EET103 Electrical Circuits I
Grading Rubric - Lab 2
version 1.0
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Requirements	Category	Outstanding	Satisfactory	Needs Improvement	Unsatisfactory	Score
Circuit A	**Part Identification**	Correctly identifies the active buzzer using the inventory guide without assistance.	Selects the active buzzer with minor guidance.	Struggles to identify the active buzzer without help.	Fails to identify the correct buzzer.	2
Circuit A	**Circuit Construction**	Constructs the circuit correctly on the first attempt, with all components connected per the schematic. Neat, well-organized wiring, with no loose connections.	Constructs the circuit with minor errors. Wiring is functional but could be neater.	Assembles the circuit with significant errors, requiring considerable assistance. Wiring is disorganized, with loose connections that interfere with operation.	Unable to assemble the circuit correctly, even with significant guidance. Connections are incorrect, and the circuit does not function.	2
Circuit A	**Testing & Operation**	Buzzer operates perfectly when the switch is pressed. Demonstrates understanding of circuit functionality.	Buzzer works when the switch is pressed after minor troubleshooting. Demonstrates basic understanding of buzzer operation in the circuit.	The buzzer may not work initially, and troubleshooting is required. Lacks a clear understanding of circuit operation.	The buzzer does not work, and the student is unable to troubleshoot or understand basic circuit principles.	2
Circuit A	**Current Measurement**	Uses the DMM correctly to measure current, connecting it in series with the load. Provides clear explanation of the measurement process.	Measures current correctly with minor setup errors. The reading is slightly off, and the student recognizes and corrects them.	Attempts to measure current but incorrectly connects the DMM. Reading is inaccurate, and the student cannot correct the mistake without help.	Fails to measure current, either by not using the DMM correctly or by making improper connections. Does not understand the measurement process.	2
Circuit A	**Video Presentation**	Clear, confident explanation of circuit construction, DMM setup, and results. Discusses ideal internal resistance of an ammeter.	Satisfactory explanation of circuit construction and measurement process. Lacks detail or clarity in some areas.	The video explanation is incomplete, with missing details about circuit construction and measurement. Internal resistance is not addressed clearly.	Video is incomplete or lacks clear explanation of circuit construction, DMM setup, and results. Demonstrates little understanding of the experiment.	2
Circuit B	**Part Identification**	Correctly selects the DC motor, batteries, and SPDT switch without assistance. Understands the switch assembly created in Lab 1.	Selects the correct parts with minor guidance. Demonstrates basic understanding of the switch's role in the circuit.	Struggles to identify the correct components or understand the role of the SPDT switch, even with help.	Fails to select the correct parts or understand their functions, even with assistance.	2
Circuit B	**Circuit Construction**	Constructs the circuit correctly on the first attempt. Neat, organized wiring, with all components connected per the schematic.	Constructs the circuit with minor errors, corrected with little assistance. Wiring may be somewhat disorganized.	Assembles the circuit with significant errors, requiring considerable guidance to correct.	Fails to assemble the circuit correctly, even with significant guidance.	2
Circuit B	**Testing & Operation**	Motor operates as expected when the switch is toggled on. Demonstrates clear understanding of motor and switch operation.	Motor operates when the switch is toggled, though troubleshooting may be needed. Demonstrates basic understanding of motor and switch operation.	The motor does not operate initially, and the student requires significant assistance to troubleshoot.	The motor does not operate, and the student is unable to troubleshoot or understand motor operation.	2
Circuit B	**Voltage Measurement**	Uses the DMM correctly to measure voltage across the motor terminals. The reading is accurate, and the student provides a clear explanation of the measurement process.	Measures voltage correctly with minor setup errors. Recognizes and corrects mistakes.	Attempts to measure voltage but makes significant setup errors.	Fails to measure voltage or uses the DMM incorrectly.	2
Circuit B	**Switch Operation & Observations**	Accurately records observations when moving the SPDT switch to positions B and C. Describes the impact on load voltage clearly.	Provides observations for switch positions B and C, but explanation lacks some clarity.	Struggles to provide clear observations for switch positions B and C.	No meaningful observations for switch positions B and C.	2
Circuit B	**Video Presentation**	Clear, well-organized explanation of circuit construction and switch operation. Discusses the impact of different voltage source configurations clearly.	Satisfactory explanation of the circuit, though some details are missing.	Disorganized or incomplete explanation of the circuit and measurements.	Video is incomplete or lacks explanations of circuit construction, DMM setup, or results.	2
Circuit C	**Part Identification & Circuit Construction**	Correctly assembles Circuit C using parts from Circuits A and B. Circuit is neat and works on the first attempt with organized wiring.	Assembles the circuit correctly with minor errors that are corrected independently or with little assistance. Wiring may be somewhat disorganized.	Struggles to assemble Circuit C correctly, requiring significant assistance. Wiring is disorganized.	Fails to assemble the circuit correctly, even with significant guidance.	3

Circuit C	**Testing & Validation**	Assumes and explains expected behavior before testing. Tests successfully and confirms functionality matches expectations.	Makes a reasonable assumption and tests the circuit with minor assistance. Confirms operation through peer comparison.	Circuit does not work initially, and the student struggles to test and validate the circuit's behavior.	Fails to test or verify the circuit.	2
Circuit C	**Voltage Measurements**	Measures voltage accurately across both motor and buzzer in switch positions A and B. Clearly explains voltage differences.	Measures voltage correctly, though explanations may lack depth or clarity.	Makes errors when measuring voltage. Struggles to explain differences in voltage across loads.	Fails to measure voltage across motor and buzzer or lacks understanding of measurement process.	2
Circuit C	**Current Measurements**	Correctly inserts DMM to measure total load current for both motor and buzzer. Provides accurate readings and explains why one load draws more current.	Measures load current correctly, but with slight setup errors.	Makes errors in current measurement or does not understand why one load draws more current.	Fails to measure load current or understand purpose of the measurement.	2
Circuit C	**Conceptual Understanding**	Provides clear, well-reasoned explanation of expected load current if both loads were connected without the switch. Demonstrates strong understanding of current distribution.	Provides basic explanation of expected load current without the switch.	Struggles to explain current distribution without switch. Lacks understanding of load behavior.	No meaningful explanation of expected current without switch. Demonstrates little understanding.	2
Circuit C	**Video Presentation**	Clear demonstration of circuit construction and current measurements. Explains impact of different loads on current and discusses combining buzzer and motor loads.	Video explanation is adequate but lacks depth in discussing current and load impact.	Disorganized or incomplete video explanation of the circuit and current measurements.	Video is incomplete or lacks clear explanations of circuit construction and measurement results.	2
					TOTAL	**35**