



TENTATIVE—SUBJECT TO CHANGE

**WELD 1060 Vertical Shielded Metal Arc Welding
COURSE SYLLABUS
Spring Semester 202014**

COURSE INFORMATION

Credit Hours/Minutes: 4/4500
Campus/Class Location: 6106
Class Meets: Monday through Thursday 3:32 to 4:47 pm
Course Reference Number (CRN):40012

INSTRUCTOR CONTACT INFORMATION

Instructor Name: Chris Cumbee
Email Address: (ccumbee@southeasterntech.edu)
Campus/Office Location: Swainsboro Campus, Building 6, Room 6106
Office Hours: Monday through Thursday 7 am until 8 am
Phone: 478-289-2325

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](http://www.southeasterntech.edu/student-affairs/catalog-handbook.php) (<http://www.southeasterntech.edu/student-affairs/catalog-handbook.php>).

REQUIRED TEXT

REQUIRED SUPPLIES & SOFTWARE

Long sleeve shirt or welding jacket, welding helmet, clear safety glasses, welding gloves, ear plugs, chipping hammer, half round file with tang, wire brush, Vice grips, combination square, torpedo level, ball peen hammer, 12" Crescent Wrench, 12' tape measure and a 4 ½" angle grinder. You will not be permitted to borrow from the Instructor or your fellow classmates. You are required to have ALL required supplies the first day of class.

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

COURSE DESCRIPTION

This course introduces the major theory, safety practices, and techniques for shielded metal arc welding (SMAW) in the vertical position. Qualification tests, vertical position, are used in the evaluation of student progress toward making industrial standard welds. Topics include: Vertical SMAW safety and health practices,

selection and applications of electrodes for vertical SMAW, vertical SMAW joints, vertical SMAW specification and 5G Open Root Pipe.

MAJOR COURSE COMPETENCIES

Use Semester State Standards. Go to KMS and make sure you have the most up-to-date course competencies. If inserting a table, the table must pass the accessibility check.

PREREQUISITE(S)

None

COURSE OUTLINE

This course outlines: Vertical SMAW Safety and Health practices, Selection and Applications of Electrodes for Vertical SMAW, Vertical SMAW Joints, Vertical SMAW Specification and 5G Open Root Pipe.

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 the specified date. Students are also responsible for policies and procedures in the STC E-Catalog.

TRADITIONAL 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: [Macy Gay \(mgay@southeasterntech.edu\)](mailto:mgay@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: [Macy Gay \(mgay@southeasterntech.edu\)](mailto:mgay@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 the 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.)

Makeup test will be given on the following class meeting date with an acceptable excuse approved by the instructor; any test not made up will result in the student receiving a zero.

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

The Technical College System of Georgia (TCSG) and its constituent Technical Colleges do not discriminate on the basis of race, color, creed, national or ethnic origin, gender, 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 nondiscrimination policy encompasses the operation of all technical college-administered programs, federally financed programs, educational programs and activities involving admissions, scholarships and loans, student life, and athletics. It also applies to the recruitment and employment of personnel and contracting for goods and services.

All work and campus environments shall be free from unlawful forms of discrimination, harassment and retaliation as outlined under Title IX of the Educational Amendments of 1972, Title VI and Title VII of the Civil Rights Act of 1964, as amended, the Age Discrimination in Employment Act of 1967, as amended, Executive Order 11246, as amended, the Vietnam Era Veterans Readjustment Act of 1974, as amended, Section 504 of the Rehabilitation Act of 1973, as amended, the Americans With Disabilities Act of 1990, as amended, the Equal Pay Act, Lilly Ledbetter Fair Pay Act of 2009, the Georgia Fair Employment Act of 1978, as amended, the Immigration Reform and Control Act of 1986, the Genetic Information Nondiscrimination Act of 2008, the Workforce Investment Act of 1998 and other related mandates under TCSG Policy, federal or state statutes.

The Technical College System and Technical Colleges shall promote the realization of equal opportunity through a positive continuing program of specific practices designed to ensure the full realization of equal opportunity.

