



**MCHT 1013  
MACHINE TOOL MATH  
COURSE SYLLABUS  
Lecture/Lab  
Spring Semester 2017**

Instructor Information should be at the beginning of the syllabus. Some information varies per course.

**Semester:** Spring 2017

**Course Title:** Machine Tool Math

**Course Number:** MCHT 1013

**Credit Hours/ Minutes:** 3 / 3750

**Class Location:** Room # 6110

**Class Meets:** 6:00 – 8:30 PM, T/R

**CRN:** 40372

**Instructor:** David G. Mills

**Office Hours:** 1:30-4:00pm T/R

**Office Location:** ROOM 6111, BUILDING 6

**Email Address:** [dmills@southeasterntech.edu](mailto:dmills@southeasterntech.edu)

**Phone:** 478-289-2323

**REQUIRED TEXT:** Mathematics for Machine Technology, 7th Edition John C. Peterson Chattanooga State Technical Community College (retired) Robert D. Smith Chattanooga State Technical Community College (retired) ISBN-10: 1133281451 | ISBN-13: 9781133281450

**REQUIRED SUPPLIES & SOFTWARE:** Pens, pencils, paper. Scientific Calculator (Optional)

**COURSE DESCRIPTION:** This course develops mathematical competencies as applied to machine tool technology. Emphasis is placed on the use of machining formulas by incorporating algebraic, geometric, and trigonometric functions. Topics include machining algebra and geometry, applied geometry, and applied trigonometry.

**MAJOR COURSE COMPETENCIES:** Machining Algebra and Geometry, Applied Machining Geometry and Applied Machining Trigonometry

**COURSE OUTLINE:**

- 1) Machining Algebra and Geometry
  - a) Demonstrate the use of algebraic formulas from known values in machine tool applications.
  - b) Manipulate equations using practical machining formulas.
  - c) Find machine feeds, speeds, length of belts, and length of band saw blades using algebraic equations.
  - d) Identify geometric figures as they apply to machine tool technology.
  - e) Determine angles with a protractor to nearest degree.
  - f) Compute angles to the nearest second.
  - g) Summarize the importance of measuring angles in machine tool work.
- 2) Applied Machining Geometry
  - a) Describe how points can be located using arcs and angles in machine tool applications.
  - b) Relate the use of Pythagorean relations to machine tool operations in layout and location of points.
  - c) Define the terms that apply to using the circle to find points in layout to include arcs, sections, chords, radii, and circumferences in machining applications.

- d) Use geometric figures inscribed in the circle to locate multiple equally spaced points on the circumference of a circle.
  - e) List the uses of geometric functions in machining.
  - f) Use geometric construction to find center points, divide angles, construct right angles for layout, and to find the center of a circle or arc for machining purposes.
  - g) Lay out machining work pieces using geometric applications.
- 3) Applied Machining Trigonometry
- a) Explain how to construct a triangle when the value of one side is known.
  - b) Define the six trigonometric functions found in machining applications.
  - c) Explain the use of trigonometric tables.
  - d) List uses of trigonometric functions in machining.
  - e) Explain the Cartesian system, how it applies to machine operations, and how to determine the "Z" axis on a machine.
  - f) Calculate the angle to a given function.
  - g) Find the function to a given angle.
  - h) Compute the third angle when one angle and one side of a triangle is given.
  - i) Determine a point when an arc and an angle are given from a reference point.
  - j) Lay out machining work pieces using trigonometric functions.

**GENERAL EDUCATION CORE COMPETENCIES:** STC 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:**

Students are expected to come prepared for each class meeting, focused and ready to learn. Homework assignments will be collected for a grade.

There may be in class graded activities planned in which you will not be able to participate if you are not prepared for that day's class.

Unannounced quizzes or in class assignments are subject to be given every day. A grade of zero will be assigned for any quizzes or in class assignments missed.

Students are expected to complete all tests, and other assignments on the scheduled dates.

Students are responsible for policies and procedures include in the STC Catalog.

**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 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.

**SPECIAL NEEDS:** Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact Helen Thomas, 912-538-3126, [hthomas@southeasterntech.edu](mailto:hthomas@southeasterntech.edu), to coordinate reasonable accommodations.

**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 advise me and make appropriate arrangements with Helen Thomas, (912) 538-3126, [hthomas@southeasterntech.edu](mailto:hthomas@southeasterntech.edu).

**WITHDRAWAL PROCEDURE:** Students wishing to officially withdraw from a course(s) or all courses after the drop/add period and prior to the 65% portion of the semester (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" is assigned when the student completes the withdrawal form from the course.

Students who are dropped from courses due to attendance (see your course syllabus for attendance policy) after drop/add until the 65% point of the semester will receive a "W" for the course. Abandoning a course(s) instead of following official withdrawal procedures may result in a grade of 'F' being assigned.

After the 65% portion of the semester, the student will receive a grade for the course. (Please note: A zero will be given for all missed assignments.)

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. All grades, including grades of 'W', will count in attempted hour calculations for the purpose of Financial Aid.

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

**MAKEUP GUIDELINES (Tests, quizzes, homework, projects, etc...):** Makeup of tests, quizzes and other assignments will only be considered where arrangements are made prior to completion date scheduled or test dates.

**ACADEMIC DISHONESTY POLICY:** The STC Academic Dishonesty Policy states *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 *STC Catalog and Student Handbook*.

### **Procedure for Academic Misconduct**

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

#### **--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.

#### **--Second Offense--**

Student is given a grade of "WF" 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.

**--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:** The Technical College System of Georgia and its constituent Technical Colleges do not discriminate on the basis of race, color, creed, national or ethnic origin, sex, religion, disability, age, political affiliation or belief, genetic information, disabled veteran, veteran of the Vietnam Era, spouse of military member or citizenship status (except in those special circumstances permitted or mandated by law). This school is in compliance with Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, or national origin; with the provisions of Title IX of the Educational Amendments of 1972, which prohibits discrimination on the basis of gender; with the provisions of Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of handicap; and with the American with Disabilities Act (ADA).

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

<b>ADA/Section 504 - Equity- Title IX (Students) - OCR Compliance Officer</b>	<b>Title VI - Title IX (Employees) - EEOC Officer</b>
Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 108 Phone: 912-538-3126 <a href="mailto:hthomas@southeasterntech.edu">hthomas@southeasterntech.edu</a>	Blythe Wilcox, Director of Human Resources Vidalia Campus 3001 East 1 <sup>st</sup> Street, Vidalia Office 138B Phone: 912-538-3147 <a href="mailto:bwilcox@southeasterntech.edu">bwilcox@southeasterntech.edu</a>

**GRIEVANCE PROCEDURES:** Grievance procedures can be found in the Catalog and Handbook located on STC'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 STC website at [www.southeasterntech.edu](http://www.southeasterntech.edu).

**GRADING POLICY**

Tests – 70%  
 Final Exam – 15%  
 Homework, Quizzes,  
 In class assignments – 15%

**GRADING SCALE**

A: 90-100  
 B: 80-89  
 C: 70-79  
 D: 60-69  
 F: 0-59

**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.*

**Course Number and Name  
XXXXX SEMESTER 2017 LESSON PLAN**

Date	Chap / Less	Content	Assignments & Tests Due	Comp Area
<b>Week 1 ( )</b>				

**\* Competency Areas: (will vary for each course/taken from state standards)**

- 1.
- 2.
- 3.

**\*\*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.

**Note—the last column, Comp Area, should include a competency area number and a general core competency letter.**