



Davis Applied Technology College

A UCAT Campus
550 E 300 S, Kaysville 84037
Phone: 593-2500



Course Descriptions - Energy Technician Catalog Year: 2012

BTEC 1105 Computer Concepts - 45 Hours

This course introduces students to computer basics. It provides an overview of computer systems, working with application programs, managing folders and files, navigating the Internet, and sending and receiving e-mail. The course will cover common features of software applications including, word processing, spreadsheets and electronic presentations.

BTEC 1580 Technical Writing Introduction - 45 Hours

This course will introduce students to the processes necessary for effective written communication, both internally and externally, at all levels of the organization. It will address the planning, composing, editing, and revision skills necessary to produce well-written, technical documents.

COMP 1000 Composite Basics - 30 Hours

The composite industry is maturing into an established and increasingly diversified business. Composite manufacturing offers the benefits of producing lightweight, strong and moldable products in a variety of shapes. The application includes several of the following industry categories: aircraft parts, aerospace assemblies, automobile components, boating industry, civil engineering applications, space travel vehicles, and sports products. This course introduces the student to the basic materials, vocabulary and safety practices utilized in the composite industry. Students be handling various composite materials and will gain an appreciation for the place they occupy in the part-development arena.

COMP 1100 Mold Preparation - 15 Hours

The first important step in composite fabricating is the care required in establishing a release coating that allows the part to separate from the mold surface. In this course, students will learn about mold release products and the use of equipment to demonstrate mold release methods.

COMP 1200 Non-Vacuum and Vacuum Bag Part Fabrication - 30 Hours

The actual lamination of the composite part is essential to the entire process. The Composite Technician not only fabricates the desired part, but additionally blends together the construction materials necessary in creating the part. During this course, students will learn the terminology as well as reinforcement fabrics common to the composite industry, how to select appropriate materials, the correct mixing of reinforcement materials, vacuum bag process, tools and use.

COMP 1300 Prepreg Material Laminations - 30 Hours

Prepreg materials combine the advantages of dry reinforcement fabrics by impregnating the fabric with adhesive resins. This unique process allows designing high-strength laminates for part fabrication primarily in the aerospace industry. Parts designed with these materials see application in aircraft, helicopter, space structures and several recreational products. Students in this course will learn terminology, process and techniques to using prepreg materials.

COMP 1400 Core Materials - 45 Hours

The use of core materials offers the designer the ability to substantially increase a structure's strength without the penalty of a dramatic increase in the overall part weight. Core materials offer this unique ability as compared to solid laminates. As an example, core materials could provide an aircraft with the ability to increase its payload or fuel capacity, without the consequences of heavy fabricated assembly parts. Students in this course will learn terminology, materials and techniques to fabricate core laminates.

COMP 1500 Composite Repair - 15 Hours

Many materials are subject to damage or abrasion in the normal course of life. Composite materials, while strong and light, are potential contenders in receiving damage reflective of the environment they are placed in. The important skill element obtained in this course is the ability to recognize the severity of the damage and the appropriate repair procedure.

COMP 1900 Composite Part Testing - 15 Hours

The central theme surrounding composites is the ability to bond materials together in the form of reinforcement fabrics and resins sufficiently to prevent the materials from separating. There are conditions that affect bonding and material strengths properties and tests that evaluate the laminates success or failure. It is important for the Composite Technician to be aware of these conditions, since it affects the strength and physical performance of the material. Students in this course will learn the terminology and process of part testing and will identify and demonstrate acceptable parts.

COMP 2000 Alternative Composite Processes - 30 Hours

The composite industry is frequently changing and introducing new manufacturing processes. Materials and equipment are being developed that will enhance the physical properties of finished products and require additional skills from the Composite Technician in producing those items. Additionally, the same materials can be applied using alternative methods and produce different results. This course will explore various methods used in fabricating composite parts. Students will learn about processing equipment.

COMP 2800 Composite Materials Technology Special Project - 60 Hours

This assignment can be completed at the DATC campus in conjunction with a personal or industry project to reflect on-the-job experience. The same work-related expectations would apply to the Special Project Time activity.

