

## SkillsUSA CONTEST DESCRIPTIONS

**3-D Animation (Technical)** - The world of 3D is rapidly expanding, and career opportunities exist in a wide range of fields – including architecture, games, product and industrial design, civil engineering, and film and television animation. This contest allows students to step into a real-world 3D production environment where creative output must be accomplished within specific timeframes, resources and design constraints. This is a two-person team event and includes a preliminary written exam. Contestants must produce high quality images and an animated short subject using 3D computerized images. Students are evaluated on their technical knowledge, production skills and creative abilities – including visual development and storyboarding. They will also have the opportunity to interface with and get feedback from high-profile judges with successful careers in 3D visualization and animation.

**Action Skills (Leadership)** - A five- to seven-minute demonstration of an occupational skill in an area in which a student is training. Contestants use examples, experiments, displays or practical operations to clearly explain their skills using contestant-prepared visual aids.

**Additive manufacturing (Technical)** embraces a wide range of materials and derivative processes building parts suitable for end-use service. The virtually unlimited design freedom enabled by additive manufacturing allows the creation of shapes and the integration of feature and function that previously required subassemblies. Employment opportunities for creative individuals are growing while industry adopts AM methods. Ready access to workstations and service providers makes the Internet a growing marketplace for public AM gadgets.

**Advertising Design (Technical)** - Tests technical skills and creative aptitude just as though contestants worked for an ad agency. In addition to a written test, competitors will re-create a given advertisement on the computer. Competitors are judged on their accuracy, proficiency with industry standard software and ability to meet the given deadline. Contestants also compete in a creative portion of the competition. The creative portion involves the application of creative thinking and development of a design problem. Layout, drawing and illustration skills are used, as well as their ability to create vibrant, effective designs using the computer.

**Aerospace Assembler (State only)** This contest is sponsored by Boeing based on Knowledge, Skills and Abilities found in the Core Plus curriculum, units 1-10. These KSA are also in the SkillsUSA Inc CTE project #3. Resume and mock interview included.

**American Sign Language (Technical - State only)** This contest assesses public signing and interpretation skills through delivery of a two- to five-minute performance and a written test.

**American Spirit (Leadership)** - Notebook contest documenting SkillsUSA chapters' community service, patriotism and citizenship, and promotion of career and technical education projects that demonstrate a belief in the American way of life and the purposes of SkillsUSA.

**Architectural Drafting (Technical)** - Contestants will use their drafting skills to solve an Architectural problem. The problem includes a written test, a hand sketch, and drawings EITHER computer-generated or board drafted. If board drafting, please bring all necessary equipment. The contest tests the contestants' problem solving abilities, not simply their CAD skills.

**Audio Radio Production (Technical)** - Students will produce (plan, write, voice, record, edit, render, etc.) a 5-minute radio production such as a PSA, NPR style soundscape, sound rich/NPR style news story, sound & interview only news story, etc. A 30-Second Ad Spot will be produced and inserted into the production. The complete production requires students to demonstrate their ability to plan a project that meets a specific prompt & run time; gather, edit and mix a variety of audio sources; and finally, render the completed project to a specified audio file.

**Automated Manufacturing Technology (Technical)** - The contest evaluates teams for employment in integrated manufacturing technology fields of computer aided drafting/design (CAD), computer aided manufacturing (CAM), and computer numerical controlled machining (CNC). CAD operators construct the part geometry; the CAM operator generates the tool paths; and the CNC operator sets up and machines the part. Plotting is not a scored event; however the contestants must be able to generate a plot file that will be used to send their data to the plotter.

**Automotive and Light Repair (Demo 2019-Technical)** To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of automobile maintenance and light repair. The contest will include a series of workstations. Workstations consist of a vehicle and/or simulators, components, service publications, and interpersonal skills stations (such as Customer Service and Job Interview). The contest will include a written knowledge test given by ASE, and will consist of 50 questions covering all skill areas found in the ASE Education Foundation Maintenance and Light Repair Program Standards and the Official ASE Study Guide — Auto Maintenance and Light Repair (G1) test. The test for this contest will be comprised of maintenance and repair content from these skill areas: engine repair, automatic transmission/transaxle, manual drive train and axles, suspension and steering, brakes, electrical/electronic steering, heating and air conditioning and engine performance.

**Automotive Maintenance Technology (State only)** – This Contest is designed to give first-year and beginning students who are enrolled in an automotive related program the opportunity to demonstrate basic shops skills related to the automotive repair industry. Students must be first year students with less than 360 hours in the class. Contestants will demonstrate their ability to perform jobs and skills based on the task list outlined by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF). Workstations will consist of on-vehicle, simulations, bench and component testing and a written test. Workstations will be comprised from basic/entry level NATEF Tasks. Contestants will be judged on technical competency, accuracy, quality, safety and ability to follow directions.

**Automotive Refinishing Technology (Technical)** - Contestant will demonstrate the ability to perform jobs and skills based on the task list outlined by the National Institute for Automotive Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF). The competition includes a series of workstations to assess skills in the following areas: surface preparation, spray gun operation, paint mixing, matching and applying, solving paint applications problems, determining finish defects, causes and cures and utilizing safety precautions. The competitor will also complete an interview, a written estimate and an ASE written exam. The overall appearance of the finished products, speed and proper safety practices will be judged.

**Automotive Service Technology (Technical)** - Contestants will demonstrate their ability to perform jobs and skills based on the task list outlined by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF). Workstations consist of on-vehicle, simulations, bench and component testing and a written test. Contestants will be judged on technical competency, accuracy, quality, safety and ability to follow directions. There are thirteen skill stations including the written test.

**Aviation Maintenance Technology –(Technical)** - Contestants perform 12 tasks that represent the types of maintenance they will handle in the aircraft industry. The contest scope is consistent with the airframe and power plant mechanics certification guide published by the Federal Aviation Administration. Aviation maintenance is the only maintenance profession certified by the federal government.

