



## TENTATIVE—SUBJECT TO CHANGE

### AMCA 2110 CNC Fundamentals COURSE SYLLABUS Spring Semester 2021 (202214)

#### COURSE INFORMATION

Credit Hours/Minutes: 4/4500

Campus/Class Location: Swainsboro/6110

Class Meets: Monday, Tuesday, Wednesday, & Thursday / 9:30AM to 10:45AM

Course Reference Number (CRN): 40053

#### INSTRUCTOR CONTACT INFORMATION

Instructor Name: James Yearty

Email Address: [James Yearty \(jyearty@southeasterntech.edu\)](mailto:jyearty@southeasterntech.edu)

Campus/Office Location: Swainsboro/6111

Office Hours: 12:30 to 2:30PM Monday Tuesday Wednesday & Thursday **“Due to the uncertainties of COVID-19, contact instructor by phone or email to make an appointment.”**

Phone: (478) 289-2323

Tutoring Hours (if applicable): Schedule with instructor as needed

#### SOUTHEASTERN TECHNICAL COLLEGE’S (STC) CATALOG AND HANDBOOK

Students are responsible for all policies and procedures and all other information included in Southeastern Technical College’s [Catalog and Handbook \(https://catalog.southeasterntech.edu/college-catalog/downloads/current.pdf\)](https://catalog.southeasterntech.edu/college-catalog/downloads/current.pdf).

#### REQUIRED TEXT

CNC Machining Fundamentals and Applications, ISBN-13: 978-1-59070-790-6

#### REQUIRED SUPPLIES & SOFTWARE

Each student should have the following: Spiral notebook, pen, pencil, highlighter, 0-1 micrometer, 6” flexible rule, 0-6” dial caliper, pocket scriber, deburr tool, & safety glasses. You will not be permitted to borrow from the Instructor or your fellow classmates.

**Students should not share login credentials with others and should change passwords periodically to maintain security.**

#### COURSE DESCRIPTION

Provides a comprehensive introduction to computer numerical controlled (CNC) machining processes. Topics include safety, Computer Numerical Control of Machinery, setup and operation of CNC machinery, introduction to programming of CNC machinery, introduction to CAD/CAM.

## **MAJOR COURSE COMPETENCIES**

1. Safety
2. Computer Numerical Control
3. Setup and Operation
4. Introduction to Programming
5. Introduction to CAD/CAM

## **CO-REQUISITE(S)**

MCHT 1012 Blueprint Reading for Machine Tool

## **COURSE OUTLINE**

Introduces students to Safety, Computer Numerical Control, Setup and Operation, Introduction to Programming, and Introduction to CAD/CAM.

## **GENERAL EDUCATION CORE COMPETENCIES**

Southeastern Technical College has identified the following general education core competencies that graduates will attain:

1. The ability to utilize standard written English.
2. The ability to solve practical mathematical problems.
3. The ability to read, analyze, and interpret information.

## **STUDENT REQUIREMENTS**

Tests and assignments must be completed on specified date. Students are also responsible for policies and procedures in the STC E-Catalog.

## **COVID-19 MASK REQUIREMENT**

Regardless of vaccination status, students are highly encouraged to wear masks or face coverings while in a classroom or lab at Southeastern Technical College. Masking may be implemented in some program areas (i.e. Health Sciences and Cosmetology) where students, faculty, and clients are in close proximity and social distancing cannot be maintained. This measure is being implemented to reduce COVID-19 related health risks for everyone engaged in the educational process. Masks or face coverings must be worn over the nose and mouth, in accordance with the Centers for Disease Control and Prevention (CDC).

## **COVID-19 SIGNS AND SYMPTOMS**

We encourage individuals to monitor for the signs and symptoms of COVID-19 prior to coming on campus.

If you have experienced the symptoms listed below or have a body temperature 100.4°F or higher, we encourage you to self-quarantine at home and contact a primary care physician's office, local urgent care facility, or health department for further direction. Please notify your instructor(s) by email and do not come on campus for any reason.

