Course Outline

Energy, Environment, and Utilities **REVISED: August/2017**

Job Title:
Electronics Technician

Career Pathway:
Telecommunications

Industry Sector:
Energy, Environment, and Utilities

O*NET-SOC CODE:
17-3023.01

CBEDS Title:
Introduction to Electronics Technology

CBEDS No.:
5551

72-55-80

Mobile Electronics/1

Credits: 5 **Hours:** 90

Course Description:
This competency-based course is the first in a sequence of two designed for mobile electronics. It provides students with project-based experiences in electromechanical installation and maintenance. Technical instruction includes an orientation, workplace safety policies and procedures, resource management, and employability skills. Emphasis is placed on the principles of electronics, proper use and maintenance of testing equipment, principles of auto electricity, and the installation, operational, and troubleshooting techniques for car audio and video, antennas and speakers, and enclosure designs. The competencies in this course are aligned with the California High School Academic Content Standards and the California Career Technical Education Model Curriculum Standards.

Prerequisites:
Enrollment requires a reading level of 6.0 as measured by the TABE D 9/10.

NOTE: For Perkins purposes this course has been designated as an **introductory/concentrator** course.

This course cannot be repeated once a student receives a Certificate of Completion.

Los Angeles Unified School District
Division of Adult and Career Education
Instructional and Couseling Services Unit
Adult Curriculum Office
www.wearedace.org

COURSE OUTLINE COMPETENCY-BASED COMPONENTS

A course outline reflects the essential intent and content of the course described. Acceptable course outlines have six components. (Education Code Section 52506). Course outlines for all apportionment classes, including those in jails, state hospitals, and convalescent hospitals, contain the six required elements:

(EC 52504; 5CCR 10508 [b]; Adult Education Handbook for California [1977], Section 100)

COURSE OUTLINE COMPONENTS	**LOCATION**
GOALS AND PURPOSES	Cover

The educational goals or purposes of every course are clearly stated and the class periods are devoted to instruction. The course should be broad enough in scope and should have sufficient educational worth to justify the expenditure of public funds.

The goals and purpose of a course are stated in the COURSE DESCRIPTION. Course descriptions state the major emphasis and content of a course, and are written to be understandable by a prospective student.

PERFORMANCE OBJECTIVES OR COMPETENCIES	pp. 7-13

Objectives should be delineated and described in terms of measurable results for the student and include the possible ways in which the objectives contribute to the student's acquisition of skills and competencies.

Performance Objectives are sequentially listed in the COMPETENCY-BASED COMPONENTS section of the course outline. Competency Areas are units of instruction based on related competencies. Competency Statements are competency area goals that together define the framework and purpose of a course. Competencies fall on a continuum between goals and performance objectives and denote the outcome of instruction.

Competency-based instruction tells a student before instruction what skills or knowledge they will demonstrate after instruction. Competency-based education provides instruction which enables each student to attain individual goals as measured against pre-stated standards.

Competency-based instruction provides immediate and continual repetition and In competency-based education the curriculum, instruction, and assessment share common characteristics based on clearly stated competencies. Curriculum, instruction and assessment in competency-based education are: explicit, known, agreed upon, integrated, performance oriented, and adaptive.

COURSE OUTLINE COMPETENCY-BASED COMPONENTS (continued)

COURSE OUTLINE COMPONENTS	LOCATION
INSTRUCTIONAL STRATEGIES	p. 14

Instructional techniques or methods could include laboratory techniques, lecture method, small-group discussion, grouping plans, and other strategies used in the classroom.

Instructional strategies for this course are listed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructional strategies and activities for a course should be selected so that the overall teaching approach takes into account the instructional standards of a particular program, i.e., English as a Second Language, Programs for Adults with Disabilities.

