



Lake Technical College

**Program Requirements and Expectations  
And Master Plan of Instruction**

***CNC Production Specialist***

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**2025-2026**



*The mission of Lake Technical College is to be an integral component of the economic growth and development in our communities by offering a variety of high quality career-education and training opportunities.*

*Lake Technical College does not discriminate on the basis of race, religion, color, national origin, gender, genetic information, age, pregnancy, disability, or marital status in its educational programs, services or activities, or in its hiring or employment practices. The district also provides access to its facilities to the Boy Scouts and other patriotic youth groups, as required by the Boy Scouts of America Equal Access Act, or any other youth group listed in Title 36 of the United States Code as a patriotic society.*

# LAKE TECHNICAL COLLEGE

## Program Requirements and Expectations

### ADMISSION REQUIREMENTS

Applicants must be at least 16 years of age and should be academically, physically, and emotionally capable of meeting the demands of the chosen program. Applicants make initial application through the Admissions Office. A minimum skills evaluation is part of the admission process.

The Career and Technical Education programs have the following minimum admissions requirements:

1. Complete an LTC online application.
2. Take the basic skills examination, if required.
3. Meet with a career advisor.
4. Fulfill additional entry requirements as needed for individual programs.

A high school diploma or GED is not required to enroll in most programs. However, it is **recommended that all students complete either a high school diploma or a GED prior to program completion.**

### TESTING REQUIREMENTS

All applicants for Career and Technical Education (CTE) programs 450 hours or more, with the exception of Florida Law Enforcement Academy and Paramedic applicants, take a state mandated basic skills evaluation prior to enrollment. Basic skills evaluation scores must be valid at the time of enrollment. Testers must be 16 years of age or older.

If a student has met or exceeded standard scores on one area of one test, they may use another test to meet the additional skill area requirements. It is acceptable to combine test scores from more than one test. (Rule 6A-10.315, F.A.C.)

Assessment instruments meeting this requirement include:

Per 2020, FS [1008.30](#) – Common placement testing for public postsecondary education and [Rule 6a-10.040](#) (eff. 2/16/21)

*No expiration date:*

- Tests of Adult Basic Education (TABE), Forms 11 and 12, 2017;
- Comprehensive Adult Student Assessment System (CASAS), GOALS 900 Series, 2019;
- 2014 GED® Tests: Reasoning through Language Arts and Mathematical Reasoning where a minimum score as required in [Rule 6A-6.0201, F.A.C](#) (eff. 3/23/16), has been attained on each test.

*Good for 2 years from the date of testing:*

- A common placement test where a minimum score has been achieved pursuant to [Rule 6A-10.0315, F.A.C.](#)(eff. 9/24/19);
- PERT, SAT, The College Board, ACT, Next Generation, ACCPLACER, The College Board

Per 2020, FS [1004.91](#), FS [1008.30](#), and the [2021 CTE Basic Skills Assessment Technical Assistance Paper](#) – Requirements for career education program basic skills – Programs 450 hours or more

- An adult student with a disability may be exempted. (per [Rule 6a-10.040](#)(eff. 2/16/21), FS [1004.02\(6\)](#)(eff. 2020) – must follow LTC policy and process);
- A student who possesses a college degree at the associate in applied science level or higher;
- Any student who entered 9th grade in a Florida public school in the 2003-2004 school year, or any year thereafter, and earned a Florida standard high school diploma. (*Graduated 2007+*)
- A student who is serving as an active duty member of any branch of the United States Armed Services;
- A student who passes a state or national industry certification or licensure examination that is identified in State Board of Education rules and aligned to the career education program in which the student is enrolled;
- An adult student who is enrolled in an apprenticeship program that is registered with the Department of Education in accordance with chapter 446;

- A student who demonstrates readiness for public postsecondary education pursuant to s. [1008.30](#) (see *testing chart below*) and applicable rules adopted by the State Board of Education. If a student has met or exceeded standard scores in one area of one test, another test may be used to meet the additional skill area requirements. It is acceptable to combine test scores from more than one test;
- A student who was previously tested and referred to developmental education at a Florida College System (FCS) institution college may be reported as meeting basic skills requirements once they successfully complete the required developmental education and will not need to be retested.
- Students enrolled in school district or FCS institution law enforcement training academies are not subject to basic skills exit requirements in s. 1004.91 F.S. or Rule 6A-10.040 F.A.C. The Florida Department of Law Enforcement (FDLE) has designated the Florida Basic Abilities Test (FBAT) for use with these students; please refer to [s. 943.17\(6\), F.S.](#), for more information.