<b>COVID-19 Key Symptoms</b>
Fever or felt feverish
Chills
Shortness of breath or difficulty breathing (not attributed to any other health condition)

<b>COVID-19 Key Symptoms</b>
Fatigue
Muscle or body aches
Headache
New loss of taste or smell
Sore throat (not attributed to any other health condition)
Congestion or runny nose (not attributed to any other health condition)
Nausea or vomiting
Diarrhea
<b>In the past 14 days, if you:</b>
Have had close contact with or are caring for an individual diagnosed with COVID-19 at home (not in healthcare setting), please do not come on campus and contact your instructor (s).

### **COVID-19 SELF-REPORTING REQUIREMENT**

Students, regardless of vaccination status, taking classes on campus, who test positive for COVID-19 or who have been exposed to a COVID-19 positive person, are required to self-report using <https://www.southeasterntech.edu/covid-19/>. Report all positive cases of COVID-19 to your instructor and [Stephannie Waters](mailto:swaters@southeasterntech.edu), Exposure Control Coordinator, [swaters@southeasterntech.edu](mailto:swaters@southeasterntech.edu), 912-538-3195.

### **ATTENDANCE GUIDELINES**

Class attendance is a very important aspect of a student's success. Being absent from class prevents students from receiving the full benefit of a course and also interrupts the learning process. Southeastern Technical College considers both tardiness and leaving early as types of absenteeism. Responsibility for class attendance rests with the student. Regular and punctual attendance at all scheduled classes is required for student success. Students will be expected to complete all work required by the instructor as described in the individual course syllabus.

Instructors have the right to give unannounced quizzes/assignments. Students who miss an unannounced quiz or assignment will receive a grade of 0. Students who stop attending class, but do not formally withdraw, may receive a grade of "F" (Failing 0-59) and face financial aid repercussions in upcoming semesters.

Instructors are responsible for determining whether missed work may be made up and the content and dates for makeup work is at the discretion of the instructor.

Students will not be withdrawn by an instructor for attendance; however, all instructors will keep records of graded assignments and student participation in course activities. The completion dates of these activities will be used to determine a student's last date of attendance in the event a student withdraws, stops attending, or receives an "F" in a course.

### **STUDENTS WITH DISABILITIES**

Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact the appropriate campus coordinator to request services.

Swainsboro Campus: [Daphne Scott](mailto:dsconfig@southeasterntech.edu) ([dsconfig@southeasterntech.edu](mailto:dsconfig@southeasterntech.edu)), 478-289-2274, Building 1, Room 1210.

Vidalia Campus: [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 912-538-3126, Building A, Room 165

## **SPECIFIC ABSENCES**

Provisions for Instructional Time missed because of documented absences due to jury duty, military duty, court duty, or required job training will be made at the discretion of the instructor.

## **PREGNANCY**

Southeastern Technical College does not discriminate on the basis of pregnancy. However, we can offer accommodations to students who are pregnant that need special consideration to successfully complete the course. If you think you will need accommodations due to pregnancy, please make arrangements with the appropriate campus coordinator.

Swainsboro Campus: [Daphne Scott \(dscott@southeasterntech.edu\)](mailto:dscott@southeasterntech.edu), 478-289-2274, Building 1, Room 1210.

Vidalia Campus: [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 912-538-3126, Building A, Room 165.

It is strongly encouraged that requests for consideration be made **PRIOR** to delivery and early enough in the pregnancy to ensure that all the required documentation is secured before the absence occurs. Requests made after delivery **MAY NOT** be accommodated. The coordinator will contact your instructor to discuss accommodations when all required documentation has been received. The instructor will then discuss a plan with you to make up missed assignments.

## **WITHDRAWAL PROCEDURE**

Students wishing to officially withdraw from a course(s) or all courses after the drop/add period and prior to the 65% point of the term in which student is enrolled (date will be posted on the school calendar) must speak with a Career Counselor in Student Affairs and complete a Student Withdrawal Form. A grade of "W" (Withdrawn) is assigned for the course(s) when the student completes the withdrawal form.

