

State Leadership &  
Skills Conference



April 25th-27th  
2019

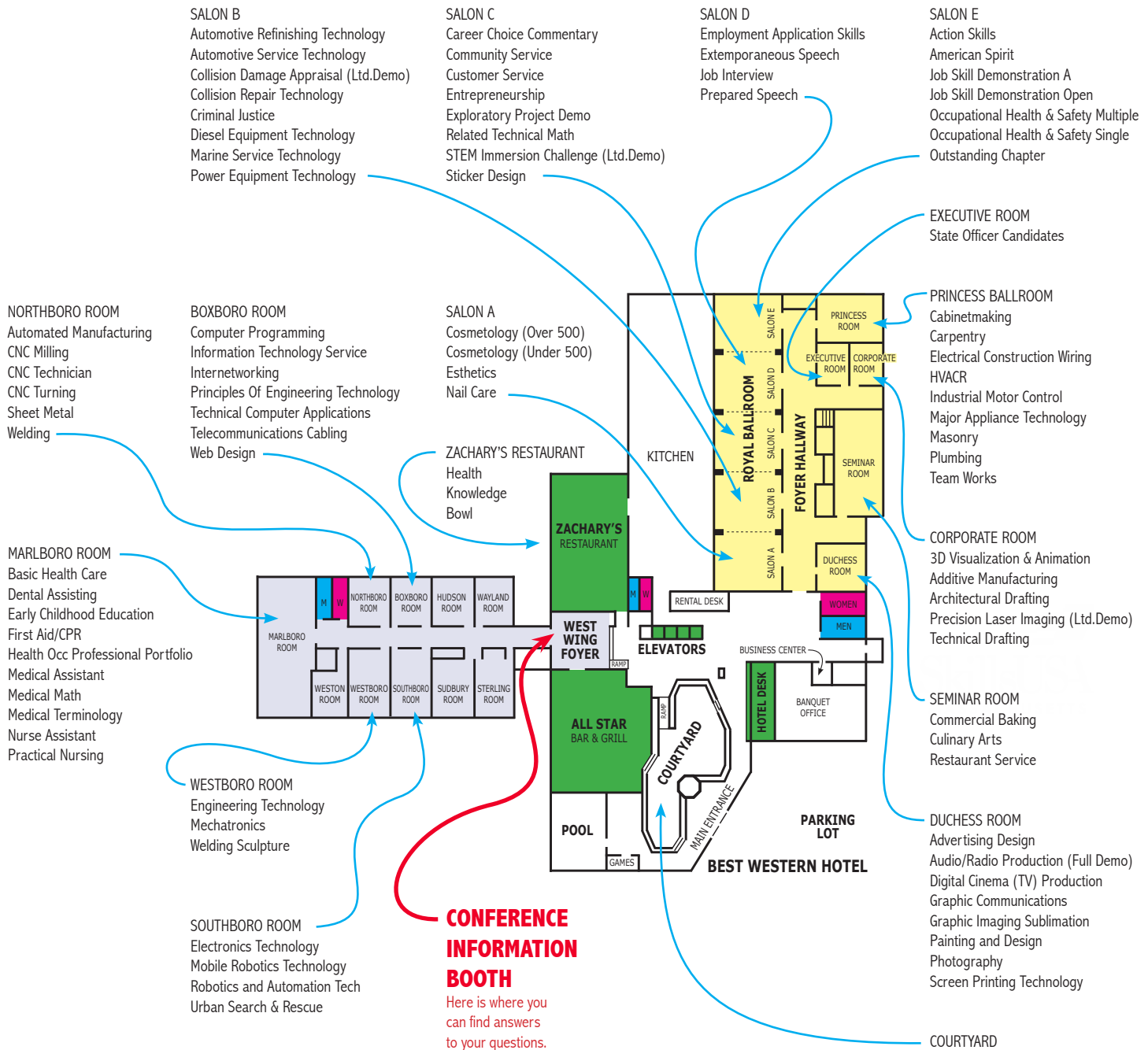
# 2019 STATE TECHNICAL STANDARDS

FOR USE AT THE  
2019 MASSACHUSETTS SKILLSUSA CHAMPIONSHIPS



# BRIEFING MEETING ROOMS

Use this map to locate many of the Briefing Meetings scheduled for Thursday evening



TRADE CENTER - REAR	TRADE CENTER - FRONT
CPS1: Arts & Communication	Voting Delegates
CPS2: Bus/Mgt/Tech	
CPS3: Human Services	
CPS4: Health Services	
CPS5: Ind & Eng Tech	
CPS6: Natural Resources/Agr./Food	
Chapter Business Procedure	
Community Action Project	
Opening & Closing Ceremonies	

BEST WESTERN TRADE CENTER

STAGE

This year, binders and scrapbooks must be picked up at the Conference Information Booth Saturday morning before the Award Ceremony begins. We assume no responsibility with returning any binders or scrapbooks after the conference.

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SERIES:	PAGE:	CONTEST:
Building Trades A	10 - 14	Electrical Construction Wiring • Industrial Motor Control • Major Appliance Technology • Masonry
Building Trades B	15 - 20	Cabinetmaking • Carpentry • HVACR • Plumbing
Building Trades C	21 - 28	Team Works
Commercial Design A	29 - 36	Advertising Design • Audio / Radio Production • TV (Digital Cinema) Production • Photography
Commercial Design B	37 - 44	3D Visualization & Animation • Additive Manufacturing • Architectural Drafting • Technical Drafting • <b>Precision Laser Imaging</b>
Commercial Design C	45 - 49	Graphic Communications • Graphic Imaging Sublimation • Painting and Design • Screen Printing Technology
Freshmen Events	50 - 58	Career Choice Commentary • Exploratory Project Demo • STEM Immersion Challenge • Sticker Design
Health Occupations A	59 - 64	Health Knowledge Bowl • Medical Assistant • Nurse Assistant • Practical Nursing
Health Occupations B	65 - 71	Basic Health Care • Dental Assisting • First Aid/CPR
Health Occupations C	72 - 80	Early Childhood Education • Health Occ Professional Portfolio • Medical Math • Medical Terminology
Metal Trades A	81 - 92	Automated Manufacturing • CNC Milling • CNC Technician • CNC Turning • Sheet Metal • Welding
Metal Trades B	93 - 98	Engineering Technology • Mechatronics • Welding Sculpture
Occupational Support Trades A	99 - 102	Principles of Engineering • Technical Computer Applications • Web Design
Occupational Support Trades B	103 - 109	Computer Programming • Information Technology Service • Internetworking • Telecommunications Cabling
Service Occupations A	110 - 120	Commercial Baking • Culinary Arts • Restaurant Service
Service Occupations B	121 - 134	Cosmetology (Over 500) • Cosmetology (Under 500) • Esthetics • Nail Care
Technology Events	135 - 144	Electronics Technology • Mobile Robotics Technology • Robotics and Automation Tech • Urban Search & Rescue
Transportation Service Trades A	148 - 155	Automotive Refinishing Technology • Collision Damage Appraisal • Collision Repair Technology • Power Equipment Technology
Transportation Service Trades B	156 - 159	Automotive Service Technology • Diesel Equipment Technology • Marine Service Technology
Display Events & Techspo	7 & 160 - 164	Chapter Display • Criminal Justice • Promotional Bulletin Board • Techspo
Occupationally Related Events	165 - 166	Community Service • Customer Service • Entrepreneurship • Related Technical Math
Individual Leadership Events	7 & 167 - 169	Employment Application Skills • Extemporaneous Speech • Job Interview • Prepared Speech
Team Leadership Events	170 - 176	Chapter Business • Community Action Project • Career Pathways Showcase • Opening & Closing Ceremonies
Demonstration Skill Events	177 - 178	Action Skills • American Spirit • Job Skill Demonstration A • Job Skill Demonstration Open • Occupational Health & Safety Multiple • Occupational Health & Safety Single • Outstanding Chapter
Other State Events	179 - 180	State Officer Candidates • Voting Delegates • Student Advisory Committee • and Others...

# CONTEST PARTICIPATION DETAILS

## Contest with Special Requirements

National Anthem Singer	1, Apply by March 1st
National Voting Delegate	3, Apply by April 1st
Pin Design	Unlimited, Apply by Dec. 31
T-Shirt Design State version	Unlimited, Apply by Dec. 31
T-Shirt Design National version	Unlimited, Apply by Dec. 31
Student Advisory Committee	4, Apply by Jan. 31, Meet Before States

## Contest Begins at Districts

3D Visualization & Animation	3:4 with Total Participation
Additive Manufacturing	3:4 with Total Participation
Advertising Design	3:4 with Total Participation
Architectural Drafting	3:4 with Total Participation
Audio/Radio Production, Full Demonstration	3:4 with Total Participation
Automated Manufacturing	3:4 with Total Participation
Automotive Refinishing Technology	3:4 with Total Participation
Automotive Service Technology	3:4 with Total Participation
Basic Health Care	3:4 with Total Participation
Cabinetmaking	3:4 with Total Participation
Carpentry	3:4 with Total Participation
CNC Milling	3:4 with Total Participation
CNC Technician	3:4 with Total Participation
CNC Turning	3:4 with Total Participation
Collision Repair Technology	3:4 with Total Participation
Commercial Baking	3:4 with Total Participation
Computer Programming	3:4 with Total Participation
Cosmetology (Over 500)	3:4 with Total Participation
Cosmetology (Under 500) Model needed for States	3:4 with Total Participation
Criminal Justice	3:4 with Total Participation
Culinary Arts	3:4 with Total Participation
Customer Service	3:4 with Total Participation
Dental Assisting	3:4 with Total Participation
Diesel Equipment Technology	3:4 with Total Participation
Digital Cinema Production	3:4 with Total Participation
Early Childhood Education	3:4 with Total Participation
Electrical Construction Wiring	3:4 with Total Participation
Electronics Technology	3:4 with Total Participation
Esthetics Model needed for States and Nationals	3:4 with Total Participation
First Aid/CPR	3:4 with Total Participation
Graphic Communications	3:4 with Total Participation
Graphic Imaging Sublimation	3:4 with Total Participation
Health Knowledge Bowl	3:4 with Total Participation
HVACR	3:4 with Total Participation
Industrial Motor Control	3:4 with Total Participation
Information Technology Service	3:4 with Total Participation
Internetworking	3:4 with Total Participation
Major Appliance Technology	3:4 with Total Participation
Marine Service Technology	3:4 with Total Participation
Masonry	3:4 with Total Participation
Mechatronics	3:4 with Total Participation
Medical Assistant	3:4 with Total Participation
Medical Math	3:4 with Total Participation
Medical Terminology	3:4 with Total Participation
Mobile Robotics Technology	3:4 with Total Participation
Nail Care Model needed for States and Nationals	3:4 with Total Participation
Nurse Assistant	3:4 with Total Participation
Painting and Design	3:4 with Total Participation
Photography	3:4 with Total Participation
Plumbing	3:4 with Total Participation
Power Equipment Technology	3:4 with Total Participation
Practical Nursing	3:4 with Total Participation
Restaurant Service	3:4 with Total Participation

## Entries

1, Apply by March 1st
3, Apply by April 1st
Unlimited, Apply by Dec. 31
Unlimited, Apply by Dec. 31
Unlimited, Apply by Dec. 31
4, Apply by Jan. 31, Meet Before States

## Details

Individual
Individuals
Individuals
Individuals
Individuals
Individuals

## Contest Begins at Districts

Robotics and Automation Tech
Screen Printing Technology
Sheet Metal
State Officer Candidate
TeamWorks
Technical Computer Applications
Technical Drafting
Telecommunications Cabling
Urban Search & Rescue
Web Design
Welding
Welding Sculpture

## Entries

3:4 with Total Participation
3:4 with Total Participation
3:4 with Total Participation
3, Apply by Jan. 31
3:4 with Total Participation
3:4 with Total Participation
3:4 with Total Participation
3:4 with Total Participation
3:4 with Total Participation
3:4 with Total Participation
3:4 with Total Participation
3:4 with Total Participation