Applicants transferring appropriately leveled TABE, CASAS GOALS, GED® test sections, or other common placement tests must do so by having an official score report sent directly to the Admissions Office prior to enrollment in the program. Scores brought by hand will be accepted only if the document provided by the outside testing center is in a sealed envelope.

### **Remediation of Basic Skills**

Students who do not meet the basic skills exit scores set by the Florida Department of Education for their program are strongly encouraged to begin attending remediation classes prior to or at the time of enrollment in a Career and Technical Education program and make acceptable progress as determined by the ASB faculty member. Lake Technical College follows vendor guidelines for all retesting. Students with an approved early testing waiver may be permitted to test early. It is highly recommended students meet state mandated basic skills requirements by the time they have completed 50% of their program. Students who do not meet state mandated basic skills exit scores may not receive a certificate of completion as per Florida Department of Education rules.

Some basic skills test scores are good for two years and must be valid at the time of enrollment. Basic skills test scores that expire during continuous enrollment remain valid until the end of such enrollment. Under continuous enrollment, students must be enrolled at least 50% of each semester. Continuous enrollment applies to attendance in a single program.

## **DISABILITY ACCOMMODATIONS**

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's IEP or 504 plan or postsecondary student's accommodations plan to meet individual needs to ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their postsecondary provider.

Students desiring accommodations or updates to their accommodations are encouraged to self-identify before or as soon as possible to the special populations staff and provide documentation that clearly shows evidence of a disability and applicable accommodations. The special populations staff will schedule a meeting with the student and faculty to discuss the documented disability and applicable accommodations.

Accommodations received in postsecondary education may differ from those received in secondary education and are reasonable as they relate to the industry or field. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments, assessments, time demands, schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodation requested and provided is maintained in a confidential file.

Students in need of academic accommodations for a disability may consult with the special populations staff to arrange appropriate accommodations. Students are required to give reasonable notice (typically 5 working days) prior to requesting an accommodation.

## **TUITION**

Tuition is charged to adult students at a rate established by the State legislature. Current fee information is available in the Admissions Office. Tuition is waived for eligible high school, career dual enrolled students. Tuition is due prior to the first day of each payment period based on the Lake Technical College payment calendar. Failure to pay fees at the time class begins may result in not being able to attend class and/or clinical.

## INSURANCE

Personal injury/school accident insurance is required for all Career and Technical Education students. This insurance is provided through Lake Technical College at the rate of \$1.50 a month. The accident insurance fee will be charged to students per payment period.

Health programs with clinical experiences require liability insurance in conjunction with requirements by the healthcare facilities. The liability insurance fee is charged to students at the time of enrollment.

## ATTENDANCE POLICY

### **Guidelines for All Students**

In an effort to develop professional skills, regular attendance is required of all students. Students are expected to be in their class promptly in the morning, after break, and after lunch. If it is necessary to be absent due to illness or emergencies, all students are to notify the faculty member as soon as possible prior to the start of class, as is expected in the workplace. Some programs have more rigid requirements for attendance. LTC recognizes that students may face extenuating circumstances that could negatively impact their attendance. In such cases, LTC employs a Student Retention Specialist who works with students and faculty to track attendance, to collaborate in developing strategies to improve attendance, and to develop a plan.

CDE students are responsible for maintaining attendance in good standing at LTC. Should a student need to miss class due to mandatory high school activities or tests, the student should give notice to their instructor and meet with the Student Retention Specialist to document the absence. Approved absences may be set to not count against the student's overall attendance average.

