Vocational Education Programs

South County Technical High School
South Tech: Vocational & Technical Education

Sixty percent of tomorrow’s jobs start with today’s career and technical education. The technical program, sponsored by the St. Louis Special School District, offers free career and technical education in 37 different career fields. Students will have the opportunity to investigate career interests prior to college and/or begin a career right after high school graduation. Since South Tech is a public high school, there are no tuition fees or transportation costs for students. Some of the programs have a course fee.

For more information in pursuing a course of study at South County Technical High School, see your guidance counselor and acquire a handbook with specific details on admissions requirements and program offerings from the Bayless High School Counseling Center.

Who Should Apply?
- Current 10th, and 11th grade students who are enrolled in good standing academics, attendance, and good behavior.
- Students who enjoy learning in a “real-world” or “hands-on” environment.
- Students who want to get involved in their career interest areas now.

How are the Programs Offered?
- Juniors attend a two-year specific training program in one specific field of their choice.
- One year seniors attend a one-year program in one specific field of their choice, if available.

Half-Day Program
- Students take four academic classes at BHS.
- Students take technical training at South Tech High School as their three other courses.
- Tech grades transfer to BHS as practical arts or core credits depending on the program.
- Students will receive a Bayless High School Diploma.

How and When to Apply?
- Schedule an appointment with your counselor to discuss and review the various career opportunities. BHS counselors will assist students with completion of these applications. Applications are due by Dec. 1st for priority enrollment in programs for the following school year. After applications are received, students are interviewed at Bayless by an admissions representative from South County Tech.
- It is also recommended that students attend a tech school open house prior to acceptance.
Vocational Programs
The following programs are available at the South Tech campus:

Auto Body
Automotive Technology
Carpentry
Cisco Networking Academy
Construction Innovations
Cosmetology
Culinary Arts
Dental Sciences
Early Childhood Education
Electrical Trades
Electronics & Robotics Engineering
Emergency Medical Technician (Senior Year Only)
Firefighting
Floorlayers Middle Apprenticeship
Graphic Design
Health Sciences Academy
Heating, Ventilation & Air Conditioning
Law Enforcement
Motorcycle & Small Engines Technology
Pharmacy Sciences
Precisions Machining
Veterinary Science
Web Design and Coding
Welding
**Auto Body I**
Students will learn to repair and restore vehicles to "like new" condition. Instruction is provided in frame and body straightening and alignment to meet factory specifications, repair of damaged panels, and replacement of component parts, welding, refinishing and painting, estimating damage costs, and preparation of damage reports.

**Auto Body II**
Students will learn to repair and restore vehicles to "like new" condition. Instruction is provided in frame and body straightening and alignment to meet factory specifications, repair of damaged panels, and replacement of component parts, welding, refinishing and painting, estimating damage costs, and preparation of damage reports.

**Automotive Technology I**
Students will follow the Automotive Service Excellence (ASE) Certification curriculum. They will learn to diagnose and repair the advanced computerized control systems on today's vehicles. Instruction is provided in tire, wheel and alignment services, brakes, steering and suspension, electronic systems, engine performance, transmissions, vehicle safety and emissions inspection, heating and air conditioning.

**Automotive Technology II**
Students will follow the Automotive Service Excellence (ASE) Certification curriculum. They will learn to diagnose and repair the advanced computerized control systems on today's vehicles. Instruction is provided in tire, wheel and alignment services, brakes, steering and suspension, electronic systems, engine performance, transmissions, vehicle safety and emissions inspection, heating and air conditioning.

**CISCO Networking Academy I**
This program is certified as a Cisco Networking Academy. Students have the opportunity to learn Cisco Certified Network Associate (CNNA) Network+ and A+ certifications. They will learn to build, repair and maintain computers and networking systems, diagnose and solve hardware and software problems in this information technology program. Instruction also covers a variety of operating systems, multimedia capabilities, printing, routing, and switching, the OSI model, VLAN and WAN systems.

**CISCO Networking Academy II**
This program is certified as a Cisco Networking Academy. Students have the opportunity to learn Cisco Certified Network Associate (CNNA) Network+ and A+ certifications. They will learn to build, repair and maintain computers and networking systems, diagnose and solve hardware and software problems in this information technology program. Instruction also covers a variety of operating systems, multimedia capabilities, printing, routing, and switching, the OSI model, VLAN and WAN systems.

**Carpentry I**
Students will follow the Associated General Contractors national curriculum for residential and commercial construction. They will learn to follow local building codes and blueprints to cut, fit, assemble, form, frame, and finish a wide variety of construction projects. Graduates may qualify for apprenticeship training credit with the Carpenters, Floor Layers and Construction Craft Laborers apprenticeship programs.

