



SNS COLLEGE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION)

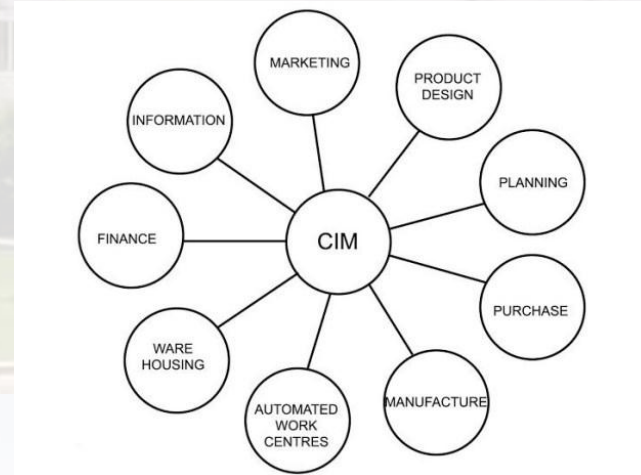
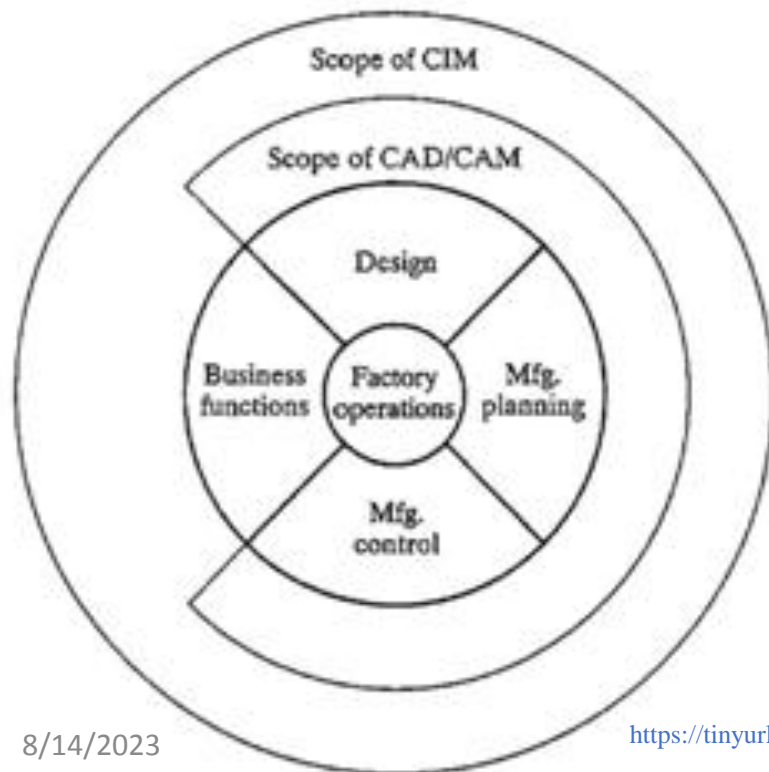


Department of Mechanical Engineering

CAD/CAM and Automation

Unit – I

Need for CAD/CAM/CIM



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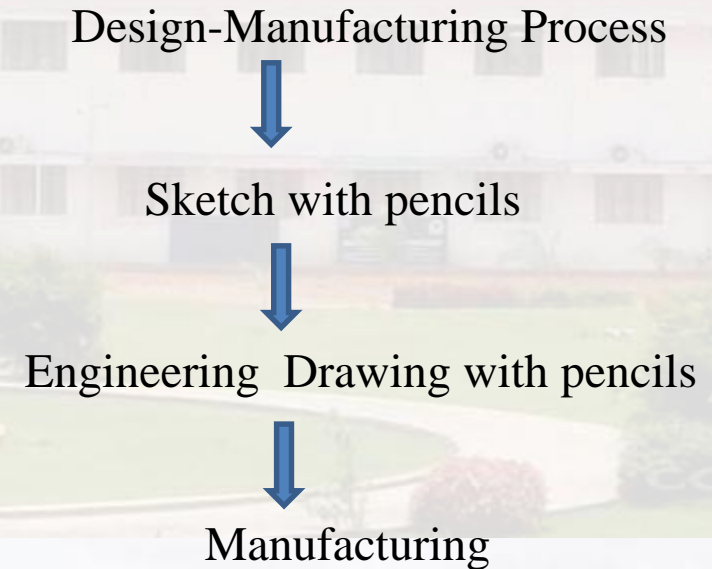
SNS College of Technology, Coimbatore