Important – Student-initiated withdrawals are not allowed after the 65% point. After the 65% point of the term in which student is enrolled, the student has earned the right to a letter grade and will receive a grade for the course. Please note: Abandoning a course(s) instead of following official withdrawal procedures may result in a grade of "F" (Failing 0-59) being assigned.

Informing your instructor that you will not return to his/her course, does not satisfy the approved withdrawal procedure outlined above.

There is no refund for partial reduction of hours. Withdrawals may affect students' eligibility for financial aid for the current semester and in the future, so a student must also speak with a representative of the Financial Aid Office to determine any financial penalties that may be assessed due to the withdrawal. A grade of "W" will count in attempted hour calculations for the purpose of Financial Aid.

## **MAKEUP GUIDELINES (TESTS, QUIZZES, HOMEWORK, PROJECTS, ETC.)**

Make up test will be at the discretion of the instructor.

## **ACADEMIC DISHONESTY POLICY**

The Southeastern Technical College Academic Dishonesty Policy states that all forms of academic dishonesty, including but not limited to cheating on tests, plagiarism, collusion, and falsification of information, will call for discipline. The policy can also be found in the Southeastern Technical College Catalog and Handbook.

## **PROCEDURE FOR ACADEMIC MISCONDUCT**

The procedure for dealing with academic misconduct and dishonesty is as follows:

### 1. First Offense

Student will be assigned a grade of "0" for the test or assignment. Instructor keeps a record in course/program files and notes as first offense. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus. The Registrar will input the incident into Banner for tracking purposes.

### 2. Second Offense

Student is given a grade of "WF" (Withdrawn Failing) for the course in which offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of second offense. The Registrar will input the incident into Banner for tracking purposes.

### 3. Third Offense

Student is given a grade of "WF" for the course in which the offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of third offense. The Vice President for Student Affairs, or designee, will notify the student of suspension from college for a specified period of time. The Registrar will input the incident into Banner for tracking purposes.

## STATEMENT OF NON-DISCRIMINATION

As set forth in the student catalog, Southeastern Technical College does not discriminate on the basis of race, color, creed, national or ethnic origin, sex, religion, disability, age, political affiliation or belief, genetic information, veteran status, or citizenship status (except in those special circumstances permitted or mandated by law).

The following individuals have been designated to handle inquiries regarding the nondiscrimination policies:

<b>American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer</b>	<b>Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer</b>
Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 165 Phone: 912-538-3126 Email: <a href="mailto:hthomas@southeasterntech.edu">Helen Thomas</a> <a href="mailto:hthomas@southeasterntech.edu">hthomas@southeasterntech.edu</a>	Lanie Jonas, Director of Human Resources Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 138B Phone: 912-538-3230 Email: <a href="mailto:ljonas@southeasterntech.edu">Lanie Jonas</a> <a href="mailto:ljonas@southeasterntech.edu">ljonas@southeasterntech.edu</a>

## ACCESSIBILITY STATEMENT

Southeastern Technical College is committed to making course content accessible to individuals to comply with the requirements of Section 508 of the Rehabilitation Act of Americans with Disabilities Act (ADA). If you find a problem that prevents access, please contact the course instructor.

## GRIEVANCE PROCEDURES

Grievance procedures can be found in the Catalog and Handbook located on Southeastern Technical College's website.

## ACCESS TO TECHNOLOGY

Students can now access Blackboard, Remote Lab Access, Student Email, Library Databases (Galileo), and BannerWeb via the mySTC portal or by clicking the Current Students link on the [Southeastern Technical College \(STC\) Website \(www.southeasterntech.edu\)](http://www.southeasterntech.edu).

