blueprints of machines and machine components used by engineers. Mechanical drafting courses can help students develop basic drafting techniques, as well as knowledge of machine components and manufacturing processes. Read on to explore some courses in detail.

### WHAT ARE THE DESIGNING SOFTWARE/TOOLS:

##### AUTO-CAD CAM

##### CIM

##### CATIA

##### JANSYS

##### MATLAB

##### PRO-E

##### SOLIDWORKS etc

### Creo Parametric Software:

Creo is a family of Computer-aided design (CAD) apps supporting product design for discrete manufacturers and is developed by PTC. The suite consists of apps, each delivering a distinct set of capabilities for a user role within product development.

Creo runs on Microsoft Windows and provides apps for 3D CAD parametric feature solid modeling, 3D direct modeling, 2D orthographic views, Finite Element Analysis and simulation, schematic design, technical illustrations, and viewing and visualization. Creo can also be paired with Mastercam (Machining based software) to machine any designed model in a minimal timeframe, Creo has increased the rate of rapid prototyping in the industry tremendously.

### Software and features:

Creo Elements and Creo Parametric compete directly with CATIA, Siemens NX/Solid Edge, and SolidWorks. The Creo suite of apps replace and supersede PTC’s products formerly known as Pro/ENGINEER, CoCreate, and ProductView. Creo has many different software package solutions and features. Creo Illustrate is a good example. Creo Parametric allows users create 3D models with many features such as sweeps, revolves and extrusions. This makes it one of the leading cad softwares that is in use for many engineering and technical based careers.

PTC began developing Creo in 2009, and announced it using the code name Project Lightning at PlanetPTC Live, in Las Vegas, in June 2010.[2] In October 2010, PTC unveiled the product name for Project Lightning to be Creo.[3] PTC released Creo 1.0 in June 2011.[4] PTC Creo has a headquarters located inside the innovation district of Boston, Massachusetts.

There are also numerous locations all across the United States.System requirements for PTC Creo are relatively low, it is offered for windows 8 and 10. The CPU requirements are Intel Core, Intel Xeon, Intel Celeron, Intel Pentium, AMD Athlon, AMD Opteron. Video display requirements are any 3D capable graphics cards with openGL support. 4 gigabytes of RAM is required to run PTC Creo Parametric, as well as a minimum of 2 gigabytes of hard disk space. Creo also has 24/7 online support to assist any user with questions. Creo requires active internet when being used to be able to refresh and connect to the Creo servers.

Creo apps are available in English, German, Russian, French, Italian, Spanish, Japanese, Korean, Chinese Simplified, and Chinese Traditional. The extent of localization varies from full translation of the product (including Help) to user interface only.

Creo is part of a broader product development system developed by PTC. It connects to PTC’s other solutions that aid product development, including Windchill for Product Lifecycle Management (PLM), Mathcad for engineering calculations and Arbortext for enterprise publishing software.

### Release history:

|  |  |
| --- | --- |
| **Version** | **Release date** |
| Creo 1.0 | 6 January 2011 |
| Creo 2.0 | 27 March 2012 |
| Creo 3.0 | 17 March 2014 |
| Creo 4.0 | 15 December 2016 |
| Creo 5.0 | 19 March 2018 |
| Creo 6.0 | 19 March 2019 |
| Creo 7.0 | 14 April 2020 |
| Creo 8.0 | 14 April 2021 |

### Creo Parametric’s Application :

##### 3D Design

##### Industrial Design

##### Concept Design

##### Product Design

##### Simulation

### Modules :

##### Sketcher

##### Part Modelling

##### Assembly

##### Surface

##### Sheet Metal

##### Detailing

### Sketcher Module :

##### Sketcher Entities

##### 

##### Line Rectangle

##### Circles Arcs

##### Ellipse Splines etc

##### Dimension Attached to the Entities

##### Constraints Can Beadded

##### 

##### Equality Tangency

##### Symmetry Collinear etc

### Advantages of Creo Parametric :

1. Optimised for model-based enterprises
2. Increased engineer productivity
3. Better enabled concept design
4. Increased engineering capabilities

1. Increased manufacturing capabilities
2. Better simulation
3. Design capabilities for additive manufacturing

### ADVANTAGES OF DESIGNING SOFTWARE/TOOLS:

1. Save time and money and reduce errors with the dynamic engineering model.

2. Reduce purchase, deployment, and support costs with one complete solution.

3. Increase value to client by delivering more design alternatives in less time.

4. Take full advantage of existing AutoCAD skills to get up to speed quickly.

5. Create production sheets faster. 6. Be sure that production drafting is always in sync with your design.

7. Complete projects faster and reduce the chance of coordination errors using the Civil 3D project environment.

8. Exploit data compatibility.

9. Build a foundation for your custom solution.

10. Clearly communicate design intent and complete final proposals with realistic 3D rendering.

### DISADVANTAGES OF DESIGNING SOFTWARE/TOOLS:

There are two primary limitations to CAD CAM restorations. (Like Cerec and E4D) It is not yet possible to do multiple unit bridges and the esthetics is limited. The esthetics has improved dramatically from the early days as the quality of materials has improved. Multi shade material blocks can duplicate dentin and enamel shades. Never the less, CAD CAM is not suited for highly esthetic situations.

It is possible to create a CAD CAM veneer, cut it back and add baked porcelain to create a superior esthetic result. However this requires a skilled technician working in a traditional porcelain studio with lots of time.

The primary limitation for most dentists is the cost. A single system is well over $100,000. That is a huge investment for the typical dentist.

However it is possible to justify the investment based on lab savings

and time saved with no second appointment. For dentists who are already doing a lot of indirect posterior onlays and crowns it is a natural fit.

But it could be a stretch for offices that still do a lot of amalgams.

Application Complexity.Processing Power Limitations and Cost, The stored data maybe lost in cases of computer related errors. Incorrect results may be obtained if the designs are not examined properly.CAD software and hiring of CAD designer is expensive.For proper operation training is required. All the ideas may not be converted into designs due to lack of tools.Introduction of CAD to existing design teams may marginalize talented designers who are not computer savvy.

### Conclusion :

From this seminar report, we have got the idea of mechanical designing software/tools and its various types with their advantages and disadvantages. The largest investment in CAD technology will come not in the initial purchase, but in the time invested after purchase. A successful CAD implementation will change the way a roof consultant works and prepare him or her for the future.The mechanical designing software/tools in the future will be more easy to use and learn, and geared to enhance concept design and construction planning, will be functional and powerful enough to satisfy the needs of engineering design and integration of all disciplines, and corporate functions, sectors and levels. It will be more than 2D drawings and more than 3D models, it has to handle Object and Symbolic Data with same ease.

It will be a 4D (3D +time) modelling tool for better planning and scheduling. It will allow designers to exploit the best advantages of each CAD Technology 2D -> 3D -> 4D, to progressively refine the design until fully satisfying the customers' needs. It will be efficient to store, locate, visualize, and re-use data for integration of proven designs, and standard parts and equipment. It will enhance simultaneous (collaborative and concurrent) and distributed engineering eliminating all barriers that constrain communications. It will share one "data factory" that creates data needed by all disciplines.

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**THANK YOU.**