

## Alabama CTE Equipment List

This list is based on a classroom size of 25 students and meets minimum standards. All costs are estimated. No specific equipment vendor or brand names are endorsed, but school districts should consult with stakeholders to ensure industry-recognized equipment and software are purchased. The intent of this list is to provide school districts with guidance on the equipment needed to cover the state standards for a Precision Machining program and are not meant to dictate the number of students that can safely fit in a classroom and/or laboratory.

**Cluster: Manufacturing**  
**Program: Precision Machining**

**CLASSROOM EQUIPMENT**

TOTAL: \$11,700

| QUANTITY | ITEM DESCRIPTION  | UNIT    | TOTAL   |
|----------|---|---------|---------|
| 5        | Computer/Device with Current Operating System   | \$1,000 | \$5,000 |
| 1        | Copy Machine, own or have accessibility to use  | \$500   | \$500   |
| 3        | File Cabinets   | \$100   | \$300   |
| 1        | Industry related (simulation) software package  | \$2,500 | \$2,500 |
| 1        | Laser Printer, color  | \$300   | \$300   |
| 1        | Scanner   | \$600   | \$600   |
| 1        | Technology- LCD projector or TV/Computer connection and/or overhead projector with video streaming capability | \$2,500 | \$2,500 |

**PROGRAM EQUIPMENT (Items over \$250)**

TOTAL: \$38,920

| QUANTITY | ITEM DESCRIPTION   | UNIT     | TOTAL    |
|----------|--|----------|----------|
| 1        | Cleaning/Chemical Cabinet, locked  | \$250    | \$250    |
| 6        | Drill Press (Bench or Floor Type)  | \$400    | \$2,400  |
| 1        | Engine Lathe with Quick-charge Gearbox and Thread-chasing Dial (Recommended Size: 14" x 30") | \$12,000 | \$12,000 |
| 1        | Fire Extinguisher (ABCK)   | \$270    | \$270    |
| 1        | Horizontal Spindle Surface Grinder for Wheels 10' (or more)                                  | \$9,000  | \$9,000  |
| 1        | Vertical Universal Milling Machine (Bridgeport-type-12" x 36" Table)                         | \$15,000 | \$15,000 |

**INSTRUCTIONAL SUPPLIES (Items under \$250)**

TOTAL: \$14,429

| QUANTITY | ITEM DESCRIPTION                       | UNIT | TOTAL |
|----------|--|------|-------|
| 3        | 2' Level                               | \$10 | \$30  |
| 6        | Adjustable Parallels                   | \$30 | \$180 |
| 6        | Adjustable Wrench                      | \$15 | \$90  |
| 6        | Allen Wrench Set                       | \$20 | \$120 |
| 6        | Angle Plate or Precision Grinding Vise | \$30 | \$180 |

