3D PRINTING OVERVIEW

Manufacturing Technologies

Something That Moves Something, created by Ohad Meyuhas, architect

Stratasys® | Education

IN THIS LESSON

We'll review four manufacturing technologies.

Subtractive manufacturing

Additive manufacturing

Cutting
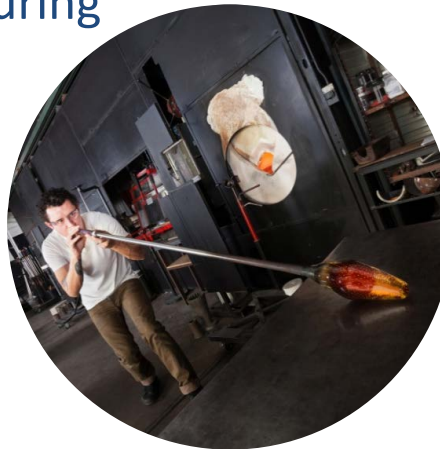
Forming

CUTTING MANUFACTURING

DEFINITION	A process of making products from varying materials using cutting tools such as laser cutters, vinyl cutters, razors and water jets.
USES	• Modeling 2D products • Modeling relatively simple products
ADVANTAGES	• Relatively simple to manufacture and operate • Simple 2D file input • Quick fabrication • Can be used with multiple materials • Low material waste
EXAMPLES	

LASER CUTTING

SUBTRACTIVE MANUFACTURING

DEFINITION	A process of making products by removing material from a solid object
USES	• Creating 3D models and tooling • Cutting "2D elements" in stronger or thicker materials which require a stronger machine
ADVANTAGES	• Traditional, well-known method • Long history of use • Relatively simple to manufacture • Milling bits are relatively low-cost • Can be used to model strong/thick materials
EXAMPLES	➡

DRILLING

FORMING MANUFACTURING

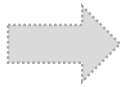| DEFINITION	A material deformation process that reshapes a work piece without reducing or adding material
USES	• Special materials
ADVANTAGES	• Traditional, well-known method • Long history of use • Reducing storage space
EXAMPLES	

GLASS BLOWING

ADDITIVE MANUFACTURING

DEFINITION	A process for making 3D products by primarily adding material rather than removing it. It has become synonymous with 3D printing.
USES	• Prototyping and tooling • Complex designs • Modeling that requires interlocking parts
ADVANTAGES	• Design freedom • Closed systems • Quick production • Less waste • Low-cost manufacturing • Multiple materials (PolyJet) • Real thermoplastics (FDM)
EXAMPLES	

3D PRINTING

LEGAL

Thank you.

Stratasys® | Education