UNITS OF STUDY, WITH APPROXIMATE HOURS ALLOTTED FOR EACH UNIT — Cover

The approximate time devoted to each instructional unit within the course, as well as the total hours for the course, is indicated. The time in class is consistent with the needs of the student, and the length of the class should be that it ensures the student will learn at an optimum level. — pp. 7-13

Units of study, with approximate hours allotted for each unit are listed in the COMPETENCY AREA STATEMENT(S) of the course outline. The total hours of the course, including work-based learning hours (community classroom and cooperative vocational education) is listed on the cover of every CBE course outline. Each Competency Area listed within a CBE outline is assigned hours of instruction per unit.

EVALUATION PROCEDURES — pp. 15-16

The evaluation describes measurable evaluation criteria clearly within the reach of the student. The evaluation indicates anticipated improvement in performances as well as anticipated skills and competencies to be achieved.

Evaluation procedures are detailed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructors monitor students' progress on a continuing basis, assessing students on attainment of objectives identified in the course outline through a variety of formal and informal tests (applied performance procedures, observations, and simulations), paper and pencil exams, and standardized tests.

REPETITION POLICY THAT PREVENTS PERPETUATION OF STUDENT ENROLLMENT — Cover

After a student has completed all the objectives of the course, he or she should not be allowed to reenroll in the course. There is, therefore, a need for a statement about the conditions for possible repetition of a course to prevent perpetuation of students in a particular program for an indefinite period of time.

ACKNOWLEDGMENTS

Thanks to PAUL PIDOUX and MARCELA BAKER for developing and editing this curriculum. Acknowledgment is also given to ERICA ROSARIO for designing the original artwork for the course covers.

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APPROVED:

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1.0 Academics
Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Energy, Environment, and Utilities academic alignment matrix for identification of standards.

2.0 Communications
Acquire, and accurately use Energy, Environment, and Utilities sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.

3.0 Career Planning and Management
Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.

4.0 Technology
Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Energy, Environment, and Utilities sector workplace environment.

5.0 Problem Solving and Critical Thinking
Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Energy, Environment, and Utilities sector using critical and creative thinking; logical reasoning, analysis, inquiry, and problem-solving techniques.

6.0 Health and Safety
Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Energy, Environment, and Utilities sector workplace environment.

7.0 Responsibility and Flexibility
Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Energy, Environment, and Utilities sector workplace environment and community settings.

8.0 Ethics and Legal Responsibilities
Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.

9.0 Leadership and Teamwork
Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the SkillsUSA career technical student organization.

10.0 Technical Knowledge and Skills
Apply essential technical knowledge and skills common to all pathways in the Energy, Environment, and Utilities sector.

11.0 Demonstration and Application
Demonstrate and apply the knowledge and skills contained in the Energy, Environment, and Utilities anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and through the SkillsUSA career technical student organization.

C. Telecommunications Pathway

The Telecommunications pathway prepares students for employment and postsecondary education and training in the wireless and fixed-line communications industries. The sharing of information is essential for personal, commercial, educational, government, and military functions. Information is stored, sent, and accessed primarily via the telecommunications industries.

Sample occupations associated with this pathway:

- Cable/Telecommunications Installation and Maintenance Technicians
- Line Workers
- Network Operators, Technicians, Designers, and Managers
- Network Security Administrator
- Satellite Systems Installation/Engineers

C1.0 Understand the basic principles and concepts that impact the telecommunications industry, including systems, concepts, and regulations.

C2.0 Demonstrate understanding and use of the basic and emerging technologies that impact the telecommunications industry.

C3.0 Examine the role and functions of satellites in telecommunications.

C4.0 Research the components, interaction, and operations of wireless telecommunications systems.

C5.0 Research the components, interaction, and operations of fixed-wire telecommunications systems.

C6.0 Consider privacy and security issues of the telecommunications systems.