*Enrollment Period* – period of time a student begins his/her education and training in a CTE program (i.e., August 15<sup>th</sup>, January 3<sup>rd</sup>) through the date of withdrawal or completion.

*Payment Period* – a set block of time in which a student pays for program hours (i.e., 300 hours, 450 hours)

Students who are approved to make up missed time must complete the required hours through attendance during designated times outside the regular program schedule. Failure to complete scheduled make-up time may result in withdrawal from the program and/or loss of financial aid. Make-up hours may not exceed 5% of the scheduled hours in the payment period. There is a \$25.00 make-up time fee per payment period.

Regularly scheduled class hours will be reported for attendance. Practice exercises completed at home will not count toward hours in a program. Students will be enrolled in additional hours if needed. Current tuition and fees will apply.

*Excessive absences* - A student who is absent for six (6) consecutive class sessions will be withdrawn from his/her program. A student must petition and be approved in order to return. Students exhibiting a pattern of consecutive absences of less than six days will be subject to dismissal as determined by a School Intervention Team. A School Intervention Team will review all petitions for re-enrollment. No additional fees will be charged if the student returns during that current payment period, provided fees have not been refunded; however, time missed may be added at the end of the program and will incur additional fees.

The excessive absences policy also applies to the adult education student. If the student requests to be re-enrolled during the same enrollment period, he or she will be assessed a \$10.00 re-enrollment fee. This may be waived depending upon mitigating circumstances.

Students with excessive absences will face the possibility of the loss of financial aid, lower professional skills grades and the ability to continue in the program.

*\*Note: licensure program attendance policies may be more rigid due to licensure requirements and supersede this policy.*

### **Leaving Campus During School Hours**

For safety reasons, students will notify their faculty when leaving campus early. Students may leave campus for lunch provided this is done within the allotted time.

## **CHECK IN/OUT FACTS AND RULES**

1. Students are to check out /in when going to lunch or leaving campus, but not for scheduled breaks or restroom breaks. However, students who leave for extended periods of time without permission will be checked out by their instructor.
2. Checking in early does not add time to hours present.
3. Checking out after the scheduled time of class does not add time to hours present.
4. Students should check out/in for their lunch breaks. Taking less than a 30-minute lunch break does not add time to student hours present. Lunch break starts at the time a student logs out for lunch. Students are expected to return and log back in within 30 minutes of the logout time. Students will be marked absent for each minute past the 30 minutes allowed.
5. If a student accidentally checks out, he/she should check back in immediately. If done within a minute, there is no reduction in student hours present.
6. It is NOT acceptable to check in or out for other students. Check in/out student IDs are to be kept confidential as stated in the Acceptable Use Policies. Violation will result in dismissal from the program.
7. A student must notify his/her instructor if it is suspected that someone is tampering with another student's check in/out ID.
8. Instructors are permitted to perform attendance overrides to correct attendance errors; however, these corrections must be made within two weeks of the original attendance date. Any changes needed beyond this two-week window must be submitted to the appropriate administrator for review and approval. Each instructor is allowed to complete one attendance override per student per academic year in cases of student oversight (e.g., forgetting to log out at the end of the day). Any additional overrides for the same student must be approved by an administrator.
9. There is NO limit to the number of instructor overrides if NOT due to the student's negligence. Instructors must record a reason for the override.
10. If a student's check in/out ID does not work, he/she should see the instructor.

## **PLAN OF INSTRUCTIONAL PRACTICES**

### **Teaching Methods**

Lecture, demonstration, discussion, group interaction, verbal and written quizzes, skill practice, individualized instruction, computerized tutorials, interactive learning, web-based learning, textbooks, workbooks, projects, journals, reports, simulations, hands-on computer experience, collaborative learning, video-taped instructions, guest speakers, field trips, customer service projects, program job shadowing, cooperative on-the-job training, interactive learning, and web-based learning are among the teaching methods utilized.

Among the provisions made to allow for individual differences are pre-testing to determine entry level, workbooks and study guides for progress at individual rate, progress grading, individualized instruction, individual project assignments, and referral for basic skills remediation.