## Details

Teams of Two
Individuals
Individuals
Individuals
Teams of Four
Individuals
Individuals
Individuals
Teams of Two
Teams of Two
Individuals
Individuals

## Contest Begins at States

Action Skills
American Spirit Award
Career Choice Commentary
Chapter Business Procedure
Chapter Display
Collision Damage Appraisal, Limited Demo
Community Action Project
Community Service
Costello Family Community Service
CPS: Arts & Communication
CPS: Bus/Mgt/Tech
CPS: Health Services
CPS: Human Services
CPS: Ind & Eng Tech
CPS: Natural Resources/Agr./Food

## Entries

1
1, bring Notebook to States
1, Freshman Only
1
1
1, by Invitation Only
1
1, bring Notebook to States
1, Apply by April 1st

## Details

Individual
Team of Three
Individual
Team of Six
Team of Three
Individual
Team of Two
Team of Three
Team of Three
Team of Three
Team of Three
Team of Three

Register the Team  
based on the  
Technical Program  
Enrollment

Delegates (States)	Up to 25	Based on School Membership
Employment Application Skills	1	Individual
Engineering Technology	1	Team of Three
Entrepreneurship	1, Business Plan due April 1st	Team of Four
Exploratory Project Demo	1, Freshman Only	Individual
Extemporaneous Speech	1	Individual
Health Occ. Professional Portfolio	1	Individual
Job Interview	1	Individual
Job Skill Demonstration A	1	Individual
Job Skill Demonstration Open	1	Individual
Non-Traditional Career Portfolio	2, Apply by April 1st	Individuals
Occ. Health & Safety Multiple	1, bring Notebook	Team up to Five (2+ Shops)
Occ. Health & Safety Single	1, bring Notebook	Team up to Five (1 Shop)
Opening & Closing Ceremonies	1	Team of Seven
Outstanding Chapter	1, bring Notebook to States	Team of Three
Precision Laser Imaging, Limited Demo	1, by Invitation Only	Team of Two
Prepared Speech	1	Individual
Principles of Technology	2	Individuals
Promotional Bulletin Board	1	Team of Three
Related Technical Math	2	Individuals
STEM Immersion Challenge, Limited Demo	1, Freshmen Only	Team of Two
Sticker Design	1, Freshman Only	Individual
Techspo	Unlimited, Student & Adult Divisions	Individuals

Contests in RED are events where participants can also be registered as Delegates at State Conference. SkillsUSA Massachusetts HIGHLY RECOMMENDS registering contestants in these events as delegates to insure a full day of active, quality participation at the State Conference.

These contests do not continue on to National competition.

These contests do not continue on to National competition, but gold medal winners are invited to attend as National Voting Delegates.

# CONTACT INFORMATION

## Host Sites:

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Blackstone Valley Technical High School  
65 Pleasant Street  
Upton, MA. 01568  
508-529-7758

Joseph P. Keefe Technical HS  
750 Winter Street  
Framingham, MA 01702  
(508) 879-5400  
Host Site for Graphic Communications, Screen Print Technology,  
Graphic Imaging Sublimation (limited Demonstration) and  
Painting & Design Technology

## Site Coordinator:

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Thomas Belland, Vocational Coordinator  
Cyra Hathaway, Vocational Curriculum Coordinator  
Blackstone Valley Technical High School  
65 Pleasant Street  
Upton, MA. 01568

508-529-7758 ext. 3412 Email: [tbelland@valleytech.k12.ma.us](mailto:tbelland@valleytech.k12.ma.us)  
508-529-7758 ext. 3015 Email: [chathawa@valleytech.k12.ma.us](mailto:chathawa@valleytech.k12.ma.us)

## SkillsUSA Championships Director:

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John Brochu, Director  
SkillsUSA Championships  
JP Keefe Technical High School  
750 Winter Street  
Framingham, MA 01702

508-416-2255  
Email: [jbrochu@jpkeefehs.org](mailto:jbrochu@jpkeefehs.org)

## Executive Director:

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Karen E. Ward, CSD  
SkillsUSA Massachusetts  
250 Foundry Street  
South Easton, MA 02375

508-230-1273  
Email: [kward@maskillsusa.org](mailto:kward@maskillsusa.org)

## Computer Operation Director/Registration:

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Carol Olsen  
180 Four Rod Road  
Rochester, NH 03867

774-238-0513  
Email: [carollandryolsen@gmail.com](mailto:carollandryolsen@gmail.com)

# SPECIAL RESUMÉ NOTICE

## ALL CONTESTS WILL REQUIRE COMPETITORS TO BRING A ONE-PAGE, TYPEWRITTEN RESUMÉ

TO BE DELIVERED TO THE TECHNICAL COMMITTEES AT THE COMPETITION ON FRIDAY.  
(SEE IF YOUR RESUMÉ IS REQUIRED FOR THE BRIEFING MEETINGS ON THURSDAY EVENING.)

### Joe Student

123 Main Street • West Anytown, MA 01234

Home (508) 123-4567 • Cell (774) 123-4567 • [JStudent@gmail.com](mailto:JStudent@gmail.com)

**Career Objective:** To work within the field of Marine Service Technology, so I may be able to contribute in a professional manner.

**Education & Training:** Currently attending Anytown Regional Technical High School • Anytown, MA September 2014 - Present  
Marine Service Technology student for four full years  
Focused on all aspects of the industry within shop and theory classes using a hands-on approach to learn

**Work Experience:** Co-operative Education at Ocean Marine • Beachside, MA September 2015 - Present  
Responsible for installing electronic equipment on new and used boats  
Troubleshoot and repair problems within electronic and digital equipment on boats  
Service and repair boat engines, including inboard, outboard as well as back-up engines  
Troubleshoot and repair problems within engine and electrical systems on boats  
Focused on customer service needs and customer satisfaction

Internship at Seaward Boatyard • Watertown, MA May & June 2015  
Responsible for launching boats for the summer season  
Serviced and prepared boats for launch, based on customer needs and launch schedule

**Other Experience:** Baseball Player Various Years  
Anytown Middle School • Watertown, MA 2013  
Anytown High School, Junior Varsity Team • Watertown, MA 2014 & 2015  
Senior Babe Ruth Team • Watertown, MA 2015 - 2016  
Anytown High School, Varsity Team • Watertown, MA 2016 & 2018

**Professional Member:** National Honor Society member September 2016 - Present  
Created Community Service project for members to work on  
Attended Leadership Training program offered through the Anytown Sheriff's Department  
Sold Yankee Candle items for the Honor Society Fundraiser

SkillsUSA member September 2014 - Present  
Participated in Fall State Leadership Conference during my junior year  
Competed in Marine Service Technology Competitions at both the District and State levels as a junior  
Competed in Marine Service Technology Competition at the District level senior year

Marine Service Technology Advisory Committee member, student representative September 2015 - Present  
Discussions include various technical framework updates and assessment standards for the Certificate of Occupational Proficiency  
Organized classmates each year to represent our shop during our Open House Event

**Accomplishments:** MVP Award for Baseball, from Anytown Middle School June 2013  
SkillsUSA silver medallion for Marine Service Technology District competition March 2016  
SkillsUSA bronze medal for Marine Service Technology State competition May 2016  
MVP Award for Varsity Baseball, from Anytown Regional Technical High School June 2017

**References:** Kevin Smith, Anytown High School, Marine Service Technology Instructor (508) 123-4567 ext. 321  
Lisa Jones, Anytown High School, English Instructor (508) 123-4567 ext. 123  
Joe Handy, Service Manager, Ocean Marine (508) 987-6543

**Resumé requirements for the JOB INTERVIEW contest are different, please review that specific Scope of Contest.**



# IMPORTANT NOTES

## 1. Theme

The SkillsUSA competition theme for the 2018-19 year is: **SkillsUSA: Champions at Work - Career-Ready Starts Here.**

The SkillsUSA competition theme is used throughout the year as the topic to be addressed by contestants in the Chapter Display, Prepared Speech and Promotional Bulletin Board competitions at local, state and national levels.

The topic to be addressed by contestants in the Chapter Display, Prepared Speech and Promotional Bulletin Board competitions is how our theme, "SkillsUSA: Champions at Work, Career-Ready Starts Here." addresses the SkillsUSA program of work in the area of professional development.

Within this topic, contestants might illustrate or discuss any of the following:

- What can you specifically point to within your SkillsUSA chapter that demonstrates Career-Ready Starts Here?
- What can you specifically point to within your career and technical education program that demonstrates Career-Ready Starts Here?
- Using Career-Ready Starts Here, what would you say to students to convince them to join SkillsUSA?
- Using Career-Ready Starts Here, what would you say to campus administrators to convince them to support SkillsUSA?
- How is the SkillsUSA Framework of developing personal, workplace and technical skills central to the concept of Career-Ready Starts Here?
- Which SkillsUSA programs ensure that members are developing the personal skills needed to be career-ready?
- Which SkillsUSA programs ensure that members are developing the workplace skills needed to be career-ready?
- Which SkillsUSA programs ensure that members are developing the technical skills needed to be career-ready?
- What areas of the SkillsUSA program of work have assisted you in becoming career-ready?
- What are the specific skills and abilities that a member possesses when career-ready?
- How will you demonstrate to an employer that you are career-ready?
- How does your career and technical education program emulate the workforce?
- What are your next steps in ensuring you are career-ready?



2. **Insuring Success:** Make sure every contestant reviews their contest(s); scope, tooling requirements, clothing requirements, etc., as there are penalties in place for non-compliance in every competition.

3. **T-shirt Requirement:** For every contest that has a clothing requirement specifying SkillsUSA Massachusetts T-shirt, the T-shirts will be distributed to chapter advisors during registration. Every participant at the conference will receive a conference T-shirt. **Make sure competitors get one that fits**, as not all students compete in their shirt.



4. **Official SkillsUSA Attire:** Participants are expected to wear SkillsUSA attire or professional dress to the Opening and Award Ceremonies. **The Massachusetts State Conference options include the SkillsUSA windbreaker and jacket, shown on page 8. See page 9 for clarification of other items.**

"SkillsUSA official attire" as indicated for specific contests refers to the following:

**For men:** Official blazer or jacket, black trousers with white dress shirt, plain black tie with no pattern (or official SkillsUSA black tie from: [www.skillsusastore.org](http://www.skillsusastore.org)), black socks and black shoes.

**For women:** Official blazer or jacket, black slacks or knee-length skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer, black sheer or skin-tone seamless hose and black dress shoes.

**Note:** All personal jewelry should contribute to a businesslike appearance. Only official SkillsUSA jewelry is to be worn on a SkillsUSA blazer, jacket or sweater. Official jewelry is described as conference pin, SkillsUSA emblem, officer pin, President's Volunteer Service Award pin, statesman pin (one only) and professional development (one only) pin.

## IMPORTANT NOTES Continued

No canvas, vinyl, plastic or leather athletic type shoes, open-toe shoes or open-heel shoes are permitted in any SkillsUSA Championships event without penalty. Contestants may be disqualified where improper footwear constitutes a health or safety hazard. When work boots/shoes are required, they can be steel-, or non-steeltoed, tied or pull-on (Roper-type, no cowboy boots), with rubber or skidresistant soles, and they must meet the specifications of The Occupational Safety and Health Administration (OSHA) OSH Act of 1970; United States Code Title 29, Chapter 15, states:

The OSH Act was established to ensure safe and healthful working conditions for every working man and woman. Among the many provisions, the act requires the use of personal protective equipment (PPE) to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective in reducing these exposures to acceptable levels. OSHA's personal protective equipment standard, 1910.132 (d)(1), requires that employers "assess the workplace to determine if hazards are present or are likely to be present, which necessitate the use of personal protective equipment." OSHA 29 CFR 1910.136 incorporates the following industry standards by reference: the American Society for Testing and Materials – ASTM F2412-05 Standard Test Methods for Foot Protection, F2413-05 Standard Specification for Performance Requirements for Protective Footwear and the American National Standards Institute (ANSI) American National Standard for Personal Protection – Protective Footwear (ANSI Z41-1999 and Z41-1991).

