

Electric Circuits - Course Study Sheet

Course: Electric Circuits Cluster: Engineering Foundations

Develops circuit variables, laws, methods, transient behavior, AC response, and practical measurement.

Five-module course map

Module	Active evidence to produce
1. voltage current and power	Explain the central idea, complete an application, diagnose one plausible error, and connect it to the next module.
2. Kirchhoff laws	Explain the central idea, complete an application, diagnose one plausible error, and connect it to the next module.
3. network theorems	Explain the central idea, complete an application, diagnose one plausible error, and connect it to the next module.
4. RC and RL transients	Explain the central idea, complete an application, diagnose one plausible error, and connect it to the next module.
5. sinusoidal steady state	Explain the central idea, complete an application, diagnose one plausible error, and connect it to the next module.

Reliable learning method

label reference directions, reduce or write circuit equations, solve, verify conservation, and compare with measurement or simulation

Representative application

Analyze an RC transient and explain initial condition, time constant, final value, and measurement loading.

Weekly study cycle

1. Preview the objective and write two questions. 2. Attend or engage and capture decisions rather than every sentence. 3. Reconstruct the main idea within 24 hours. 4. Complete independent practice. 5. Analyze the first unsupported move on each error. 6. Use feedback. 7. Schedule a delayed mixed recheck.

Self-check before moving on

Can you explain the idea without notes, complete a fresh task, detect a near-miss, verify the result, and state a limitation? Watch especially for: changing passive sign convention mid-solution or treating a simulation trace as proof without circuit-law checks.

What to save

a circuit analysis with schematic, equations, simulation or measurement, error, and interpretation

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