**Carpentry II**
Students will follow the Associated General Contractors national curriculum for residential and commercial construction. They will learn to follow local building codes and blueprints to cut, fit, assemble, form, frame, and finish a wide variety of construction projects. Graduates may qualify for apprenticeship training credit with the Carpenters, Floor Layers and Construction Craft Laborers apprenticeship programs.
**Construction Trades I**
This program provides an overview of various aspects of the construction field. Students will learn blueprint reading, plumbing, HVAC system maintenance, residential electricity, concrete, masonry, carpentry framing, roofing, drywall, flooring, and finishing procedures. Graduates may qualify for apprenticeship training credit at the Carpentry, Floor Layers and Construction Craft Laborers apprenticeship programs.

**Construction Trades II**
This program provides an overview of various aspects of the construction field. Students will learn blueprint reading, plumbing, HVAC system maintenance, residential electricity, concrete, masonry, carpentry framing, roofing, drywall, flooring, and finishing procedures. Graduates may qualify for apprenticeship training credit at the Carpentry, Floor Layers and Construction Craft Laborers apprenticeship programs.

**Cosmetology I**
The curriculum is the same as those used by private cosmetology schools, following Missouri State Board of Cosmetology guidelines. Students will learn theory and gain practical experience with customers in a new salon environment. Instruction is provided in hair analysis, treatment, coloring, cutting, and styling techniques. Facials, nail care, anatomy, physiology, and salon management are also covered. Upon completion of this curriculum and attainment of 1500 required hours of instruction, students will take the State Board's comprehensive licensure examination.

**Cosmetology II**
The curriculum is the same as those used by private cosmetology schools, following Missouri State Board of Cosmetology guidelines. Students will learn theory and gain practical experience with customers in a new salon environment. Instruction is provided in hair analysis, treatment, coloring, cutting, and styling techniques. Facials, nail care, anatomy, physiology, and salon management are also covered. Upon completion of this curriculum and attainment of 1500 required hours of instruction, students will take the State Board's comprehensive licensure examination.

**Culinary Arts I**
Accredited by the prestigious American Culinary Foundation, this program enables students to earn the ACF Culinary Secondary Graduate Certificate, as well as the ServSafe and ProManagement Professional Cooking Certificates from the Educational Foundation of the National Restaurant Association. Students will train as chefs in a full-size, state-of-the-art kitchen and dining facility.

**Culinary Arts II**
Accredited by the prestigious American Culinary Foundation, this program enables students to earn the ACF Culinary Secondary Graduate Certificate, as well as the ServSafe and ProManagement Professional Cooking Certificates from the Educational Foundation of the National Restaurant Association. Students will train as chefs in a full-size, state-of-the-art kitchen and dining facility.

**Dental Sciences I**
Students will learn dental examination, treatment, radiographic, and laboratory procedures, patient scheduling, and record maintenance. Instruction is also provided in infection control and hazards management, chair-side assistance, emergency and preventive procedures, dental specialties, and office administration. Seniors may participate in a clinical internship. Upon completion of the program, and two years' full-time work experience, students may take the National Board Exam to become a certified dental assistant.

**Dental Sciences II**
Students will learn dental examination, treatment, radiographic, and laboratory procedures, patient scheduling,
and record maintenance. Instruction is also provided in infection control and hazards management, chair-side assistance, emergency and preventive procedures, dental specialties, and office administration. Seniors may participate in a clinical internship. Upon completion of the program, and two years' full-time work experience, students may take the National Board Exam to become a certified dental assistant.

**Early Childhood Education I**
Students will study teaching in a pre-school setting for 2-5 year old children, rotating through curriculum development, lesson preparation, teaching, and supervisory duties. Instruction includes child development, guidance and discipline techniques, health and safety procedures, licensing, program evaluation, professionalism, and relating to families. Students also learn to provide an enriched, safe, and appropriate environment to meet the physical, social, emotional, and intellectual needs of small children. Seniors will work on portfolio presentation for Child Development Association (CDA) certification.

**Early Childhood Education II**
Students will study teaching in a pre-school setting for 2-5 year old children, rotating through curriculum development, lesson preparation, teaching, and supervisory duties. Instruction includes child development, guidance and discipline techniques, health and safety procedures, licensing, program evaluation, professionalism, and relating to families. Students also learn to provide an enriched, safe, and appropriate environment to meet the physical, social, emotional, and intellectual needs of small children. Seniors will work on portfolio presentation for Child Development Association (CDA) certification.

