

**Tri-County Technical College**  
**Technical Advanced Placement (TAP) Program**  
**Competency Verification and Teacher Recommendation Form**  
**Machine Tool Technology Program**

**SECTION I** (To be completed by the *student*)

Please complete this section of the form and give it to your Machine Shop teacher.

Your Name (*PLEASE PRINT*): \_\_\_\_\_ SSN: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

High School: \_\_\_\_\_ Grade: \_\_\_\_\_

**SECTION II** (To be completed by the *teacher*)

For the courses initialed below, I verify that this student has mastered the major course competencies listed on the back of this form (signifying mastery of all sub competencies shown on the syllabi for the designated courses, which were provided and reviewed during the annual Industrial and Engineering Technologies Articulation committee meeting), and I therefore recommend this student to enroll in the appropriate transition course sequence required for Technical Advanced Placement credit.

\_\_\_\_ MTT 121/122 (Machine Tool Theory I: Machine Tool Practice I)  
transition course sequence: MTT 123 and MTT 124

\_\_\_\_ MTT 123/124 (Machine Tool Theory II: Machine Tool Practice II)  
transition course sequence: MTT 125 and MTT 126

\_\_\_\_ MTT 125/126 (Machine Tool Theory III: Machine Tool Practice III)  
transition course: MTT 222 (Tool and Diemaking Practice I)

Teacher Name (*PLEASE PRINT*): \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name of high school course(s) in which this student gained the required competencies for possible TAP credit:

\_\_\_\_\_

Date of course completion or expected completion: \_\_\_\_\_

Comments (if applicable): \_\_\_\_\_

\_\_\_\_\_

**Please make a copy of this form for your records and mail the original to: Mr. Dave Walker, MTT Program Coordinator, Tri-County Technical College, P.O. Box 587, Pendleton, SC 29670. (Questions regarding TAP procedures for Machine Tool Technology should be directed to Mr. Dave Walker, at 646-8361, ext. 1415.)**

Ab: 3/9/06

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## Major Course Competencies

### MTT 121 and 122 (Machine Tool Theory I; Machine Tool Practice I)

- § explain and use safe shop practices
- § measure with a machinist's rule, micrometers, gage blocks, height gages, and vernier calipers
- § evaluate cutting conditions and calculate the proper speeds and feeds for lathe, milling, and drilling operations
- X operate correctly a pedestal grinder, drill press, and metal cutting saw
- X perform facing, turning, knurling, threading, and taper cutting operations on a lathe
- X identify and use holding, striking, assembling, and hand-type cutting tools
- X operate a vertical milling machine to mill sides, slots, keyseats, and angles
- X use basic layout materials, tools and accessories

### MTT 123 and 124 (Machine Tool Theory II; Machine Tool Practice II)

- X compare and use different types of comparison measuring instruments
- X follow the proper procedure for reaming a hole accurately
- X select the proper grinding wheel and set up and operate a surface grinder to grind surfaces flat, parallel and perpendicular
- X recognize carbide cutting tools, their advantages and disadvantages, and their proper use
- X make the necessary calculations and set up a dividing head on a horizontal milling machine to mill a specified number of equally spaced slots around the circumference of a cylinder

### MTT 125 and 126 (Machine Tool Theory III; Machine Tool Practice III)

- X set up and machine a part on a rotary table
- X identify various types of gears and apply formulas for calculating gear-tooth dimensions
- X compare the different types of cams and followers and calculate the lead and angle of inclination for milling a cam on a vertical milling machine
- X explain the principle and purpose of ecm, electrolytic grinding, and edm, and identify the various components and their functions in each of these systems
- X set up and operate a cylindrical grinder
- X operate a vertical milling machine to perform boring operations