

2020/2021 Student Competency Record
Electricity I
8533 - 36 weeks, 140 hours

Student	School Year
School	Teacher Signature

Traditional letter or numerical grades do not provide adequate documentation of student achievement in competency-based education; therefore, the Virginia Standards for CBE require a recording system to provide information about competencies achieved to employer, student-employee, and teacher. The Student Competency Record provides a means for keeping track of student progress. Ratings are assigned by the teacher for classroom competency achievement and by the teacher-coordinator in conjunction with the training sponsor when competence is evaluated on the job.

Tasks/competencies designated "Required" are considered essential statewide and are required of all students. In some courses, all tasks/competencies have been identified as required. Tasks/competencies marked "Optional" are considered optional; they and/or additional tasks/competencies may be taught at the discretion of the school division. Tasks/competencies marked with an asterisk (*) are considered sensitive, and teachers should obtain approval by the school division before teaching them. Student competency records should be kept as long as the student is enrolled in the school and for five years after the student graduates/leaves the school.

Note: Students with an Individualized Education Program (IEP) or an Individualized Student Alternative Education Plan (ISAEP) will be rated, using the following scale, only on the competencies identified in their IEP or ISAEP.

Students will be expected to achieve a **satisfactory rating** (one of the three highest marks) on the Student Competency Record (SCR) rating scale on at least 80% of the required (essential) competencies in a CTE course.

...RATING SCALE...

- 1 - Can teach others**
- 2 - Can perform without supervision**
- 3 - Can perform with limited supervision**
- 4 - Can perform with supervision**
- 5 - Cannot perform**

8533 36 weeks, 140 hours	Electricity I TASKS/COMPETENCIES		Date	Rating
Demonstrating Personal Qualities and Abilities				
Required	1	Demonstrate creativity and innovation.		
Required	2	Demonstrate critical thinking and problem solving.		
Required	3	Demonstrate initiative and self-direction.		
Required	4	Demonstrate integrity.		
Required	5	Demonstrate work ethic.		
Demonstrating Interpersonal Skills				
Required	6	Demonstrate conflict-resolution skills.		
Required	7	Demonstrate listening and speaking skills.		
Required	8	Demonstrate respect for diversity.		
Required	9	Demonstrate customer service skills.		
Required	10	Collaborate with team members.		
Demonstrating Professional Competencies				
Required	11	Demonstrate big-picture thinking.		
Required	12	Demonstrate career- and life-management skills.		
Required	13	Demonstrate continuous learning and adaptability.		
Required	14	Manage time and resources.		
Required	15	Demonstrate information-literacy skills.		
Required	16	Demonstrate an understanding of information security.		
Required	17	Maintain working knowledge of current information-technology (IT) systems.		
Required	18	Demonstrate proficiency with technologies, tools, and machines common to a specific occupation.		
Required	19	Apply mathematical skills to job-specific tasks.		
Required	20	Demonstrate professionalism.		
Required	21	Demonstrate reading and writing skills.		
Required	22	Demonstrate workplace safety.		
Examining All Aspects of an Industry				
Required	23	Examine aspects of planning within an industry/organization.		
Required	24	Examine aspects of management within an industry/organization.		

Required	25	Examine aspects of financial responsibility within an industry/organization.		
Required	26	Examine technical and production skills required of workers within an industry/organization.		
Required	27	Examine principles of technology that underlie an industry/organization.		
Required	28	Examine labor issues related to an industry/organization.		
Required	29	Examine community issues related to an industry/organization.		
Required	30	Examine health, safety, and environmental issues related to an industry/organization.		
Addressing Elements of Student Life				
Required	31	Identify the purposes and goals of the student organization.		
Required	32	Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.		
Required	33	Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.		
Required	34	Identify Internet safety issues and procedures for complying with acceptable use standards.		
Exploring Work-Based Learning				
Required	35	Identify the types of work-based learning (WBL) opportunities.		
Optional	36	Reflect on lessons learned during the WBL experience.		
Required	37	Explore career opportunities related to the WBL experience.		
Optional	38	Participate in a WBL experience, when appropriate.		
Applying Basic Construction Safety Standards (Core Safety)				
Required	39	Comply with federal, state, and local safety legal requirements.		
Required	40	Maintain a safe working environment.		
Required	41	Explain safe working practices around electrical hazards.		
Required	42	Identify emergency first aid procedures.		
Required	43	Identify the types of fires and the methods used to extinguish them.		
Required	44	Identify PPE (personal protective equipment) requirements.		
Required	45	Inspect course-specific hand and power tools to visually identify defects.		