Need for CAD/CAM/CIM



- To increase productivity of the designer
- To improve quality of the design
- To improve communications
- To create a manufacturing database
- To create and test toolpaths and optimize them
- To help in production scheduling and MRP models
- To have effective shop floor control

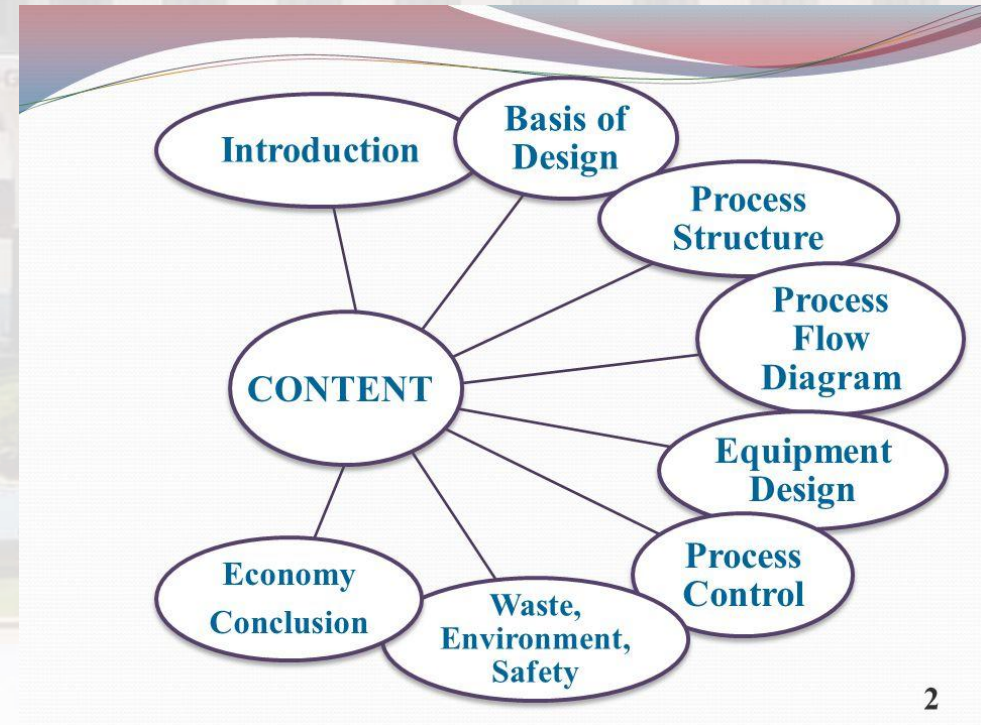




Elements of Design the Process



- Problem Identification
- Research Phase
- Requirements Specification
- Concept Generation
- Design Phase
- Prototyping Phase
- System Integration
- Maintenance Phase