**Electrical Trades I**
The curriculum adheres to the National Electrical Code, and models electrical apprenticeship programs. Students will learn to install, connect, test, and maintain wiring systems for residential and commercial settings. Instruction includes electrical theory, interpreting schematics and blueprints, AC circuits and wiring methods, conductors, low voltage wiring, conduit bending, load centers and safety switches, service entrance construction, rough-in and trim-out, transformers, lighting, motors, controllers, and more. Graduates may test out of one year of the Independent Electrical Contractors apprenticeship program.

**Electrical Trades II**
The curriculum adheres to the National Electrical Code, and models electrical apprenticeship programs. Students will learn to install, connect, test, and maintain wiring systems for residential and commercial settings. Instruction includes electrical theory, interpreting schematics and blueprints, AC circuits and wiring methods, conductors, low voltage wiring, conduit bending, load centers and safety switches, service entrance construction, rough-in and trim-out, transformers, lighting, motors, controllers, and more. Graduates may test out of one year of the Independent Electrical Contractors apprenticeship program.

**Electronics and Robotics Engineering I**
This program provides students with a foundation in electrical and electronics theory. Coursework is divided into four major categories that include direct current, alternating current, analog, and digital circuits. Students will also learn the concepts of voltage, current, resistance, inductance, capacitance, impedance, power, and related troubleshooting techniques. They will construct numerous projects such as robots, AM/FM radios, and radio-controlled cars. Seniors may earn certification through the Electronic Technicians Association.

**Electronics and Robotics Engineering II**
This program provides students with a foundation in electrical and electronics theory. Coursework is divided into four major categories that include direct current, alternating current, analog, and digital circuits. Students will also learn the concepts of voltage, current, resistance, inductance, capacitance, impedance, power, and
related troubleshooting techniques. They will construct numerous projects such as robots, AM/FM radios, and radio-controlled cars. Seniors may earn certification through the Electronic Technicians Association.

**Emergency Medical Technicians (Senior Year Only)**
Instruction includes EMT preparation, basic life support, patient assessment, medical emergencies, trauma, ambulance service, and 32 hours of clinical observation at local fire and hospital emergency departments. The program adheres to the National EMT-Basic and American Heart Association curriculums, as well as Occupational Safety and Health Administration (OSHA) standards. Students will earn EMT, AHA, CPR and automated external defibrillator, OSHA hazardous materials and outreach training certifications.

**Firefighting I**
The program adheres to the Missouri Fire Marshall Fire Fighter, National First Responder, and American Heart Association curriculums, as well as Occupational Safety and Health Administration (OSHA) standards. Students will earn First Responder, AHA first aid, CPR and automated external defibrillator, OSHA hazardous materials and outreach training certifications. Students will learn rescue procedures, firefighting and suppression techniques, including fire combat experience in the fire tower. Qualified juniors have the option of moving into the EMT program.

**Floorlayers Middle Apprenticeship (Bayless Campus) I**
Students learn to install hardwood, vinyl, carpet and ceramic tile floorings, and to create unique flooring designs for residential and commercial properties. Students can participate as a summer intern with a licensed contractor, earning a high wage while completing portions of the apprenticeship program and credit toward an associate's degree. Students earn 10 hour OSHA certification.

**Floorlayers Middle Apprenticeship (Bayless Campus) II**
Students learn to install hardwood, vinyl, carpet and ceramic tile floorings, and to create unique flooring designs for residential and commercial properties. Students can participate as a summer intern with a licensed contractor, earning a high wage while completing portions of the apprenticeship program and credit toward an associate's degree. Students earn 10 hour OSHA certification.

**Graphic Design I**
Students will learn to design for advertising, publishing, and display purposes. Instruction is provided in design, typography, production and camera-ready art, computer graphics and personal portfolio preparation. One quarter is spent in printing technology cross-training to develop an understanding of the interaction required between design and production in the graphic communications industry. This program is Print ED Certified and national accredited by the Graphic Arts Education and Research Foundation.

**Graphic Design II**
Students will learn to design for advertising, publishing, and display purposes. Instruction is provided in design, typography, production and camera-ready art, computer graphics and personal portfolio preparation. One quarter is spent in printing technology cross-training to develop an understanding of the interaction required between design and production in the graphic communications industry. This program is Print ED Certified and national accredited by the Graphic Arts Education and Research Foundation.