Eye protection must meet ANSI Z87 requirements. Prescription and nonprescription safety glasses must include side shields designed for the safety glasses by the manufacturer of the eye protection. An imprint with the mark "Z87" will appear on the frame or lens to identify the safety glasses as meeting ANSI Z87 requirements. Approved safety goggles may also be worn to meet these eye protection requirements.

Contestants with long hair that poses a possible safety or sanitary hazard must wear hair containment devices (hair nets)

Contestants may be disqualified for lack of safety clothing or attire.

The wearing of accessory items (such as belts) is optional unless otherwise specified in the contest rules.

No identification of the contestant, school is allowed on official clothing.

Check for specific clothing and safety requirements under the guidelines for each contest.

**AVOID the following: Black leggings, black jeans, short skirts, open-toe shoes, heels taller than two inches, excessive jewelry, displaying name/school on the jacket**



SkillsUSA Official Attire Options



## IMPORTANT NOTES Continued

### Visual samples for clarification of state contest requirements

Women's Black Dress Shoes: (Other colors are acceptable with professional dress)



These shoes:  
not all black  
and are taller  
than a 2" heel



Men's Black Dress Shoes: (Other colors are acceptable with professional dress)



These shoes  
are not all black



Safety Shoes (some contests require all white or all black)



These may not meet  
safety standard:



Safety Boots (some contests require leather work boots):



These boots  
not meet  
standards:



Safety Glasses, Goggles & Shields (contest details define which is required):



Welding Goggles do not  
take the place of  
additional goggles:



# BUILDING TRADES A

**SERIES DIRECTOR:**  
NOEL LAMOTHE

**CONTACT INFORMATION:**  
TANTASQUA RHS  
320B BROOKFIELD ROAD  
FISKDALE, MA 01518  
(508) 347-7381  
lamothen@tantasqua.org

## EVENTS:

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### ELECTRICAL CONSTRUCTION WIRING

Briefing: Princess Ballroom  
Competition: Blackstone - 210C, 208C  
Event Manager: Tom Donahue

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### INDUSTRIAL MOTOR CONTROLS

Briefing: Princess Ballroom  
Competition: Blackstone - 209C, 208C  
Event Manager: David Barboza

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### MAJOR APPLIANCE TECHNOLOGY

Briefing: Princess Ballroom  
Competition: Blackstone - Plumbing—070C, 081C  
Event Manager: Steve Folkes

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### MASONRY

Briefing: Princess Ballroom  
Competition: Upton Highway Barn  
Event Manager: Lawrence Bradley



# INDUSTRIAL MOTOR CONTROL CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Khaki work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Leather work boots

Hard hat

Safety glasses

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

½" EMT bender

Side cutters

Pump pliers

Knife

Measuring tape

Claw hammer

Torpedo level

Crimping tools

Scratch Awl

Supplies for drawing ladder diagrams (pencil, straightedge, etc.)

Calculator (NO electrical specific calculators)

Latest edition of MA Code Book (NO code handbooks allowed)

**CORDLESS DRILLS WILL BE ALLOWED for the 2019 competition**

(Note: NO electrical screwdrivers allowed)

Diagonal pliers

Long-nose pliers

Wire strippers

Assorted flat blade & Phillips

Hacksaw

Electrical tape and connectors

Multimeter

Fuse pullers

Roto-splitter

## National Skills:

Contestants will be given job sheets with schematic diagrams and accompanying requirements for wiring an industrial motor control installation. All work must conform to the specifications of the latest edition of the National Electrical Code as of January prior to the SkillsUSA Championships. Contestants will demonstrate their ability to perform jobs or skills selected from the list of competencies as determined by the SkillsUSA Championships Technical Committee. These will include: safety, use of tools and equipment, calculations, trade information, install raceways and enclosures, install and connect switches, buttons and lights. You will also be required to complete wiring or ladder diagrams, troubleshoot a control fault using a multi meter, and a written test referencing the current NEC code.

## State Skills:

All aspects of the contest will focus around industrial motor control and include some of the aspects of the National Event. The project will use a variety of wiring methods and be mounted on a simulated finished wall. It may include a disconnect switch, a controller or starter, and various automatic or manual controls. These items may be connected to a trough using short offset nipples. The project will evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of industrial motor controls.



# MAJOR APPLIANCE TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Khaki work pants, as shown

Work shoes

Safety glasses

SkillsUSA Massachusetts T-Shirt, provided

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Screwdrivers

Only socket needed will be 1/4"

VOM

1/4" & 5/16" nut driver

Small putty knife

Vice Grips

Voltage/ohm Meter or Amp Meter w/ohms

Wire cutters

Wire Stripper

Pliers Regular and needle nose

### State Skills:

Using eight appliances with a bugged failure, the students will be observed to see if they;

- Use customer relations skills to interact with a "customer".
- Have and use all safety equipment.
- Show proper respect for the customer and the product and surroundings.
- Inspect the failed appliance using the facts they receive from us (the customer) validate the complaint.
- Determine probable cause, if any, and consider if electrical, mechanical or both has failed.
- Use a multi-meter to test for voltage, continuity and resistance.
- Use a wiring diagram to trace circuits.
- Use mechanical skills to access components for testing.
- Show proper use of basic hand tools.
- Use their senses to determine product failure.
- Return product to same condition as found.
- Explain failure and corrective actions to the "customer" in detail using proper verbiage.
- Review resume with a "hiring manager".
- Score appropriately on diagnosis, times to service, explanation of failure and repair, resume.



# MASONRY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Khaki work pants, as shown

Leather work boots

Safety glasses

SkillsUSA Massachusetts T-Shirt, provided

Hard hat

NO cell phones allowed

### Safety: **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Tool bag

Brick spacing rule

Flat jointer 1/2"

Brush

4' Level

2 - Line blocks with line

Trowel

Pencil

2' Level

2 - Line pins

Brick hammer

2' framing Square

Modular rule

Convex jointer 1/2" x 5/8"

Brick set

## National Skills:

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.

## State Skills:

The contest will involve brick and block composite wall construction. Participants in this contest will be judged on their ability to follow correct masonry design and procedures. All contestants will be assessed on neatness, safety, production, manipulation, and adherence to masonry construction building standards. All contestants must dismantle their projects after the judges have finished scoring. All contestants must stay and clean the entire building site as required by the event manager. Any student not participating in site clean up will lose points on his/her final score.

## SkillsUSA Score Sheet

## Points

Correct Design

10

Block Height

15

Level

15

Plumb

15

Range

15

Brick Height

15

Level

15

Plumb

15

Range

15

Modular Spacing

10

Square

10

Full and Uniform Joints

10

Neatness

10

Production

10

Manipulation

15

Joint Finish

10

Safety

15

Masonry Reinforcement

10

**Total**

**230**

Clean up Penalty

0 to 15 pts.



# ELECTRICAL CONSTRUCTION WIRING

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Khaki work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Leather work boots

Hard hat

Safety glasses

NO cell phones allowed

### Safety: **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

1 - 1/2" EMT bender

1 - Scratch awl

1 - Roto splits

1 - Hacksaw

1 - Tool box w/lock

1 - Electricians knife

1 - Claw hammer

3/4" Spade bit

1 - Key hole saw

1 - 25' Extension cord

1 - Side cutters

1 - Empty nail apron

1 - 8' - 12' Measuring tape

1 - Arc joint pliers

1 - Needle nose pliers

Assorted wood chisels 1/4" to 1"

1 - Current Massachusetts Code Book (NO Code handbooks allowed)

1 - Scientific calculator (NO electrical specific calculators)

1 - Corded Electrical drill 3/8" or 1/2" chuck

1 - Diagonal pliers

1 - 3/4" - 7/8" Auger bit

1 - Roll electrical tape

1 - Wire strippers

1 - Torpedo level

1 - Multimeter

Assorted flat blade and Phillips screwdrivers

**CORDLESS DRILLS WILL BE ALLOWED for the 2019 competition**

**Note: NO electrical screwdrivers, or wood blocks for measuring**

### National Skills:

Contestants in residential wiring are tested on their ability to install wiring in a residence or light commercial installation, working from drawings and specifications sheets. Professional electricians judge the contestants on the basis of general workmanship, accuracy of layout and installation, adherence to National Electrical Code and safety. The test consists of two parts—conduit bending and the simulated wiring of two or more rooms of a typical residence. **The wiring will be judged according to standard residential and commercial wiring practices, and the current edition of the National Electrical Code.**

### State Skills:

All aspects of the contest will center on residential or light commercial installations. The project will be wired in a simulated wall sections, either studs or finished wall. Students may be asked to trouble shoot an existing circuit using a multimeter and repair/replace problems with devices. The project may consist of the following methods: Romex, BX, EMT, Conduit, Wiremold, PVC, ENT, Bell Wire, Cat 5, and Cat 6 Cabling. Contestant projects will be judged on workmanship, accuracy, speed, adherence to the current Massachusetts Electrical Code, and other requirements as applied to the project.



# BUILDING TRADES B

**SERIES DIRECTOR:**  
RAY MAHON

**CONTACT INFORMATION:**  
BAY PATH RVTHS  
57 MUGGETT HILL ROAD  
CHARLTON, MA 01507  
(508) 769-5728  
rmahon@baypath.net

## EVENTS:

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### CABINETMAKING

Briefing: Princess Ballroom  
Competition: Blackstone - Carpentry 330C, 340C  
Event Manager: Christopher Ward

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### CARPENTRY

Briefing: Princess Ballroom  
Competition: Blackstone - Old Gym 750B, 340C  
Event Manager: Andrew Mcullough

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### HVAC & REFRIGERATION

Briefing: Princess Ballroom  
Competition: Blackstone - 110D, 111D  
Event Manager: Chris Faucher

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### PLUMBING

Briefing: Princess Ballroom  
Competition: Blackstone - 080C, 071C  
Event Manager: Wayne Little



# CABINETMAKING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Khaki work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Leather work boots

Hard Hat, not required

Safety glasses **MUST BE WORN AT ALL TIMES**

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

No sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

**Contestant tool check off form must be completed, signed and turned in with resumé**

Tape measure or rule

Utility knife with blades

Protractor

Dovetail saw

Back saw

Combination square

Set of dividers or compass

Coping saw with extra blade

Hammer

Plastic mallet

Sliding T bevel

#1, #2, #3 Phillips screwdrivers

2 - pencils, sharpened

3/16, 1/4 slotted screwdrivers

Power drill 3/8 or 1/2 (cordless or corded)

Drill index 1/16 to 3/8 x 1/16

1/4" collet router

Biscuit joiner

1 pt. Wood glue

1 qt. Nontoxic contact cement

2 - contact cement application brushes

Nail Set

6" machinist scale

Phillips screwdriver bit set for drill

Laminate tools flat mill file, plastic laminate roller, electric trimmer, flush cutter, bevel cutter

Edge banding trimmer

Set of wood chisels (1/4", 3/8", 1/2", 3/4", 1") **(Chisels must be ground and sharpened)**

## National Skills:

Contestants are required to build a small cabinet from materials and drawings supplied. They 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 are to be accurately assembled, sanded and adjusted to tolerances as specified by the judges.

## State Skills:

The event will include 10-12 of the following:

1. Mortise in a butt hinge
2. Layout and band saw a valance
3. Blind dado
4. Spline joint
5. Spline flat miter joint
6. Haunched mortise and tenon
7. Drawer Corner joint (DBL DADO)
8. Pocket hole
9. Pocket hole dado
10. Cope joint
11. Flat miter and doweled
12. Turn a round tapered leg
13. Drawer Front dovetail
14. Machine dovetail
15. Plastic laminating
16. Square tapered leg jig and leg (4 sides)
17. Layout and cut a cabriole leg
18. Layout rod
19. Mortise and tenon table leg and rail
20. Bridle joint
21. Set up a knife and collar on the shaper
22. Turn a leg with beads, coves, and half rounds
23. Through dovetail
24. Biscuit joinery
25. Cabinet carcass assembly
26. Assemble & install doors
27. Layout and install door & draw hardware
28. Assemble & install drawers
29. Mechanical draw slides

# CABINETMAKING

## MEMORANDUM

TO: Cabinetmaking School Advisor  
FROM: Cabinetmaking Event Manager  
DATE: February 15, 2019  
RE: Safety and Proficiency

Please complete this information for each contestant who intends to participate in the Cabinetmaking Contest. Each contestant must present to the Event Manager a completed version of this form on the morning of competition before the students will be allowed to compete.