**Barbering (Demo 2018) (Technical)** - The contest is divided into four separate skill performance tests with one written and an oral communication competition. The purpose is to evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of barbering. The four separate skill performance tests assess skills in haircutting, hair styling, hair color, beard design & coloring. Creativity is assessed in the creative cut and beard design, while haircutting is tested in the recreation of one men's haircut from a photograph and one technical haircut which is the Flat Top.

**Basic Electronics (State Only) (Technical)** - Contestants are required to complete a written test of questions formulated from the International Society Certified Electronics Technician (ISCET). Contestants' will demonstrate their knowledge of analog and digital circuitry; ability to troubleshoot electronic circuits; ability to construct and test experimental circuits; and, ability to design and select circuit components. All aspects of the competition test contestants' abilities to use and calibrate electronic equipment, record and organize data, and demonstrate proper safety practices.

**Basic Health Care Skills (Technical)** - Contestants will demonstrate their knowledge and ability to perform entry-level procedures or skills based on the following list of core standards: Academic Foundations, Communication Skills, Career

Opportunity Concepts and Systems, Employability and Teamwork, Ethical and Legal Issues, Safety Practices. Performance will be evaluated through various stations involving written, verbal and skills testing. References: Diversified Health Occupations, Seventh Edition by Louis Simmers, Thomson-Delmar Learning and National Health Care Foundation Standards.

**Broadcast News Production** (Technical)- The contest is comprised of four student members. Two students serve as the news anchor team, one student will serve as the team's director/technical director, and one student will serve as the floor director. Each team will have two hours to write and produce their rundown before assigned contest time. Teams will produce and complete a three-minute newscast as if it were live. Teams are evaluated on their broadcast writing ability, voice quality, diction, timing and pacing and performance techniques.

**Building Maintenance** (Technical) - Students will demonstrate competencies related to the building maintenance trade. Students will be expected to compete in a higher level of mastery areas considering the fact that the contest is a national event. These areas will include, but are not limited to, carpet care, office and restroom cleaning, floor care and liquid measurement.

**Cabinetmaking** (Technical) - Requires the building of a small cabinet from materials and drawings supplied. Contestants are expected to read the drawings, lay out and cut the parts using a table saw, laminate trimmer, hand drill, hinge boring machine and various hand tools. The parts must be accurately assembled, sanded and adjusted to tolerances specified by the judges.

**Career Pathways Showcase** (Leadership) - Student teams will use their course of study as the basis of a project that will benefit their class, school, community or industry. The project must highlight an aspect of their career cluster training. Upon completion of the project, the students will develop a display and use it within their community to explain their training and their project. This contest will judge mastery of their training, its application, the project's benefit to their community, and display and presentation techniques.

**Carpentry** – (Technical) Contestants will frame walls using wood and or metal steel studs, cut and install rafters, gable end overhangs, fascia board and soffit installation, install sheathing and or exterior siding and trim. Demonstration of knowledge of stair construction is required. Contestants will be judged on accuracy, ability to read and interpret blueprints, workmanship, safety and the proper use of tools, equipment and materials.

**Chapter Business Procedure** (Leadership) - Student teams of six members, will demonstrate their knowledge of parliamentary procedure in both a written exam and a team demonstration. The written exam will consist of 100 questions related to materials found in Robert's Rules of Order—Newly Revised. Scores are averaged and included as part of the team's overall score. During the presentation, the team will demonstrate the running of a typical business meeting using a standard order of business. During the presentation, the team must properly insert into the order of business the secretary's minutes, treasurer's report and business items identified by the technical committee. In addition to the debate and transaction of the business items, teams will also properly demonstrate at least 6 different parliamentary procedure motions, including at least one of each of the following: main, privileged, subsidiary, incidental and motions that bring back issues to the floor. Minutes of the demonstration will be read by the secretary upon completion of the demonstration.

**Chapter Display** (Leadership)- Selects the outstanding promotional exhibit designed and constructed by SkillsUSA student members. The display is built around and articulates a common theme established annually by SkillsUSA. The contest involves a team of no more than three students setting up the display and one student presenting information about the display in a presentation/interview with judges.

**CNC Milling Specialist** (Technical) - The purpose of this contest is to evaluate each contestant's preparation for employment in Computer Numeric Control Milling. In addition, recognize outstanding students for excellence and professionalism. This contest will assess the ability to write CNC milling programs, interpret prints (including GDT), and measure/gage parts. Participants will also demonstrate theoretical knowledge of CNC machine configuration, setup and operations.

**CNC Technician (Technical)** - The purpose of this contest is to evaluate each contestant's preparation for employment in Computer Numeric Control for both Milling and Turning. In addition, recognize outstanding students for excellence and professionalism. This contest will assess the ability to write CNC milling and turning programs, interpret prints (including GDT), and measure/gage parts. Participants will also demonstrate theoretical knowledge of CNC machine configuration, setup and operations.

**CNC Turning Specialist (Technical)** - The purpose of this contest is to evaluate each contestant's preparation for employment in Computer Numeric Control Turning. In addition, recognize outstanding students for excellence and professionalism. This contest will assess the ability to write CNC turning programs, interpret prints (including GDT), and measure/gage parts. Participants will also demonstrate theoretical knowledge of CNC machine configuration, setup and operations.

