
Equipment List

Industrial Manufacturing

Plastics Manufacturing - Option B

CIP No. 15.0600

The Industrial Manufacturing classroom should reflect the equipment and environment students would expect to find in industry. This list includes some “consumables” that may or may not be eligible for funding.

Computer Equipment

Computers with sufficient memory and removable storage, peripherals and printers (minimum of 1 computer per 2 students)

Minimum specifications:

P4 – 1Ghz

512M RAM

80GB Hard Drive

DVD CDRW

AGP 2X 3D Graphics card with 8MB Video Memory (software compatible)

24-bit sound card

SVGA color monitor

20TX Ethernet with RJ45 connector

Digital projection system with dedicated computer

Computer Numerically Controlled (CNC) machining equipment with dedicated computer

Surge Suppressers

Computer & Engineering Software Resources

Dimensional Calculations and Conversions software with manuals

Computer Aided Design and Drafting (CADD) software with manuals (AutoCAD recommended)

Computer-Numerically Controlled (CNC) software, with manuals

Data collection and analysis software (MS Excel, Minitab, LabVIEW recommended)

ERP/MRP software and manuals (Fourth Shift, DataWorks recommended)

General productivity software, general utility software and Internet browsers

Project Management software, with manuals (MS Project, Visio, Concerto recommended)

Time Management software with manuals (Outlook, Groupwise, Lotus Notes recommended)

Solid Modeling software and manuals (Pro-Engineer, SolidWorks, Catia recommended)

Word processing software, with manuals (MS Office Pro XP recommended Including Access/Excel/PowerPoint/Word)

Automated Manufacturing/Manufacturing Execution Systems (MES) software and manuals (PROMIS or Factoryworks recommended)

Robotics and Materials Handling Software and manuals

Plastics Technology software and manuals

Rapid Prototyping software and manuals (Rapid Prototype recommended)

Trainers (or equivalent equipment)

Basic Logic Trainer
CNC Trainer
Electronics Trainer
Hydraulics Trainer
Mechanical Trainer
Pneumatics Trainer
Programmable Logic Controller (PLC) Trainer
Robotic Arm on Slide Base
SPC Miniprocessor

Safety

First Aid Station or Kit
Flammable Liquid Storage Cabinet
Hearing Protection
Lockout/Tag Out devices
Protective Clothing (coveralls, aprons, sleeves, etc. as needed)
Respiratory Protection
Safety Cabinet (OSHA and EPA compliant)
Safety & Environmental Labels (Fire/Explosives Diamonds)
Safety Glasses, Goggles, and Face Shields
Steel Toe Shoes (Toe Caps)
Variety of Material Data Safety Sheets (MSDS)
Work Gloves

Tool Room/Prototyping Lab

Air Compressor (stationary or portable)
Annealing Oven
Assortment of boring bits
Assortment of drill bits
Assortment of files
Assortment of hammers
Assortment of saw blades
Assortment of tape measures, rules and digital measuring tools
Cans, Oily Waste, Safety
Cans, Solvent Dispensing
Clamps
Diagonal Cutter
Dremel High Speed Drill Set
Drills, portable power
Knives
Levels
Machinable Wax
Magnifying Lens

Tool Room/Prototyping Lab (con't)

Miter saw box
Miter vice (clamp)
Nut Driver Set
Pliers (slip-joint, long nose, diagonal, etc.)
Rapid Prototyping Machine (optional)
Rasps, various sizes
Sanders
Saws, circular portable, saber, hand
Screwdrivers, Flat head, Phillips and Jewelers
Shop Vacuum
Sliding T bevel
Snips
Socket Set
Squares, (e.g., tri, flat steel and combination)
Wrenches, assorted sizes, standard and metric, Hex Key

Test and Measurement

Bore gauges
Calipers, interior, exterior, digital
Dividers
Engineer scale
Coordinate Measuring Machine (CMM)
Granite Block
Height/Depth Gauge Set
Impact Tester
Marking gauges
Micrometers (to .001", digital)
Microscope
Oscilloscope
Spectrophotometer
Stress Analyzer
Tensile/Compression Tester
Thickness Gauge
Triple Beam Balance
Ultrasonic Tester

Option B: Plastics Manufacturing Lab

Blow Molder
Chillers
Cutters (Gate, Hot Wire, Thermo, Plastic trimming, PVC, etc.)
Densitometer
Die Heaters
Drilling and Tapping center
Dryer
Extensiometer
Extruder
Extrusion Welding Gun
Gripper, Pneumatic
Heat Bender
Heat Gun
Hot Stamp Foil Machine
Injection Molder with nozzles
Material Grinder
Melt Flow Indexer
Molds
Pelletizing System
Plastic Strip Heater
Plastometer
Transfer Molder
Ultrasonic Welding Equipment
Vacuum Former

Consumables:

Abrasives
Anti-static spray
Glue
Mold Release Agents, Cleaners
Plastic Cleaner
Polishing supplies
Plastics Sheet Materials
Plastics Powdered Materials