**Health Sciences I, Health Sciences Advanced Study**
The Health Sciences program teaches the skills necessary for a foundation in healthcare. Through a
combination of classroom activities and actual on-the-job clinical experiences in nursing homes, hospitals, and physician's offices, students learn human anatomy and physiology, medical terminology, disease processes, CPR, first aid, vital signs, human relations skills, and basic healthcare skills. It is imperative to be able to think and reason for this career field. Upon completion of the program, students may have the opportunity to take the Missouri State Tests as a Certified Nurse's Assistant exam. If the student passes the exam with an 80 percent and has completed all clinical requirements, he or she may be certified as a nurse's assistant by the State of Missouri. Seniors may qualify to attend and off-campus program in a nearby acute care hospital or nursing home. Graduates may qualify for advanced standing at college level.

Health Sciences II, Health Sciences Advanced Study
The Health Sciences program teaches the skills necessary for a foundation in healthcare. Through a combination of classroom activities and actual on-the-job clinical experiences in nursing homes, hospitals, and physician's offices, students learn human anatomy and physiology, medical terminology, disease processes, CPR, first aid, vital signs, human relations skills, and basic healthcare skills. It is imperative to be able to think and reason for this career field. Upon completion of the program, students may have the opportunity to take the Missouri State Tests as a Certified Nurse's Assistant exam. If the student passes the exam with an 80 percent and has completed all clinical requirements, he or she may be certified as a nurse's assistant by the State of Missouri. Seniors may qualify to attend and off-campus program in a nearby acute care hospital or nursing home. Graduates may qualify for advanced standing at college level.

Heating, Ventilation & Air Conditioning I
This program follows HVAC excellence guidelines, enabling students to earn electrical, gas heat, and electrical heat certifications. Students will learn to install, maintain, diagnose and repair indoor environmental systems controlling temperature, humidity and air quality. Instruction includes basic refrigeration, service and diagnostic techniques, heating and cooling systems, electrical operations, control circuitry, soldering and brazing.

Heating, Ventilation & Air Conditioning II
This program follows HVAC excellence guidelines, enabling students to earn electrical, gas heat, and electrical heat certifications. Students will learn to install, maintain, diagnose and repair indoor environmental systems controlling temperature, humidity and air quality. Instruction includes basic refrigeration, service and diagnostic techniques, heating and cooling systems, electrical operations, control circuitry, soldering and brazing.

Homeland Security
Students will develop an understanding of our culturally diverse population, as well as the Anti-Terrorist, Patriot, and Homeland Security Acts. The probation, parole, prison system, and private security are also covered. Students will learn how to prepare for natural disasters and terrorist attacks, respond to incidents involving weapons of mass destruction, and develop a disaster plan utilizing appropriate emergency response techniques. Students will earn National Emergency Telecommunication, Domestic Preparedness, Occupational Safety and Health Administration, and American Heart Association First Aid certifications.

IT & Graphic Design Computer Applications
Students with Sophomore standing can explore the South Tech career clusters in this course. In the Information Technology & Graphics cluster, students explore computer programming and networking, web design, broadcast captioning, court reporting, fashion design, advertising, graphic design and production.

Lab & Pharmacy Sciences I
Students will learn the basic laboratory testing skills needed to meet the high demand in medical, industrial,
plant science and biotechnology laboratory settings. Instruction includes quality control, hazard management, lab mathematics, specimen collection and processing, solution and media preparation, electrophoresis, PCR reaction, identification of bacteria, and analysis of chemical content, utilizing sophisticated lab equipment. Phlebotomy, microbiology, hematology, serology, histology, and chemistry are also covered.

**Lab & Pharmacy Sciences II**
Students will learn the basic laboratory testing skills needed to meet the high demand in medical, industrial, plant science and biotechnology laboratory settings. Instruction includes quality control, hazard management, lab mathematics, specimen collection and processing, solution and media preparation, electrophoresis, PCR reaction, identification of bacteria, and analysis of chemical content, utilizing sophisticated lab equipment. Phlebotomy, microbiology, hematology, serology, histology, and chemistry are also covered.

**Law Enforcement I & II**
Students will earn national First Responder, American Heart Association first aid and CPR, and OSHA certifications. They will learn criminal and juvenile justice, problem resolution, defense tactics, emergency response and enforcement procedures, preparation of police reports, investigation, patrol, and traffic control procedures. Physical fitness, human relations, cultural diversity, ethics training and communication skills are also covered. Seniors may participate in an internship with the police department.