**Collision Damage Appraisal (Demo 2019 – Technical)** – The contest will be consistent with the Collision Repair/Refinishing Technician Task List outlined in the guidelines published by the National Institute for Automotive Service Excellence (ASE) and the National Technicians Education Foundation (NATEF), [www.natef.org](http://www.natef.org). Contestants will demonstrate their ability to perform jobs of skills selected from the standards mentioned above as determined by the SkillsUSA Championships technical committee. The contest includes a written knowledge test given by ASE, which will consist of 50 questions covering the areas of the Damage Analysis & Estimating that are identified in the NATEF Collision Repair/Refinishing Program Standards and the ASE Official Study Guide: Collision Repair/Refinish, an estimating test the tests for the high school and college contests will be comprised of diagnosis and repair content.

**Collision Repair Technology (Technical)** - Contestants demonstrate their ability to perform jobs and skills based on the task list outlined by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF). The competition includes a series of workstations to assess skills in the following areas: metal straightening, welding, plastic repair and structural analysis. The overall appearance of the finished product, speed and proper safety practices are judged. There are written tests on estimating, structural analysis, and an ASE exam. The students are also interviewed by the judges.

**Commercial Baking (Technical)** - Contestants are challenged to meet production and quality standards expected by industry. The contest includes both a written examination and practical exercises. Contestants demonstrate their knowledge and skills through scaling, mixing, preparing and baking six products. The products include breads, rolls, Danish, cookies and pies. The student also must demonstrate their cake decorating skills. The contestant must work efficiently to produce quality products in a job-like setting.

**Community Action Project (Leadership)** - Purpose: To evaluate a team of two contestants ability to develop, execute, document and present a project that was completed in their community or school, which provides a benefit to the community or the school. To evaluate local activities that benefit the community and to recognize excellence and professionalism in the area of community service. This event also enables the community to become aware of the outstanding work being performed by career and technical education students. Eligibility: Open to active SkillsUSA members enrolled in career and technical programs with entry-level job skills as the occupational objective. A letter from the appropriate school official on school letterhead stating that the contestant is classified under the provisions of Public Law 105-17, Individuals with Disabilities Education Act, 1997, is required for participation.

**Community Service (Leadership)** -The community service competition evaluates local chapter activities that benefit the community. SkillsUSA chapters present their best community service project for the year. Contestants are evaluated on a notebook which reports their chapter's community service project and on a live presentation, which is given to a panel of three judges.

**Computer Maintenance (Technical - State only)** – Students service hardware components of electrical products. Students will be required to demonstrate an ability to: perform maintenance and preventative maintenance on personal computers, laptop computers and portable devices, including identification of names, purposes and characteristics. They will describe and identify network connectors, cables, connectivity technologies, as well as install and upgrade

network cards, wired and wireless connections. Identify, install, troubleshoot and upgrade hardware security, as well as be able to identify safety and environment concerns surrounding computer technology. In addition, the contest will be defined by the CompTIA A+ Certification Examination.

**Computer Programming** – (Technical- Competition consists of project coding and output, a skill-related written test and an interview. The contestants will receive a packet that includes instructions to the written test and each of the two projects. Each project's specifications are written for Visual Basic, Java, C#, C++ and RPG. The projects will be saved on the Desktop in a folder called "SkillsUSA Contestant#\_." All projects will be downloaded to a jump drive or diskette (whichever the student prefers) and transferred to a main station to be printed, both code and screen.

**Cosmetology** (Technical) - Students will demonstrate their skills in haircutting, hair styling and long hair design in four separate tests. All work is performed on mannequins so everyone begins with the same model and the same type of hair. Contestants will create one 90 degree women's haircut, one woman's and one man's cut from a finished photo. A display of creativity is seen in the long hair segment of the competition where these future salon professionals demonstrate their own design skills. A parade finale closes the contest with each contestant walking down the stage with their completed mannequins to present to the audience.

**Creed** (State only-Leadership) – Contestants will demonstrate an ability to recite the Creed and answer questions demonstrating knowledge of its meaning.

**Crime Scene Investigation** (Technical) - Contestants will be directed to the crime scene and briefed as to the situation. The contestants will, as a three-person team, process the crime scene. They will legally search for, properly collect and remove evidence of the crime. One member of the team will be required to lift a latent fingerprint from a pre-selected item of evidence. After the scene has been processed, the contestants will write their report, draw the crime scene sketch and mark their evidence.

**Criminal Justice** (Technical) - For students preparing to be police officers or to work in other areas of criminal justice. Typically this contest will utilize both written examination and practical exercises to evaluate the contestants' abilities and knowledge of the field. The contestants are scored on their knowledge and application of U.S. Constitutional Law, written and verbal communications skills, and their ability to handle an entry-level law enforcement position.

**Culinary Arts** (Technical) - The competition will encompass both hot and cold food preparation and presentation. Contestants will demonstrate their knowledge and skills through the production of a four-course menu in a full day competition. The contestants will be rated on their organization, knife skills, cooking techniques, creative presentation, sanitation food safety techniques, and above all, the quality and flavor of their prepared items. The high school competitors will work from one menu with standardized recipes. The college/postsecondary students will work from a market basket format and write their own menu and recipes the night before the competition.

**Customer Service** (Occupational) - Evaluates students' proficiency in providing customer service. The contest involves live, role-playing situations. Contestants demonstrate their ability to perform customer service in both written and oral forms including telephone and computer skills, communications, problem solving, conflict resolution and business etiquette.

**Cyber Security (Demo 2019)** (Technical) - Team of 2. The competition asks student teams to assume administrative and protective duties for an existing "commercial" network – typically a small company with 30+ users, 3 to 5 servers, and common Internet services such as a web server, mail server, and e-commerce site. Each team begins the competition with an identical set of hardware and software and is scored on their ability to detect and respond to outside threats, maintain availability of existing services such as mail servers and web servers, respond to business requests such as the addition or removal of additional services, and balance security needs against business needs. Throughout the competition teams will be scored to verify the functionality and availability of each team's services on a periodic basis and traffic generators continuously feed simulated user traffic into the competition network. A volunteer red team provides the "external threat" all Internet-based services face and allows the teams to match their defensive skills against live opponents.