DRFT 1045_ Blueprint Reading - 30 Hours

This course is designed to teach the basic blueprint reading skills. Standard industrial practices will be applied on one or more industrial drawings. Principles and applications of the following will be used--lettering, orthographic, oblique, isometric, dimensioning, sectioning, and auxiliary views.

DRFT 1045_ Blueprint Reading - 30 Hours

This course is designed to teach the basic blueprint reading skills. Standard industrial practices will be applied on one or more industrial drawings. Principles and applications of the following will be used--lettering, orthographic, oblique, isometric, dimensioning, sectioning, and auxiliary views.

DRFT 1045_ Blueprint Reading - 30 Hours

This course is designed to teach the basic blueprint reading skills. Standard industrial practices will be applied on one or more industrial drawings. Principles and applications of the following will be used--lettering, orthographic, oblique, isometric, dimensioning, sectioning, and auxiliary views.

DRFT 1805_ Blueprint Reading for Composite Materials Technology - 15 Hours

Blueprints are used to convey the shape and material composition of an object from one person to another and it is the universal language in modern manufacturing. Students in this course will gain a basic understanding of the principles and techniques used in the drawing, interpretation and manufacturing of blueprints.

ETEC 1000 Applied Industrial Math - 30 Hours

Students will review the basic operations of numbers and measurement and will evaluate formulas and tolerances and apply basic geometry and trigonometry concepts to solve application problems.

ETEC 1010 Energy Essentials - 60 Hours

This course will provide students with the skills and knowledge required for entry-level green collar jobs. Students will learn about the growing world demand for alternative energy and why it is essential that effective methods for energy use be developed. This course will focus on thermodynamics in energy generation and consumption, blueprint reading, the fundamentals of electricity, natural gas, fundamentals of building design, and construction and energy management. Students will learn the fundamentals of electricity generation, transmission, and distribution. Net metering and interconnection fundamentals will also be included in this course.

ETEC 1015 OSHA General Industrial Safety (10 hours) - 10 Hours

Students will be introduced to OSHA policies, procedures and standards as well as general industry safety and health principles covered in OSHA Act Part 1910. Special emphasis will be placed on areas most hazardous using OSHA general industry standards as a guide. This course is ideal for supervisors with safety and health responsibilities, and for employee safety and health awareness.

ETEC 1146 American Heart Association Heartsaver CPR - 4 Hours

Students in this course will learn how to perform CPR on an adult, child and infant, including two-person CPR and the use Automated External Defibrillator (AED) training. Students in this course will also learn how to perform abdominal thrusts and how to contact and use emergency medical services.

ETEC 1600 Construction Procedures - 60 Hours

Students in this course will learn construction processes applicable to the carpentry, electrical, mechanical, and general building trades and provide print reading skills using contemporary prints. Students will apply these skills to single and multi-family dwellings using building component specifications and construction procedures. Students will also learn sustainable construction, project delivery systems, the role of construction professionals, building information modeling, zoning and permitting, fireproofing, green building technology and LEED certification.

ETEC 1600 Construction Procedures - 60 Hours

Students in this course will learn construction processes applicable to the carpentry, electrical, mechanical, and general building trades and provide print reading skills using contemporary prints. Students will apply these skills to single and multi-family dwellings using building component specifications and construction procedures. Students will also learn sustainable construction, project delivery systems, the role of construction professionals, building information modeling, zoning and permitting, fireproofing, green building technology and LEED certification.

ETEC 1610 Sustainable Conservation - 90 Hours

Students in this course will learn what is considered "green" and how to create sustainable conservation through improved building techniques, materials and technologies. Students will evaluate three major building-related energy conservation system areas found in residential and commercial buildings: insulation and lighting; passive solar heating and ventilation; and sustainable architectural design. This evaluation will include determination of system size issues that impact energy efficiency. Students will learn basic heating, ventilation and air conditioning as well as plumbing skills in this course.