### **Online Access**

Technology is an integral part of our daily lives. From smart phones to electronic tablets, these devices are becoming items that many cannot function without. In addition, the Internet is changing the way education is delivered. Lake Technical College strives to ensure that our students are able to compete in this technology driven world. With this in mind, it is recommended that students have an online presence and access to the internet.

It is also important that students have an email address that they check for on a regular basis. A lot of information may come to you through your email, so it is important that you check it regularly. If you do not have an email address, there are numerous services that provide FREE email addresses. Please make sure your faculty have a current, working email address for you. See your faculty for more information.

## **Social Media**

The advent of social media has created a world-wide communication medium for people of all ages. While extremely popular, these websites have also created their own set of “not-so-popular” problems such as cyber-stalking, identity theft, cyber-bullying, cyber-cheating (posting of exam, or other course material), and a host of other nebulous challenges that users may face. Another reality associated with social media is its far-reaching consequences for those who share posts that may be seen by others as inappropriate.

Potential employers, current employers, civic, or educational organizations you may be associated with, and many others are looking at social media sites for information that may tell them things about an individual. Students should also be cautioned on how private their social media content really is – despite the settings on an account. All social media sites are potentially vulnerable. A simple search of how to view pages that are set as “private” for a popular social media website yielded numerous responses for ways to view the content. Everything from blogs to online videos offer to explain how to accomplish this task.

Students in all programs need to be cognizant of the fact that most professions rely on great moral character. It is recommended that when using social media, assume that all posts will be seen/read by everyone with access to the internet.

## **Evaluation**

Class performance, quizzes, tests, attendance, portfolio assessments, completion of project assignments, decision-making, professional skills, achievement of entry-level competencies, and other methods are used for evaluation. See “Grading Procedures”.

## **Work Based Activities**

Work-based learning activities play an integral part of the curriculum of LTC’s career-technical training programs. These activities are planned with two objectives in mind. First, the activity provides students with the opportunity to develop and apply a “real world” experience using the knowledge and skills attained in the program. Second, the activity provides the faculty with objective input from potential employers or customers of program graduates. Each work-based activity has a written instructional plan outlining objectives, experiences, competencies and evaluation required during the activity.

Work-based activities are program specific and may include:

- Unpaid in-school shop/lab activities to provide customer service opportunities under the direct supervision of the program faculty.
- Unpaid job shadowing experiences that may include in-school or off-campus employer-based experiences under the supervision of a qualified employer representative who is working closely with the program faculty.
- Paid or unpaid cooperative training experiences conducted at the employer’s work location under the supervision of a qualified employer representative and under the direction of the program faculty.

## **Cooperative Education**

Cooperative training is available for students and coordinated by the faculty. Cooperative training is for students who have shown competence in program training that indicates readiness for placement in an on-the-job program. High school students participating in the cooperative job placement program must be in at least grade 12. Students must be enrolled in their last course of their program in order to participate in Co-op. In addition, basic skills exit levels must be met and the student can have no outstanding debt with the school. Students must be approved for Co-op prior to beginning, including clearance through financial aid.

Students may be returned to the program for additional training if they do not function satisfactorily on the job or when the cooperative agreement is terminated at the request of the student, parent, employer, or program faculty.

Veterans will be accepted into the program in accordance with the Department of Veterans Affairs approved program.

Additional information regarding co-op opportunities may be obtained from the program faculty.

## **Job Shadowing**

Job shadowing experiences, or volunteer experiences, are available to students as part of their program training. These experiences are designed to give the student actual hands-on experience doing a variety of related tasks. Length and type of experiences will vary. The program faculty determines appropriateness of the experience. Additional information regarding job-shadowing experiences may be obtained from the program faculty.

## **Career Dual Enrollment Students**

All students enrolled in Lake Technical College are expected to function as adults. High school students will be held to the same behavioral and performance standards as adult students.

## GRADING PROCEDURE

The grading scale for LTC is as follows:

90 – 100	A (4 quality points)
80 – 89	B (3 quality points)
70 – 79	C (2 quality points)
60 – 69	D (1 quality point)
< 59	F (0 quality points)
I	Incomplete
NG	Not Graded

Note: passing thresholds may vary by program based on industry standards. Separate program requirements are listed in the Master Plan of Instruction.