**Dental Assisting (Technical)** - Contestants demonstrate procedures specified in the accreditation standards for Dental Assisting Education Programs of the Commission on Dental Accreditation. Students compete in chair-side assisting; preparation of dental materials; infection control; and emergency, laboratory and office procedures. Skills evaluated may include administrative, clinical or laboratory dental areas.

**Diesel Equipment Technology (Technical)** - Contestants cycle through fourteen stations testing and troubleshooting engines, electrical and electronics systems, power train systems including chassis, transmissions and carriers. Contestants also demonstrate skills in hydraulic systems, vehicle inspections, fundamental failure analysis, brake systems, air-conditioning systems and general shop skills. Contestants also perform a job interview skills and complete a written test.

**Digital Cinema Production (Technical)** - To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the cinematography/short film production. The contest will be divided into four portions: a written exam that will assess knowledge in industry standards, a storyboard assignment to be completed in teams of two people, an interview with 1 or more judges and a short video (4.5 to 5 minutes) that will be filmed and edited on site. (meaning all work must be done between contest briefing and designated turn in time) All footage must be acquired after the contest has begun and must be filmed within the areas specified by the field assignment.

**Early Childhood Education (Technical)** - Contestants will demonstrate their knowledge of developmentally appropriate practice and their ability to prepare and implement learning activities for children 3 to 5 years old. Contestants will prepare a written lesson plan and take a written test assessing their knowledge of child development and effective teaching strategies. They will demonstrate their understanding of the unique age-related learning characteristics of young children and the relevant social interactions as they implement the lesson.

**Electrical Construction Wiring (Technical)** - Contestants are required to complete a written test of questions formulated from the latest edition of the National Electric Code (NEC), a practical conduit bending exercise and hands-on installation of a conduit system, cabling system and wiring devices. Working from drawings and specification sheets, contestants are required to install an electrical system common in most residential and light commercial projects. Judging is based on general workmanship, accuracy of layout and installation, and adherence to the current NEC and standard industry safe practices.

**Electronics Technology (Technical)** - The contest is divided into five sections: customer service exam, written exam, soldering, bread boarding and troubleshooting. Contestants' will demonstrate their knowledge of analog and digital circuitry; ability to troubleshoot electronic circuits; ability to construct and test experimental circuits; and, ability to design and select circuit components. All aspects of the competition test contestants' abilities to use and calibrate electronic equipment, record and organize data, and demonstrate proper safety practices.

**Employment Application Process (Leadership)** - Tests the contestant's readiness in applying for employment and their understanding of the process. The contest is available to students who are classified under the provisions of Public Law 105-17, Individuals with Disabilities Education Act, 1997. The competition includes completing an application and interviewing with the judges. Their resume and portfolio are used during their interviews.

**Engineering Technology Design (Occupational)** - A team of three students demonstrates their ability to design an innovative engineering project and present those ideas along with a display and live model. During the presentation, students are judged on their performance as a professional team, presentation of their project to a panel of judges from the engineering field, their storyboard presentation model, and the overall effect of the presentation.

**Entrepreneurship (Occupational)** - A team of 4 event testing students' knowledge in starting their own businesses by developing business plans that identify needed products or services in a local market. Emphasis is placed on financial planning and practicality of product/service. Teams give oral presentations based upon their written plans and the team must successfully answer questions by a team of judges in response to typical problem encountered by entrepreneurs during their first year of business.

**Esthetics (Technical)** - Competition evaluates contestants' techniques and professionalism in the field of skin care. Students will be tested in four different areas: an oral skin consultation; a written exam covering the fundamentals of skin care; sanitation; skin analysis; a hands-on basic facial demonstration; and, a day time and fantasy make-up application.

**Extemporaneous Speaking (Leadership)** - Requires contestants to give a three- to five-minute speech on an assigned topic with five minutes of advance preparation. Contestants enter the preparation area one at a time where they are given a speech topic. They are judged on voice, mechanics, platform deportment, organization and effectiveness.

**Firefighting (Technical)** - Evaluates the contestant's preparation for firefighting careers through hands-on skill demonstrations and both written and oral presentations. Areas tested include: safety; breathing apparatus; fire streams; ladders, ropes, knots and hoses; fire control; ventilation; emergency medical care and rescue; and protecting fire cause evidence. Contestants are evaluated using standards established by the National Fire Protection Association (NFPA).

**First Aid/CPR (Occupational)** - Evaluates a contestant's ability to perform procedures or take appropriate action based on scenarios presented related to CPR (Adult/AED, 2 man system, child and infant CPR) first aid medical emergencies. There is also a written exam. All skills are judged on nationally accepted standards identified by The American Red Cross, The American Heart Association, The American Safety and Health Institute and The National Safety Council.

**Graphic Communications (Technical)** - Student competitors participate in an eight part contest which includes the following segments in alphabetical order:

1. Digital Press – using a Ricoh Digital Press and or other available devices, the student will set up the machine for proper file transfer, creating a finished product that may consist of variable data and or inline finishing along with completing a short written test;
2. Digital Workflow – the student accesses files and follows instructions to perform preflight operations, reviewing and making corrections as needed for correct output;
3. Electronic Prepress – the student creates a file using Adobe InDesign, PhotoShop, and Illustrator on an Apple computer, following instructions to create a file that matches a provided sample;
4. Finishing – the student operates a Baumcut programmable cutter, properly trimming down a sheet to its finished size, set up a table top Baumfolder for a tri-fold and a half-fold and complete a short written test;
5. Offset Press Operations – using a Heidelberg Printmaster 46-2, the student will set up the feeder and delivery, mount and adjust plates, print two colors on a preprinted two color sheet creating a 4-color finished job;
6. Oral Professional Assessment – the student participates in an interview exercise;
7. Production Planning – the student will solve a production estimating problem relating to the cost justification of printing a job on a digital press verses an offset press. This area of the contest will be in conjunction with the Digital Press contest;
8. Technical Knowledge Test – the student completes a general technical knowledge test developed using competencies from the introduction to graphic Communications accreditation area of PRINT-ED.

