



**SUBMARINE INDUSTRIAL BASE  
PROGRAM**

**Student Handbook  
Effective 1/1/2024**

Please carefully read over this student handbook, which will provide you with important information, regarding TMA's policies and procedures for manufacturing training programs.

Welcome to Technology & Manufacturing Association (TMA) Submarine Industrial Base training program. This Handbook will provide you with the necessary information to understand and be enrolled in the Submarine Industrial Base Program.

## **TECHNOLOGY & MANUFACTURING ASSOCIATION (TMA)**

**MISSION:** To help our members achieve profitable growth and business success through advocacy, advice, education, networking, information, programs, and services.

**VISION:** A robust network of Midwest "makers" that leads the United States and the world in precision manufacturing.

**VALUES:** Core values are the **MAKER** Principles:

**Members Focus**  
**Accessible**  
**Knowledgeable**  
**Effective**  
**Resourceful**

The main objective of the TMA is to assist its members achieve profitable growth and business success through advocacy, advice, education, networking, information, programs, and services. One of the main ways to assist members in achieving profitable growth and business success is to address the shortage of qualified candidates available to fill critical positions in their organizations. The training programs offered through TMA will provide a mechanism to increase the number of qualified candidates for manufacturing jobs in the northern Illinois region. Providing industry designed skill-based training will ensure that the TMA can create a pipeline of skilled workers to fill current and future employer hiring needs.

The objective of these training programs is to expand the pipeline of skilled manufacturing workers for both its members and the manufacturing community in northern Illinois at large.

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## Location/Contact Information

Technology & Manufacturing Association (TMA)  
1651 Wilkening Road  
Schaumburg, IL 60173

Phone: (847) 849-5334  
Email: [education@tmailinois.org](mailto:education@tmailinois.org)  
Website: <http://www.tmailinois.org>

## School Calendar

TMA observes the following holidays, no class will be held during these, New Years Day, Good Friday, Memorial Day, 4th of July, Labor Day, Thanksgiving, Friday after Thanksgiving, Christmas Eve, and Christmas Day. The only vacation periods each school year is in between the Christmas and New Year holidays. This varies year to year but typically is the last two weeks in December.

Class is a total of 96 hours. Class meets Monday - Thursday from 9 am to 3 pm. For specific class dates, please refer to the TMA website or contact TMA directly.

<https://www.tmailinois.org/tma-submarine-mfg-program.html>

## Training Services Agreement

TMA and its students in all training programs make a commitment to the following principles:

### **TMA Duties and Responsibilities:**

The mission of training programs at TMA is to provide instruction for students to learn manufacturing skills that will prepare them for entry-level positions in the manufacturing industry. When possible, TMA will assist students with training-related job searches during the class and after graduation. Additionally, TMA will assist students to access additional support services, as necessary.

### **Student Duties and Responsibilities:**

- To arrive on time and ready to learn every day
- To actively participate in all classes
- To seek extra help from instructors and staff whenever needed
- To work with the TMA staff to secure full-time, permanent employment at or about the time of successful program completion.
- To notify TMA
  - When/if you encounter any problems during training
  - When any of your personal contact information changes
  - When you find employment

## Training Program Overview

TMA's Advanced Manufacturing Bootcamp is the beginning of a career pathway in vital submarine component manufacturing. This training program course combines theory and hands-on training in set-up, operation, and programming of a Computer Numerical Control (CNC) mill and CNC lathe. Emphasis is placed upon developing safe work habits to operate CNC machines. After successful completion of this course, students will be able to read blueprints, use precision measuring equipment, demonstrate basic CNC skills in programming, set-up, and operation, and manufacture small parts using a CNC lathe and mill.

In addition, this training program will also include content specifically designed to empower employees with the essential skills and insights necessary to navigate the dynamic landscape of the working world. This comprehensive program provides participants with a supportive environment to explore, learn, and grow alongside their peers, fostering a strong foundation for a successful and fulfilling professional journey.