ETEC 1610 Sustainable Conservation - 90 Hours

Students in this course will learn what is considered "green" and how to create sustainable conservation through improved building techniques, materials and technologies. Students will evaluate three major building-related energy conservation system areas found in residential and commercial buildings: insulation and lighting; passive solar heating and ventilation; and sustainable architectural design. This evaluation will include determination of system size issues that impact energy efficiency. Students will learn basic heating, ventilation and air conditioning as well as plumbing skills in this course.

ETEC 1620 Electrical Systems - 90 Hours

This course provides students with an overview of the current National Electric Code including wiring methods and materials; conductors and overcurrent protective devices; branch circuits and feeders; grounding; transformers; services available; special locations and calculations. Students will learn procedures for applying code when designing electrical systems.

ETEC 1630 Electrical Wiring Basics - 30 Hours

Students will learn conduit bending and installation as well as the sizing and installation of junction boxes, panels and conductors for electrical circuits. Students will also learn basic residential and commercial wiring skills.

ETEC 1640 Photovoltaic Systems - 120 Hours

This course is a comprehensive guide to the design, installation, and evaluation of residential and commercial Photovoltaic systems. The course covers the principles of Photovoltaics and how to effectively incorporate Photovoltaic systems into stand-alone or interconnected electrical systems. The course will also cover advantages and disadvantages, site evaluation, component operation, system design and sizing, and installation requirements and recommended practices. The course covers theory and hands-on installation of Photovoltaic systems, and wind turbines.

ETEC 1700 Energy Efficiency - 90 Hours

In this course students will learn about the implications of the efficient use and conservation of energy by consumers as well as energy policy and the role of energy service providers in this industry. Students will learn about energy use, issues relating to national security and the rapidly rising energy cost. The course covers concerns for the environment, benefits of the efficient use of energy and the impact this has on the economy.

ETEC 1710 Alternative Energy - 120 Hours

Students will learn about alternative and sustainable energy sources and will conduct a cost-benefit analysis on each form of alternative energy in order to determine what is practical on a large or small scale. Instruction will include the efficiencies of each alternative energy source as well as what limitations exist in terms of extracting useable energy. Students will also learn how a fuel cell works and how they can power automobiles.

ETEC 1710 Alternative Energy - 120 Hours

Students will learn about alternative and sustainable energy sources and will conduct a cost-benefit analysis on each form of alternative energy in order to determine what is practical on a large or small scale. Instruction will include the efficiencies of each alternative energy source as well as what limitations exist in terms of extracting useable energy. Students will also learn how a fuel cell works and how they can power automobiles.

ETEC 1715 Alternative Energy Final Project - 15 Hours

Students will demonstrate their ability to build and maintain a solar power system. This will include determination of the size and power demands as well as the use of appropriate tools and components required for building a solar power system.

ETEC 1720 Conducting an Energy Audit - 30 Hours

Students will learn the importance of an energy audit and how to conduct an audit on the following systems: HVAC, lighting, electrical, compressed air, steam, water, waste and recycling, and plug in loads with a focus on improving energy efficiency and return on investment.

IAMT 1100 Industrial Safety and Workplace Relations - 30 Hours

This course introduces students to the basic manufacturing processes and the importance of safety in the workplace. Students will learn and understand lockout/tag out, confined spaces, and hazardous communications. This course will teach the basics of first aid, ergonomics, and lifting techniques in addition to ladder and scaffolding safety. It will provide preparation for employer expectations and requirements, and develop essential human-relation skills needed to maintain gainful and satisfying employment. This course includes familiarization with problematic areas found in the workforce including, problem solving; understanding relationships and diversity; increasing personal ethics; and developing strong personal, and interpersonal and human relation skills.

IAMT 1100 Industrial Safety and Workplace Relations - 30 Hours

This course introduces students to the basic manufacturing processes and the importance of safety in the workplace. Students will learn and understand lockout/tag out, confined spaces, and hazardous communications. This course will teach the basics of first aid, ergonomics, and lifting techniques in addition to ladder and scaffolding safety. It will provide preparation for employer expectations and requirements, and develop essential human-relation skills needed to maintain gainful and satisfying employment. This course includes familiarization with problematic areas found in the workforce including, problem solving; understanding relationships and diversity; increasing personal ethics; and developing strong personal, and interpersonal and human relation skills.