Lake Technical College is a postsecondary institution designed to provide trained individuals to industry. The grading scale for this program reflects industry standards. The approved postsecondary program grading requirements must be met if the student is to receive a certificate. In determining grades, most programs evaluate students equally in the areas of skills (33 1/3%), knowledge (33 1/3%), and professional skills (33 1/3%). This structure should be included in the Master Plan of Instruction. A few programs do not use this structure due to State licensure, board and/or curricular requirements.

### **Program Progress**

Students are expected to complete the program of training within the hours allotted by the State of Florida for completion. The student's rate of progress will be closely monitored by the faculty and the Student Retention Specialist to ensure program completion in a timely manner. Most tests, projects, and similar assignments must be completed in class under the direction of the instructor.

### **Requirements for a Certificate**

All competencies specified in the State of Florida Curriculum Framework for the program must be successfully completed with at least a passing grade in the areas of skills, knowledge, and professional skills. Students must also meet minimum basic skills requirements prior to graduation.

### **Professional Skills**

Effective professional skills are the cornerstone to successful employment. Students are expected to demonstrate productive professional skills during all phases of enrollment. Faculty will work with students who need assistance in this area to improve the overall possibility for successful employment.

**Attendance:** Attends class for all scheduled hours assigned, arrives/leaves on time, contribute to class discussion and is actively involved in all activities.

**Character:** Displays academic integrity (inclusive of not committing plagiarism), trustworthiness, dependability, reliability, self-discipline, and self-responsibility.

**Teamwork:** Respects the rights of others; is a team worker; is cooperative; ensures confidentiality in all classroom, clinical and other matters; demonstrates professional behavior in interactions with peers, preceptors, and faculty.

**Appearance:** Displays appropriate dress, grooming, hygiene, and wears full regulation uniform of the day.

**Attitude:** Displays a willingness to cooperate and accept constructive criticism; sets realistic expectations; approaches assignments with interest and initiative.

**Productivity:** Follows safety practices; conserves materials and supplies; maintains equipment; stays on task and utilizes time constructively; demonstrates proactive learning through involvement in activities and contributions to class discussions.

**Organization:** Manifests skill in prioritizing and management of time and stress; demonstrates flexibility in handling change; completes assignments on time; uses work time appropriately.

**Communication:** Contacts faculty to report concerns; notifies faculty of tardy/absence one hour before start of class; seeks clarification and understanding through appropriate, pertinent questions.

**Leadership:** Displays leadership skills; appropriately handles conflict and concerns; demonstrates problem-solving capability; maintains appropriate relationships with supervisors/faculty and peers; follows the chain of command.

**Respect:** Deals appropriately with cultural/racial diversity; does not engage in harassment of any kind to include but not limited to verbal, nonverbal, and written; addresses faculty and peers in appropriate tone and with appropriate language to include but not limited to electronic (email, text, etc.) communications.

### **STUDENT DRESS CODE**

Students who attend Lake Tech shall dress in a manner appropriate for the job in which they are receiving training, including any special protective gear and professional uniforms. All clothing, makeup, and jewelry must be clean, neat, modest, in good repair, appropriately sized, and be neither distracting nor offensive. Students are expected to display their valid student ID, or have on their person when unable to display due to safety in the program, at all times. Shorts are not permitted in CTE program areas.

The Executive Director or designee has the final authority for determining whether or not a student's apparel conforms to the dress code. If it is determined that it does not, students will be required to change into clothing which will conform to this code or leave campus. Students may return to campus when they have changed into appropriate clothing.

Students will wear the designated program uniform each day to class and while on a Job Shadow experience, Co-op or clinical assignment. Shirts may be worn with pants or skirts. Shorts are not permitted. On designated days, some programs will require students to dress in business attire suitable for a job interview. This is defined to be clothing that would be acceptable for most job candidates to wear to a standard job interview.