TMA will not only provide students opportunities to learn today's manufacturing skills but also assist in securing employment within these cutting-edge careers. U.S. manufacturing is high skilled, precision manufacturing, with factories cleaner than your kitchen producing parts for industries such as military but also in aerospace, automotive, medical, agricultural, and tech.

### **Training Program Objectives include:**

1. How to measure and understand inspection
2. Print reading
3. Safety - Personal Protective Equipment (PPE)
4. Safely set up and operate vertical machining centers and turning centers
5. Understand and apply the Cartesian coordinate system to vertical machining centers and turning centers
6. Understand and apply preparatory and miscellaneous commands
7. Understand the machine control unit and its function
8. Set correct cutter speeds and feeds
9. Set tool and work offsets
10. Analyze part measurements and derive necessary changes at the machine tool registers to produce parts within specified tolerances
11. Be able to write a short 'G' code program to control vertical machining center and turning center
12. Enhance critical thinking and problem-solving skills
13. Build positive professional relationships and successfully networking
14. Understand professional ethics and conduct in the workplace
15. How to develop your professional brand
16. Learn how to navigate workplace dynamics and communicate professionally
17. Manage time and stress effectively
18. Prepare to interview

## Student Code of Conduct

The TMA training programs prepare students for career success. The rules and culture of the manufacturing environment are simulated closely so that program graduates can adjust quickly to manufacturing jobs. The standards of behavior we follow are similar to those found at any manufacturing company.

Students enrolled are immediately identified as a member of the Precision Metalworking Industry, a representative of the company in which they are employed with and/or workforce organization they are utilizing, and a registrant of TMA. Each student has a personal obligation to conduct themselves in such a manner as to enhance the public image of the manufacturing industry.

1. Attend all class sessions regularly and on time to the fullest extent possible as well as to adhere to TMA's attendance policy.
2. Achieve the required minimum grade of 70% or better in each class.
3. Adhere to all school policies and regulations concerning the consumption of food and beverages, smoking, parking, and utilization of public and private property.
4. Respect the role of my instructor in the performance of his/her duties and cooperate fully in matters pertaining to class, under his/her direction.
5. Condone no action on the part of any other participant that would tend to discredit the training program, the school, or TMA.
6. Observe all legal restrictions concerning the consumption and possession of alcoholic beverages, drugs, and other federally controlled substances while in attendance in this program.
7. Lend my support to build a positive image of the Precision Metalworking Industry.
8. Attend classes properly attired.
9. Common courtesy is expected. Sunglasses, headphones, and hats (unless approved by TMA staff) should be removed and cell phones are to be turned off during class. Foul language is strongly prohibited.

Failure to fulfill these responsibilities through serious infraction of any of them can result in dis-enrollment and denial from future registration as a TMA student. Any behavior that disturbs our environment is grounds for termination. Verbal and physical fighting, threats, and harassment are prohibited. Cheating, stealing, abusing school or classmates' property, and sleeping in class also violate the behavior standards. Gossiping, forming cliques, and talking bad about other students is also considered a form of harassment and can be grounds for disciplinary action.

Safety is of primary concern. Behaviors that threaten the safety of self or others are seriously problematic. In particular, using, possessing, distributing, or being under the influence of controlled substances — alcoholic beverages, marijuana, narcotic drugs, stimulants, etc. — are strictly forbidden. TMA reserves the right to drug test students at any time. Refusal is grounds for termination.

The following additional standards ensure a comfortable and productive learning environment:

- Staff cannot grant personal favors such as lending money, cars, or other personal items.
- Staff is not allowed to accept gifts or favors from students, in order to maintain a fair and professional relationship with all students.
- During class, computer and cell phone use is restricted to training related projects and job searches only.

## Attendance Policy

At the Technology & Manufacturing Association we believe that for a student to reach their full educational achievement, attendance is essential.

### **TMA's Related Theory Apprenticeship Training Program**

Students will be allowed a maximum of one absence during the training program. When a student has one absence in the class, they will receive a written warning from TMA Training and Education staff so that the student can be counseled on the consequences of a second absence. Students reaching the one maximum absence cannot have any more absences or they will risk being disenrolled from the program. There are no excused absences.

