DEPARTMENT: TECHNOLOGY EDUCATION	COURSE TITLE: ELECTRONICS II COURSE NUMBER: 508A
GRADES: 10 - 12	PRE-REQUISITES (IF ANY): ELECTRONICS I

UNIT	LENGTH	CONTENT	SKILLS	METHODS OF ASSESSMENT	FRAMEWORK STRAND(S) & STANDARD(S)
Review Electronics	2 Weeks	• Measuring Resistance • Ohm's Law • Series, Parallel and Series-Parallel Circuit Analysis • AC waveforms & Calculations; Using Test Equipment	Students will: • Interpret and draw schematic diagrams • Use algebra and trigonometry for problem solving • Use DMM, Oscilloscope, Function Generator and Bench Power Supply	• Problem sets (both in-class and homework) • Lab (practical) work • Unit test	STE-S4, 9/10-5.1 – 5.6
Capacitors and Time Constants	2 Weeks	• Calculating capacitance from physical attributes • Series and Parallel connected capacitors; Calculating and measuring RC time constants	Students will: • Use micrometer, metric rule and capacitance meter • Use algebra to calculate capacitance, total circuit capacitance and time constants • Use oscilloscope to measure time and voltage • Wire circuits from schematic diagrams	• Problem sets (both in-class and homework) • Lab (practical) work • Unit test	
Power Supply Theory and Operation	3 Weeks	• Theory and Operation of: transformers, fuses, rectifiers, filtering circuits, regulator circuits	Students will: • Read and interpret schematic diagrams • Utilize electronic assembly/fabrication techniques to build a power supply kit • Utilize test equipment (oscilloscope and DMM) to test and verify operation of the circuit	• During assembly of the power supply, students make tests and measurements to observe and verify electrical quantities (waveforms, voltages) in the circuit • During final tests of the PS, students explain theory of operation to the teacher	STE-S4, 9/10-5.1 – 5.6

555 Timer Circuits	2 Weeks	• Using the 555 IC timer to construct various circuits including: astable and monostable pulse circuits which provide both audible and visible outputs	Students will: • Read and interpret schematic diagrams • Draw schematic diagrams; wire and test circuits using breadboard system • Use test equipment to verify predicted operation • Use algebra to calculate/predict frequency, period and duty cycle as well as unknown component values • Brainstorm real-world applications for these circuits	• Written (calculations and short answer) answers to questions associated with 555 circuit design and applications • Unit test	STE-S4, 9/10-1.1 and 1.5
Operational Amplifiers	2 Weeks	• Theory and operation of inverting, non-inverting, summing and difference amplifiers using the 741 Op Amp	Students will: • Read, draw and interpret schematic diagrams • Use algebra to calculate/predict circuit operation • Use test equipment (oscilloscope and DMM) to measure and verify circuit operation; wiring circuits using breadboards • Brainstorm real-world applications for these circuits	• Problem sets (both in-class and homework) associated with circuit design solution • Lab work to verify predicted circuit behavior • Unit test	STE-S4, 9/10-1.1 & 1.5
Review	1 week	• Summary of trimester material	Students will: • Present orally using technology • Utilize lab equipment • Solve algebra-based problems	• Student presentations • Lab • Practical and written exam	