**Graphic Image Sublimation (Technical)** – Will rate a contestant's preparation for employment and to recognize outstanding contestants for excellence and professionalism in the field of graphic imaging. Contestants are tested on their ability to design and print a tile mosaic and then transfer the design to ceramic tile; contestants also decorate coffee and latte mugs, mousepads, and license plates with pre-printed sublimation transfers. Eligibility: Open to all active SkillsUSA members enrolled in technical education programs that teach graphic communications skills.

**Health Knowledge Bowl (Occupational)** - Tests teams of four students on their collective knowledge of health occupations. Teams are judged on speed and accuracy answering questions in nine categories: (1) Academic Foundations; (2) Communication; (3) Systems; (4) Employability Skills; (5) Legal Responsibility; (6) Ethics; (7) Safety Practices; (8) Teamwork; and, (9) Health Maintenance.

**Health Occupations Professional Portfolio (Occupational)** - Contest recognizes students for their successful development of a professional portfolio. The competition evaluates the ability of the students to present themselves to

a prospective employer. The contestants will show the use of the portfolio use effective communication skills in presenting. The contest consists of two parts: a portfolio notebook and a live presentation by the contestant.

**Heating, Ventilation, Air Conditioning and Refrigeration (HVACR)(Technical)** - The contest includes a series of testing stations designed to assess skills identified by industry HVACR standards. Industry equipment used during the work stations portion of the contest may include but is not limited to: ice machines, refrigerated display cases, small package HVAC units, furnaces and split-system air conditioning and/or heat pump units and geothermal units.

**Industrial Motor Control (Technical)** - Students demonstrate their knowledge of electrical principles, equipment and industry codes and standards as it relates to the design and installation of motor control systems. Students demonstrate their skills and abilities in applying that knowledge by properly installing motor control equipment and associated enclosures, raceways, pilot devices and circuitry in accordance with accepted industry practice and National Electric Code requirements.

**Information Technology Services (Technical)** - Competition requires contestants to identify and correct end -user computing issues including configuration problems, operating system failures, boot issues, basic client side network problems and install common software components. The contest also includes client or customer facing issues pertaining to intake or resolution of a customer installation or repair. Students must demonstrate basic ability to configure & secure SOHO networks, manage client side virtual machines, basic understanding of Windows registry, use of remote assistance software to support remote clients, comprehensive knowledge of commands, and work with mobile devices. In addition, the contestants take the A+ Certification exam. Their score on this exam is used as the basis for the written portion of the contest, and contestants who pass the exam receive their A+ Certification.

**Interactive Application and Game Development (Technical)** - Teams of 2 must produce an original, high-quality prototype or sample of an interactive multimedia application or video game during the school year immediately preceding the contest deadline. Their production should include concept art and/or storyboards, the sample or prototype itself, an executive overview of the project, and a printed résumé for each team member. Résumés should include the industry experience gained from developing the contest submission, time invested, and the professional and academic relevance to the contestant's career ambitions.

**Internetworking (Technical)** - The contest consists of three main parts—networking design, general networking knowledge and hands-on evaluations. The networking design problem tests a contestant's ability to design functionality, scalability, adaptability and manageability of an internetworking system. The online written portion tests the student's complete knowledge of internetworking concepts. The hands-on component demonstrates the abilities of the contestant to make cables, trouble shoot network systems, configure routers, switches and servers, to deliver customer service in a technical assistant center environment. The contestants will find errors in WAN and LAN networks; do an ISP configuration using routers and switches; talk a technician through an error they are having on their network; and, take an online, certification type test. The national contest is based on the most current CCNA certification. In today's job market system administration skills are needed, therefore the server skills listed here will be scored: Install DNS, create a record, install active directory service, and DHCP. In addition, contestants should have knowledge of creating user and group accounts on Windows Server 2008.

**Jewelry Design (State Only Contest) (Technical)** - The contest tests the knowledge and skills of various aspects of general jewelry knowledge, fabrication of project(s), safety, professional development, creativity, and current Jewelry technical processes in approximately 4 to 5 hours. Individuals will be evaluated on the following: drawings, fabrication process, safety, written exam, resume, and written cost estimates.

**Job Interview (Leadership)** - Divided into three phases: completion of employment applications; preliminary interviews with receptionist; and, in-depth interviews. Contestants are evaluated on their understanding of employment procedures faced in applying for positions in the occupational areas for which they are training.

**Job Skill Demonstration A (Leadership)(Middle School)** - Contestants demonstrate and explain an entry-level skill used in the occupational area for which they are training. Competitors in Job Skill A must demonstrate a career objective in an occupational area that is included in one of the contest areas of the SkillsUSA Championships.

**Job Skill Demonstration Open (Leadership) (Middle School)** - Contestants demonstrate and explain an entry-level skill used in the occupational area for which they are training or outside of their training program. Any technical skill may be demonstrated.

**Major Appliance and Refrigeration Technology (Technical)** - Contestants rotate from station to station diagnosing common service issues on refrigerators, washers, dryers, ranges, microwave ovens and dishwashers. Contestants also demonstrate their ability to braze by assembling a copper and steel tubing project per a schematic provided. The Contestants customer satisfaction and employability skills will also be evaluated using, interviews, job applications and various types of assessments. There is also a major appliance technology general knowledge learning exercise.