NOTE - Remember that you are preparing for employment in a position in which public relations may be a factor in your success. Individual desires cannot always take precedence.

### **GENERAL SCHOOL INFORMATION**

#### **Campus Safety**

Lake Technical College makes every effort to provide a safe environment for all students, visitors, faculty and staff. Basic safety standards, which will include fire drills, weather drills, equipment usage, and traffic regulations, will be covered in the program orientation. These basic safety standards will be reinforced throughout the program enrollment. See the current school catalog for additional campus safety information.

#### **Follow Up**

Lake Technical College is proud of its graduates and celebrates the next step graduates take whether it is employment, military or further education. Prior to completing, students may visit the Career Success Center for assistance with employability skills such as resume writing. In addition, faculty may provide students with employment leads. However, it is up to the individual student to actively pursue employment opportunities. We like to hear how our graduates are doing and want to celebrate your successes so be sure to communicate with your faculty any employment, military, or further education you enter. Students are required to participate in an Exit Interview prior to their last day in their program.

#### **Food and Drink**

To protect equipment and furnishings in the classroom and laboratory areas, only water, in closed, covered containers, is permitted. No other food or drinks are allowed, unless specific permission is granted by the faculty. However, under no circumstance may food or drinks be in the computer lab areas.

#### **Lunch**

Food services are provided on the main campus in the Lake Tech Café and are available during breaks and lunch. Adult students may leave the LTC campus during the scheduled 30-minute lunch break as long as they return to the program on time.

#### **Parking Regulations**

Students may park only in the south parking lot in spaces not designated as staff or customer service parking. For safety, loitering in or around vehicles once the vehicle is parked is not allowed, and a 5 mph speed limit is enforced. In consideration of the neighbors and classes in session, loud music in vehicles on campus is prohibited.

**Smoking**

Lake Tech is a tobacco free institution. The use of tobacco products of any kind, including e-cigarettes, is not permitted at any Lake Tech location. This includes the parking lots.

**FINANCIAL AID**

Policies and guidelines for the administration of all financial aid are established according to federal and state law. Applicants complete an information form, Free Application for Federal Student Aid, and furnish documentation needed to verify eligibility. More information on the application process may be obtained in the Financial Aid Office.

The Financial Aid Office will assist students, where possible, with access to financial support offered by federal agencies (U.S. Department of Education – Pell Grants, Department of Veterans' Affairs), other state and local agencies and local organizations (scholarships).

**TEXTBOOKS**

For the most recent book list for any program visit Lake Technical College's bookstore located in the Business Office.

# LAKE TECHNICAL COLLEGE

## CNC Production Specialist

### INTRODUCTION

**CNC Production Specialist** is a 600-hour program and is responsible for training individuals to attain entry-level status in the manufacturing field. The program covers a broad range of instruction in CNC machining. An appropriate amount of time is spent in each area to thoroughly cover needed instructional material as well as to gain manipulative skills competence. The program utilizes both theory and practical application of material to help the students gain needed knowledge and skills. Each student must successfully complete written test material on theory and related topics as well as successfully demonstrate the practical application of this information in the shop environment.

The students will learn shop safety procedures, the history of machining, CNC programming (Mill and Lathe), CNC setup procedures, blueprint reading and measurement skills. After students have seen a demonstration of each unit, they practice all skills using simulation software and CNC machines.

Students will be evaluated by the faculty on their machining skills, their ability to work safely, and their professional skills (e.g., appearance, dress, attendance and compliance with school and program policies and procedures).

After completion of all program competencies, students may elect to test for an industry certification in the following areas. Autodesk Certified Associate in CAD for Mechanical Design, Autodesk Certified Associate in CAM 2.5 Axis Milling, or Fusion360.

This program requires basic skills exit scores of Reading/Language 9 and Math 10.

### PROGRAM MISSION

The mission of the CNC Production Specialist program is to prepare students for employment or advanced training in the manufacturing/ machine shop industry.

### CNC PRODUCTION SPECIALIST PHILOSOPHY

We believe in assisting the student in the development of his/her ability to get along with others, show integrity, develop safe professional skills both on and off the job, evidence personal and job cleanliness and demonstrate the ability to become a better adjusted, more productive citizen.

