Seward County Community College/Area Technical School
Course Syllabus

I. **TITLE OF COURSE:** - DC Circuits

II. **COURSE DESCRIPTION:** : 3 credit hours. 2 hours of lecture and 2 hours of lab per week.
A study of the fundamentals of direct current including Ohm's law, Kirchhoff's laws and circuit analysis techniques. Emphasis on circuit analysis of resistive networks and DC measurements.

Rationale: DC Circuits lays the groundwork for a career in electronics or electricity. Regardless of the make-up of modern-day electronics, the same basic principles that exist in the simple electrical circuit still apply. DC Circuits introduces students to the terms and concepts that surround electricity.

III. **PROGRAM MISSION STATEMENT:** The Corrosion Technology program at Seward County Community College/Area Technical School provides students with the opportunity to develop and enhance their skills in the corrosion technology field through educational and technical instruction.

IV. **TEXTBOOK AND MATERIALS:** Grob's Basic Electronics (10th edition); ISBN 13 978-0-07-297475-1. A scientific calculator is required for this course.

V. **SCCC/ATS OUTCOMES:** Students who successfully complete this course will demonstrate the ability to do the following SCCC/ATS Outcomes.

Outcome #1: Read with comprehension, be critical of what they read, and apply knowledge gained to real life situations.

Outcome #2: Communicate ideas clearly and proficiently in writing, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.

Outcome #3: Communicate ideas clearly and proficiently in speaking, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.

Outcome #4: Demonstrate mathematical skills using a variety of techniques and technologies.

Outcome #5: Demonstrate the ability to think critically by gathering facts, generating insights, analyzing data, and evaluating information.

Outcome #6: Exhibit skills in information and technological literacy.

Outcome #9: Exhibit workplace skills that include respect for others, teamwork competence, attendance/punctuality, decision making, conflict resolution, truthfulness/honesty, positive attitude, judgment, and responsibility.

VI. **GENERAL COURSE OUTCOMES:**

- Apply safety techniques while working on and troubleshooting various circuits and components.
- Identify various sources of electricity in DC circuits.
- Measure voltage, current, and resistance in DC circuits using appropriate measuring devices.
- Analyze DC circuits using appropriate mathematical formulas such as Ohm's Law, Kirchhoff's Law, and the power formula.
- Troubleshoot various DC circuits using schematics diagrams.

VII. **TOPICAL COURSE OUTLINE:**

- Math Review
- Basic Electricity
- Resistance
- Ohm's Law
- Series Circuits
- Series Troubleshooting
- Parallel Circuits
- Series-Parallel Circuits
- Voltage and Current Dividers
- Multimeters
- Kirchhoff's Current Law
- Conductors, Insulators, & Batteries
- Alternating Current and Voltage
- Transformers

VIII. **INSTRUCTIONAL METHODS:** Class lecture, demonstrations, discussion, and lab activities.

IX. **METHODS OF ASSESSMENT:**

Quizzes 25%
Lab Assignments 25%

Homework 25%
Final Exam 25%

X. **ADA STATEMENT:** If you believe that you are entitled to special accommodations under the Americans with Disabilities Act, please contact Celeste Donovan, Dean of Student Services at 620-417-1016 or visit the office located in the Hobble Academic Building.

Revised: 2-16-09