**Marine Service Technology (Technical)** - The Marine Service Technology contest includes individual skill stations and a written or online test. The hands-on test stations include many aspects of 2-stroke and 4-stroke outboard, stern drive and inboard troubleshooting and repair. Students should be proficient in marine application electrical/ignition systems, fuel systems, cooling systems, lubrication systems, drive/transmission systems and boat and trailer rigging and repair. The written or online test includes the above listed topics including diagnostics, service and repair of marine accessory items. Contestants will be judged on safe work practices, cleanliness, organizational skills, accuracy, speed and completion of assigned tasks, worksheets and paperwork.

**Masonry (Technical)** - While production is very important, quality workmanship is vital. The students will be expected to construct a composite brick & block project in a six-hour period that will test their ability to meet industry standards in quality. In addition to a written exam, the critical eye of journeyman judges will be the deciding factor in determining the winners. The contest project will include components of the most frequently used details in residential construction.

**Mechatronics (Technical)** - Requires contestants to understand the new industrial discipline of “mechatronics,” the ability to understand complex systems that integrate various elements in the mechanical, fluid power, and controls domain, combined with the ability to work in a team environment with people of different areas of expertise. Mechatronic specialists must therefore have well development skills in pneumatic technology, electrical and electronics systems, mechanical systems and general automation techniques and practices, including systematic troubleshooting methods. This competition consists of three events designed to measure the skills required in the modern automated manufacturing environment. Contestants will be required to assemble, adjust and test an automated machine system, troubleshoot and repair a faulty machine system and take a comprehensive written test. The contest elements have been designed to be as realistic as possible, closely resembling the tasks and activities of modern automation professionals. High school teams of two will compete in a construction phase and a troubleshooting phase. In addition, there will be an individual oral interview.

**Medical Assisting (Technical)** - Contestants are tested on their skills in the clinical and administrative setting. They are judged on speed, the use of correct safety measures and their ability to interact personally with a patient. The students are also judged on general office skills, communication skills, patient education, knowledge of anatomy and physiology, terminology, instrument identification and equipment, as well as on a variety of clinic procedures and techniques. Contestants need to be able to assess a situation in a short period of time and perform a skill required for that situation within the given time limit. Spelling counts for all testing and documentation.

**Medical Math (Occupational)** - Contestants demonstrate their knowledge of general math concepts used in the healthcare fields. They complete a written test that may include the use of ratio/proportion, dosage calculation, metric and household equivalents, Roman numerals, abbreviations, and general math including percentages, among other medical math-related problems.

**Medical Terminology (Occupational)** - To evaluate the knowledge of medical terminology and abbreviations of an individual preparing for employment in the health occupations fields.

**Mobile Electronics Installation** (Technical) - This event tests contestant's abilities to perform standard installation practices used by certified, professional mobile electronics installers. These skills have been established through the certification objectives and items created for the Basic MECP certification by the Consumer Electronics Association. This event includes a written examination covering the Basic MECP certification, a professional interview and five hands-on applications that include taking electrical measurements, installing consumer electronics equipment in a mobile environment, soldering, working with relay circuits and troubleshooting electronic circuitry.

**Mobile Robotics Technology** (Technical) - The contest will test the ability to perform, exhibit and compile skills and knowledge from the following list of competencies determined by the SkillsUSA Mobile Robotic technical committee. It will evaluate each contestant's preparation for employment in the field of robotics with emphasis on the team approach to problem solving in a work environment.

**Motorcycle Service Technology** (Technical) - Contestants perform tasks representative of those encountered in a dealership's service department. Technical skills include performing scheduled maintenance tasks; use of service, electrical diagnostic and parts manuals; electrical diagnostics; precision measurement; brake service; chassis/suspension service; fuel delivery system inspection and repair; transmission and drive systems; power train systems; on Harley-Davidson motorcycles. Judges will look for clean and organized work habits; correct use of reference materials; the ability to follow directions; and good technical skills.

**Nail Care** (Technical) The purpose of this contest is to evaluate each contestant's preparation for employment and to recognize outstanding students' excellence and professionalism in the field of nail technology. The contest consists of 6 separate segments; oral communication skills, acrylic application, tips applied and overlaid with a light-cured gel, nail polish application, nail art pedicuring and a written exam. The written exam tests basic knowledge of proper sanitation, chemical safety, salon procedures, etc. The practical applications evaluate the contestant's ability to perform the most common nail services in the salon today.

**Nurse Assisting** (Technical) - Students will demonstrate knowledge and skill in performing personal care, encouraging patient independence, assisting with ambulation, and performing other routine tasks, including standard infection control procedures used in basic nurse assisting. Students will demonstrate knowledge and abilities in CPR, and the measurement of vital signs. Contestants will be familiar with basic anatomy, communications skills, legal/ethical issues and employment skills.

**Occupational Health and Safety** (Leadership) - Contestants demonstrate the safety and health endeavors of their respective technical programs by putting together a scrapbook that highlights important programs, activities and events related to their school's health and safety program. The competition encourages chapters to be active in all phases of SkillsUSA. The health and safety activities of the chapters are evaluated on the planning and organization of four projects and the final outcome of those projects. Students are interviewed and scrapbooks are scored by a panel of judges based on the quality and content of the books and on the candidates' presentation during the interview process.

**Opening and Closing Ceremonies** (Leadership) (Middle School) - A teamwork and oral presentation contest that evaluates teams' understanding of the symbolic representation of the colors and assembled parts of the SkillsUSA emblem. Each team includes seven registered members in the roles of president, vice president, parliamentarian, reporter, treasurer, secretary and historian. The contest is a demonstration of the SkillsUSA Opening and Closing Ceremonies conducted according to the script and description as printed in the SkillsUSA Championships Technical Standards.

**Outstanding Chapter** (Leadership) (Middle School) - Consists of activities members have been involved with during the school year. Activities consist of chapter meetings, leadership training, publicity, community service projects, professional development, program of work, awards, local and state competition and other selected chapter activities. Each activity is documented according to guidelines and submitted in a scrapbook for judging. One student representative is interviewed during the competition.

