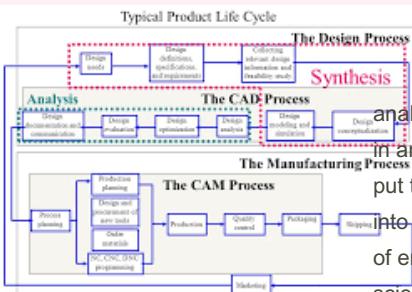


UNIT !	phases in product cycle (cont)	design process
<p>product life cycle begins with the need of customer's and market's demands.</p> <p>the two main processes include design and manufacturing.</p> <p>sub process of design includes synthesis and analysis and sub process of manufacturing includes process planning and production.</p>	<p>during synthesis the design takes the form of sketches or 3d representation to show the relation between various product parts.</p> <p>the panner works with blueprints from the design team and may communicate to clarify changes in the design to fit manufacturing methods</p>	<p>it is the formulation of plan to help an engineer to build a product.</p> <p>the fundamental elements of design includes, establishment of objectives and criteria, synthesis, analysis, construction, testing and evaluation.</p>
product life cycle image		
	 <p>The diagram illustrates the Typical Product Life Cycle, divided into three main phases: Analysis, Synthesis, and Manufacturing. The Analysis phase involves requirements gathering and specification. The Synthesis phase involves design and engineering. The Manufacturing phase involves production, quality control, and delivery. Within these phases, there are sub-processes: The Design Process (Analysis, Synthesis, Manufacturing), The CAD Process (Design, Analysis, Synthesis, Manufacturing), The CAM Process (Manufacturing), and Process planning (Analysis, Synthesis, Manufacturing). The diagram shows the flow from Analysis to Synthesis to Manufacturing, with feedback loops and a final delivery step.</p>	
phases in product cycle	design phase	manufacturing phase
philosophy, functionality and uniqueness of the product falls under synthesis	the backbone of manufacturing is process planning as it attempts to determine the most efficient sequence to produce the product	<p>the outcome of analysis and design is the design documentation in the form of engineering drawings</p> <p>once the PP is complete the production starts. the parts are inspected for quality stds requirements, assembled, packed, labeled and shipped</p>
		<p>market feedback is usually done under the design process, with this feedback the product loop cycle is closed.</p>
ENGINEERING DESIGN PROCESS		
	CONCEPTUAL DESIGN	EMBODIMENT DESIGN
	SHIGLEY'S DESIGN PROCESS	
	identification of customer needs	production architecture
	problem definition	definition of problem
	gathering info	parametric design
		analysis and optimization
	conceptualization	evaluation
	concept	presentation
	<p>engineering design is a multistep process including the research, conceptualization, feasibility assessment, establishing design requirements, preliminary design, production planning, and tool design and enters the reproduction phase.</p>	