|    |   |       |         |
|----|---|-------|---------|
| 6  | Assorted Grinding Wheels  | \$40  | \$240   |
| 6  | Assorted Stub Drills (3/4" – 1" in diameter)                      | \$60  | \$360   |
| 6  | Assorted Wrenches for Lathe and Tool Holders (with Machine)       | \$50  | \$300   |
| 1  | Bloodborne Pathogen Kit   | \$50  | \$50    |
| 6  | Boring Bar and Holder   | \$70  | \$420   |
| 5  | Boxes of 8.5" x 11" Paper   | \$40  | \$200   |
| 6  | Burr Knife or Scraper   | \$25  | \$150   |
| 50 | Center Drills   | \$5   | \$250   |
| 6  | Chamfering Tool Sets (Assorted Diameters and Chamfer Angles)      | \$35  | \$210   |
| 6  | Chuck Cleaning Tools (Brushes, Shop Rags, Vacuum Cleaner, etc.)   | \$10  | \$60    |
| 10 | Cutt-off/Grooving Tool (1/8")                                     | \$7   | \$70    |
| 6  | Drill Chuck with Key and Sleeve for Tailstock Mounting            | \$30  | \$180   |
| 6  | Drill Press: 6" Dividers  | \$10  | \$60    |
| 6  | Drill Press: Assorted Wrenches                                    | \$20  | \$120   |
| 6  | Drill Press: Counter Sinks (1/2")                                 | \$20  | \$120   |
| 6  | Drill Press: Counter Sinks (5/16")                                | \$20  | \$120   |
| 6  | Drill Press: Drill Vise or other Appropriate Work Holding Device  | \$50  | \$300   |
| 6  | Drill Press: Height Gauge or Surface Gauge with Scriber Point     | \$40  | \$240   |
| 6  | Drill Press: Jobber's Link Drills (1/4", 1/2", 5/16", and 25/64") | \$80  | \$480   |
| 6  | Drill Press: Machine Tap Set for 3/8" – 16 Thread                 | \$50  | \$300   |
| 6  | Drill Press: Mill File or Burr Knife, Scraper, etc.               | \$20  | \$120   |
| 6  | Drill Press: Reamers (Assorted Sizes)                             | \$100 | \$600   |
| 6  | Drill Press: Tapping Fluid  | \$30  | \$180   |
| 2  | Dust Pans   | \$10  | \$20    |
| 6  | Edge Finder   | \$20  | \$120   |
| 3  | Eye Protection (Pack of 12)                                       | \$15  | \$45    |
| 3  | Fire Blankets (with Case)   | \$100 | \$100   |
| 3  | Flammable Material Storage Locker                                 | \$200 | \$600   |
| 2  | Floor Squeegee  | \$20  | \$40    |
| 6  | Four-jaw Independent Chuck (with Machine)                         | \$62  | \$372   |
| 2  | Garbage Can (mobile)  | \$75  | \$150   |
| 1  | Hazardous Skill Response Kit                                      | \$50  | \$50    |
| 6  | HSS End Mills (Assorted Sizes)                                    | \$80  | \$480   |
| 6  | Inserted Carbide Face Mills (2")                                  | \$70  | \$420   |
| 6  | Magnetic Chuck (Pre-dressed)                                      | \$200 | \$1,200 |
| 6  | Master Square and/or Magnetic Square                              | \$40  | \$240   |
| 6  | Micrometer (6")   | \$100 | \$600   |
| 2  | Mop   | \$20  | \$40    |
| 1  | Mop Bucket  | \$50  | \$50    |
| 6  | Number Stamp Set  | \$30  | \$360   |

|    |  |       |       |
|----|--|-------|-------|
| 1  | OSHA "Right to Know" Compliance Kit  | \$100 | \$100 |
| 20 | Pre-ground Carbide Tool Bits (Straight-turning, Shoulder-turning, Facing, and Thread-cutting)                                | \$6   | \$120 |
| 6  | Right and Left Hand Turning Tools (Capable of Turning to a Square Shoulder)  | \$37  | \$222 |
| 4  | Safety Can (Solvents, Rags, etc.)  | \$100 | \$400 |
| 6  | Shop Brooms  | \$20  | \$120 |
| 6  | Soft-faced Hammer  | \$15  | \$90  |
| 6  | Soft-jaw Chuck (with Machine)  | \$60  | \$360 |
| 6  | Spiders for Chucks (with Machine)  | \$60  | \$360 |
| 3  | Storage Cabinets   | \$100 | \$300 |
| 6  | Surface Finish Specimen Plates   | \$25  | \$150 |
| 6  | Telescoping Gauge Set or ID Calipers (to 2")   | \$50  | \$300 |
| 50 | Tool Blanks to Produce an Internal Threading Tool  | \$6   | \$300 |
| 50 | Tool Blanks to Produce External Threading Tool   | \$6   | \$300 |
| 6  | Tool Holders for Left and Right Hand Turning Tools, Grooving Tools, and Internal and External Threading Tools (with Machine) | \$60  | \$360 |
| 6  | Tool Post and Tool Holders for Turning, Facing, Cutting-off/grooving, and Threading (with Machine)                           | \$40  | \$240 |
| 6  | T-Slot Cleaner   | \$5   | \$30  |
| 6  | Wheel Dressing Tool with Appropriate Holder or Fixture   | \$10  | \$60  |

#### OPTIONAL EQUIPMENT/SUPPLIES

| ITEM DESCRIPTION              |
|-------------------------------|
| CNC Lathe with Tooling        |
| CNC Milling with Tooling      |
| CNC Software                  |
| CNC System                    |
| Precision Machining Simulator |

#### Category Totals:

|                                |                 |
|--------------------------------|-----------------|
| Classroom Equipment            | \$11,700        |
| Program Equipment              | \$38,920        |
| Instructional Supplies         | \$14,429        |
| <b>Estimated Program Total</b> | <b>\$65,049</b> |