

ELT-111 CIRCUIT ANALYSIS I

Combination Circuits

LECTURE NOTES

Combination series/parallel circuits

Combination circuits have both series and parallel components.

Identify series/parallel relationships

Apply theories of the analysis of both series and parallel circuits taught in previous chapters.

Solve for total Resistance.

Begin away from the source and apply rules for calculating series and parallel resistance.

Calculate total circuit current using ohms law.

Solve for individual branch currents and voltage drops using:

Kirchhoff's Voltage Law

Kirchhoff's Current Law

Voltage divider Theorem

Current divider Theorem

Use Ohm's Law as a basis for checking all calculations

Use critical thinking to determine if answers are logical.

Current is the same in all series sections of a circuit

Voltage is the same in all parallel sections of the circuit

Resistive loads

Wheatstone Bridge – Used for precise measurement of resistance

Load current and Bleeder current

Internal resistance of a Voltmeter causing loading