

CAD/CAM LABORATORY

CAD/CAM (computer-aided design and computer-aided manufacturing) refers to computer software that is used to both design and manufacture of products. CAD is the use of computer technology for design and design documentation. CAD/CAM applications are used to both design a product and program manufacturing processes, specifically, CNC machining. CAM software uses the models and assemblies created in CAD software to generate tool paths that drive the machines that turn the designs into physical parts. CAD/CAM software is most often used for machining of prototypes and finished parts.



Recent advances in CAD software, computers, and graphical displays have made it possible to use solid representations of components being considered in the design process. These solid models can be employed in numerous ways. Advantages of Solid Modeling a realistic visual display: By producing a shaded visible surface image of the solid, solid modeling allows a designer to see exactly what has been created. Easy to deal with different views: Once a part has been created, we have the ability to rotate, shade, section, or produce almost any view required by a designer. Single associated model database: The solid modeler provides the only database suitable for all CAD operations. Almost all information needed for part generation is contained in the solid. Design and Technology education has to reflect modern practice so it is crucial that students have the opportunity to use real CAD/CAM tools in their designing and manufacturing.

I. DESIGN PROCESS AND ROLE OF CAD

1. Recognition of need
2. Definition of problem
3. Synthesis
4. Analysis and optimization
5. Evaluation
6. Presentation
7. SOLID MODELING REQUIREMENTS FOR MODELING ASSEMBLING

II. LIST OF SOFTWARES:

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| 1 | ANSYS17 | 5 | EDGE CAM |
| 2 | SOLIDWORKS17 | 6 | Gibbs CAM |
| 3 | CREO 3.0 | 7 | Algor Nastran |
| 4 | AutoCAD | 8 | CATIA |
| 5 | Solid Edge | 9 | AutoDesk Inventor |

III. LIST OF EQUIPMENTS:

1. CNC LATHE
2. CNC MILLING