  
1800 Bronson Blvd., Fennimore, WI 53809 | 608.822.3262 | Toll Free: 800.362.3322 | www.swtc.edu

**Electrical Power Distribution Program**

**Course Curriculum**

|  |  |  |
| --- | --- | --- |
| **Semester 01**   (Tuition: $2,340  Books: $340-$480) | | |
| **Course #** | **Course Title** | **Credits** |
| 31-413-303 | Electric Power Distribution Fund 1A | 4 |
|  | | |
| Credits: 4 Lecture Hours: 36 Lab Hours: 108 The student is introduced to basic electrical theory using Ohm's Law to analyze series, parallel and combination circuits. Concepts of work, power, energy, and magnetism will be studied. Student learns basic line construction materials such as insulator design, pole information, and wire size and resistance, with hands on practice on communication signals for line workers. Students will be introduced to GPS and its applications to onsite work. Throughout the course there is an emphasis on safety for line workers. | | |
| 31-413-304 | Electric Power Distribution Fund 1B | 4 |
|  | | |
| Credits: 4 Lecture Hours: 36 Lab Hours: 108 The student is introduced to basic A.C. circuits and advances to A.C. circuits with induction and capacitance. The course includes A.C. parallel circuits with resistance, inductive reactance and capacitive reactance. The student learns guying and anchoring concepts. Throughout the course there is an emphasis on safety for line workers. | | |
| 31-413-305 | Electric Power Dist Fund 1C-App Lab | 5 |
|  | | |
| Credits: 5 Lecture Hours: 0 Lab Hours: 180 The student is introduced to power line construction techniques including staking/overhead line design, overhead structure specifications, overhead distribution line construction and stringing/sagging overhead line conductors. The course includes basic hydraulics and line truck operation. Ropes, knots, and splices associated with the line workers trade will be learned and used throughout the course. Electrical connectors will also be covered. Students will learn aerial climbing tools and techniques. The student uses electrical test equipment and hand and power tools associated with the line workers trade. Throughout the course there is an emphasis on safety for line workers. | | |
| 31-804-305 | Applied Mathematics | 2 |
|  | | |
| Credits: 2 Lecture Hours: 54 Students compute with rational numbers. They make and convert various measurements. Students use formulas to solve problems. They compute dimensions of geometric shapes. Students use statistical tools to represent and analyze data. They analyze various financial situations. Students use basic right triangle trigonometry to solve problems. In each topic area, students solve application problems. | | |
|  |  | **15** |
| **Semester 02**   (Tuition: $2,340  Books: $140-$180) | | |
| **Course #** | **Course Title** | **Credits** |
| 10-105-110 | Computer Applications | 1 |
|  | | |
| Credits: 1 Lecture Hours: 0 Lab Hours: 36 Students are introduced to the hardware and software components of modern computer systems and the application of computers in the home, business, and industry. Time will be devoted to hands-on activities using general purpose software packages available today (file management, word processing, spreadsheet, Internet and electronic mail). Online Option Available | | |
| 31-413-306 | Electric Power Dist Fund 2A | 4 |
|  | | |
| Credits: 4 Lecture Hours: 36 Lab Hours: 108 The student is introduced to the theory of three-phase electrical power systems, including wye and delta systems. Student studies single- and three-phase transformer; construction, principles of operation, connections as well as secondary power supply systems. Skills in electrical system grounding principles and over voltage equipment will be developed. Safety topics related to electrical line work will be highlighted. Prerequisite: Electric Power Distribution Fund 1A (31-413-303) | | |
| 31-413-307 | Electric Power Dist Fund 2B | 4 |
|  | | |
| Credits: 4 Lecture Hours: 36 Lab Hours: 108 The student is introduced to electrical power line apparatus such as; over current equipment, voltage regulators and kilowatt hour meters. Components and functions of an electrical substation, underground distribution systems, street lighting equipment, along with the sources of communication interference from electrical sources. Safety related topics are included. Prerequisite: Electric Power Distribution Fund 1B (31-413-304). | | |
| 31-413-308 | Electric Power Dist Fund 2C-AppLab | 4 |
|  | | |
| Credits: 4 Lecture Hours: 0 Lab Hours: 144 The student integrates lab concepts in advanced levels of topics such as; aerial climbing, rope knots and slices, electrical connectors, electrical test equipment, as well as hand tools. Application and installation of various electrical apparatus in a lab environment is completed by the students. Overhead transmission structures are constructed, protective grounding is introduced and live line work such as; rubber gloving and hot stick use is practiced (de-energized lines). Underground related equipment is introduced including cable terminating tools and cable locating equipment. Student installs UD cable and terminate cable. Student also operates a modern combination trencher-cable plow. Safety for the various lab activities is stressed. Prerequisite: Electric Power Dist Fund 1C-App Lab (31-413-305). | | |
| 31-801-310 | Workplace Communication | 2 |
|  | | |
| Credits: 2 Lecture Hours: 36 Lab Hours: 18 Students apply oral, written, listening, and non-verbal skills to workplace situations. Students discover how to use communication as the key to solving workplace problems, resolving conflicts, working as members of a team, and effectively giving and receiving criticism. Students develop an understanding of diversity in the workplace, harassment issues, and the impact of substance abuse on the job. Prerequisites: Communication 1 (73-851-710), or An undeclared major student. | | |
|  |  | **15** |
| **Total Credits: 30** | | |
| **Estimated Total Tuition: $4,680** | | |
| **Tools/Equipment: $1,900** | | |