COMPETENCY-BASED COMPONENTS
for the Mobile Electronics/1 Course

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
A. ORIENTATION AND SAFETY Review, apply, and evaluate classroom and workplace policies and procedures used in accordance with federal, state, and local safety and environmental regulations. (4 hours)	1. Review the scope and purpose of the course. 2. Review the overall course content as a part of the Linked Learning Initiative. 3. Review classroom policies and procedures. 4. Review the different occupations in the Energy and Utilities Industry Sector which have an impact on the role of electronics technicians. 5. Review the opportunities available for promoting gender equity and the representation of non-traditional populations in electronics. 6. Review the impact of Environmental Protection Agency (EPA) legislation on the Energy and Utilities Industry Sector practices. 7. Review and demonstrate the procedures for contacting proper authorities for the removal of hazardous materials based on the EPA standards. 8. Review the purpose of the California Occupational Safety and Health Administration (Cal/OSHA) and its laws governing electronics technicians. 9. Review and demonstrate the use of the Material Safety Data Sheet (MSDS) as it applies to the electronics industry. 10. Review classroom and workplace first aid and emergency procedures according to American Red Cross (ARC) standards. 11. Review how each of the following insures a safe workplace: a. employees' rights as they apply to job safety b. employers' obligations as they apply to safety c. safety laws applying to electrical tools 12. Pass the safety test with 100% accuracy.	**Career Ready Practice:** 1, 3, 6, 8, 12 **CTE Anchor:** Communications: 2.1, 2.2, 2.3, 2.4 Career Planning and Management: 3.4, 3.5 Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14, 6.15, 6.16 Technical Knowledge and Skills: 10.1, 10.2 **CTE Pathway:** C1.1, C1.2
B. TRADE MATHEMATICS Understand, apply, and evaluate the mathematical requirements in mobile electronics work.	1. Describe the practical applications of math in mobile electronics work. 2. Describe and demonstrate problem-solving techniques involving whole number problems, using arithmetic operations (addition, subtraction, multiplication, and division). 3. Describe and demonstrate problem-solving techniques involving various fraction problems using arithmetic operations. 4. Describe and demonstrate problem-solving techniques involving various decimal problems using addition, subtraction, multiplication, and division.	**Career Ready Practice:** 1 **CTE Anchor:** Communications: 2.1, 2.2, 2.4 Problem Solving and Critical Thinking: 5.1, 5.2, 5.4

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(5 hour)	5. Describe and demonstrate techniques for changing fractions to decimals. 6. Describe and demonstrate techniques for changing decimals to fractions. 7. Describe the English system of measuring length. 8. Describe the English system of measuring weight. 9. Describe the English system of measuring volume or capacity. 10. Describe and demonstrate problem-solving techniques for various English system measuring problems using arithmetic operations. 11. Describe and demonstrate measuring techniques for objects by using the English system measuring tools common to the trade. 12. Express metric units in ascending and descending powers of ten. 13. Convert the English numbering system to metric system. 14. Convert the metric system to the English numbering system. 15. Calculate square roots of regular numbers. 16. Describe and demonstrate problem-solving techniques for geometric problems. 17. Describe and demonstrate problem-solving techniques for algebraic problems. 18. Define and demonstrate problem-solving techniques using percentages. 19. Define and demonstrate techniques for reading and interpreting graphs. 20. Define and demonstrate the conversion of decimal numbers to binary numbers. 21. Define and demonstrate the conversion of binary numbers to decimal numbers.	Technical Knowledge and Skills: 10.1 **CTE Pathway:** C1.5, C3.7
C. RESOURCE MANAGEMENT Understand, apply, and evaluate resource management principles and techniques in the mobile electronics business.	1. Define the following: a. resources b. management c. sustainability 2. Describe the management of the following resources in the mobile electronics business: a. time b. materials c. personnel 3. List specific examples of effective management of the following in the mobile electronics business: a. time b. materials c. personnel 4. Describe the benefits of effective resource management in the mobile electronics business: a. profitability b. sustainability c. company growth 5. Describe the economic benefits and liabilities of managing resources in an environmentally responsible way.	**Career Ready Practice:** 1, 3, 6, 8, 9, 12 **CTE Anchor:** Communications; 2.1, 2.2, 2.3, 2.4, 2.5 Career Planning and Management: 3.1, 3.2 Technology: 4.1. 4.2. 4.3, Problem Solving and Critical Thinking: 5.1, 5.2, 5.4 Health and Safety: 6.11 Responsibility and Flexibility: 7.1, 7.2, 7.3, 7.4, 7.7, 7.8

