



## Davis Applied Technology College

A UCAT Campus  
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### Course Descriptions - Electrician Apprentice Catalog Year: 2012

#### ELAP 1011 Electrical 1A - 90 Hours

First year electrical students will establish a solid foundation in electrical fundamentals by completing the study of early electrical history and atomic structure, direct current fundamentals, Ohm's Law, simple series parallel circuits, formulas used in electricity, conduction of liquid and gases, lighting and static charges, resistance of wire, and size of wire (current carrying capacities). Students will be introduced to construction and electrical safety, blueprint reading, hand tools and construction math. A competency test will be given upon completion of the course.

#### ELAP 1012 Electrical 1B - 90 Hours

First year electrical students will continue to build upon the solid foundation of basic electrical theory and principle through the study of magnetic induction, direct current generators and motors, lighting control circuits and signaling devices. The student will gain a basic introduction to safety, tools and the National Electrical Code relating to residential wiring. The study of working drawings, circuits, conductors and wiring systems, swimming pools, GFI protection, heating and air conditioning calculations, and an introduction to smart house wiring will also be included as part of the course. A CPR/First Aid course will be covered in this semester. A competency test will be given upon completion of the course.

#### ELAP 1021 Electrical 2A - 90 Hours

This course will consist of Basic Trigonometry, as related to right triangles and Alternating Current, theory, phase relationships of current, voltage and power. The student will learn about inductance, capacitance, resistance, reactance, AC circuit's power, power factors, and power correction and how to apply these principles in the electrical field. In addition, building upon principles learned in the first year, how Ohm's Law principles relate to AC 3 phase theory, single and 3 phase transformer theory and calculations will also be covered. Due to the amount of material covered in this course, students can expect to spend 15+ hours per week on homework assignments. A competency test will be given upon completion of the course.

#### ELAP 1022 Electrical 2B - 90 Hours

This course will provide the student with a better understanding of the National Electrical Code Article 90 through Article 450 and how it is applied in the field. Material to be covered will include AC motor controls, bonding, and grounding in addition to National Electrical Code calculations for wire size, over current protection, ampacity, and motor ratings. Due to the amount of material covered, the student can expect 15 + hours of homework assignments each week. A competency test will be given upon completion of the course.

#### ELAP 1031 Electrical 3A - 90 Hours

Third year students will review the basic AC and DC including fundamentals, bonding and grounding. The material to be covered includes power generation and harmonics, load calculations, basic electronic theory, voice/data and Video. Students are expected to complete 10-15 hours of homework assignments per week. At the end of the course a competency test will be given.

#### ELAP 1032 Electrical 3B - 90 Hours

This course will consist of basic electronics as applied to electricians in addition to fundamentals of instrumentation in the industry. Students will learn control systems and their fundamental concepts, advanced controls, fire alarms, and HVAC controls, and will gain a better understanding of the National Electrical Code. Students will be required to complete 10-15+ hours of homework assignments per week as assigned by the instructor. A competency test will be given upon completion of the course.

#### ELAP 1041 Electrical 4A - 90 Hours

Fourth year electrical students will learn basic skills for becoming crew leader and managing electrical hazards. Conductor terminations and splices, medium voltage terminations and splices, distribution systems, heat and freezing protection, and special locations will be included. A competency test will be given upon completion of the course.

### **ELAP 1042 Electrical 4B - 90 Hours**

The student will review principals of AC and DC theory, mathematics relating to the study of electricity, National Electrical Code mathematical formulas, motors, motor controllers, transformer calculation, and undertake an intensive study of the National Electrical Code. The intention of the course is to prepare the student for the journeyman qualifying examination. Due to the course content each student can expect 12 hours or more per week of homework type study outside the classroom. At the end of the course the student will demonstrate journeyman level competency by completing a practice test consisting of closed book theory, open book National Electrical Code, and math calculation.

### **FUND 0050 Keyboarding Skills - 90 Hours**

This course covers an introduction to the QWERTY keyboard, correct finger placement, and keyboarding techniques. Students will learn to touch type as they complete drills and timed writings. Through practicepractice, students will increase their typing speed and accuracy on a computer keyboard.

### **FUND 0065 Computer Skills - 30 Hours**

Students will learn beginner computer skills in a Windows XP environment. Topics include starting a computer, using a mouse, launching programs, creating, saving and printing documents, surfing the World Wide Web and sending email.

### **FUND 0070 Spelling Skills - 30 Hours**

Students will improve their spelling skills by learning and using phonics and common spelling rules.

### **FUND 0075 Language Skills - 90 Hours**

In this course students will practice and improve their language and writing skills and will gain an understanding of the English language and its correct use in written communication. Topics include sentence structure, parts of speech, grammar and punctuation rules in addition to extending these rules to sentences and paragraphs.

### **FUND 0080 Reading Skills - 90 Hours**

This course will provide students with a foundation in reading skills, build vocabulary, and will provide practice recalling and interpreting information.

### **FUND 0085 Math Skills - 60 Hours**

In this course students will learn to perform all four basic math operations accurately with whole numbers, fractions and decimals. Students will also be introduced to percentage and converting between fractions, decimals and percents.

### **FUND 0090 Study Skills - 30 Hours**

Students will learn to use effective study habits and strategies for remembering information found in their textbooks and heard in class lectures. Students will also learn to use a strategy for reading and taking notes from textbooks, in class, and learn effective strategies for taking the five types of tests most frequently given by teachers.

### **FUND 0091 Davis School District Technical Tutoring - 250 Hours**

Technical tutoring provides designated high school students with individual tracking to improve student success in Davis Applied Technology College courses. Students are provided assistance in study skills, test preparation as well as review of student progress and attendance.