**Photography** (Technical) - Contestants demonstrate their ability to use digital SLR's, image editing software (Adobe Photoshop) and professional studio lighting. Students perform on-site photography, portrait studio lighting & posing, process and print digital photos and submit two 11×14 or 16×20 mounted & matted photographs in advance of the contest to be judged and displayed at the competition. Contestants are evaluated on their mastery of entry-level job skills.

**Pin Design** (Leadership) (Middle School) Students present their state-winning pin along with their artwork and participate in an oral presentation regarding all aspects of their creation of the design. He/she will explain how the pin represents the state, its unique qualities and why another SkillsUSA student or adult member would want to wear it.

**Plumbing** – (Technical) - Contestants “rough-in” hot and cold water lines with copper tubing and “rough-in” sanitary drainage, waste and vent lines with cast iron and PVC plastic for a water closet, a lavatory, a washer box and a floor drain. Water pipes are pressure tested on completed projects. Professional plumbers and pipefitters judge the contestants on the basis of accuracy, workmanship, proper selection and use of tools and supplies, and proper safety procedures.

**Power Equipment Technology** (Technical) - Tests the student's skills in all areas of this technology. They must know and understand both 2 & 4 cycle engines. They should know and understand the related theories that go along with the types of engines that they will come across in the industry. They should also understand drive trains, hydraulic, as well as wiring schematics. Contestants will need to be versed in customer service. As they rotate through the various stations they are judged and scored on both physical and oral skills. They are further tested with their ability to read and follow the job tasks that are given.

**Practical Nursing** (Technical) - Contestants will demonstrate their ability to perform procedures/skills consistent with Practical Nursing competencies as determined by State Boards of Nursing. Contestants are judged on their knowledge of medical terminology, body structure and function, nutrition, medications and nursing care. They must also demonstrate their abilities to perform job skills such as: administration of oral, subcutaneous and nasogastric medications; physical assessment; insertion of a nasogastric tube; sterile dressing change and cardiopulmonary resuscitation. At each workstation they are judged on accuracy of their skill, organization, communication and safety.

**Precision Machining** (Technical) (State only contest – no nationals) The purpose of this contest is to evaluate each contestant's preparation for employment as a general machinist. In addition, recognize outstanding students for excellence and professionalism. This contest will assess the ability to machine parts on an engine lathe and on a Bridgeport-type mill, interpret prints (including GDT), and measure/gage parts. Participants will also demonstrate theoretical knowledge of machine configuration, setup and operations.

**Prepared Speech** (Leadership) - Requires students to deliver a speech five to seven minutes in length on a common theme established by National SkillsUSA early in the school year. Contestants are evaluated on their ability to present thoughts relating to a central theme clearly and effectively, and on voice, mechanics, and platform deportment.

**Principles of Engineering/Technology** (Occupational) - Evaluates contestants' understanding of basic technical concepts/principles of the applied sciences and ability to demonstrate and explain the concept/principle in action and application. Any technical concept may be demonstrated, provided it is related to the principles of technology curriculum and incorporates basic principles of the applied sciences.

**Promotional Bulletin Board** (Leadership) - Judges bulletin board displays created by SkillsUSA chapters based on the annual SkillsUSA theme. The bulletin boards promote SkillsUSA, career and technical education in general, and related occupational information. An accompanying notebook documents the development and construction of the bulletin board. An oral presentation explains the process, purpose and educational value.

**Quiz Bowl** (Leadership) - Tests a team of 5 competitors' ability to quickly respond to questions covering the areas of academic knowledge, professional development and current events. The participants respond to a question by

activating a buzzer system. The teams receive one point for a correct answer and lose a point for each incorrect answer. The active rounds (preliminary and finals) are 100 questions each.

**Related Technical Math (Occupational)** - On a written test, contestants demonstrate skills required to solve mathematical problems commonly found in the skilled trades and professional and technical occupations. Skills demonstrated include addition, subtraction, multiplication and division of whole numbers, fractions and decimals; applied word problems; percentages; ratio proportions; averages; area; volume; metric measures and traditional (Imperial) measures and trigonometry.

**Residential Systems Installation and Maintenance** - To test each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of home technology integration. The contest is made up of multiple stations where the contestants will be judged and scored on the following skills and knowledge. Installation of residential products including Home Theater system, computer networking, video security equipment and construct the various cables used at each of the stations. In addition, students will need the knowledge of the different smart home technologies. There will also be a written test that will include Computer Networking Fundamentals, Audio and Video Fundamentals, Home Security and Surveillance Systems, Telecommunications Standards, Structured Wiring (Low Voltage & High voltage, and Systems Integration).

**Restaurant Service (Technical)** - Contestants are tested on skills required in the "front of the house" of a fine restaurant. The focus is on guest service and guest relations in the dining room including: table set up; greeting guests; reservations procedures; presentation of menus; description of food, drinks, soups and specials of the day; taking orders; serving each course and clearing the table after each course; and preparation and presentation of the check and closing remarks. Contestants are judged on personal appearance, tableside manner, professionalism, ease with guests, courtesy, general knowledge and technical and verbal skills.

**Robotics Urban Search and Rescue (Technical) (Middle School)** Purpose: To evaluate team members' skills and preparation for employment in fields related to and including robotics, engineering, automation, manufacturing, electronics, and emergency services. To recognize outstanding performance by participants in scenarios that require problem solving and teamwork in a real-world situation. Eligibility: The RoboRescue Challenge is open to active SkillsUSA members who are associated with Computer Science, Computer Programming, or Robotics.