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(1 hour)		Ethics and Legal Responsibilities: 8.1, 8.2, 8.4, 8.5 Leadership and Teamwork: 9.1, 9.2, 9.3, 9.6 Technical Knowledge and Skills: 10.1, 10.2 **CTE Pathway:** C1.1, C7.2, C7.3
D. ELECTRONIC PRINCIPLES Understand, apply, and evaluate the basic principles and techniques used in electronics.	1. Define the following: a. voltage (volts) b. amperage (amps) c. resistance (ohms) d. Ohm's Law e. Farad f. Henry g. current h. direct current (DC) i. alternating current (AC) j. resistors k. capacitors l. coils m. diodes n. relays o. transistors p. batteries q. series circuit r. parallel circuit s. series/parallel circuit t. schematics 2. Define and demonstrate the calculation of Ohm's Law equations. Identify and define the features and functions of the following: a. electronic components and symbols b. resistors c. capacitors d. diodes e. transistors f. power supplies g. DC applications h. series circuit i. parallel circuit j. series/parallel circuit	**Career Ready Practice:** 1, 3 **CTE Anchor:** Communication: 2.1, 2.2, 2.3 Problem Solving and Critical Thinking: 5.1 Technical Knowledge and Skills: 10.1 **CTE Pathway:** C1.1, C5.6

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)	4. Define and demonstrate the following: a. reading and using schematics b. designing and drawing schematics c. identifying and making 12volt power supply	
E. TESTING EQUIPMENT Understand, apply, and evaluate the principles and techniques for using, maintaining, and storing mobile electronics testing equipment. (5 hours)	1. Identify and demonstrate the proper use, maintenance, and storage techniques for the following: a. digital multimeter (DMM) b. signal generator c. battery load tester 2. Define and demonstrate the following: a. measuring unknown voltages with a multimeter b. measuring resistance with a multimeter c. measuring current with a multimeter d. proper data recording e. diagnosing and solving problems involving: i. open circuit ii. short circuit iii. resistance in circuit iv. ground loops v. improper voltages	**Career Ready Practice:** 1, 3, 4, 5 **CTE Anchor:** Communications: 2.1, 2.2, 2.3, 2.4 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.6, 6.8, 6.14, 6.15, 6.16 Technical Knowledge and Skills: 10.5 **CTE Pathway:** C1.1, C5.5, C5.6, C6.3
F. BASIC AUTO ELECTRICITY Understand, apply, and evaluate the basic operation of the auto electrical system as it relates to general audio and video electronics installation and repair. (10 hours)	1. Compare alternating current (AC) to direct current (DC). 2. List the electrical systems found in cars. 3. Identify electrical circuits and their components. 4. Describe how electricity can be generated. 5. Describe the operation of charging systems. 6. Describe the features and function of an automotive storage battery. 7. Test an automotive storage battery. 8. Describe the function of fuses. 9. Describe the function of relays. 10. Identify and define how electromagnetic interference (EMI) can cause electronic components to malfunction.	**Career Ready Practice:** 1, 3 **CTE Anchor:** Communications: 2.1, 2.2, 2.3 Problem Solving and Critical Thinking: 5.1 Health and Safety: 6.6, 6.11, 6.12, 6.13, 6.16 Technical Knowledge and Skills: 10.1 **CTE Pathway:** C1.1, C5.6