### ESSENTIAL TRAINING TASKS

#### **Physical Requirements**

Ability to:

- |  |  |
|--|--|
| 1. Reach                                     | 5. Exhibit a high degree of finger dexterity |
| 2. Exhibit a high degree of manual dexterity | 6. See (near acuity)                         |
| 3. Stoop                                     | 7. Lift 50 pounds or less                    |
| 4. Crouch and/or bend                        | 8. Communicate                               |

#### **Mental and Emotional Requirements**

Ability to:

- |   |  |
|---|--|
| 1. Work with others                                     | 10. Tolerate moderate noise level  |
| 2. Make decisions                                       | 11. Apply common sense understanding to carry out instructions furnished in both written and oral form |
| 3. Cope with anger/hostility of others in a calm manner | 12. Measure accurately   |
| 4. Cope with moderate to high levels of stress          | 13. Work without close, direct supervision   |
| 5. Cope with confrontation                              | 14. Work on multiple tasks and priorities  |
| 6. Cope with frustration                                | 15. Perform and complete tasks of relative complexity  |
| 7. Assist with problem resolution                       | 16. Perform basic mathematical operations  |
| 8. Demonstrate a high degree of patience                | 17. Demonstrate mechanical skills  |
| 9. Plan and organize daily activities                   |  |

## MATERIALS

Some instructional materials are audio/visual computerized tutorials. For hygienic reasons, students must furnish their own standard computer headphones to use in listening to the instructional programs. Students are required to purchase the following equipment, supplies, and textbooks:

- Safety glasses.
- Class shirts.
- Closed toe shoes.
- USB-A flash drive (2gig max)
- Jack-in headphones

## CLASS SCHEDULE

Full-time Day students attend class from 7:30 AM to 3:30 PM, Monday through Thursday, with a 30-minute lunch period. This schedule provides 7.5 hours of instruction each day for a total of 30 hours per five-day week, excluding holidays and school breaks as outlined in the current school calendar.

## BREAK TIME PROCEDURES

- Breaks will be allowed at times indicated on the schedule unless directed otherwise by the LTC staff or Faculty.
- Students shall return promptly to the classroom after each break. Tardiness will affect your Professional Skills grade.
- Students may leave the grounds for lunch break provided they return within the 30-minute allotted time frame.
- Food and beverages are not allowed in the classrooms, with the exception of bottled water.

## CLASSROOM/LAB PROCEDURES

Learning methods used are self-paced and competency based. They are tested periodically with written and practical tests. Practical shop experiences are designed to enhance and reinforce the theories involved as well as to develop manipulative skills and good work and safety practices. Materials are reviewed and updated periodically to keep them as current and as relevant as possible. The passing threshold on each assignment and overall is 80%. **The final course grade recorded in the Student Information System will reflect the category in which the student was not successful. At the end of any CNC course, students with academic, professional or skills grades below 80% will be dismissed.**

### Teaching Aids

- Autodesk Fusion360 CAD/CAM Software
- Haas Machine Simulators
- Total Machinist by Immerse2learn

### Student Projects

Students are encouraged to design and create projects related to class objectives and standards. A variety of projects will be assigned, each one with varying difficulty. All projects must be approved by the instructor and completed within class and program time.

## STUDENT DRESS CODE FOR SAFETY

1. Pants shall be worn fastened and at the waist. Pants should be dark colored, straight legged or boot cut (jeans are acceptable). Baggy pants are not permitted in any program area. Baggy pants are considered to be more than one size larger than the individual's waist.
2. Shoes must meet safety/industry standards. Sandals are not permitted
3. School t-shirt with the program logo is to be worn.
4. Clothing should be clean and in good repair.
5. For safety reasons, shorts, loose clothing, jewelry, and loose hair below the collar are not allowed.
6. Hats are only permitted in shop areas and must meet the faculty's specifications for safety and appropriateness.