## **TECHNICAL COLLEGE SYSTEM OF GEORGIA (TCSG) GUARANTEE/WARRANTY STATEMENT**

*The Technical College System of Georgia guarantees employers that graduates of State Technical Colleges shall possess skills and knowledge as prescribed by State Curriculum Standards. Should any graduate employee within two years of graduation be deemed lacking in said skills, that student shall be retrained in any State Technical College at no charge for instructional costs to either the student or the employer.*

### **GRADING POLICY**

<b>Assessment/Assignment</b>	<b>Percentage</b>
Reviews & Activities	25%
Projects & Tests	40%
Final Exam	35%

### **GRADING SCALE**

<b>Letter Grade</b>	<b>Range</b>
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

# AMCA 2110 CNC Fundamentals

## Spring Semester 202214 Lesson Plan

Subject to change

<b>Date/Week</b>	<b>Chapter/Lesson</b>	<b>Content</b>	<b>Assignments &amp; Tests Due Dates</b>	<b>Competency Area</b>
1/10/22 Day 1		First day of class/Class Introduction—Syllabi, Outline		1,2,3,4,a,b,c
1/10/22 Week 1	Chapter 1 Numerical Control and CNC Lesson 2 Shop Safety Safety for Machining	CNC Machining Fundamentals and Applications Instructor to give demonstrations on manual lathes & mills Fundamentals of CNC Machining shop binder handout Immerse2learn	Chapter 1 Review page 28 & Lesson 2 Safety test  Modules 1,2,3 Post Test & Comprehensive exam due 1/13/22	1,2,3,4,a,b,c
1/18/22 Week 2	Chapter 2 Axis and Coordinate System Lesson 4 Coordinate Systems	CNC Machining Fundamentals and Applications  Fundamentals of CNC Machining shop binder handout	Chapter 2 Review page 47 & Activities 1,2,3,&4 page 48 due 1/20/22	1,2,3,4,a,b,c
1/24/22 Week 3	Chapter 3 CNC Math Chapter 4 CNC Machining Centers	CNC Machining Fundamentals and Applications CNC Machining Fundamentals and Applications	Chapter 3 Review pages 72-74 & Activity 1 page 75 & Chapter 4 Review page 95 due 1/27/22	1,2,3,4,a,b,c
1/31/22 Week 4	Chapter 5 CNC Machining Center Tools, Inserts, Speeds, and Feeds Speeds & Feeds	CNC Machining Fundamentals and Applications  Immerse2learn	Chapter 5 Review page 119  AND  Modules 1,2,3 Post Test & Comprehensive exam due 2/3/22	1,2,3,4,a,b,c

<b>Date/Week</b>	<b>Chapter/Lesson</b>	<b>Content</b>	<b>Assignments &amp; Tests Due Dates</b>	<b>Competency Area</b>
2/7/22 Week 5	Materials  3-Axis CNC Milling Machine Setup Chapter 6 Machining Center Carbide Insert Fundamentals	Immerse2learn  Immerse2learn  CNC Machining Fundamentals and Applications	Modules 1&2 Post Test & Comprehensive exam Module 1 Post Test  Chapter 6 Review page 131 due 2/9/22	1,2,3,4,a,b,c
2/10/22	Chapters 1,2,3,4,5,6		Students will take 1 <sup>st</sup> test 2/10/22	1,2,3,4,a,b,c
2/14/22 Week 6	3-Axis CNC Milling Machine Setup Chapter 7 Programming Process for Machining Centers Chapter 8 Programming Codes for Machining Centers	Immerse2learn  CNC Machining Fundamentals and Applications  CNC Machining Fundamentals and Applications	Modules 2&3 Post Test  Chapter 7 Review page 142 & Activity page 143 & Chapter 8 Review page 168 due 2/17/22	1,2,3,4,a,b,c
2/21/22 Week 7	3-Axis CNC Milling Machine Setup  Chapter 9 Program Format for Vertical Machining Centers Chapter 10 Canned Cycles for Machining Centers	Immerse2learn  CNC Machining Fundamentals and Applications  CNC Machining Fundamentals and Applications	Module 4 Post Test  Chapter 9 Review page 185 Activities 1,2,&3 pages 187 thru 192  Chapter 10 Review with Activity 1 page 209 due 2/23/22	1,2,3,4,a,b,c
2/24/22	Chapters 7,8,9 & 10		Students will take 2nd test 2/24/22	1,2,3,4,a,b,c