This letter is to confirm that \_\_\_\_\_ is enrolled in the  
Cabinetmaking program at \_\_\_\_\_ School and has satisfactorily  
passed all general and specific shop safety rules and has demonstrated proficiency on all parts, controls, safety tests on each of the  
following pieces of machinery (check all as appropriate):

- |  |                                       |  |
|--|---------------------------------------|--|
| <input type="radio"/> Circular Saw               | <input type="radio"/> Disc Sander     | <input type="radio"/> Jointer                    |
| <input type="radio"/> Spindle Sander             | <input type="radio"/> Surface Planer  | <input type="radio"/> Lathe                      |
| <input type="radio"/> Band Saw                   | <input type="radio"/> Radial Arm Saw  | <input type="radio"/> Shaper                     |
| <input type="radio"/> Router                     | <input type="radio"/> Chisel Mortiser | <input type="radio"/> Portable Hand Saws         |
| <input type="radio"/> Tennonner                  | <input type="radio"/> Power Drill     | <input type="radio"/> Hand Held Laminate Trimmer |
| <input type="radio"/> Edge Sander                | <input type="radio"/> Drill Press     | <input type="radio"/> Stoke Sander               |
| <input type="radio"/> Other - Please List: _____ |                                       |  |

\_\_\_\_\_  
Signed (Student)

\_\_\_\_\_  
Signed (Advisor)

\_\_\_\_\_  
Signed (Administrator)

**This document, completed and containing all required signatures  
MUST be presented to the Event Manager on Friday morning  
BEFORE being allowed to use machinery in the contest area**



# CARPENTRY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Khaki work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Leather work boots

Hard hat

Safety glasses **MUST BE WORN AT ALL TIMES**

Work gloves

### Safety: **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

NO cell phones allowed

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

1 - 3' OSHA approved step ladder

1 - Circular Saw

1 - Block plane

1 - Flat Bar

1 - Utility knife with extra blades

1 - Set of wood chisels (1/4" - 1")

1 - 24" or 30" level

1 - Combination wood rasp and file

1 - Cordless Drill (bits will be provided)

1 - Claw hammer, (16-22 oz. smooth face)

1 - Tool box

1 - Tool Belt

1 - Phillips and flathead screwdriver

1 - Framing square (stair stops optional)

Nail sets (1/32, 2/32 and 3/32)

1 - Ruler or tape measure

1 - Keyhole saw

2 - Sharpened pencils

1 - Hand Saw

1 - Cats paw/Nail claw

1 - Combination square or speed square

1 - Chalk line

1 - Pair Tin snips

1 - Pair slip joint pliers

1 - 25' Extension cord (UL approved, grounded)

### Purpose:

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of residential and commercial carpentry.

### Eligibility:

Open to active SkillsUSA members enrolled in programs with carpentry as the occupational objective.

### State Skills:

The contestants are required to complete a project specifically designed to test overall carpentry skills, which include framing, exterior trim, and stair building. They are judged on the basis of accuracy, ability to read and interpret blueprints, workmanship, and the proper use of tools and equipment.



# AIR CONDITIONING & REFRIGERATION - HVACR

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Khaki work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Work shoes

Hard hat

Safety glasses **MUST BE WORN AT ALL TIMES**

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Pen/Pencil

Flaring block and yoke

Tubing Cutter

Simpson VOM MODEL 260 or similar

Refrigerant manifold gauge set

Wire Cutter

Tubing bender 1/4" - 3/8"

Reg. & Phillips screwdriver

Flint spark lighter

Refrigeration service valve ratchet

10" adjustable wrench

Wire Stripper

Hammer (Ball Peen)

Gloves

Tape/ ruler

1/4, 3/8, 1/2, 5/8 swaging tools

Reamer

Safety glasses

Pliers (Water Pump)

Temperature and Pressure Chart

Lockout locks or tags

B Type acetylene set-up with hose, handle and tips suitable for soft soldering and brazing

**Please mark all torch kits so that they can be identified**

ABSOLUTELY NO B TANKS OR TANKS OF ANY KIND SHOULD BE BROUGHT. WE WILL PROVIDE THEM.

### \*\*\* IMPORTANT NOTE \*\*\*

IF A SCHOOL IS SENDING MORE THAN ONE STUDENT AND THERE ARE PROBLEMS SECURING TOOLS FOR EACH PARTICIPANT (SUCH AS ACETYLENE TANK SET-UPS), THE JUDGES WILL TRY TO SCHEDULE STUDENTS FROM THAT SCHOOL SO THAT THEY ARE NOT DOING THE SAME TASK AT THE SAME TIME. HOWEVER, THE JUDGES WILL TAKE NO RESPONSIBILITY FOR INCONVENIENCE, DELAYS, OR OTHER PROBLEMS THAT THIS COULD LEAD TO.

### National Skills:

Contestants are tested on their ability to perform such jobs as troubleshooting, recommending service and repair, and brazing. They are judged on the basis of their use of tools and test equipment, speed, accuracy, and safety.

### State Skills:

1. Soft soldering, brazing, flaring, and copper tubing procedures.
2. Diagnosing electrical problems in heating and cooling units.
3. Knowledge of refrigeration systems, associated components and operating characteristics.
4. Observance of refrigeration safety.



# PLUMBING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Khaki work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

**Safety: avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

Leather work boots

Work gloves

NO loose clothing

Hard Hat

NO cell phones allowed

NO jewelry

Safety glasses

NO sneakers

### The Following Items Will Be Supplied by the Technical Committee:

18 Torches

Flux

PVC Primer

Propane

Clip Board

Solder

Sand cloth

Ratchet type cast iron cutters

PVC Glue

Scissors type cast iron cutter

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Toolbox with the tools needed to assemble PVC, copper tubing and a no hub project. Be sure to include the two different sizes of Torque

Wrenches or nut driver for Huskey and Annaco 4000 clamps.

Reamer

Pencils

5/16" Torque wrench

PVC saw

Claw Hammer

Straight tin snips

Cordless drill

Clean rags

Ruler/tape measure

Huskey 3/8" Torque wrench

Ridgid #15

Hack saw with spare blades

4 in 1 Screwdriver

9" Torpedo level

Utility knife

Steel wool

Chaulk

Soap stone

Water pump pliers

10" Adjustable wrench

10" and 12" pipe wrenches

Scratcher

**Only the tools listed here will be allowed. Tools will be laid out prior to beginning the competition.**

**More tools or less (missing) tools, minus 2 points per tool.**

### State Skills:

Using supplied materials, contestants are required to "rough in" water, drain and vent piping. Installations are judged on accuracy to specified measurements. The completed projects are pressure tested on the water pipes. Professional plumbers judge the contestants on the basis of accuracy, workmanship, proper selection and use of tools and supplies, and proper safety practices.



# BUILDING TRADES C

**SERIES DIRECTOR:**  
KEN PACHECO

**CONTACT INFORMATION:**  
CHIEF OPERATIONS OFFICER  
FACILITIES & OPERATIONS  
FALL RIVER PUBLIC SCHOOLS  
417 ROCK STREET  
FALL RIVER, MA 02720  
kenpacheco@fallriverschools.org

## **EVENT:**

### **TEAMWORKS**

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Briefing: Best Western - Princess Ballroom **Wednesday afternoon**  
Competition: Tent at Trade Center **all day Thursday and Friday**  
Event Manager: Chris Gallagher

**Be sure to plan on arriving Wednesday**  
**You will need to reserve your team's hotel room**  
**and the advisor's hotel room for the additional night**

**Please be sure to identify which advisor**  
**will be arriving early with the team**



# TEAMWORKS CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** **required for every contestant, failure to do so will result in a clothing penalty**

Khaki work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Work jacket or sweatshirt for weather

Leather work boots

Long sleeve work shirt

NO cell phones allowed

Safety glasses

Hard hat

**Safety:** **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

TEAMWORKS WILL TAKE PLACE OUTSIDE, IN A TENT, AT THE BEST WESTERN ROYAL PLAZA TRADE CENTER.  
BE PREPARED FOR ALL WEATHER CONDITIONS.

### TEAMWORKS MASONRY REQUIREMENTS:

**Tool Requirements:** **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

- Standard masonry tool box

- Extension Cord

- Safety equipment as required

- Wheelbarrow

- Masonry saw (skill saw with masonry blade)

- Mortar pan

### TEAMWORKS CARPENTRY REQUIREMENTS:

**Tool Requirements:** **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

- Standard carpentry toolbox with hand tools

- Skill saw

- Sabre saw

- Safety equipment as required

- Extension cords

- Miter box

- Saw horses

- Drywall screw gun

### TEAMWORKS ELECTRICAL REQUIREMENTS:

**Tool Requirements:** **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

- Standard electrical toolbox

- Screw gun - Extension cord

- Safety equipment as required

- Metal Stud Punch (optional)

- Right angle drill with bits

### TEAMWORKS PLUMBING REQUIREMENTS:

**Tool Requirements:** **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

- Standard plumbing tool box

- Screw gun

- 2 Rolls Teflon Tape

- 1 lead free solder

- 1 1/2" Fitting brushes

- Safety equipment as required

- Sawzall

- 1 Qt. Cleaner

- 1 Flux with brushes

- 1 Plumbers putty

- Right angle drill with required bits

- 1 Qt. Cement

- 1 Can of Pipe Dope - sealant

- 1 Roll of sand cloth

## PROPANE TANK WILL NOT BE SUPPLIED

TEAMS NEED TO BRING THEIR OWN! IT WILL NOT BE ALLOWED IN THE HOTELS SO IT MUST BE STORED AT THE JOB SITE!

In addition to the tools and equipment listed, the plumbing contestant in TeamWorks may also bring appropriate test equipment as listed below: Test Equipment to be brought by contestant:

(3) - 3" test plugs

(1) - 1 1/2" x 1/2" black bushing

(1) - 1/2" x 1/4" black bushing

(1) - 0-300 psi gauge

(1) - 1 1/2" ABS or PVC x female adapter

(1) - 1/2" x black tee

(1) - 1/4" male x Schrader valve

(2) - 2" test plugs

(1) - 4" test plugs

(1) - 1/2" IPS ball valve

(1) - 0-30 psi gauge

(3) - 1 1/2" test plugs

# TEAMWORKS Continued

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## THE TEAM:

Teamwork is vital for every successful project. The competition will challenge each team to plan and execute a complex structure to completion. Each school will supply an adequate labor force to complete the assignment.

## THE CHALLENGE:

Your task will be to build a structure per the plans and material supplied. You are to work as a team but each trade will be responsible for their own work. [For example: A plumber may hold a board for a carpenter but the carpenter must cut it and install it.]

## THE PLAN:

"PLAN your work - then WORK your plan."

**ON WEDNESDAY EVENING - APRIL 24, 2019 AT 6:30PM** DINNER WILL BE PROVIDED COMPLIMENTS OF AMERESCO FOR ALL CONTESTANTS AND ADVISORS.

**ON THURSDAY MORNING - APRIL 25, 2019 AT 6:30AM** ALL TEAMS SHOULD ARRIVE AT THE BEST WESTERN ROYAL PLAZA HOTEL FOR THE TEAMWORKS BREAKFAST. After breakfast, all teams will report to the tent where all the trades will meet and plan how they will identify the sequence of the project.