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

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

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

Assessment/Assignment	Percentage
Hands On Assignments	% 50
Lab Safety & Clean up	% 25
Daily Participation	% 25

GRADING SCALE

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

WELD 1060 Vertical Shielded Metal Arc Welding Spring Semester 2020 Lesson Plan

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
1/7/2020	SMAW Set Up and Electrode Selection	First day of class/Class Introduction— Syllabi, Outline, Rules, Regulations Coverage, Library Resources and tour. SMAW Set Up and Electrode Selection	Refreshing of proper SMAW Set Up and Electrode Selection by instructor. SMAW Equipment and Filler Metals	1,2,3,4,5 A,B,C
1/8/2020	3F Padded Plate	3F Padded Plate 7018 Electrodes	Instructor demonstrates welding a padded plate using 7018 electrodes. Students practicing padded plate.	1,2,3,4,5 A,B,C
1/9/2020	3F Padded Plate	3F Padded Plate 7018 Electrodes	3F Padded Plate 7018 Electrodes	1,2,3,4,5 A,B,C
1/13/2020	3F Padded Plate	3F Padded Plate 7018 Electrodes	3F Padded Plate 7018 Electrodes	1,2,3,4,5 A,B,C
1/14/2020	3F Padded Plate	3F Padded Plate 6010 Electrodes	Instructor demonstrates welding a padded plate in the vertical position using 6010 electrodes. Students practicing padded plate.	1,2,3,4,5 A,B,C
1/15/2020	3F Padded Plate	3F Padded Plate 6010 Electrodes	3F Padded Plate 6010 Electrodes	1,2,3,4,5 A,B,C
1/16/2020	3F Padded Plate	3F Padded Plate 6010 Electrodes	3F Padded Plate 6010 Electrodes	1,2,3,4,5 A,B,C
1/20/2020	Holiday	No Class	Holiday	No Class
1/21/2020	Butt Joints -3F Fillet Welds	Butt Joints - 3F Fillet Welds 7018 Electrodes	Students practicing Butt Joints.	1,2,3,4,5 A,B,C
1/22/2020	Lap Joints -3F Fillet Welds	Lap Joints -3F Fillet Welds 7018 Electrodes	Instructor demonstrates welding Lap Joint using 7018 Electrodes. Students practicing Lap Joints.	1,2,3,4,5 A,B,C
1/23/2020	Lap Joints -3F Fillet Welds	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C
1/27/2020	Lap Joints -3F Fillet Welds	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C
1/28/2020	HOLIDAY	NO CLASS	HOLIDAY	1,2,3,4,5 A,B,C
1/29/2020	Lap Joints -3F Fillet Welds	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
1/30/2020	Lap Joints -3F Fillet Welds	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C
2/3/2020	Lap Joints -3F Fillet Welds 7018 Electrodes	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C
2/4/2020	Lap Joints -3F Fillet Welds 7018 Electrodes	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C
2/5/2020	Lap Joints -3F Fillet Welds	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C
2/6/2020	Lap Joints -3F Fillet Welds	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C
2/10/2020	Lap Joints -3F Fillet Welds	Lap Joints -3F Fillet Welds 7018 Electrodes	Students practicing Lap Joints.	1,2,3,4,5 A,B,C
2/11/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Instructor demonstrates welding T-Joints using 7018 Electrodes. Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/12/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/13/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/17/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/18/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/19/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/20/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/24/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/25/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/26/218	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
2/27/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C
3/2/2020	T-Joints – 3F Fillet Welds	T-Joints – 3F Fillet Welds 7018 Electrodes	Students practicing T-Joints.	1,2,3,4,5 A,B,C

