

# Course-Level Assessment Matrix

This table shows how specific Electrical Engineering Technology (ELT) courses are used to support ABET Student Outcomes 1 to 5. The courses are assessed every semester. Assessment results are used in a continuous improvement process to make modifications to the program.

ABET Student Outcome	Summary	ELT 103	ELT 110	ELT 112	ELT 113	ELT 115	ELT 203	ELT 213	ELT 214	ELT 215	ELT 217	ELT 220	ELT 240
1	Apply Knowledge	Students will apply computer programming techniques to solve a well-defined engineering problem.	Students will practice soldering skills and component recognition to construct a circuit	Students will apply the techniques of circuit analysis to solve for voltages, currents, and powers in a series, parallel, or series/parallel resistive circuit	Students will apply the techniques of circuit analysis to solve for the voltages and currents in a transistor amplifier circuit	Students will apply the techniques of circuit analysis to solve for the AC voltages and currents in a reactive circuit		Students will use analog design techniques (input and output impedances, etc.) to analyze the behavior of a multi-stage amplifier.	Students will apply knowledge of logic gates to analyze the behavior of a digital combinational circuit				Students will apply knowledge of communication circuits and mathematical modeling to analyze circuit behavior(voltage, current, noise, gain, etc.).
2	Design Solutions	Students will design a spreadsheet to solve a well-defined technical problem	Students will design the layout of a circuit on a solderless breadboard				Students will use digital design techniques to design and construct an electronic control circuit	Students will use analog design techniques (op amp golden rules, amplifier topologies, etc.) to design an operational amplifier circuit.	Students will use digital design techniques (Truth Tables, Boolean Equations, Boolean Algebra, K-maps, etc.) to design a combinational logic circuit	Students will use digital design techniques (Truth Tables, Boolean Equations, Boolean Algebra, K-maps, etc.) to design a sequential logic circuit	Students will use digital design techniques (Truth Tables, Boolean Equations, Boolean Algebra, K-maps, etc.) to design a combinational or sequential logic circuit	Students will write software to program a microcomputer and design the associated hardware needed to solve a well-defined technical problem.	Students will apply knowledge of communication circuits and mathematical modeling in the design of an electronic communications circuit.
3	Communicate Ideas/Use Literature	Students will use graphical methods to convey information	Students will interpret technical literature (electrical schematics) to complete a project	Students will write a lab report that integrates written and graphical information	Students will write a lab report that integrates written and graphical information	Students will write a lab report that integrates written and graphical information	Students will provide an oral presentation of their technical findings.	Students will write a lab report that integrates a written test procedure		Students will provide an oral presentation of their technical findings.		Students will provide an oral presentation of their technical findings.	Students will write a lab report that integrates written and graphical information
4	Conduct Tests and Measurements			Students will build a resistive circuit and test its operation (voltage and current measurements) using standard bench-top equipment	Students will build an amplifier and test its operation (DC operating point, gain, etc) using standard bench-top equipment	Students will build a reactive circuit and test its operation at different frequencies using standard bench-top equipment		Students will construct a circuit and/or use computer simulation software to test their designs and compare the results to theoretical values.		Students will use computer simulation software to test their designs and compare the simulation results to the theoretical values	Students will construct a combinational or sequential logic circuit and test its operation using standard bench-top equipment	Students will use standard bench-top equipment to test the operation of their software and hardware designs.	Students will use computer simulation software to test electronic communication circuit designs and compare the simulation results to theoretical values
5	Work in a Team			Students will work in teams to solve a well-defined engineering problem.	Students will work in teams to solve a well-defined engineering problem.	Students will work in teams to solve a well-defined engineering problem.	Students will work in teams to solve a well-defined engineering problem.		Students will work in teams to solve a well-defined engineering problem.		Students will work in teams to solve a well-defined engineering problem.	Students will work in teams to solve a well-defined engineering problem.	