**The competition will start at 8:00pm on Wednesday, April 24<sup>th</sup> with the interview and resumé portion of the competition.**

**The hands-on portion of the competition will begin at 8:30am on Thursday, April 25<sup>th</sup>.**

## CAUTION:

This is an aggressive undertaking so time management is very important. Schedule your trades so they will be able to complete their tasks without interfering with others. Early construction of the initial trades should start during the planning time.

## ASSESSMENT:

A team of judges will monitor and assess the projects. They will evaluate the quality of the work, the cohesiveness of the team and the completion of the project. **NOTEBOOKS OR REFERENCE MATERIAL WILL NOT BE ALLOWED IN THE WORK AREAS. ONLY CODE BOOKS ARE AUTHORIZED.**

## PROPER TEAMWORKS REGISTRATION, FOR WEDNESDAY EVENING:

Teams are required to be housed at their conference hotel on Wednesday evening.

We have provided the proper form on the next page, which can be mailed in with your registration.

We have also provided a digital form to each school's advisor, which can be filled in digitally and emailed before the registration due date.

**Please be sure the Chapter Advisor has made this notification to the state office, by April 1, 2019 for TeamWorks**

# TEAMWORKS REGISTRATION DETAILS

THIS DOCUMENT SHOULD BE COMPLETED AND CAN BE SUBMITTED WITH STATE REGISTRATION

Please be sure the Chapter Advisor has made this notification to the state office, by April 1, 2019 for TeamWorks

## PROPER TEAMWORKS REGISTRATION, FOR WEDNESDAY EVENING:

Teams are required to be housed at their conference hotel on Wednesday evening.

SCHOOL: \_\_\_\_\_

THE FOLLOWING MEMBERS ARE ARRIVING WEDNESDAY EVENING:

Carpenter: \_\_\_\_\_

Electrician: \_\_\_\_\_

Mason: \_\_\_\_\_

Plumber: \_\_\_\_\_

Advisor 1: \_\_\_\_\_

Advisor 2: \_\_\_\_\_

A SECOND TEAM IS ALSO ARRIVING WEDNESDAY EVENING:

Carpenter: \_\_\_\_\_

Electrician: \_\_\_\_\_

Mason: \_\_\_\_\_

Plumber: \_\_\_\_\_

Please email completed form to [kward@maskillsusa.org](mailto:kward@maskillsusa.org)

# TEAMWORKS

## JOB INTERVIEW

**PURPOSE:** To evaluate the contestant's understanding of project interview procedures that they may face in applying for positions/project in the occupational areas for which they are training.

**GENERAL REGULATIONS:** Contestant's entering this contest must follow all rules listed below as well as the "General Regulations" of the Massachusetts Skills Championships. The "General Regulations" can be found in a separate file under that name. You will be held accountable for knowing and following all rules and guidelines of the Massachusetts Skills Championships.

**CLOTHING REQUIREMENT FOR THE INTERVIEW:** Business Casual

**OBSERVER RULE:** No observers will be permitted to view the interviews in progress.

### EQUIPMENT AND MATERIALS:

- 1) Supplied by Interview Committee
  - a. Blank Building Permit
- 2) Supplied by the contestant
  - a. OSHA Job Safety Manual
  - b. An ink pen for completing the Building Permit
  - c. Three copies each of a one-page typewritten personal resume, to be presented during the interview

### SCOPE OF CONTEST

- 1) Contestants should prepare for the interview contest by developing the following skills:
  - a. Demonstrate confident handshake, proper greeting and personal introduction
  - b. Know the aspects of making positive first impressions
  - c. Demonstrate good grooming in dress and personal hygiene
  - d. Demonstrate confidence and positive personal image
  - e. Develop listening skills and show sincere interest
  - f. Pronounce words in a clear and understandable manner
  - g. Know their personal qualities and how to "sell themselves"
  - h. Know the sources of information about a prospective employer
  - i. Effectively vary voice in pitch, tone, tempo and volume
- 2) Prepare a personal resume
  - a. Answer questions and carry a conversation pertaining to resume and trade
- 3) Prepare an OSHA Safety Plan
  - a. Answer questions and carry a conversation pertaining to this plan
- 4) The interview will be divided into five phases:
  - a. Introduction
  - b. Work Presentation
  - c. Resumes
  - d. Questions
  - e. Permit/Safety

## TEAMWORKS JOB INTERVIEW Continued

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- 5) The contestant must submit three (3) copies of the personal resume (limited to one page typewritten or word-processed). The following information must be contained in the resume:
  - a. Name, any (fictitious) address, phone number and email may be added
  - b. Career objective
  - c. Education and training
  - d. Work experience beginning with present employment listing specific responsibilities
  - e. Memberships, major accomplishments, awards earned, etc.
- 6) When called from the holding area, the contestant will approach directly into the Interview Room as though applying for a job in the occupational area for which she or he is training
- 7) Upon evaluation of the resume, the judges will present the rating sheet and the three copies of the personal resume back to team
- 8) All contestants will be asked identical questions. Judges are encouraged to use their own interview techniques. Such questions might include the following but will be determined by the judges:
  - a. Questions directly out of from the Massachusetts Building Code
  - b. Occupational Safety Questions
  - c. Questions from the National Electrical Code
  - d. Personal Short and Long range goals
- 9) Contestants will be handed a building permit application at the conclusion of the interview.
- 10) Contestants will be required to fill out this permit once they return to their work zone. The building permit application **MUST** be completed with an ink pen prior to the commencement of any craftsmanship work. Once approved, a building permit will be issued to that team. The team is required to post this permit.
- 11) **INTERVIEW TIME:** Contestants will be required to manage their interview time per the posted schedule. Please locate the posted interview board for your teams' time. Remember points will be subtracted for tardiness.
- 12) **INTERVIEW ROOM ARRANGEMENT:** The Interview Room will be furnished with table(s) and chairs for the contestants and two or three judges from the interviewing committee.
- 13) **INTERVIEW PROCESS:** The Team Leader shall lead the team into the Interview Room and direct each member to his or her respective chair.
  - a. With all team members standing in front of chair, the Team Leader shall commence with the team introduction
  - b. While standing and looking directly at the Judges, the Team Leader shall state the following (Example):
    - I. Proper Salutation (Hello and Good Morning), my name is \_\_\_\_ (first name only) and I am the team leader and I'm also the Electrician (specified trade) for Team# I will now ask the team members to introduce themselves and their trade.
    - II. **TEAM MEMBERS:** Proper Salutation (Hello and Good Morning), my name is (first name only) and I'm the Plumber for Team# \_\_\_\_ .
    - III. All members shall introduce themselves to the Judges as identified above.
    - IV. Upon completion of each individual introduction, each team member shall hand a copy of his or her resume to each Judge.



# TEAMWORKS

## JOB INTERVIEW RATING SHEET

**Job Interview Points Earned:**

Introduction/ Interview Time 20

## Proper Clothing 15

**Team Leadership** 15

## INTRODUCTION TOTAL 50

Remarks:

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Members Role(s)	20
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Proposed Team Work 15

Trade Knowledge 15

**WORK PRESENTATION TOTAL 50**

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**Completeness of Detail** 20

**Neatness** 15

Volume 15

RESUMÉ TOTAL 50

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**Answer Accuracy** 20

<b>Presentation (eye contact)</b>	<b>15</b>
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Knowledge	15
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**QUESTIONS TOTAL 50**

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**Completed Properly/Posted**      **20**

Safety Manual 15

**PPE (head, ears, eyes, feet) 15**

**PERMIT/SAFETY TOTAL 50**

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**OVERALL TOTAL 250**

# TEAMWORKS

## BUILDING PERMIT APPLICATION

### (for Training Purposes Only)

I. APPLICANT I TEAM Number \_\_\_\_\_

II. TYPE AND USE OF BUILDING - Please indicate all that apply

PURPOSE FOR PERMIT	New Building	Addition	Alteration	Repair
USAGE CATEGORY	Residential	Business	Automotive	Industrial

ESTIMATED COST OF WORK PROPOSED UNDER THE PERMIT \$ \_\_\_\_\_

Describe briefly the nature of the work proposed to be completed under this permit application:

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III. BUILDING CHARACTERISTICS - Please indicate all that apply

Frame:	Masonry	Wood	Structural	Steel	Other
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Type of Heating Fuel: \_\_\_\_\_ Construction Size: \_\_\_\_\_ Area

Are any of the following included in the work? Please indicate by circling all that apply

Electrical	Plumbing	Private Water	Oil Storage	Fire Suppression	Air Conditioning	
Public Water	Heating	Septic System	Gas Fitting	Fire Detection	Hazard	Abatement

IV: CONTRACTOR

Team Number Construction Supervisors License# \_\_\_\_\_

Home improvement Contractor Registration # \_\_\_\_\_

VII: ARCHITECT, ENGINEER OR DESIGNER

JoAnn Bentley Architect 209 Bedford Street Suite 404, Fall River, MA 02720

Phone# Facsimile # E mail 508-674-7600 508-674-7603 jbentleyarchitect@verizon.net

VIII: READ CAREFULLY BEFORE SIGNING:

The undersigned applicant certifies that he/she is the legal owner of the property OR has been authorized to act as an agent of the owner with their full knowledge and consent. The applicant certifies that they have read, examined and truthfully completed this application in its entirety, that the proposed work and submitted plans are subject to the provisions of the Massachusetts Building Code (780 CMR) and other applicable laws and ordinances of the city and state to which the work is being performed and that any permit issued as a result of this application will be subject to the statements contained in the application and all codes, laws and ordinances. This application was designed for SkillsUSA project training purposes.

Team Leader (print) \_\_\_\_\_ Signature of Team Leader \_\_\_\_\_

BUILDING INSPECTION SIGN-OFF SHEET Project should not proceed without the appropriate sign-offs.

Flooring Systems _____	Deck/Stairs-Walls _____
Plumbing Rough _____	Electrical Rough _____

# COMMERCIAL DESIGN A

**SERIES DIRECTOR:**  
MONICA CLABAUGH

**CONTACT INFORMATION:**  
82 PINE STREET  
DOUGLASS, MA 01516  
(774) 437-2184  
mon.clabog@gmail.com

## EVENTS:

### ADVERTISING DESIGN

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Briefing: Duchess Room  
Competition: Blackstone - Graphics Computer Lab (Related)—Room 051B  
Event Managers: Don Goldman and Justin Searles

### AUDIO/RADIO PRODUCTION (Full Demo)

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Briefing: Duchess Room  
Competition: Blackstone - Room 522A & 523A  
Event Manager: Anthony Nardozi

### DIGITAL CINEMA (TV) PRODUCTION

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Briefing: Duchess Room  
Competition: Blackstone - Rooms 526, 525  
Event Manager: Mary Novick

### PHOTOGRAPHY

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Briefing: Duchess Room  
Competition: Blackstone - Room 521A  
Event Manager: Dennis Daubney



# ADVERTISING DESIGN CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Pencils and erasers

Colored pencils

Markers - colored

Scales and rulers - picas and inches

X-acto knife and blades

Paper Adhesive(s) - one coat rubber cement, tape, glue stick, etc.

Note: Additional materials are acceptable but not necessary. They may be brought to the contest at the discretion of the artist.

All other materials will be supplied by the Committee.

### State Skills:

Contestants are tested on their technical skills as well as their creative aptitude. To test their technical ability, the competitors complete a problem that tests many of the technical aspects they would encounter in the completion of a mechanical/color separation. This is done using traditional manual skills. The competitors also complete a mechanical layout problem using a computer. The computer platform is Apple iMacs running OS X El Capitan 10.11.6. The creative portion of the contest involves the working out of an assignment through the development of a rough sketch, final sketches, drawing and illustration, and the final layout and development of a product. Software: Adobe CC – which includes InDesign, Photoshop, and Illustrator.