**Robotics and Automation Technology (Technical)** - Challenges two-person teams to demonstrate operation of a five-axis servo-robot along with a set of sensors and motorized devices to resolve a simulated production process problem. Teams set up and demonstrate operation of a robotic workcell from a word problem. Contestants are required to create a flow chart and sequence of operation. Teams are also judged on efficiency, speed and teamwork.

**Screen Printing Technology (Technical)** - Contestants are tested on their ability to prepare screens, register a multi-color design on a manual four color one station rotary press, and print a multi-color design on a manual six color four station rotary press. Contestants also complete a written technical knowledge test and participate in an oral professional assessment.

**Sheet Metal (Technical)** - Contestants are tested on their ability to perform such jobs as connecting sheet metal pieces with drive cleats, spot welding and riveting. Skills tested may include, but are not limited to, straight duct, transition fitting and 45-degree entry tap fitting. Professional sheet metal workers judge contestants on the use of hand tools, correctness of layout and shop safety procedures. Contestants will be judged on accuracy, completeness, and craftsmanship.

**T-Shirt Design (Occupational)** - The contest is designed to assess the ability of the competitor to design and produce a drawing of that design, as well as give a presentation regarding all aspects of his or her creation of the design.

**Team Engineering Challenge (Middle School)** - This contest is designed to evaluate and to recognize outstanding students for excellence and professionalism in the areas of creative and critical thinking skills and the decision making

process, to solve a problem. The contest is intended to foster creativity, innovation, team work, and problem solving skills.

**Teamworks (Technical)** - Teams of four students will be required to build a construction project, over three days, that will demonstrate their ability to work together as a Team. Each Team will be required to understand the project elements based on a detailed blue print and special instructions presented at the pre-competition orientation. Each Team must write a project completion “action plan” and will present their “action plan” as one of the “key” elements of the competition (all Team members must participate during the presentation). During the “construction project”, the Team will demonstrate their ability to work together as a Team by using their carpentry, electrical, plumbing and masonry skills. Judging is based on the Team’s presentation skills, ability to construct the project per “competition specified” building codes, jobsite safety and cleanliness, organized and correct ordering of materials from the competition material depot, proper use and accountability of tools and equipment and the rate of completion of the project for the Team. Teamworks is not only a Skills USA competition, but a way of learning, for each Team member, to help maximize their skills for their future.

**Technical Computer Applications (Technical)** - Contestants will be expected to demonstrate installation, configuration and use of Windows, Mac OSX and Linux Professional Operating Systems and one or more integrated office suite packages including email, word processing, spreadsheet applications, database applications, web page development, money management applications, presentations applications, internet browser applications, etc. The use of Open source software such as OpenOffice will be preferable. Microsoft Office and other integrated office suites could be used. The utilization of instant messaging, collaboration and social networking software will be required during the contest. Contestants will be expected to perform in teams while demonstrating individual technical skills. The contest will include an oral presentation demonstrating the student’s ability to communicate with others, a hands-on skills demonstration, and a one hour time allotted written examination.

**Technical Drafting (Technical)** - This contest evaluates contestant’s preparation for employment and recognizes outstanding students for excellence and professionalism in the field of technical drafting. The contest will focus on the solution of industry-developed problems by applying appropriate technical drafting skills and tools including computer-aided drafting (CAD).

**Telecommunications Cabling (Technical)** - For students interested in voice and data network cabling and installation. Industry indicates that 80 percent of the problems in computer networks, security systems installations and others are caused by cabling issues not the computers, servers, switches, etc. This competition tests to worldwide industry standards related to cabling for data and voice connections, physical and logical networks and signal transmission. Contestants demonstrate skills in fiber and copper cable termination, pulling and mounting cable, patch panel installation and termination, installing jacks, cable testing and troubleshooting, and providing customer service. Both CAT 5/6e and fiber optics cable are represented. The contest stresses safety in all activities.

**Television (Video) Production (Technical)** - Teams of two contestants are required to plan and shoot a video (generally 30 seconds or one minute in length) on location to convey the “theme” of the event. Editing is done in the contest area with special emphasis on professional production of the video by industry standards, quality of audio and video, and adequate conveyance of the “theme” to the viewer.

**Web Design (Technical)** - Teams will complete a series of challenges focusing on website usability and accessibility, with at least one challenge related to scripting. Each challenge must be documented, clearly demonstrating the skills as outlined in the SkillsUSA Championships Technical Standards.

**Welding (Technical)** - Competitors receive contest drawings and a set of welding procedure specifications. All drawings, welding symbols, and welding terms conform to the latest edition of the American Welding Society standards. Through a series of stations, contestants are tested on various aspects of welding: measuring weld replicas, using weld measuring gauges; laying out a plate and using oxy-acetylene equipment to cut several holes that are checked for accuracy and quality; Gas Metal Arc Welding (GMAW) on steel making welds in various positions using short circuiting transfers; Flux Cored Arc Welding (FCAW) using a shielding gas, making welds in various positions and, using a combination machine

capable of providing the correct welding current for shielded metal arc (SMAW) and gas tungsten arc welding (GTAW). Competitors complete the steel project and weld an aluminum project in various positions using a variety of filler metals.

**Welding Fabrication** (Technical) - A team competition that requires three students from each school to use their welding and fabrication skills to build a designed project from the given material. Each team is required to be skilled in the following welding and cutting processes: SMAW, GTAW, GMAW, FCAW and OFC. The students are also required to be proficient in using the common tools of a workshop. A theme-based project will be constructed by the students based on the prints drawn by each team.

**Welding Art/Sculpture** (Technical) - Contestants demonstrate their ability to design and produce a sculpture of that design, as well as give a presentation regarding all aspects of his/her creation of the design. Previously welded sculptures created for regional and state competitions will be displayed for the national competition. A notebook is required displaying evidence of original work. Each participant is interviewed regarding aspects of design and creation of the piece. There will be no live welding on site.