Nebraska Career Pathways Project

SKILLED AND TECHNICAL SCIENCES

Architecture and Construction Cluster Technical Knowledge and Skills
High School/College Residential Wiring *Student Checklist*

				STUDENT: **DATE:**
2	**1**	**N**	**CODE**	**N = Not Exposed to Performance Element, 1 = Progressing with Performance Element, 2 = Mastery of Performance Element**
2	**1**	**N**	**CODE**	**Define and apply safety rules and practices in residential wiring according to NEC standards (RW. SR)**
			RW.SR.1	*Apply shop rules and regulations to work stations*
			RW.SR.2	*List the techniques and practices used to prevent fires*
			RW.SR.3	*Use electrical and hand tools correctly*
			RW.SR.4	*Discuss the appropriate methods for lifting and climbing ladders*
			RW.SR.5	*Explain appropriate clothing for residential wiring*
			RW.SR.6	*Outline the safety requirements for installing temporary electrical services*
2	**1**	**N**	**CODE**	**Apply knowledge of basic wiring theory according to NEC standards (RW.BW)**
			RW.BW.1	*Use wiring diagrams, schematic diagrams and prints successfully in a scenario*
			RW.BW.2	*Apply math calculations to circuits and measurements*
			RW.BW.3	*Discuss theory concepts for troubleshooting*
2	**1**	**N**	**CODE**	**Discuss important trade information and standards according to the NEC (RW.TI)**
			RW.TI.1	*Explain the purpose and use of the National Electric Code*
			RW.TI.2	*Sketch and diagram effectively*
			RW.TI.3	*Plan the layout of an electrical installation*
			RW.TI.4	*Use trade catalogs and publications to solve residential wiring problems*
			RW.TI.5	*Correlate specifications, prints and jobsites*

2	1	N	CODE	**Use basic equipment and procedures defined by industry standards (RW.BE)**
			RW.BE.1	*Discuss techniques of residential and light commercial wiring*
			RW.BE.2	*Demonstrate wire-pulling techniques*
2	**1**	**N**	**CODE**	**Apply knowledge of service loads and electrical safety to residential wiring situations (RW.SL)**
			RW.SL.1	*Compute service loads*
			RW.SL.2	*Calculate individual service loads*
			RW.SL.3	*Determine the number of outlets permitted in a circuit*
			RW.SL.4	*Compute the size of service entrance conductors*
			RW.SL.5	*Use all types of cables including NM, MC and service*
2	**1**	**N**	**CODE**	**Install a service entrance to meet NEC standards (RW.SE)**
			RW.SE.1	*Install a main service panel*
			RW.SE.2	*Install circuit breakers in a panel*
			RW.SE.3	*Install a service entrance cable to service drop*
			RW.SE.4	*Install temporary electrical service*
2	**1**	**N**	**CODE**	**Install switch boxes and outlet boxes to meet NEC standards (RW.SB)**
			RW.SB.1	*Install box hangers*
			RW.SB.2	*Install recess boxes for outlets*
			RW.SB.3	*Install hangable boxes*
			RW.SB.4	*Install octagon boxes*
			RW.SB.5	*Install surface mount boxes*
			RW.SB.6	*Install recessed fixture housing in a ceiling*
			RW.SB.7	*Install outlet boxes in dry wall, lath plaster or paneled walls*
2	**1**	**N**	**CODE**	**Maintain already existing wiring to meet NEC standards (RW.EW)**
			RW.EW.1	*Diagnose and repair incandescent lights*
			RW.EW.2	*Replace existing receptacles and switches*
			RW.EW.3	*Troubleshoot a branch circuit*
			RW.EW.4	*Test wiring for correct voltages*

2	1	N	CODE	Rough in, connect and install electrical devices to meet NEC standards (RW.ED)
			RW.ED.1	*Rough in, connect and install a single pole switch*
			RW.ED.2	*Rough in, connect and install a three-way switch*
			RW.ED.3	*Rough in, connect and install a four-way switch*
			RW.ED.4	*Rough in, connect and install a duplex grounded receptacle*
			RW.ED.5	*Rough in, connect and install a 120–240 volt distribution panel*
			RW.ED.6	*Rough in, connect and install a door chime system*
			RW.ED.7	*Rough in, connect and install a ground fault interrupting device*
			RW.ED.8	*Rough in, connect and install an emergency warning system*
			RW.ED.9	*Rough in, connect and install a photoelectric cell control*
			RW.ED.10	*Rough in, connect and install a surface raceway*
			RW.ED.11	*Rough in, connect and install an exterior lighting fixture*
			RW.ED.12	*Rough in, connect and install lighting dimmers*
			RW.ED.13	*Rough in, connect and install TV outlets*
			RW.ED.14	*Rough in, connect and install telephone outlets*
			RW.ED.15	*Rough in, connect and install emergency lighting systems*
			RW.ED.16	*Rough in, connect and install appliance circuits*
2	**1**	**N**	**CODE**	**Install PVC and EMT conduit to meet NEC standards (RW.C)**
			RW.C.1	*Make 90-degree bends from measurements*
			RW.C.2	*Make offset bends from measurements*
			RW.C.3	*Make back-to-back bends from measurements*
			RW.C.4	*Make saddle bends from measurements*
			RW.C.5	*Determine correct conduit measurements*
2	**1**	**N**	**CODE**	**Install residential telecommunications infrastructure to meet current TIA/EIA 570 standards (RW.RT)**
			RW.RT.1	*Install a coaxial cable with "F" type connectors and terminating hardware*
			RW.RT.2	*Install unshielded twisted-pair cable, connectors and terminating hardware*
			RW.RT.3	*Install 110-type terminating hardware*