Competitors will be tested for their artistic skills with emphasis on design, color sense, typography usage, and production skills. Particular focus will also be on accuracy and neatness, not necessarily speed. The Advertising Design Competition will consist of two areas: Mechanical and Layout Design. Judging will be based on any or all of the following:

1. Mechanical - completeness, accuracy and neatness
2. Design - Creativity, completeness, imagination and presentation
3. Apply basic drawing techniques to advertising design
4. Understand and apply color as used in advertising design
5. Prepare layouts
6. Design, specify and apply typography to design
7. Demonstrate two and three-dimensional concepts for advertising design
8. Prepare art and copy for reproduction
9. Specify printer's instructions for multi-color work, generate art, design and copy using electronic equipment and appropriate software
10. Mounting art on supplied board in a clean, neat, and visually appealing manner

### IMPORTANT NOTE:

Competitors should be prepared to leave on the first bus available for Blackstone Valley RVTHS. Advertising Design competitors should enter the area for the ribbon-cutting ceremony. Competitors in this area will be called and allowed to leave early to begin their contests.



# AUDIO / RADIO PRODUCTION CONTEST (FULL DEMO)

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Supplied by the technical committee:

- a. Theme and objective for production
- b. Facilities and power to edit final product
- c. Audio equipment, cables and connectors outside of required "contestant supplied" equipment

Supplied by the contestants:

- a. Portable digital audio recorder with removable recording media
- b. Microphone with audio cable
- c. Method of importing digital audio from field recorder to editing system
- d. Audio editing software/system (use of laptops is strongly encouraged)
- e. Writing implement (pen, pencil, marker, etc.)
- f. USB flash drive
- g. Scratch paper for notes
- h. Headphones (not ear buds)
- i. Surge-protected power strip
- j. Production music (Production music is not commercial music purchased in stores. It is music created for use in audio and video productions. Some production music companies are: Music Bakery, Production Garden, TM Studios and Omnibus. Production music may also be created using programs such as GarageBand, Soundtrack or ACID)

## Skill Performance:

The contest includes an assignment to produce a final project on site as determined by the technical committee.

1. The contestants will demonstrate their ability to perform the following jobs or skills:
  - a. Demonstrate knowledge of audio production technology, including proficiency in digital audio recording, editing and mixing.
  - b. Demonstrate knowledge of terminology for mic level, line level, dynamic range, microphone preamp, compressor/limiter, XLR cable, XLR connector, EQ, time-based processing, send, return, input, output, balanced, and unbalanced.
  - c. Demonstrate working knowledge of microphones, microphone preamps, compressor/limiters, EQ, send, return, level control, and digital audio editing on a DAW (Digital Audio Workstation).
  - d. Demonstrate proficiency in planning a radio production, including the proper commercial script form.
  - e. Demonstrate knowledge of terminology for script, script form, copy, target demographic, live tag, intro, outro, format, 60-second spot, 30-second spot, PSA, broadcast, network, run time, voice over, FCC, and mic technique.
  - f. Demonstrate practical knowledge of scriptwriting, pre-production story development, radio advertising development, proper microphone technique.

## AUDIO / RADIO PRODUCTION Continued

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2. Audio and information will be gathered on location as needed to convey the assigned theme or objective. Contestants are to work on site to capture and edit the radio production.
3. Students are to fully produce (plan, write, voice, record, edit, render, etc.) a **two-minute radio production** such as a PSA, NPR-style soundscape, sound-rich/NPR-style news story, sound and interview only news story, etc. A **15-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 and run time; gather, edit and mix a variety of audio sources; and render the completed project to a specified audio file.
4. Designated time periods will be provided for script research and development, rehearsal of the script, generation of written copy, field recording, booth voiceover recording, and editing the final project.
5. Recording, but not editing, may begin **after Thursday evening's Briefing Meeting**, but no sooner. Recording may continue until noon Friday, on the day of the competition. Editing begins on Friday, the day of competition – after the ribbon cutting ceremony.
6. All editing will end promptly at 1:00 on Friday, the day of the competition. Students are required to stay at the competition site for their interview. Interview times will be posted and students should be ready and prepared for their scheduled times.
7. Emphasis will be placed on:
  - a. Professional production of the audio/radio production by industry standards
  - b. Quality of the audio
  - c. Conveyance of the subject, theme and information to the listener
  - d. The completed radio production must meet the assigned run time and convey an adequate representation of the subject or theme.
8. All teams will submit their projects including final production and script on a USB flash drive with a file name and format chosen by the technical committee.
9. Teams that do not turn in their produced audio/radio production and script within the time limit will have 20 points deducted from their final score, plus 1 point for each additional minute past the deadline.
10. Teams that are late to their assigned editing station will have that time deducted from their allotted time.
11. The finished production must meet the run time determined by the contest committee (plus or minus one second). Points will be deducted if the spot is outside the one-second tolerance.
12. If a team experiences a problem with its equipment, it is the team's responsibility to fix the problem. No extra time will be given for equipment problems. Teams may choose to bring in a second editing system in case of equipment problems, but no extra space will be given for the second system. The contest committee strongly encourages the use of laptops.
13. Teams may edit by using whatever software or method they choose, but they must supply their own equipment.

### **IMPORTANT NOTE:**

Competitors should be prepared to leave on the first bus available for Blackstone Valley RVTHS. Audio/Radio Production competitors should enter the area for the ribbon-cutting ceremony. Competitors in this area will be called and allowed to leave early to begin their contests. This will allow the competitors the opportunity to return to the ribbon cutting to capture vital audio of the ribbon-cutting event.





# DIGITAL CINEMA (TV) PRODUCTION

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** **failure to do so will result in a clothing penalty**

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Supplied by the State Technical Committee:**

- Classroom space with one outlet accessible for each team and one USB thumb drive per team

**Tool Requirements:** **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

- For each piece of music used, a written copyright permission letter from the copyright holder must be submitted with entry. A blanket letter from a music library may be used. Any entry containing music not properly licensed will result in point penalties. Contestants may also create their own music during post-production. Sound effects and sound effects libraries may be used.
- A camera and computer system capable of recording video and outputting video  
Aspect Ratios: 4:3 (4x3) or 16:9 (16x9) Frame Rates: 24fps, 29.97fps, or 30fps. Scanning: Progressive or Interlaced  
Resolution: 480 (SD) formats, and 720,1080 (HD) formats are acceptable up to 30fps.
- Videos will be exported as files and transferred to USB thumb drive media for submission. No stock photography, no stock video, no stock animation or graphics packages are allowed.
- Audio and video must be in the same file; we cannot accept submissions with separate audio and video files.
- One nonlinear editing system (multiple computers are not allowed). Any software editing/compositing/mixing system may be used, but no third-party templates may be used.
- Microphone (wired and/or wireless)
- Two or more batteries and power supply/charger for camera
- Certify that the equipment has been thoroughly inspected and is in safe working condition
- 20' AC extension cord with multiple outlet power strip
- Camera support system (tripod, monopod, shoulder mount, steadicam, etc. are all allowed)
- Headphone splitters, if desired, must be supplied by contestants
- Submissions must be one of the following: Quicktime (.mov) file, it must be compressed using either the H.264 or MPEG-2 codecs H.264, MPEG-2. Contestants may shoot (record) in any format/frame rate/resolution desired, but the final project to be turned in must follow the specs outlined above.

### State Skills:

The contest will include a video assignment to be created on site by a team of two student members from the same school and same division.

The assignment will consist of the following:

- A video that conveys the following theme: SkillsUSA - Champions at Work, Career-Ready Starts Here.

What can you specifically point to within your SkillsUSA chapter that demonstrates Career-Ready Starts Here?

What can you specifically point to within your career and technical education program that demonstrates Career-Ready Starts Here?

Using Career-Ready Starts Here, what would you say to students to convince them to join SkillsUSA?

Using Career-Ready Starts Here, what would you say to campus administrators to convince them to support SkillsUSA?

How is the SkillsUSA Framework of developing personal, workplace and technical skills central to the concept of Career-Ready Starts Here?

Which SkillsUSA programs ensure that members are developing the personal skills needed to be career-ready?

Which SkillsUSA programs ensure that members are developing the workplace skills needed to be career-ready?

Which SkillsUSA programs ensure that members are developing the technical skills needed to be career-ready?

What areas of the SkillsUSA program of work have assisted you in becoming career-ready?

What are the specific skills and abilities that a member possesses when career-ready?

How will you demonstrate to an employer that you are career-ready?

How does your career and technical education program emulate the workforce?

What are your next steps in ensuring you are career-ready?



## TV PRODUCTION Continued

2. Contestants are to work on site to capture and edit a 60-second video production (penalties will be assessed for video projects under/over 60 seconds).
3. The completed video production must convey an adequate representation of the subject or theme.
4. Taping, but not editing, may begin upon arrival to Skills events on Thursday evening, but no sooner. Taping may continue until noon Friday, on the day of the competition. Editing begins on Friday, the day of competition – after the ribbon cutting ceremony.
5. All editing will end promptly at 1:00 on Friday, the day of the competition. Students are required to stay at the competition site for their interview. Interview times will be posted and students should be ready and prepared for their scheduled times.
6. Emphasis will be placed on professional production of the video by industry standards, quality of audio and video, and conveyance of theme to the viewer.
7. All teams will submit projects on a SkillsUSA provided USB thumb drive or as a computer file using a CODEC specified during the contest.
8. Safety Requirements must be followed  
Both the instructor and the contestant certify by agreeing to enter this contest that the contestant has received instructions and has satisfactorily passed an examination on the safe use of tripods and other mounts (if used). They also certify that the equipment has been thoroughly inspected and is in safe working condition. Contestants will be removed from competition if proper training has not been provided and/or they are using the equipment in an unsafe manner.

### IMPORTANT NOTE:

Competitors should be prepared to leave on the first bus available for Blackstone Valley RVTHS. TV Production competitors should enter the area for the ribbon-cutting ceremony. Competitors in this area will be called and allowed to leave early to begin their contests. This will allow the competitors the opportunity to return to the ribbon cutting to capture vital footage of the ribbon-cutting event.

### SCORE SHEET

Criteria	Point Value	Criteria	Point Value
1. Script	100	4. Music / Sound	65
1a. Script organization	20	4a. Audio levels are consistent	20
1b. Script consistent tone	20	4b. Music selections are appropriate	15
1c. Script answers major questions	20	4c. Music matches the edits	15
1d. Script appropriate for audience	20	4d. Music is mixed with narration	15
1e. Script appropriate ending	20		
2. Camera Technique / Storyboarding	150	5. Special Effects	65
2a. Camera's basic shots	25	5a. Special effects are appropriate	20
2b. Video variety of basic shots	25	5b. Special effects add value	15
2c. Non-basic shots	25	5c. Special effects are creative	15
2d. Locations and props to "frame" shots	25	5d. Special effects are integrated	15
2e. Camera lens was focused	25		
2f. Proper use of equipment	25	6. Team Presentation	200
3. Editing	210	6a. Ability to work as a team	50
3a. Edits are clean	30	6b. Demonstrate problem solving	50
3b. Edit style and pacing is appropriate	30	6c. Demonstrated professional attitude	50
3c. Timing of the edits is appropriate	30	6d. Spoke clearly, communicated well	50
3d. Edits avoid any continuity problems	30		
3e. B-Roll footage effectively integrated	30	7. Overall Impressions and Interview	210
3f. Graphic elements are appropriate	30	7a. Effective integration of all elements	60
3g. Text titles are readable and used	30	7b. Message was effectively communicated	50
		7c. Video was creative, engaging	50
		7d. Demonstrated it was their work	50
		Total	1000



# PHOTOGRAPHY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Two prints for contest submission

Digital SLR

Memory Cards (1GB min)

Extra camera batteries (charged)

On-camera Flash & light meters (helpful but not mandatory)

Camera's USB cable or Memory card adapter for downloading images to computer.

Computer loaded with school's available version of Adobe Photoshop

Jump Drive

### State Skills:

#### Part 1: Print Competition

Students are required **TO BRING WITH THEM** and submit 2 prints that will be scored by a panel of professional judges.