Students who are dropped from a cohort because of absences can apply to be reinstated in a future cohort. Re-application approval is at the complete discretion of the TMA staff.

## Dress Code

Due to the nature of the training, all students will be required to wear appropriate clothing during training. This includes safety glasses, earplugs, and appropriate footwear (steel toe shoes are optional). The following is NOT accepted:

- Shorts
- Open toed shoes
- Long or oversized clothing or jewelry on the neck, ears, or hands
- Non-TMA approved gloves
- Shirts that advertise alcohol, promote drug use, or that might prove offensive to others because of racial, political, or sexual content.

*Students may not operate any machinery without the required personal protective equipment. This will be at the discretion of TMA staff and dependent on program.*

## Drug and Alcohol Policy

TMA is committed to maintaining a safe, productive work environment to both students and staff. A student who is under the influence of illegal drugs, unauthorized controlled substances or alcohol can pose a serious threat to his or her safety and the safety of others. The manufacture, distribution, possession, use of illegal drugs, unauthorized use of controlled substances or alcohol on TMA's premises is prohibited.

TMA reserves the right to drug test a student at any time including after accidents, injuries, or if staff deem a student's behavior to be unusual or erratic. If a student is requested to submit to a drug test, they have 24 hours to complete the test. If a student tests positive for prescription drugs, they must produce a prescription for the drug within 48 hours. A student's refusal of a drug test or failure to bring in prescription documentation can result in termination.

Any violation of TMA's Drug and Alcohol Policy may result in disciplinary measures up to an including dismissal from training.

## Safety Policy

TMA expects all students, instructors and staff members to understand and practice the strict safety guidelines and policies put in place in order to provide a safe and healthy workplace and maintain compliance with the Occupational Safety and Health Act of 1970 and with regulations of the U.S. Department of Labor. All staff and students should ensure that the following duties are performed:

- Define hazardous operations, designate safe practices, and select protective equipment or engineering controls.
- Ensure that program and support staff receive instructions and training in safe work practices, use of personal protective equipment (PPE), and in procedures for dealing with accidents or emergencies.
- Ensure that students fully understand the training received.
- Ensure that all personnel obtain the protective equipment or engineering controls necessary for the safe performance of their job.
- Ensure that the required safety practices and techniques are being employed through periodic assessment and evaluations.
- Report any accidents - no matter how slight - immediately to a staff member.
- Ensure that action is taken to correct work practices and conditions that may result in accidents and incidents.
- Properly dispose of unwanted and/or hazardous chemicals and other hazardous materials



## General Machine Shop Rules

### ***Cleanliness***

- Work areas will be kept clean and uncluttered, and the floor will be kept free of chips, scraps, and oil.
- Floors will be kept clear of objects or cords that could cause someone to trip. Cords should be taped to the floor to eliminate a trip hazard, if necessary.
- Equipment and tools must be cleaned after use.
- All tools must be returned to their proper storage locations at the end of the day.
- Do not use tools that are damaged or in disrepair. They should be repaired or replaced prior to next use.
- All power tools must be turned off and unplugged before cleaning, repairing, or making any adjustments.
- Spilled liquids must be cleaned up immediately.

### ***Compressed Air***

Under Title 29 Code of Federal Regulations (CFR) Section 1910.242(b), the following rules will be followed when using compressed air for cleaning:

- Compressed air must not be used to clean your clothing or yourself.
- Compressed air will not be directed at other people.
- Compressed air used for cleaning work areas, such as work benches, table saws, and drill presses, shall not exceed 30 pounds per square inch at the outlet.
- Chip guarding will be used, and appropriate eye protection will be worn when using compressed air.