<b>Date/Week</b>	<b>Chapter/Lesson</b>	<b>Content</b>	<b>Assignments &amp; Tests Due Dates</b>	<b>Competency Area</b>
2/28/22 Week 8	3-Axis CNC Milling Machine Setup  Lesson 6 CNC Operation	Immerse2learn  Fundamentals of CNC Machining shop binder handout	Modules 5,6,7,8,&9 Post Test & Comprehensive exam  Students completing milling part set-up project of Lesson 6	1,2,3,4,a,b,c
3/7/22 Week 9	Lesson 6 CNC Operation	Fundamentals of CNC Machining shop binder handout	Students completing milling part set-up project of Lesson 6 for grade by 3/10/22	1,2,3,4,a,b,c
3/14/22 Week 10	Chapter 11 Turning Centers Chapter 12 Turning Center Tools, Inserts, Speeds, And Feeds Chapter 13 Programming Process for Turning Centers  CNC Lathe Setup	CNC Machining Fundamentals and Applications CNC Machining Fundamentals and Applications  CNC Machining Fundamentals and Applications  Immerse2learn	Chapter 11 Review page 223 Chapter 12 Review page 237 with Activity 1;  Chapter 13 Review page 251 with Activity Program 1 & 2 page 252 thru 254, due 3/16/22 Modules 1&2 Post Test	1,2,3,4,a,b,c
3/17/22	Chapters 11,12 & 13		Students will take 3 <sup>rd</sup> test 3/17/22	1,2,3,4,a,b,c
3/21/22 Week 11	CNC Lathe Setup Chapter 14 Programming Codes for Turning Centers Chapter 15 Canned Cycles for Turning Centers	Immerse2learn  CNC Machining Fundamentals and Applications  CNC Machining Fundamentals and Applications	Modules 3&4 Post Test Chapter 14 Review page 272 with Activities 1,2,&3 pages 273-274, & Chapter 15 Review page 295 with Activities 1,2,3,&4 pages 295-296 due 3/23/22	1,2,3,4,a,b,c
3/24/22	Chapters 14 & 15		Students will take 4 <sup>th</sup> test 3/24/22	1,2,3,4,a,b,c
3/28/22 Week 12	CNC Lathe Setup  Lesson 8 CNC Turning	Immerse2learn  Fundamentals of CNC Machining shop binder handout	Modules 5,6,7,&8 Post Test & Comprehensive exam Students completing lathe part set-up project of Lesson 8	1,2,3,4,a,b,c

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
4/4/2022		SPRING HOLIDAYS FOR STUDENTS		
4/11/22 Week 13	Lesson 8 CNC Turning	Fundamentals of CNC Machining shop binder handout	Students completing lathe part set-up project of Lesson 8 for grade by 4/14/22	1,2,3,4,a,b,c
4/18/22 Week 14	Chapter 16 Subprograms Chapter 17 Electrical Discharge Machining CAD/CAM	CNC Machining Fundamentals and Applications CNC Machining Fundamentals and Applications  Shop handout	Chapter 16 Review page 301 With Activity 1 & Chapter 17 Review page 314 due 4/20/22	5,a,b,c
4/21/22	Chapters 16,17 & CAD/CAM		Students will take 5TH test 4/21/22	1,2,3,4,5,a,b,c
4/25/22 Week 15	Review	Review for final exam	Final exam due 5/4/22	1,2,3,4,5,a,b,c

**COMPETENCY AREAS: (WILL VARY FOR EACH COURSE/TAKEN FROM STATE STANDARDS)**

1. Safety
2. Computer Numerical Control
3. Setup and Operation
4. Introduction to Programming
5. Introduction to CAD/CAM

**GENERAL CORE EDUCATIONAL COMPETENCIES:**

- a) The ability to utilize standard written English.
- b) The ability to solve practical mathematical problems.
- c) The ability to read, analyze, and interpret information.