Particular attention will be given to:

- The technical & artistic aspects of the image
- The overall impact
- Minimum 11x14 or 154 sq in. image area mounted to 16 x 20
- Black or white matting

**NOTE:** This is a Photography competition and not Graphic Design. Any image presented that goes far beyond the capabilities of traditional film photography in terms of manipulation will lose points. In short, if you can produce the image using film, negative retouching and print spotting, then the image is acceptable. Over use of multiple images, text, liquify tool, etc., is not encouraged.

**IMPORTANT NOTE:** Competitors should be prepared to leave on the first bus available for Blackstone Valley RVTHS. Photography competitors should enter the area for the ribbon-cutting ceremony. Competitors in this area will be called and allowed to leave early to begin their contests. This will allow the competitors the opportunity to return to the ribbon cutting to capture shots of the ribbon-cutting event.

#### Part 2: Field Assignment (Time to completion: 1 hour)

(NOTE: Students supply Digital SLR & accessories)

Students will go on assignment and capture images that relate to a "theme".

Students must demonstrate their ability to stay within the parameters with respect to:

- Location
- Theme
- Time limit
- Technical and artistic proficiency

## PHOTOGRAPHY Continued

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**Part 3: Digital Editing** Students will be required to complete a digital image manipulation project. Competitor are required to use their school or personal computer and version of Adobe Photoshop.

**Part 4: Trouble Shooting Digital Images** Students must correctly identify common problems in the processing/printing of digital images (i.e. blooming, jpeg artifacts, noise, color fringing, etc.)

### OVERALL POINT STRUCTURE

Part 1: Print Competition ..... 250 points

Part 2: Field Assignment..... 250 points

Part 3: Digital Editing ..... 250 points

Part 4: Troubleshooting ..... 250 points

TOTAL: .....1000 points

# COMMERCIAL DESIGN B

**SERIES DIRECTOR:**  
MARK LYONS

**CONTACT INFORMATION:**  
LYONS SHARE ENTERPRISE  
10 FORREST RD  
WESTFORD, MA 01886  
(978) 290-9015  
mlyons@aetlabs.com

## EVENTS:

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### 3-D VISUALIZATION AND ANIMATION

Briefing: Corporate Room  
Competition: Blackstone - 524A, 527A  
Event Manager: Ed Hull

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### ADDITIVE MANUFACTURING

Briefing: Corporate Room  
Competition: Blackstone - Room 165D  
Event Manager: Dave Kempinski

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### ARCHITECTURAL DRAFTING

Briefing: Corporate Room  
Competition: Blackstone - Drafting Shop 160D  
Event Manager: Samantha Squailia

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### PRECISION LASER IMAGING (Limited Demo)

Briefing: Corporate Room  
Competition: Blackstone - Room 023B & 020B  
Event Manager: Steve Beaudry

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### TECHNICAL DRAFTING

Briefing: Corporate Room  
Competition: Blackstone - Drafting Shop 165D  
Event Manager: Ed Gebo



# 3D VISUALIZATION AND ANIMATION

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

*This year, our contest will not have a sponsor for workstations! All teams MUST have their own workstations!!*

Each team is responsible for bringing their own computer equipment with software installed and running.

If the computer of choice is a workstation, this equipment must be set up on Thursday, before competition day.

The Competition Committee will provide a clean USB storage device, to be used only when submitting final work.

### Software Requirements:

1. 3D Software: Here are examples of acceptable 3D Animation programs
  - a. Maya, 3DS Max, LightWave, XSI, Houdini, Cinema 4D
  - b. Contestants are permitted to use more than one of the above to complete tasks.
2. 2D Image Editing Software: Photoshop or Equivalent
3. Examples of acceptable image sequence compositing programs are Adobe After Effects, Adobe Premiere, or equivalent

### Hardware Requirements:

1. Contestants may use any brand or type of personal computer from any source. Software must be pre-loaded and configured. The computer hardware must meet or exceed the minimum recommended system requirements from the manufacturer of the software of choice. We strongly recommend that the minimum requirements are exceeded.
  2. User may use the following components with their systems: Wacom tablet, double monitors and Cintiq Pens.
  3. Each contestant is allowed only one power outlet from the wall. Be prepared to bring a power strip.
  4. Your computer must be able to write to a USB storage device.
  5. Test the system carefully prior to competition. Make sure you can save to a USB storage device.
- Limited on-site technical assistance will be available on contest day.

### Other Required Materials:

Pencils and erasers

Storyboard paper with NTSC CCIR 601 storyboard frames

Contestants may bring published reference books and software manuals.

Reference materials may not take up more than 1/2 cubic foot of space per team member (total of 1 cubic foot).

### State Skills:

Contestants are tested on their production skills as well as their technical understanding of 3D Visualization and Animation. Testing of production skills and quality is administered through a practical examination wherein the contestants will, from scratch: design, build, animate, texture, and render an object to be presented at the time of competition.

Testing of technical acumen will be administered through a multiple-choice test.

Judging of the practical examination is based on the following criteria:

Planning, Storyboards, Methodology and Execution

Animation quality and Believable Motion

Rendering, Textures and Lighting

Design and modeling

Final Presentation

Contestants are required to plan an action sequence that must be storyboarded. Once the action sequence is defined contestants are required to then animate the pre-defined object to that storyboard sequence. The action sequence must consist of two parts: a slow and visually fluid movement and a fast and powerful movement.



# ADDITIVE MANUFACTURING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. Cell phones must be turned OFF during the event.

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Cell phones must be turned OFF during the event.

1. Supplied by the technical committee:
  - a. All additive manufacturing equipment and material.
2. Supplied by the contestant:
  - a. Each team must register a single VALID email address by sending an email FROM THAT ADDRESS to Mark Lyons at [mlyons@aetlabs.com](mailto:mlyons@aetlabs.com).
  - b. Contestants will then receive instructions on uploading their files.
  - c. Computer system (laptop) with computer design system capable of rendering files in STL format.
  - d. USB Drive for transferring CMB file.
  - e. Any tools required to provide finished part.
  - f. The team must supply the smart phone used for their design. The phone must be powered OFF.

### Self-Presentation Requirements:

You must supply a completed resume outlining your education, experience and skill set. Resumes will be judged on effectiveness and clarity.

### Purpose:

To evaluate each team's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of Digital and Additive Manufacturing.

Additive manufacturing 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.

### Skill Performance:

This contest will be a team-oriented event. Teams will consist of two contestants from the same school in the same.

This contest includes two elements to evaluate teams for employment in additive manufacturing fields.

### Element One:

**Element one will need to be completed IN ADVANCE OF THE STATE COMPETITION. Your team MUST register with Mark Lyons at [mlyons@aetlabs.com](mailto:mlyons@aetlabs.com) to receive the instructions!**

The files must be submitted to the Event Manager (details will be provided to the official registered email address of each team) no later than **Friday, April 19. NOTE THIS IS THE FRIDAY OF VACATION WEEK. The deadline will not be extended under any circumstance!**



## ADDITIVE MANUFACTURING Continued

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Each team will keep an engineering notebook that will demonstrate the design history and intent of the original design. Design considerations:

1. Build time must be no longer than 5 hours and 30 minutes.
2. All parts must be submitted to be printed by the committee in a CMB format.
3. No other parts will be allowed.
4. Assembly will take place the day of the competition.
5. Designs should minimize material usage for both model and support.

Login information for software to virtually estimate print time will be made available to registered contestants. Moving parts that rotate freely must be part of the design. The design will show the benefits of additive manufacturing by incorporating complex geometric shapes.

### Process considerations:

1. Self-supporting angles are 45 degrees.
2. More support means longer build time because the machine takes time to switch from model to support on each layer.
3. Air gap for freedom of movement in parts  $>0.023''$ .
4. How the file is oriented to be built will affect the amount of support material being built and the overall time of the build.
5. The processing software has 3 different internal fill patterns that will affect material usage and time of build.
6. See <http://www.stratasys.com/3d-printers/technologies/fdm-technology/faqs> for additional information about the printers.
7. Models will be printed on a Stratasys F370 (see specifications: <http://www.stratasys.com/en/F123/3D-Printers>)

### Element Two:

For the second element, COMPLETED ONSITE at the SkillsUSA competition, teams will receive a challenge to perform within a set timeframe involving a design change. Each team member will be required to participate in the design challenge to demonstrate design program competencies. The printed design and design changes in software will be presented to the judges along with the engineering notebook updated with design change notes from the day of the competition.

### If you have questions contact:

Mark Lyons  
AET Labs  
10 Forrest Rd.  
Westford, MA 01886  
EMAIL: [mlyons@aetlabs.com](mailto:mlyons@aetlabs.com)



# ARCHITECTURAL DRAFTING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

*Contestants may use any brand or type of personal computer from any source. Software must be pre-loaded and configured. Test the system carefully prior to competition. Make sure your computer is able to write to a USB storage device. Be sure to test your computer to ensure it will print to a PDF. Limited on-site technical assistance will be available on contest day.*

Each competitor is responsible for bringing their own computer equipment with their choice of CAD software installed and running.

If the computer of choice is a workstation, this equipment must be set up on Thursday, before competition day.

All computers must have Adobe PDF Printer Driver installed.

Do not bring your own printer.

All files will be printed to PDF format and hard copies will be made from these files.

1 cubic foot of reference material

Graph paper

Architect's scale

Erasers

Hand held calculator

Pencils (mechanical)

### National Skills:

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.

### State Skills:

Today's industry requires proficiency in both manual and electronic output of technical documents. It is therefore the scope and intent of the contest to test the student's proficiency in their electronic (CAD) skills, as well as their manual ability to produce a drawing (sketching).

**If you have questions contact:**

Mark Lyons

Lyons Share Enterprise

10 Forrest Rd.

Westford, MA 01886

EMAIL: [mlyons@aetlabs.com](mailto:mlyons@aetlabs.com)



# PRECISION LASER IMAGING (LIMITED DEMO)

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Supplied by the State Technical Committee:**

Classroom space with one outlet accessible for each team and one USB thumb drive per team

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Computer with Adobe Illustrator or CorelDraw Software

Pens, Pencils, Markers for sketching

Notebook

Ruler

### Purpose:

Over the past 5 years the applications for laser engravers had grown substantially. Initially a technology that was primarily used for awards and trophies has grown with applications including:

Fab/Labs and Innovation Centers	Medical Equipment Marking
Packaging	Prototyping
Marking	Graphic Design Applications
Engraving	Sign Making
Medical Production Applications	Others



The use of lasers of all types in industry is experiencing rapid growth.

The need for skilled operators, product designers and creators is growing. Laser engraving systems are being used in advanced manufacturing programs, graphic design programs, and engineering programs. The purpose of this contest is to assess the knowledge and performance skills of the contestants.

### Contest Guidelines:

This competition will be a team of two (2), one student focusing on Design and the other focusing on Imaging.

The *Design Team Member* would need to use either Adobe Illustrator or CorelDraw and design the file.

The *Imaging Team Member* who runs the laser would manipulate the files and cut the image.

The *Design Team Member* needs to do the creative design work, and the *Imaging Team Member* needs to take the file and laser engrave the image and laser cut the shape.

### Proposed Design Challenge:

The Precision Laser Imaging competition will be comprised of three components. The students will be presented with a finished product.

Phase one: 1.5 hours – Machine orientation. The teams will be divided in half and work with each machine for 45 minutes to orient themselves to the machine. All teams will use each type of machine; one type for each phase of the competition.

Phase two: 1.5 hours Students will be given material and a design to enter into their CAD/Design system software and produce on a laser engraver.

## PRECISION LASER IMAGING Continued

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Phase three: 1.5 hours Students will be given material and a design to enter into their CAD/Design system software and produce on a laser engraver.

For the demonstration event, we will have a laser engraver(s) on-site. One of each type (Trotec & Epilog) to accommodate technology integrated in schools. (Participating partners: E-Stem Solutions & AET Labs) The Trotec Laser Materials Division will supply all of the necessary materials for competition.