**Motorcycle & Small Engine Technology I**
Students will learn to diagnose, maintain, and repair lawn equipment, chain saws, motorcycles, personal watercraft, boat engines, all-terrain vehicles (ATVs), and other two and four stroke cycle powered equipment. Instruction includes utilization of diagnostic equipment, engine overhauls, tune-ups, drive trains, wheel, tire and safety inspection. Starter, fuel, governor/throttle, ignition, electrical, carburetion, cooling, lubrication and brake systems are also covered.

**Motorcycle & Small Engine Technology II**
Students will learn to diagnose, maintain, and repair lawn equipment, chain saws, motorcycles, personal watercraft, boat engines, all-terrain vehicles (ATVs), and other two and four stroke cycle powered equipment. Instruction includes utilization of diagnostic equipment, engine overhauls, tune-ups, drive trains, wheel, tire and safety inspection. Starter, fuel, governor/throttle, ignition, electrical, carburetion, cooling, lubrication and brake systems are also covered.

**Precision Machining I**
Instruction includes precision measurement and inspection techniques, blueprint reading and drawing, quality control, and operation of lathes, grinders, drill presses, and milling machines to manufacture metal parts to meet precise specifications. Students will also learn computer aided manufacturing (CAM) technology, computer numerically controlled (CNC) precision machine operation and programming, in an apprenticeship setting.

**Precision Machining II**
Instruction includes precision measurement and inspection techniques, blueprint reading and drawing, quality control, and operation of lathes, grinders, drill presses, and milling machines to manufacture metal parts to meet precise specifications. Students will also learn computer aided manufacturing (CAM) technology, computer numerically controlled (CNC) precision machine operation and programming, in an apprenticeship setting.
Veterinary Assistant I
Students will learn animal handling, diagnostic, examination, and treatment procedures in a simulated clinical, boarding, and grooming facility. Instruction is provided in medical terminology, anatomy and physiology, nutrition, behavior, diseases and parasites, sterilization, handling and restraining, grooming and bathing, patient examination, surgical and treatment procedures. Emphasis is placed on the physical care of animals. Office procedures, patient scheduling, and records maintenance are also covered.

Veterinary Assistant II
Students will learn animal handling, diagnostic, examination, and treatment procedures in a simulated clinical, boarding, and grooming facility. Instruction is provided in medical terminology, anatomy and physiology, nutrition, behavior, diseases and parasites, sterilization, handling and restraining, grooming and bathing, patient examination, surgical and treatment procedures. Emphasis is placed on the physical care of animals. Office procedures, patient scheduling, and records maintenance are also covered.

Web & Computer Programming I
The curriculum parallels computer programming courses taught at the college level. Students will learn program logic and design, analysis of program goals, and problem-solving skills. They will test programs and maintain a variety of operating and information systems. Coding assignments will be constructed in SQL, C++, HTML, Java, JavaScript, Net, LINUX, UNIX, and Visual Basic.

Web & Computer Programming II
The curriculum parallels computer programming courses taught at the college level. Students will learn program logic and design, analysis of program goals, and problem-solving skills. They will test programs and maintain a variety of operating and information systems. Coding assignments will be constructed in SQL, C++, HTML, Java, JavaScript, Net, LINUX, UNIX, and Visual Basic.

Welding I
Students will learn a wide range of skills applicable to many metal fabrication industries, including aerospace, construction, automotive and diesel manufacturing and repair, and machining. Instruction is provided in blueprint reading, metal fabrication, cutting, layout and fit up, metallurgy and heat treatment, inspection and testing techniques. Oxy-fuel, shielded metal arc, general pipe, gas tungsten-arc and metal-arc, plasma and carbon-arc welding procedures are covered.

Welding II
Students will learn a wide range of skills applicable to many metal fabrication industries, including aerospace, construction, automotive and diesel manufacturing and repair, and machining. Instruction is provided in blueprint reading, metal fabrication, cutting, layout and fit up, metallurgy and heat treatment, inspection and testing techniques. Oxy-fuel, shielded metal arc, general pipe, gas tungsten-arc and metal-arc, plasma and carbon-arc welding procedures are covered.

Construction Innovations
The new format is open to junior and seniors and allows for one semester, one year or two years of participation. The first year or semester of attendance will consist of quarter courses designed to provide students with creative options that allow them to explore the fields of construction and design. Students who choose to return for a second year will select a specialized field for advanced study. This new program design offers a meaningful and exciting opportunity for students to earn elective credits in a manner that promotes self-discovery, team-work, and strengthens a positive connection between education and the world of work! Program Highlights: Professional Tools and Equipment, Industry Experienced Instructors, Industry recognized Certifications, Full Scale Project Work.