WESTERN DAKOTA TECH

ELECTRICAL TRADES

Associate of Applied Science, 71-77 Credit Hours, 18-Month Program

This program provides in-depth instruction in the theories and principles of electricity and electrical construction. Strong math skills are a requirement. Principles of operation for electrical devices/equipment and correct/safe operation of tools are covered. A typical job description for an electrician may include typically working 40 hours per week. However, some jobs may require working evenings or weekends. Electricians must be physically capable of climbing and working at heights and outside. Other physical work may be required.

Students will study and learn to interpret and apply the requirements of the National Electrical Code. A solid background in the theory and technology of the electrical field will give the knowledge and ability to install, maintain, troubleshoot, and repair electrical circuits and equipment. The training gives students the flexibility to pursue different areas of employment as entry-level electricians. Most of our lab experience mimics outside work-sites and allows students to have first-hand experience in a controlled environment. The Electrical Trades program prepares students for employment as an apprentice electrician in the construction, mining, and industrial manufacturing sectors of the Electrical Industry.

The South Dakota Electrical Commission requires successful completion of First Aid/CPR training to graduate from an electrical trades program.

Course	No.	Course Title	Credits
		General Education Requirements	
CSC	105	MICROCOMPUTER SOFTWARE APPLICATIONS I	3
ECON	202	PRINCIPLES OF MACROECONOMICS online or	3
SOC	100	INTRODUCTION TO SOCIOLOGY	
ENGL	106	WORKPLACE COMMUNICATIONS I*	3
MATH	104	TECHNICAL MATHEMATICS**	3
PSYC	103	HUMAN RELATIONS IN THE WORKPLACE	3
		Total	15
		Technical Requirements***	
IEL	102	ELECTRICAL FUNDAMENTALS I	9
IEL	103	ELECTRICAL FUNDAMENTALS II	3
IEL	122	ELECTRICAL CODE STUDY I	3
IEL	123	INDUSTRIAL DATA COMMUNICATION	2
IEL	131	INTRODUCTION TO ELECTRICAL WIRING	3
IEL	135	BASIC ELECTRICAL MATERIALS AND DEVICES	1
IEL	211	ELECTRICAL MOTOR CONTROL	3
IEL	213	ELECTRICAL HEATING AND APPLIANCES	2
IEL	214	ELECTRICAL CODE STUDY II	2
IEL	216	ELECTRICAL MOTOR CONTROL LAB	2
IEL	217	SPECIAL SYSTEMS	4
IEL	218	WIRING LAB I	3
IEL	220	WIRING LAB II	3
IEL	221	PROGRAMMABLE LOGIC CONTROLLERS	2
IEL	222	PROGRAMMABLE LOGIC CONTROLLERS LAB	3
IEL	223	ELECTRICAL MOTOR LAB	1
IEL	224	POWER DISTRIBUTION	2
IEL	226	ELECTRICAL MOTOR FUNDAMENTALS AND MAINTENANCE	2
IEL	231	ELECTRICAL DRAWINGS AND SCHEMATICS	2
IEL	232	DIGITAL DRAWINGS AND ESTIMATING	2
IEL	299	ELECTRICIAN INTERNSHIP/CO-OP (OPTIONAL)	6
WDM	100	WELDING AND FABRICATION FOR GENERAL APPLICATIONS	2
		*Prerequisite: Accentable ACCUPLACER score or Rasic Writing	56-62

*Prerequisite: Acceptable ACCUPLACER score or Basic Writing.
**Prerequisite: Acceptable ACCUPLACER score or Basic Math.
***CPR/First Aid must be completed before graduation.

Semester breakdown on next page

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Semester Breakdown AAS

	First			Second	
	Semester	CR	Semester		CR
CSC 105	Microcomputer Software	3	ENGL 106		3
CBC 103	Applications I	3	IEL 103	Workplace Communications I Electrical Fundamentals II	3
IEL 102	Electrical Fundamentals I	9	IEL 135	Basic Electrical Materials & Devices	1
IEL 131	Introduction to Electrical	3	IEL 217	Special Systems	4
	Wiring	-	IEL 223	Electrical Motor Lab	1
MATH 104	Technical Mathematics	3	IEL 226	Electrical Motor Fundamentals and	2 2
				Maintenance	2
			IEL 231		2
			WDM 100	Welding & Fabrication for General	
				Applications	
	Total Credit Hours	18			18
			Total Credit Hours		
	T1. 1			Edl	
	Third	CD		Fourth Semester	CD
EGONI 202	Semester	CR	IEI 010		CR
ECON 202	Principles of Macroeconomics	3	IEL 213	Electrical Heating & Appliances	2 2 3 2 3 2 3
SOC 100	online or		IEL 214	Electrical Code Study II	2
IEL 122	Introduction to Sociology	3	IEL 220 IEL 221	Wiring Lab II	3
IEL 122 IEL 123	Electrical Code Study I Industrial Data Communication	2	IEL 221 IEL 222	Programmable Logic Controllers PLC Lab	2
IEL 123	Electrical Motor Control	2 3 2 3	IEL 222 IEL 224	Power Distribution	2
IEL 211	Motor Control Lab	2	PSYC 103	Human Relations in the Workplace	3
IEL 218	Wiring Lab I	3	1510103	Truman Relations in the Workplace	3
IEL 232	Digital Drawings and	2			
1LL 232	Estimating	2			
	Estimating			Total Credit Hours	17
	Total Credit Hours	18		20002 02000 220020	
	Optional Summer	CD			
	Semester	CR			
IEL 299	Electrician Internship/CO-OP	6			
	Total Credit Hours	6			