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
G. CAR AUDIO AND VIDEO Understand, apply, and evaluate the principles and techniques of customer service and auto electronics as they relate to specific car audio and video installation and repair. (25 hours)	1. Define the following: a. decibels (dB) b. radio noise c. noise suppression d. modulation e. amplitude modulation (AM) f. frequency modulation (FM) g. amplifiers h. subwoofers i. engine interference 2. Identify several types of car audio and video systems. 3. Define and demonstrate the following: a. completion of check-out sheet while reviewing and identifying auto damages b. identification of proper installation locations for equipment c. structural modification techniques for audio and video applications d. vehicle tear-down and reassembly techniques e. determining the dimensions and specifications of components f. design techniques for audio systems with: i. head unit/deck ii. amplifier iii. subwoofer iv. speakers g. design techniques for video systems with: i. head unit/deck ii. amplifier iii. subwoofer iv. speakers v. flat panel screens h. custom design of special audio and video installations i. structural modification techniques for audio and video applications j. application and installation techniques for components k. recognition and correction of engine interference l. correct use of noise suppression devices m. checking for proper functions of both systems n. explaining the operation of audio and video systems to a customer o. completion and signing of check-out sheet to verify proper operation of vehicle systems	**Career Ready Practice:** 1, 3, 5 **CTE Anchor:** Communications: 2.1, 2.2, 2.3 Technology: 4.1 Problem Solving and Critical Thinking: 5.1 Health and Safety: 6.6, 6.11, 6.13 Ethics and Legal Responsibilities: 8.1 Technical Knowledge and Skills: 10.1 **CTE Pathway:** C5.6

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
H. ANTENNAS AND SPEAKERS Understand, apply, and evaluate the principles and techniques of auto mechanics as they relate to vehicle antenna and speaker installation and repair. (15 hours)	1. Identify and define the features and functions of the following: a. manual antennas b. automatic antennas c. mobile antennas i. citizen band (CB) ii. cellular iii. short-wave iv. car audio v. navigation 2. Define the following: a. antenna installation b. speaker size and location c. speaker size and type d. speaker phase and impedance matching e. speaker parts f. passive crossovers 3. Define and demonstrate the following: a. determine proper antenna location b. design passive crossovers c. install antenna d. calibrate special application antennas e. checking for proper function of both systems f. explaining the operation of the antennas and speaker to a customer g. completion and signing of check-out sheet to verify proper operation of antenna and speaker systems	**Career Ready Practice:** 1, 3 **CTE Anchor:** Communications: 2.1, 2.2, 2.3 Technology: 4.1 Problem Solving and Critical Thinking: 5.1, 5.4 Health and Safety: 6.6, 6.13, 6.16 Responsibility and Flexibility: 7.4, 7.5 Ethics and Legal Responsibilities: 8.1 Technical Knowledge and Skills: 10.1, 10.2 **CTE Pathway:** C1.1, C3.9, C4.5, C5.6, C7.2, C7.3
I. ENCLOSURE DESIGN Understand, apply, and evaluate the principle of enclosure design.	1. Define fabrication. 2. Identify and define the specifications and functions of the following: a. types of speakers b. speaker enclosures c. fiberglass d. carpeting and insulation rework e. crossover networks 3. Define and demonstrate the following: a. fabrication techniques b. custom fiberglass design and construction c. carpeting and installation reworking d. audio systems design and configuration i. enclosure tuning ii. crossover design	**Career Ready Practice:** 1 **CTE Anchor:** Communications: 2.1, 2.2, 2.3 Problem Solving and Critical Thinking: 5.1, 5.4 Health and Safety: 6.2, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11, 6.13, 6.15, 6.16

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(10 hours)		Responsibility and Flexibility: 7.5 Ethics and Legal Responsibilities: 8.1 Technical Knowledge and Skills: 10.1 **CTE Pathway:** C7.2, C7.3, C7.5
J. EMPLOYABILITY SKILLS Understand, apply, and evaluate the employability skills required in mobile electronics work. (5 hours)	1. Describe employer requirements for the following: a. punctuality b. attendance c. attitude toward work d. quality of work e. teamwork f. timeliness g. communication skills 2. Identify potential employers through traditional and internet sources. 3. Describe the role of electronic social networking in job search. 4. Design sample résumés and cover letters. 5. Explain the importance of filling out a job application legibly, with accurate and complete information. 6. Describe the common mistakes that are made on job applications. 7. Complete sample job application forms correctly. 8. State the importance of enthusiasm in the interview and on a job. 9. State the importance of appropriate appearance in the interview and on a job. 10. State the importance of the continuous upgrading of job skills. 11. Describe customer service as a method of building permanent relationships between the organization and the customer. 12. Describe and demonstrate appropriate interviewing techniques. 13. Identify the informational materials and resources needed to be successful in an interview. 14. Describe and demonstrate appropriate follow-up procedures	**Career Ready Practice:** 1, 2, 3, 7, 8 **CTE Anchor:** Communications: 2.1, 2.2, 2.3, 2.4, 2.5 Career Planning and Management: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9 Technology: 4.4 Responsibility and Flexibility: 7.2, 7.4, 7.5, 7.6, 7.7 Ethics and Legal Responsibilities: 8.4 Leadership and Teamwork: 9.2, 9.4, 9.6 Technical Knowledge and Skills: 10.1 Demonstration: 11.1, 11.2, 11.5 **CTE Pathway:** C1.1, C7.1, C7.2, C7.3, C7.4