### ***General Safety Rules***

- Read the operator's manual, or comparable literature, before using any power tool or machine.
- Do not use any tool or machine unless you have been trained to do so.
- Inspect tools and machines before each use and replace or repair any damaged tools or parts before using.
- Never use damaged tools or machines.
- Do not repair tools or machines unless you are trained to do so.
- Only use tools, machines, and attachments for the purpose for which they were designed.
- Always select the correct tool, bit, cutter, or grinder for the material that you are working with.
- Never alter a tool or machine unless trained to do so in a safe manner.
- Never use power tools before they have reached operating speed or while they are coming to a stop.
- Never force objects into the moving parts of a machine.

- Always secure work pieces with clamps or a vise to keep them from moving.
- Keep hands away from cutting edges and moving parts.
- Never leave machines or power tools running unattended unless machine is fully enclosed.
- Never operate machine tools while using personal electronic devices (e.g., cell phones, iPods) or wearing headphones.

### ***Personal Protective Equipment***

PPE is designed to prevent personal injury. Examples of PPE include safety glasses or goggles, face shields, safety shields, gloves, respirators, and hearing protection. It is the responsibility of the TMA Instructor to ensure that all staff and students are using the necessary safety equipment.

### ***Protective Clothing***

- When working with a potentially hazardous material, protective clothing is required.
- Loose clothing, such as neckties, sweaters, flowing sleeves, lanyards, necklaces, and other loose/dangling jewelry shall not be worn in the machine shop.
- Rings, bracelets, wristwatches, and related items should be removed prior to machine use.
- Do not use heavy work gloves in close proximity to moving machinery. “Surgical” type gloves (those that have low tear strength) are permissible.
- Shorts or pants with cuffs should be avoided during shop use.
- Long hair must be tied back.
- Closed-toed shoes will be worn in the machine shop at all times.
- Reusable protective clothing, such as work gloves, etc., must be visually inspected prior to use to ensure that they are in good condition.

### ***Eye Protection***

Safety glasses or goggles must be worn in the machine shop. Ordinary prescription glasses are not designed to provide adequate protection against occupational hazards. Prescription safety glasses are recommended for employees who must routinely wear safety glasses in lieu of fitting safety glasses over their personal glasses. Additional eye or face protection may be required when there is a potential for hazardous materials, including chemicals, ultraviolet light radiation, and wood, metal, and plastic shavings or particulates, to come in contact with the eyes or face. Examples of eye/face protection include safety glasses, goggles, and face shields. All protective eye and face devices must meet the American National Standards Institute Z87.1-1989 standard.

### ***Milling Machine***

- Do not use the table as a work bench or storage place. Damaging the table will cause the machine to malfunction.
- Be sure you know how to stop the milling machine quickly before operating the

machine.

- Make sure that power feed controls are in the neutral position before turning on the machine.
- Handle cutters carefully. Protective gloves may be recommended.
- Secure the work piece firmly in the vice or with appropriate clamps.
- Keep hands on the controls while the machine is running.
- Never try to feel a finished surface while the cut is being taken.

### ***Lathe***

- Roll up loose sleeves, and do not wear lanyards, neckties, or other loose items while operating the lathe.
- Be certain the work piece is set up securely and tightly.
- Remove the chuck key immediately after each use. If the chuck key is left in the chuck and the lathe is activated, the key can become a fast-moving projectile and potentially cause serious injury.
- Keep hands on the controls while the lathe is running during manual operation only. If lathe is being used in computer numerical control mode, all operator interactions should be at the control panel.

### ***Machine Guarding***

Machine guarding is required by OSHA under 29 CFR 1910.211. A guard is a barrier that prevents the entry of the operator's hands or fingers into any part of a machine or piece of equipment where they may be cut or caught between moving parts, between moving and stationary parts, or between the material and moving parts of the machine. Guarding is required of machine tools. Hand-held, portable power tools or manual tools are not required to be guarded. Machine guarding provided by the manufacturer should never be removed from the machine.

### ***Bloodborne Pathogen Policy***

Bloodborne pathogens are disease causing microorganisms that may be present in human blood and other body fluids. The three most commonly encountered bloodborne pathogens are hepatitis B virus (HBV), hepatitis C (HCV) and human immunodeficiency Virus (HIV). Bloodborne pathogens are transmitted when the pathogens from infectious body fluids enter the bloodstream through cuts or other breaks in the skin. They can also enter through mucus membranes. Bloodborne pathogens are **not** transmitted by casual contact.