Required	46	Demonstrate lifting and carrying techniques.		
Required	47	Demonstrate safe laddering techniques.		
Optional	48	Demonstrate safe scaffolding techniques.		
Required	49	Demonstrate lockout/tagout procedures.		
Required	50	Report injuries.		
Required	51	Report personal, environmental, and equipment safety violations to the appropriate authority.		
Required	52	Earn the OSHA 10 card.		
Required	53	Pass safety exam.		
Focusing on the Electrician's Profession				
Required	54	Explain electrician-specific safety issues.		
Required	55	Discuss current topics in the industry.		
Required	56	Explore the various occupations available in electricity and related fields.		
Required	57	Investigate career opportunities in the electrical industry.		
Required	58	Discuss all postsecondary training and licensing in the electricity field.		
Required	59	Describe the employee's role in ensuring the success of the electrical business.		
Required	60	Identify national and local trade organizations.		
Using Tools and Materials				
Required	61	Utilize the various types of hand tools used by electricians.		
Required	62	Utilize the various types of power tools used by electricians.		
Required	63	Identify commonly used materials by name and by regional variance of terminology.		
Required	64	Prepare a material inventory.		
Applying Basic Electrical Theory				
Required	65	Explain basic electrical theory.		
Required	66	Explain the relationship of electron theory to circuit design by the use of Ohm's Law.		
Required	67	Use a variety of meters to take readings.		
Required	68	Calculate series circuits.		
Required	69	Wire a series circuit.		
Required	70	Calculate parallel circuits.		
Required	71	Wire parallel circuits.		
Solving Mathematical Problems Related to the Electrical Field				

Required	72	Solve word problems involving whole numbers, fractions, and decimals.		
Required	73	Solve algebraic formulas pertaining to electrical applications.		
Required	74	Solve problems involving percentage, ratio, and proportion.		
Required	75	Measure distances using scales and measuring devices.		
Interpreting Prints and Specifications				
Required	76	Draw electrical circuits.		
Required	77	Read electrical construction drawings and specifications.		
Navigating the NEC Book				
Required	78	Explain the intent of the NEC.		
Required	79	Interpret the NEC requirements for electrical installation.		
Selecting and Installing Conductors				
Required	80	Identify various types of conductors and their associated applications.		
Required	81	Install conductors.		
Required	82	Terminate conductors with lugs, connectors, or terminals.		
Identifying Panelboards and Switchboards				
Required	83	Identify purpose and location of overcurrent protective devices (OCPDs) and service entrance equipment.		
Describing Generators and Power Supplies				
Required	84	Explain principles of generating electricity.		
Required	85	Explain principles of magnetism/electromagnetism.		
Required	86	Apply principles of generating electricity.		
Required	87	Identify components of a typical stand-alone generator.		
Exploring Environmentally Friendly Choices				
Required	88	Identify energy-efficient equipment and methods.		
Optional	89	Explore the environmental impacts of land use and site location for a proposed building project.		
Optional	90	Explore design choices for a proposed building project that reflect conservation and efficient use of materials.		
Optional	91	Explore design choices for a proposed building project that reflect conservation and efficient use of energy.		
Optional	92	Explore design choices for a proposed building project that reflect conservation and efficient use of water.		
Optional	93	Explore design choices that can affect indoor air quality for proposed building projects.		
Locally Developed Tasks/Competencies				