SUGGESTED INSTRUCTIONAL MATERIALS and OTHER RESOURCES

TEXTS AND SUPPLEMENTAL BOOKS

Agrawal Dharma P. and Qing-An Zeng. Introduction to Wireless and Mobile Systems. CL Engineering, 2010.

Fujimoto, Kyohei and J.R. James. Mobile Antenna Systems Handbook. Artech House, 2008.

Goldsmith, Andrea. Wireless Communications. Cambridge University Press, 2005.

Grob, Bernard and Mitchell E. Schultz. Basic Electronics, 5th Edition. McGraw-Hill Companies, 2002.

Herrick, Clyde. Basic Electronics Math. Elsevier Science, 2007.

Nicopolitidis, P. A.S. Pomportsis and M.S. Obaidat. Wireless Networks. Wiley, John and Sons, Incorporated, 2002.

Schuler, Charles A. Electronics: Principles and Applications, 6th Edition. McGraw-Hill and Companies, 2002.

Schwartz, Mischa. Mobile Wireless Communications. Cambridge University press, 2004.

Slone, G. Randy. Understanding Electricity and Electronics, 2nd Edition. McGraw-Hill and Companies, 2002.

RESOURCES

Employer Advisory Board members

CTE Model Curriculum Standards
http://www.cde.ca.gov/ci/ct/sf/documents/energyutilities.pdf

Mobile Electronics Certified Professional (MECP) Program, 1919 S. Eads St., Arlington, VA 22202
866-858-1555
www.mecp.com

International Society of Certified Electronics Technicians, 3608 Pershing Ave., Forth Worth, TX, 76107-4527, 800-946-0201
www.iscet.org

Electronics Technicians Association International, 5 Depot Street, Greencastle, IN 46135, 800-288-3824
www.eta-i.org

COMPETENCY CHECKLIST

TEACHING STRATEGIES and EVALUATION

METHODS AND PROCEDURES

A. Lecture and discussion

B. Multimedia presentations

C. Demonstrations and participation

D. Individualized instruction

E. Peer teaching

F. Role-playing

G. Guest speakers

H. Field trips and field study experiences

I. Projects

EVALUATION

SECTION A – Orientation and Safety – Pass the safety test with 100% accuracy.

SECTION B – Trade Mathematics – Pass all assignments and exams on trade mathematics with a minimum score of 80% or higher.

SECTION C – Resource Management – Pass all assignments and exams on resource management with a minimum score of 80% or higher.

SECTION D – Electronic Principles – Pass all assignments and exams on electronic principles with a minimum score of 80% or higher.

SECTION E – Testing Equipment – Pass all assignments and exams on testing equipment with a minimum score of 80% or higher.

SECTION F – Basic Auto Electricity – Pass all assignments and exams on basic auto electricity with a minimum score of 80% or higher.

SECTION G – Car Audio and Video – Pass all assignments and exams on car audio and video with a minimum score of 80% or higher.

SECTION H – Antennas and Speakers – Pass all assignments and exams on antennas and speakers with a minimum score of 80% or higher.

SECTION I – Enclosure Design – Pass all assignments and exams on enclosure design with a minimum score of 80% or higher.

SECTION J – Employability Skills – Pass all assignments and exams on employability skills with a minimum score of 80% or higher.

Statement for Civil Rights

All educational and vocational opportunities are offered without regard to race, color, national origin, gender, or physical disability.