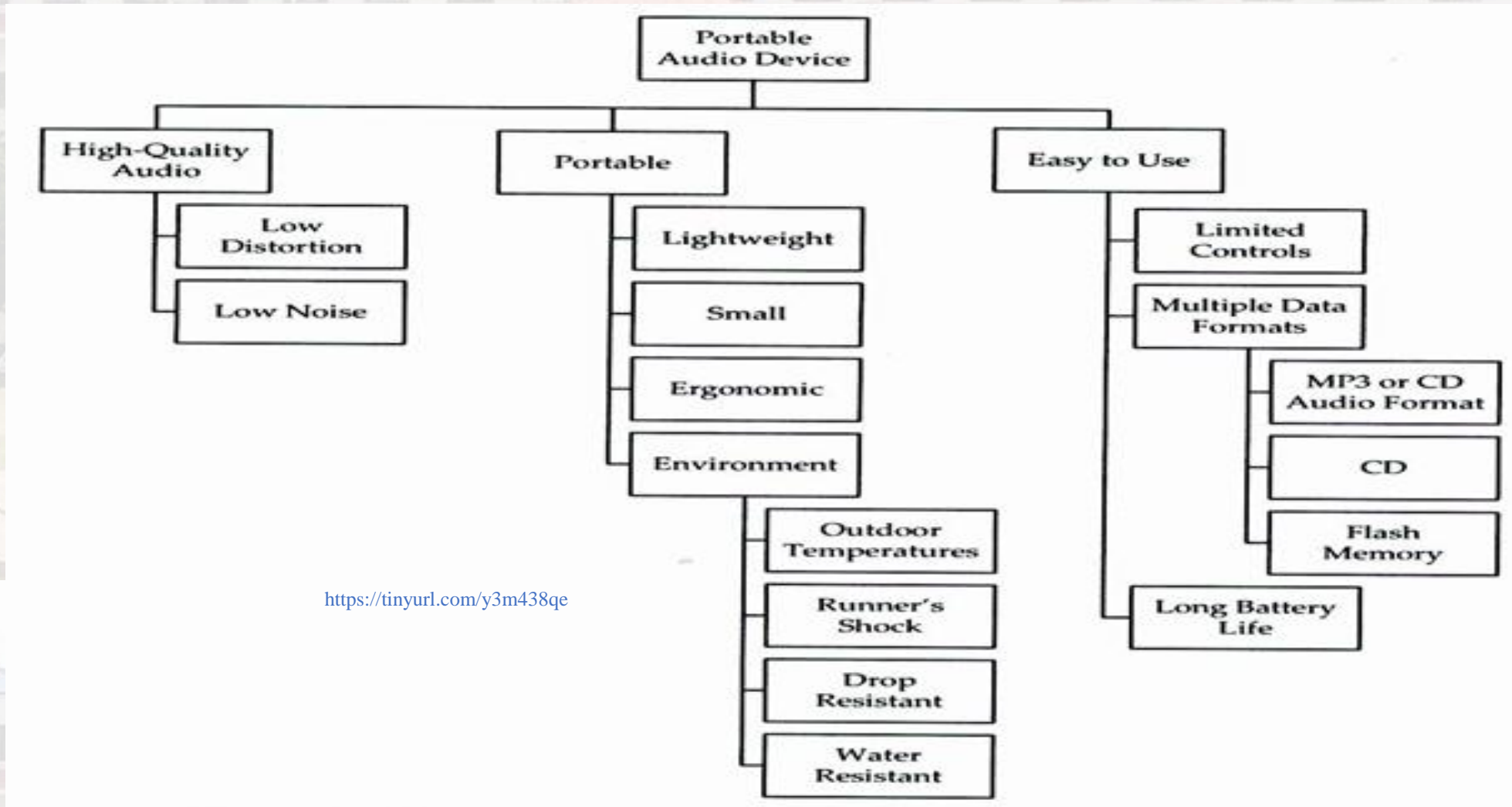


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<https://tinyurl.com/y3m438qe>



Needs Hierarchy



<https://tinyurl.com/y3m438qe>



Benefits of CAD

1. Productivity Improvements In Design
2. Shorter Lead Time
3. Design Analysis
4. Failure Design Errors
5. Flexibility In Design
6. Standardization Of Design Drafting And Documentation
7. Drawings Are More Understandable
 - 2 D View
 - 3d View.
8. Improved Procedure For Engineering Changes
 - Easily Collect From Database
9. Benefits Of Manufacturing
 - Capp
 - Tool and Fixture Design



Uses of CAD



- Cad is used to design a variety of different products for variety of fields such as
 - Architecture
 - Electronics
 - Automotive engineering
 - Industrial design
 - Machinery
 - Visual art
 - Medical design



Computer Integrated Manufacturing

A process of integration of CAD, CAM and business aspects of a factory. It attempts complete automation with all processes functioning under computer control.



<https://tinyurl.com/y3m438qe>



Main Applications of Computer Aided Manufacture (CAM)



1. PLOTTERS/CUTTERS
2. LASER CUTTING
3. 2.5D MILLING
4. 3D MILLING
5. TURNING
6. 3D PRINTING



Main Applications of Computer Aided Manufacture (CAM)



The key benefits of CAD/CAM ·

- Increased range of design ideas
- Improved accuracy
- Ease of modification
- Repeatability of output
- Quality of output
- Reduction of wastage



Assessment



1. List out the international organizations involved developing the graphics standards?
2. List out the various standards in graphics programming?
3. Define IGES, DXF and STEP
4. Write down the names of different software used in design?
5. What are the Benefits of CAD?



THANK YOU