## REASONS FOR DISMISSAL FROM PROGRAM

1. Unsatisfactory academic, lab or job shadow work.
2. Failure to comply with the student code of conduct.
3. Cheating in any manner.

4. Violations of the attendance policy.
5. Failure to satisfy identified probationary requirements within the stated time.
6. Failure to comply with requirements as stated in the Master Plan of Instruction.

### **JOB DESCRIPTION**

The CNC Production Specialist machines a wide range of raw materials from plastics to exotic steels utilizing CNC machine tools. The work can be in a production environment or in a job shop environment. Entry level machinists are trained to operate different types of machine tools. In addition, Setup machinist would load programs and ensure the correct work holding devise(s) and tool(s) are loaded into the machine. The more experienced machinist advances to a CNC programmer. He/she studies blueprints and sketches to determine the type of correct machining operations, metals to use, and create the CNC code necessary to program the machine to manufacture the part. Quality Control techniques are used to evaluate the final parts.

The work of the CNC Production Specialist is active and sometimes strenuous, but exceptional physical strength is not required. Prolonged standing is often necessary. Good physical condition, eyesight, and the ability to communicate are important.

The CNC Production Specialist work environment may or may not be climate controlled. Job conditions may be noisy. The typical shop works a 40-hour work week with overtime as required. Many shops run multiple shifts.

### **PROGRAM OBJECTIVES**

See the attached Florida State Department of Education curriculum framework for program objectives and desired competencies.

**Florida Department of Education  
Curriculum Framework**

**Program Title:** CNC Production Specialist  
**Program Type:** Career Preparatory  
**Career Cluster:** Manufacturing

Career Certificate Program		
Program Number	J200300	
CIP Number	0648050307	
Grade Level	30, 31	
Program Length	600 hours	
Teacher Certification	Refer to the <b>Program Structure</b> section	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	<a href="http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml">http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml</a>	
Basic Skills Level	Computation (Mathematics): 10	Communications (Reading and Language Arts): 9

### Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the manufacturing career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the manufacturing career cluster.

The content includes but is not limited to broad, transferable skills, stresses the understanding of all aspects of the computer numeric control as it relates to the machining industry, and demonstrates such elements of the industry as planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

**Additional Information** relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

### Program Structure

This program is a planned sequence of instruction consisting of two occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	PMT0026	CNC Production Technician I	ENG 7G MACH SHOP @7 7G METAL WORK 7G	300 hours
B	PMT0027	CNC Production Technician II		300 hours

## **Common Career Technical Core – Career Ready Practices**

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline, or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social, and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership, and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

## **Standards**

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of workplace safety and workplace organization.
- 02.0 Demonstrate an understanding of manufacturing methodology principles.
- 03.0 Solve basic job-related math problems.
- 04.0 Interpret basic blueprint information.
- 05.0 Perform basic metrology.
- 06.0 Demonstrate basic knowledge of manufacturing history and primary as well as secondary manufacturing processes.
- 07.0 Demonstrate basic understanding of geometric dimension and tolerance (GD&T)
- 08.0 Set up and operate drill presses.
- 09.0 Demonstrate the use of a CNC control panel.
- 10.0 Demonstrate an understanding of CNC machine systems.
- 11.0 Set up and operate a computerized-numerical-control (CNC) machine for lathe operations.
- 12.0 Set up and operate a computerized-numerical-control (CNC) machine for milling operations.
- 13.0 Demonstrate appropriate computerized-numerical-control (CNC) maintenance and troubleshooting.
- 14.0 Explain the importance of employability and entrepreneurship skills.
- 15.0 Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives.
- 16.0 Solve problems using critical thinking skills, creativity, and innovation.
- 17.0 Demonstrate first article inspection methods.
- 18.0 Demonstrate the technique of CNC milling.
- 19.0 Perform advanced set up and operation of a computerized-numeric-control (CNC) mill machine.
- 20.0 Demonstrate the technique of CNC turning.
- 21.0 Perform advanced set up and operation of a computerized-numeric-control (CNC) lathe machine.
- 22.0 Demonstrate basic computer-aided design/computer-aided manufacturing (CAD/CAM) processes.