Alabama CTE

11-12 Engineering Research and Design

Engineering Pathway ERD:1-2	a	**Explain professional, legal, and ethical responsibilities in the field of engineering, including the need for a diverse work force.** ERD1.A
	b	**Demonstrate effective skills for seeking employment in a specific engineering pathway, including the attributes that contribute to a successful engineering career.** ERD 1.B
Project Proposal ERD:3	a	**Create a formal, narrative proposal for an engineering design brief.** ERD:3A
Reserach ERD:4	a	**Conduct independent research related to a chosen engineering design brief.** ERD:4A
Design and Evaluation ERD: 5-6	a	**Demonstrate the engineering design process, including defining the problem, developing and selecting solutions, constructing prototypes testing, evaluating and documenting results, and redesigning as needed.** ERD:5A
	b	**Apply a standard experimental method to the evaluation process of a given engineering design.** ERD:6B
Product and Process ERD:7-10	a	**Create a written technical report and a multimedia presentation for an engineering design problem, concept, or issue using industry recognized guidelines.**
	b	**Demonstrate the correct use and selection of tools, materials, procedures, and equipment in the construction of models, prototypes, and finished products.**
	c	**Apply correct drafting techniques using computer-aided design (CAD) programs to produce plans, diagrams, and working drawings for the construction of models, prototypes, and final products.**
	d	**Design a project portfolio that includes all project-related documentation.**