TMA expects students to report all bloodborne events to instructors and staff who are considered first responders. TMA also provides all students the following information they need to work safely with bloodborne pathogens in case of an accident or injury on the shop floor.

## Exposure Control Plan

### ***Personal Protective Equipment (PPE)***

The following is the personal protective equipment needed to engage in any potential exposure to blood or Other Potentially Infectious Material (OPIM):

- Disposable Gloves (Latex, or Nitrile)
- Splash Proof Safety Goggles
- Splash Proof Face Shield

### ***Preventative Measures***

- Treat all blood and OPIM as infectious.
- Cover all exposed skin with clothing or PPE.
- When cleaning a walking / working surface do not handle broken glass, tooling, razor blades or any other sharp objects with your hands. Always use mechanical means such as a dustpan and broom.
- When cleaning machinery or equipment, engineering controls should be used whenever possible like a brush or other cleaning device when there is evidence of bio-hazardous waste or OPIM. In addition, be aware that sharps can become stuck in equipment, and can pose hazards to you or others. If you do have to use your hands, wear gloves, and **NEVER REACH WHERE YOU CAN'T SEE**.
- Wash hands immediately after removing gloves or contact with blood or OPIM.
- Do not consume or store food or drinks in areas where blood or OPIM could be present.

### ***Reactive Measures***

In the event that blood or OPIM comes in contact with your eye, mouth, nose, broken skin or under the skin, the following procedures should be done:

- Immediately wash or rinse the exposed area for 10 to 15 minutes.
- Immediately following washing, notify staff and seek medical attention.

## Sexual Harassment Policy

The Technology & Manufacturing Association will not, under any circumstances, condone or tolerate conduct which may constitute sexual harassment on the part of any of its students. It is our policy that all students have the right to learn in an environment free from any type of illegal discrimination, including sexual harassment. Any student found to have engaged in such conduct will be subject to immediate discipline, up to and including termination.

Sexual harassment is defined as:

- Making sexual advances or requests for sexual favors a term or condition of

- acceptance into the program.
- Creating an intimidating, hostile or offensive working environment or atmosphere either by:
  - 1) verbal actions, including using vulgar, kidding, or demeaning language; or
  - 2) physical conduct which interferes with a student's work performance.

While TMA encourages healthy friendships among its students, both students and staff must be sensitive to acts of conduct which may be considered offensive and must refrain from engaging in such conduct.

Sexual harassment can occur in many forms including verbal (which includes phone calls or voicemails), physical, or written (which includes text, email, or other written forms). TMA staff takes all incidents of sexual harassment seriously whether they occur during class or outside of class time.

It is, also, expressly prohibited for a student to retaliate against other students who bring sexual harassment charges or to assist in investigating charges. Retaliation is a violation of this policy and may result in discipline, up to and including termination. TMA will promptly and discreetly investigate any harassment claim and no student will be discriminated against, or discharged, because of bringing or assisting in the investigation of a complaint of sexual harassment.

## Satisfactory Academic Progress Policy

Students must be in compliance with TMA's grading and attendance policy. Students who are failing or close to failing will receive a warning at midterm. The evaluation contained in this policy is designed to help identify students who would benefit from early intervention and/or remediation. Most critical to this policy is a student's ability to enroll in and complete courses on a consistent and successful manner. It is very important that students attend all classes and complete them successfully.

## Student Reentrance/ Probation

Students may reenter the program with a one-year probation period. During the probationary period the student's records may consist of periodic reports regarding progression made related instruction, and any disciplinary action taken during the probationary period.

Any probationary student evaluated as satisfactory after a review of the probationary period will be given full credit for the probationary period and continue in the program.

After the probationary period the student may be canceled at the failure to adhere to any of TMA's policies after documented due notice to the student and a reasonable opportunity for corrective action.