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
3/3/2020	Corner Joints –3F Fillet Welds	Corner Joints – 3F Fillet Welds 7018 Electrodes	Instructor demonstrates welding Corner Joint using 7018 Electrodes. Students practicing Corner Joints.	1,2,3,4,5 A,B,C
3/4/2020	Corner Joints – 3F Fillet Welds	Corner Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Corner Joints.	1,2,3,4,5 A,B,C
3/5/2020	Corner Joints – 3F Fillet Welds	Corner Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Corner Joints.	1,2,3,4,5 A,B,C
3/9/2020	Corner Joints – 3F Fillet Welds	Corner Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Corner Joints.	1,2,3,4,5 A,B,C
3/10/2020	Corner Joints – 3F Fillet Welds	Corner Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Corner Joints.	1,2,3,4,5 A,B,C
3/11/2020	Corner Joints – 3F Fillet Welds	Corner Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Corner Joints.	1,2,3,4,5 A,B,C
3/12/2020	Corner Joints – 3F Fillet Welds	Corner Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Corner Joints.	1,2,3,4,5 A,B,C
3/16/2020	Corner Joints – 3F Fillet Welds	Corner Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Corner Joints.	1,2,3,4,5 A,B,C
3/17/2020	Edge Joints – 3F Fillet Welds	Edge Joints – 3F Fillet Welds 7018 Electrodes	Instructor demonstrates welding Edge Joint using 7018 Electrodes. Students practicing Edge Joints.	1,2,3,4,5 A,B,C
3/18/2020	Edge Joints – 3F Fillet Welds	Edge Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Edge Joints.	1,2,3,4,5 A,B,C
3/19/2020	Edge Joints – 3F Fillet Welds	Edge Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Edge Joints.	1,2,3,4,5 A,B,C
3/23/2020	Edge Joints – 3F Fillet Welds	Edge Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Edge Joints.	1,2,3,4,5 A,B,C
3/24/2020	Edge Joints – 3F Fillet Welds	Edge Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Edge Joints.	1,2,3,4,5 A,B,C
3/25/2020	Edge Joints – 3F Fillet Welds	Edge Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Edge Joints.	1,2,3,4,5 A,B,C
3/26/2020	Edge Joints – 3F Fillet Welds	Edge Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Edge Joints.	1,2,3,4,5 A,B,C
3/30/2020	Edge Joints – 3F Fillet Welds	Edge Joints – 3F Fillet Welds 7018 Electrodes	Students practicing Edge Joints.	1,2,3,4,5 A,B,C
3/31/2020	Chain Fillet Welds	Chain Fillet Welds 7018 Electrodes	Instructor demonstrates how to lay- out and weld Chain Fillet Welds using 7018 Electrodes. Students practicing welding and laying out chain fillet welds.	1,2,3,4,5 A,B,C

Date/Week	Chapter/Lesson	Content	Assignments & Tests Due Dates	Competency Area
4/1/2020	Chain Fillet Welds	Chain Fillet Welds 7018 Electrodes	Students practicing welding and laying out chain fillet welds.	1,2,3,4,5 A,B,C
4/2/2020	Chain Fillet Welds	Chain Fillet Welds 7018 Electrodes	Students practicing welding and laying out chain fillet welds.	1,2,3,4,5 A,B,C
4/6/2020	Spring Break	Spring Break	Spring Break	Spring Break
4/7/2020	Spring Break	Spring Break	Spring Break	Spring Break
4/8/2020	Spring Break	Spring Break	Spring Break	Spring Break
4/9/2020	Spring Break	Spring Break	Spring Break	Spring Break
4/13/2020	Staggered Fillet Welds	Staggered Fillet Welds 7018 Electrodes	Students practicing welding and laying out staggered fillet welds.	1,2,3,4,5 A,B,C
4/14/2020	5G Open Root Pipe	5G Open Root Pipe	Instructor demonstrates welding 5G Open Root Pipe, students practicing welding 5G Open Root Pipe	1,2,3,4,5 A,B,C
4/15/2020	5G Open Root Pipe	5G Open Root Pipe	Students practicing welding 5G Open Root Pipe.	1,2,3,4,5 A,B,C
4/16/2020	5G Open Root Pipe	5G Open Root Pipe	Students practicing welding 5G Open Root Pipe.	1,2,3,4,5 A,B,C
4/20/2020	5G Open Root Pipe	5G Open Root Pipe	Students practicing welding 5G Open Root Pipe.	1,2,3,4,5 A,B,C
4/21/2020	5G Open Root Pipe	5G Open Root Pipe	Students practicing welding 5G Open Root Pipe.	1,2,3,4,5 A,B,C
4/22/2020	5G Open Root Pipe	5G Open Root Pipe	Students practicing welding 5G Open Root Pipe.	1,2,3,4,5 A,B,C
4/23/2020	5G Open Root Pipe	5G Open Root Pipe	Students practicing welding 5G Open Root Pipe.	1,2,3,4,5 A,B,C
4/27/2020	5G Open Root Pipe	5G Open Root Pipe	Students practicing welding 5G Open Root Pipe.	1,2,3,4,5 A,B,C
4/28/2020	5G Open Root Pipe	5G Open Root Pipe	Students practicing welding 5G Open Root Pipe. 5G pipe weld due for grade.	1,2,3,4,5 A,B,C
4/29/2020	Bevel Plate Test	3F Beveled Plate Test	Student completing Bevel Plate Test	1,2,3,4,5,A,B,C

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

1. Vertical SMAW Safety Practices and Health Practices
2. Selection and Applications of Electrodes for Vertical SMAW
3. Vertical SMAW Joints
4. Vertical SMAW to Specification
5. 5G Open Root Pipe (6010-Root, 7018 – Fillers)

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.