

YTC CRITICAL THINKING RUBRIC Instructor: Gopal Mohan Course: EET 261 Electronic Troubleshooting Semester Spring

	Advanced - 4	Competent - 3	Developing - 2	Elementary - 1	Score ____
Identify	Student is independently able to analyze and synthesize the behavior of the circuit from a diagnostic perspective and from that is able to successfully troubleshoot the circuit.	Student needs minimal assistance as to how to begin the process. After this the student is able to successfully diagnose and identify the necessary steps needed to proceed.	Student needs moderate levels of assistance in various stages along the way. Has understanding of basic circuit principles. Needs assistance with connecting principles to problem on hand.	Student needs significant assistance and input in recognizing the symptom. Unable to identify simple electrical concepts such as opens and shorts without extensive support (or at not able to identify segments of the circuit to any degree).	
Gather	Student independently and accurately determines the approach, the necessary test and measurement equipment, and calculates the expected values for proper operation of the circuit.	Student needs minimal assistance with the initial approach in terms of the expected values. Student is able to proceed with the rest of the process efficiently.	Student needs continued, moderate levels of assistance including test equipment use to complete process. Able to proceed with continual Assistance in some aspects.	Student needs constant significant, step-by-step guidance including preliminary understanding, test equipment selection, and what to expect for proper operation. Fails to apply learned principles for this step.	
Examine	Student considers all the physical senses before proceeding. Knows to ask appropriate questions of relevant parties and considers all alternatives. Student independently and accurately arrives at a diagnostic scheme.	Student requires minimal unsolicited input for some aspects of process. But is able to proceed in most areas with high degree of independence.	Student needs a checklist for common diagnostic methods and criteria. Significant support is provided.	Student needs full contribution of instructor input and assistance to be able to arrive at a diagnostic scheme.	
Formulate	Student independently calculates the expected values for the proper operation of the circuit in relationship to their derived scheme. Goes about “distributing” this end result from input stage to the output stage.	Student demonstrates significant level of knowledge of expected values for the proper operation of the circuit. Needs some minimal support with the synthesizing this information.	Student requires significant support/input to evaluate the expected values for the proper operation of the circuit. Unable to synthesize information.	Student unable to formulate the calculations needed for the evaluation of expected values for the proper operation of the circuit without constant step by step instructions. Cannot apply knowledge to diagnostic scheme.	

<p>Apply</p>	<p>Student independently and accurately demonstrates the application of the basic laws of electricity and incorporates system and device behavior to arrive at a correct resolution. Can offer alternative methods if applicable.</p>	<p>Student can, with minimal assistance, demonstrate the application of the basic electronic principles to arrive at the solution. No alternatives are provided if applicable.</p>	<p>Student, when given a step by step approach, is able to arrive at a resolution to the circuit problem. Significant support required. Some errors in judgment evident.</p>	<p>Student needs complete support in order to be shown the application of electronic principles and guided through to the resolution of the circuit problem. Failure to demonstrate any application.</p>	
<p>Evaluate</p>	<p>Student is able to independently verify through explanation and/or demonstration that their derived diagnosis and solution for the problem has resulted in the proper operation of the circuit and the system is fully restored.</p>	<p>Student is able to verify circuit operation, but needs minimal input on how their circuit fix has resolved the system issue. Supporting details are somewhat limited.</p>	<p>Student needs significant assistance in verifying whether the attempted repair has resulted in the expected fix to the problem. Has difficulty relating their diagnosis to the solution factors.</p>	<p>Student is unable to demonstrate or discuss how the repair resulted in the fixing of the problem, first at the circuit level and then at the system level.</p>	