## Equal Opportunity

The Technology & Manufacturing Association shall not directly or indirectly discriminate against any applicant of the Submarine Industrial Base (SIB) Program or individual accepted into the SIB on the basis of race, color, sex, age, religion, disability, national origin, ancestry, sexual orientation, marital status, parental status, military discharge status, source of income or membership in a union or membership in an organization whose primary purpose is the protection of civil rights or the improvement or living conditions and human relations.

## Grievance Procedures

A grievance is a formal complaint concerning the terms of enrollment, the student standards of behavior agreement, or any other such concern that a student may have regarding his or her training with TMA and its staff.

A student may file a grievance only on his/her own behalf. A student may not file a grievance on behalf of another party.

Resolution: If a student finds that he or she would like to file a complaint, s/he should take the following steps:

- 1) The student should address the complaint in writing to the attention of the Director of Training Services. The Director of Training Services will attempt to resolve the complaint within five (5) business days.
- 2) If a solution is not reached or if the complainant is not satisfied with the solution offered, s/he should address the complaint in writing to the attention of the TMA President. The President will attempt to resolve the complaint within five (5) business days.

## Cancellation/Refund Policy

All cancellations will be assessed a \$25 Cancellation Fee. Students will be charged IN FULL if cancellations are not received in writing, by email ([education@tmaillinois.org](mailto:education@tmaillinois.org)) by noon 5 business days prior to the start date of the class. No refunds will be provided after this time. If you do not cancel and do not attend, you are still responsible for payment.

Should there be a waiting list for the class, upon cancellation students will forfeit their spot to the next available student.

NOTE: Dates and times subject to change; employers/students will be notified of and changes. Classes, workshops, or special events require a minimum number of registrants in order to run as scheduled. In the event of a cancellation, TMA will refund your fee IN FULL.

## Grading Policy

Grades will be based on midterm exams, final exams, and any quizzes or homework the instructor assigns. **A passing grade is 70% or higher.**

## Grading Scale

100 - 90 A | 89 - 80 B | 79 - 70 C | 69 and below: Failing

## Transcripts

Students may request a copy of their transcript at any time by writing to the Director of Training and Education at TMA. The Director of Training and Education will provide the student with his or her transcript within 30 business days.

TMA student have the right to have access to his or her education records, the right to seek to have the records amended, and the right to have control over the disclosure of personally identifiable information from the records

## Credit Transfers and Articulation

Any incoming students with previous credits, coursework, or industry experience will be evaluated by TMA. Documentation is required. In addition, students will be required to complete any exams to demonstrate their competencies. This may be a written exam, a verbal exam with the instructor, and/or a performance exam in person.

TMA does not guarantee the transferability of credits to another school, college, or university. Credits or coursework are not likely to transfer; any decision on the comparability, appropriateness, and applicability of credit and whether credit should be accepted is the decision of the receiving institution.

## TMA Accreditation Status

Technology and Manufacturing Association is approved to operate by the Private Business and Vocational Schools Division of the Illinois Board of Higher Education  
Technology and Manufacturing Association is not accredited by a US Department of Education recognized accrediting body.

## TMA Officials

### **TMA Training and Education Staff:**

Director of Education and Curriculum: Jack Krikorian

Director of Training and Workforce Development: Leigh McConnell

Education Services Coordinator: Nayhelly Caldera

### **TMA Board of Directors:**

Chairman: Craig Zoberis

Vice Chairman: Robert Clifford

Treasurer: Shiv Sivakumar

Past Chairman: Nicole Wolter

President: Patrick J. Osborne

Directors: Lynn Dreisilker, Matt Eggemeyer, George Gatto, Jr., David Karbin, Michael Magliano, Althea Mottl, Tom Schroeder, Debbie Sommers, and Larry Spelman.



TMA Training Equipment

**HAAS ST10**



**HAAS VF-2**



## HAAS Mini Mill



## Doosan DNM 400II





## Doosan LYNX 220LSY



## MAZAK Vertical Center Universal 500



# Star SB16R Swiss CNC







## HAAS SIMULATOR



## FANUC SIMULATOR

