

## ADMISSION POLICY

### A. Applicants Not Enrolled in High School

Applicants not enrolled in high school are eligible for admission provided that:

1. They are at least eighteen (18) years of age or have a high school diploma or equivalent.
2. They declare an occupational objective or demonstrate through testing or counseling reasonable potential for achieving that objective.

### B. Applicants Enrolled in High School

Applicants enrolled in high school are eligible for admission provided that:

1. An agreement authorizing such admission concluding between the local Board of Education and the Tennessee College of Applied Technology. Such agreements are subject to the approval of the Chancellor or his designee.
2. Enrollment is limited to one (1) occupational area.

### C. Admission of Foreign Non-Immigrants

Foreign non-immigrant applicants are eligible for admission if they meet the same conditions required for other applicants.

## ADMISSION PROCEDURES

### STEPS FOR ENROLLMENT



PICK A PROGRAM



FILL OUT ONLINE APPLICATION



SUBMIT PROGRAM SPECIFIC APPLICATION MATERIALS (IF REQUIRED)



SUBMIT PROOF OF VACCINATION



REQUEST/SUBMIT TRANSCRIPTS



COMPLETE FAFSA



## CLASS SCHEDULES

Full-time classes are offered Monday through Friday between the hours of 7:45 a.m. and 2:30 p.m. Part-time class schedules may vary according to local needs.

## STUDENT COST

Cost can be found on our website:  
[www.tcatlivingston.edu/programs](http://www.tcatlivingston.edu/programs)

## FINANCIAL AID

Financial aid is available to those students who are eligible. Students can be assessed for eligibility for Federal Pell Grants, Federal SEOG, TN Student Assistance Award, Wilder Naifeh Technical Skills Grant, TN Promise, TN Reconnect and Federal Work Study. The school also coordinates efforts with the Department of Veteran's Affairs, Voc. Rehabilitation, WIOA, TRA and TOPS.

## LOCAL HIGH SCHOOL ARTICULATION

The Tennessee College of Applied Technology at Livingston has articulation agreements with local high schools in the school's service area. These agreements establish guidelines by which high school students may receive advanced placement in programs for skills acquired in high school. For more information on how to receive advanced placement, contact your high school guidance counselor or the Student Services Office at TCATL.

740 HI TECH DRIVE  
LIVINGSTON, TN 38570  
931-823-5525

[WWW.TCATLIVINGSTON.EDU](http://WWW.TCATLIVINGSTON.EDU)

TCAT Livingston is an equal access, equal opportunity organization. More: [tbr.edu/nds](http://tbr.edu/nds). 2024/10/1800/10

# MACHINE TOOL TECHNOLOGY

WE BUILD CAREERS.





## MISSION STATEMENT

The mission of the Machine Tool Technology pro-gram is to provide training in all phases of machine shop procedures, practices, and use of machining equipment in order to meet the occupational and technical needs of citizens of the College's service area who have an interest in employment in this type of occupation.

## COURSE DESCRIPTION

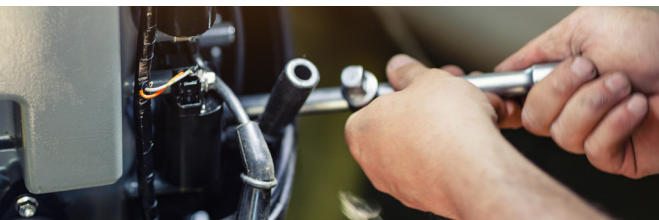
The Machine Tool Technology course is designed to give students experience on a variety of machine tools similar to those with which they will work after graduation. Instruction is given in related mathematics and blueprint reading, precision measuring and basic metallurgy, such as the properties of metal, their workable characteristics, heat treatment of metals, and the relative hardness of metals. The skills of operating drill presses, milling machines, etc. is stressed. Computer aided manufacturing and CNC machining are vital parts of the training.

## JOB OPPORTUNITIES

Machinist work from blueprints to select, set-up, and operate production metal machines to machine metals parts. Using their skills with machining tools and their knowledge of metals, machinists plan and carry out the operation needed to make machined products that meet precise specifications. Besides creating new parts, some machinists do maintenance work — repairing and making new parts for existing machinery.

Most machinist work in small machining shops, tool and die shops, or in manufacturing firms that produce durable goods such as metal working and industrial machinery. Maintenance machinist are employed in many industries that use production machinery.

Demand: Job opportunities will be good, as employers continue to have difficulties in attracting workers to machining and tool programming occupations. Many job openings will arise each year from the need to replace experience machinists and programmers who transfer to other occupations or retire.



## OVERVIEW

Almost all products used by people, whether in farming, mining, manufacturing, construction, transportation, communication, or other professions, are dependent on machine tool for their manufacture. Constant improvement to and efficient use of machine tools affect the standard of living of any nation.

The machine tool technology student should have good eye hand coordination, good manual and finger dexterity, be able to stand for long periods of time, and have a high degree of mechanical aptitude. They should also have the ability to lift heavy objects as well as being able to visualize objects form drawing that will be the result of machining.

The graduate, as a result of their training, should be able to analyze a variety of specifications, understand and read blueprints, sketches, or descriptions of a project, layout the metal stock, and set up and operate the machine necessary to complete the project. They should be able to complete a project by using a model as a guide.

Graduates should be knowledgeable of a variety of machines including: metal lathes, milling machines, shapers, grinders, and metal saws. They should be able to set up and operate each of these machines to a major degree of accuracy.

The machinist fits and assembles parts to make and repair metal working dies, cutting tools, jigs, fixtures, gauges, and machinists' hand tools. They should be able to apply their knowledge of tool and die design and construction, shop mathematics, and properties of metal and machine operation to make them successful in the field. A machinist may be required to verify dimensions, alignments, and clearance using various measuring instruments such as dial indicators, gauge blocks, thickness gauges, and micrometers. Using a surface plate and height gauge, the machinist measures, marks, and scribes metal stock for machining.

The machinist may use hand tools, such as scrapers and abrasive stones, and power grinders to smooth flat and contoured surfaces, and fits and assembles parts into assemblies of mechanisms. In many cases, they are called upon to heat treat tools or parts.

CNC (Computer Numerical control) machining and computer aided manufacturing are the high-tech modern day methods of machining. The machine tool technology student at TCATL is taught the skill of using these types of machines. Most jobs in the machine tool technology field now require a working knowledge of computer operated machines.

## COURSE OUTLINE

Approximately: 16 Months

- Worker Characteristics
- Orientation & Practical Safety
- Math Concepts
- Engineering Drawings CAD/CAM
- Benchwork & Manual Machine Tool
- Shop Theory
- Manufacturing Materials & Processes
- Computer Numerical Control Machining
- Electrical Discharge Machining
- Employability Skills

## CERTIFICATES

Production Machine Tender	432 hours
Machine Set-Up Operator	864 hours

## DIPLOMAS

General Machinist	1296 hours
Machinist 1	1728 hours