Laser types to be used in the competition: Trotec and Epilog (or similar)





# TECHNICAL DRAFTING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

*Contestants may use any brand or type of personal computer from any source. Software must be pre-loaded and configured. Test the system carefully prior to competition. Make sure your computer is able to write to a USB storage device. Be sure to test your computer to ensure it will print to a PDF. Limited on-site technical assistance will be available on contest day.*

Each competitor is responsible for bringing their own computer equipment with their choice of CAD software installed and running.

If the computer of choice is a workstation, this equipment must be set up on Thursday, before competition day.

All computers must have Adobe PDF Printer Driver installed.

Do not bring your own printer.

All files will be printed to PDF format and hard copies will be made from these files.

1 cubic foot of reference material

Graph paper

Engineer's scale

Erasers

Hand held calculator

Pencils (mechanical)

### National Skills:

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).

### State Skills:

Today's industry requires proficiency in both manual and electronic output of technical documents. It is therefore the scope and intent of the contest to test the student's proficiency in their electronic (CAD) skills, as well as their manual ability to produce a drawing (sketching).

**If you have questions contact:**

Mark Lyons

Lyons Share Enterprise

10 Forrest Rd.

Westford, MA 01886

EMAIL: [mlyons@aetlabs.com](mailto:mlyons@aetlabs.com)

# COMMERCIAL DESIGN C

**SERIES DIRECTOR:**  
RICK ALLAIN

**CONTACT INFORMATION:**  
KEEFE TECHNICAL SCHOOL  
750 WINTER STREET  
FRAMINGHAM, MA 01702  
rallain@jpkeefehs.org

## EVENTS:

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### GRAPHIC COMMUNICATIONS

Briefing: Duchess Room  
Competition: J.P. Keefe Tech's Graphic Communications Shop  
Event Manager: Doug Sturgis

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### GRAPHIC IMAGING SUBLIMATION

Briefing: Duchess Room  
Competition: J.P. Keefe Tech's Graphic Communications Shop  
Event Manager: Steve Lutch

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### PAINTING & DESIGN TECHNOLOGY

Briefing: Duchess Room  
Competition: J.P. Keefe Tech's Design and Visual Shop  
Event Manager: John Hughes

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### SCREEN PRINT TECHNOLOGY

Briefing: Duchess Room  
Competition: J.P. Keefe Tech's Graphic Communications Shop  
Event Manager: Joe Conners



# GRAPHIC COMMUNICATIONS CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Safety shoes

Safety glasses

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Pencil with eraser

Blue pen

Ruler/line Gauge

Calculators may be used but are not a requirement

Safety glasses worn when necessary

### National Skills:

The contest consists of four parts. The contestant is judged on the following: estimating; bindery operations; offset duplication; and final art using a desktop computer and software system.

### State Skills:

Contestants will demonstrate their ability to perform selected tasks from the following list of competencies.

The Technical Committee may select any or all tasks from the following list:

1. Handle orders (billing, estimation, work orders, etc.)
2. Produce composition (specify, set, and proof copy)
3. Layout and composition (rough layouts, finished copy and type specs)
4. Operate a Duplicator and complete the required work
5. Calculate/Perform cutting and bindery operations

### Operating Equipment:

Heidelberg Printmaster 46-2

Challenge 305 Paper Cutter

Baumfolder 714

Apple iMac OSX

Adobe Creative Cloud Software Suite includes InDesign, Photoshop, and Illustrator





# GRAPHIC IMAGING SUBLIMATION PRINTING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Safety shoes

Safety glasses

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Pencil with eraser

Blue pen

Ruler/line Gauge

Calculators may be used but are not a requirement

Safety glasses worn when necessary

### National Skills:

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism as a sublimation technician in the field of graphic imaging.

### State Skills:

Contestants will demonstrate their ability to perform selected tasks from the following list. The Technical Committee may select any or all tasks from the following list. The competition will assess student participants' knowledge and skills of graphic imaging sublimation at the testing stations listed below:

Design a digital image

Print transfer sheets using a sublimation printer

Print a graphic on a Mug using a mug press

Design and print a mouse pad

Design and print on tiles

Design and print on a polyester t-shirt

Take a written technical knowledge test

### Operating Equipment:

Sawgrass Virtuoso SG400

George Knight DC16 digital combo

Adobe Software: CC includes InDesign, Photoshop, and Illustrator



# SCREEN PRINT TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Safety shoes

NO jeans

Safety glasses

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Safety Glasses with side guards, for screen reclaiming

Ear protection and latex gloves, for screen reclaiming

Ruler, permanent marker

Optional: Smock or apron, optical devices

Safety glasses worn when necessary

### State Skills:

**Part 1: Screen Inspection** Students are required to examine three screens for defects to determine if each screen is suitable for use:

- screen frame is free of damage
- screen is free of cuts, splits or punctures
- stencil is free of holes that could leak ink
- screen mesh is not clogged in the image area

**Part 2: Screen Coating** Students are required to coat a screen with emulsion

- select and prepare emulsion
- coat screen with emulsion
- evaluate screen for acceptable tolerances
- place coated screen in a screen dryer

**Part 3: Screen Exposure and Washout** Students are required to describe the steps to expose a screen and properly process the image to prepare for printing, which includes:

- inspect the black film positive (provided) for dirt and marks
- select a screen
- inspect and protect screen from excess light
- center the black film positive within screen frame
- secure the black film positive to the screen
- place screen and black film positive on an exposure unit
- expose screen- remove black film positive

**Part 4: Screen Blockout** Students are required to demonstrate proper blockout techniques

- apply and tape to cover the appropriate non-image areas
- inspect all non-image areas for complete blockout application

**Part 5: Image Registration** Students are required to properly register screens (provided)

- place screens on the press and course register the image
- apply adhesive to shirt boards for proper adhesion
- check rag for proper adhesion
- print test image on pelon to check for proper registration
- adjust registration as needed to align for proper registration
- print proof image on one shirt and dry each one
- inspect contact side of screens for excess ink, test screen off contact

**Part 6: Screen Reclaiming** Students are required to properly describe the steps to reclaim a screen

**Part 7: Image Printing** Students are required to properly produce one printed shirts

- apply adhesive to shirt boards for proper adhesion
- check rag for proper adhesion
- inspect contact side of screens for excess ink, test screen off contact
- check ink supply on each screen
- print image on shirts and properly dry each one with the dryer

**Overall Point Structure:** Not all Parts 1-6 will be offered and points will be adjusted accordingly to total 1000 points.

Parts 1-6: Hands-On Demonstrations = 600 points

Part 7: Image Printing = 400 points



# PAINTING AND DESIGN TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Blue work pants, as shown

Painter Pants are also Acceptable

Safety shoes

No sneakers

SkillsUSA Massachusetts T-Shirt, provided

No jeans

NO cell phones allowed

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Safety glasses or goggles

Dust mask

Can opener or 5-in-1

Sand paper

Sanding pad

Extension pole

Screwdriver

Putty knife

Drop cloths

Paint Pail

Rags

Hawk or mud pan

4" - 6" broad knife, and 10" joint knife or trowel

Brushes, 2-inch, & 1 ½-inch (optional)

Roller pan

Angled sash brushes (1 ½-inch, and 2-inch)

Razor knife with snap off blade

7" or 9" Roller handle

7" or 9" Roller covers (appropriate nap)

Level

Tape Measure

Smoothing brush or plastic smoother

4" - 6" Putty knife and or straight edge

A pencil

NO cell phones allowed

### Scope of Contest:

Part 1: Prepare surfaces to receive finishes, and apply coatings and finishes to various surfaces.

Students will demonstrate proper use of tools and materials for protecting surfaces, and general preparations for substrates. They will demonstrate finish application methods using brushes and rollers on a demonstration module with wallboard and various architectural molding.

Students are responsible for the proper clean-up of adjacent surfaces and the proper clean-up and disposal of paints.

Part 2: Apply drywall Finish to a level 2 standard.

Students will demonstrate their ability to apply a drywall Finish to a level 2 standard. All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife or trowel leaving a thin coating of joint compound over all joints and interior angles and exterior corners. Fastener heads and accessories shall be covered with a coat of joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable. Joint compound applied over the body of the tape at the time of tape embedment shall be considered a separate coat of joint compound and shall satisfy the conditions of this level.

Part 3: Prepare and apply Wallcoverings to wall surface.

Students will set up a work area with wallcoverings and the tools used to install them. They will apply wallcoverings using proper techniques.

Part 4: Prepare and apply computer cut vinyl graphics to a sign surface according to scaled dimensions.

Students will read measurements on a scaled drawing, prepare vinyl letters for application, layout letters according to scaled measurements, and apply vinyl lettering to substrate.

# FRESHMEN EVENTS

**SERIES DIRECTOR:**  
CAROL HARTNETT

**CONTACT INFORMATION:**  
(339) 793-1266  
carolbhartnett@gmail.com

## EVENTS:

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### CAREER CHOICE COMMENTARY

Briefing: Salon C  
Competition: Embassy Suites, Clark Room  
Event Manager: Kim Lynch

**Attendance at the Freshmen Events General Session is required.**

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### EXPLORATORY PROJECT DEMONSTRATION

Briefing: Salon C  
Competition: Embassy Suites, Wellesley Room  
Event Manager: John Maré

**Attendance at the Freshmen Events General Session is required.**

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### STEM IMMERSION CHALLENGE (Limited Demo)

Briefing: Salon C  
Competition: Embassy Suites, Harvard Room  
Event Manager: Brenda Quinn

**Attendance at the Freshmen Events General Session is required.**

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### STICKER DESIGN

Briefing: Salon C  
Competition: Embassy Suites, Bennington/Burklee Room  
Event Manager: TBA

**Attendance at the Freshmen Events General Session is required.**

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### FRESHMEN EVENTS GENERAL SESSION

Location: Embassy Suites, Berklee Room



# CAREER CHOICE COMMENTARY CONTEST (FRESHMEN ONLY)

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Equipment and Materials, Supplied by the Technical Committee:**

Stopwatch      Time Cards

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Note cards (if desired by the contestant)

**Purpose:** To evaluate each contestant's ability to prepare and present clearly and effectively a series of thoughts relating to his or her Freshman Exploratory experience.

**State Skills:**

Knowledge Performance: There is no written exam for this contest.

Skill Performance: This contest assesses basic public speaking skills through the delivery of a **three to five minute commentary**.

**Contest Guidelines:**

1. The topic for the Career Choice Commentary is based on the Freshman Exploratory experience. Within this topic, contestants might illustrate or discuss any of the following:
  - How the Exploratory program helped the contestant to evaluate and choose a trade area to pursue.
  - How the Exploratory program taught the contestant to value different talents/skills and to appreciate the talents they have as well as the talents of others.
  - How the Exploratory program experience promotes decision-making and problem solving by teaching students to process all perspectives in a respectful and productive manner.
  - How the Exploratory program helped to broaden the awareness of the contestant to foster an open-minded approach to learning.
  - How the contestant made the decision to pursue the particular trade they have chosen and how that decision aligns with their life goals.
2. The commentary will be three to five minutes in length. *Penalty: five points will be deducted for each thirty seconds or fraction thereof under three minutes or for each thirty seconds or fraction thereof over five minutes.*
3. Time will be started when the commentary begins. The timer will signal the speaker at three minutes, four minutes and four minutes thirty seconds.
4. **Visual aids and props are not permitted.**
5. **Note cards are permitted.**
6. The contestant will not mention his or her name, school or city.
7. Contestants must submit one typewritten copy of the commentary to the technical committee at the briefing meeting on Thursday evening. It should include school name, contestant's name, and commentary title.

## CAREER CHOICE COMMENTARY Continued

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**Judging Guidelines:** The following criteria will be used to judge the commentary:

Opening – has a strong, clear opening

Voice – voice is well modulated and controlled and carries the rhythm of the speech

Platform deportment – speaker is poised and demonstrates good control of movement

Organization – commentary is well organized and the organization can be easily followed

Mechanics – proper grammar is used and diction is clear

Closing – closing provides a clear and solid conclusion and summary of the thoughts

Effectiveness – assigned topic is covered, is clear and achieved

Timing – commentary falls with the three to five minute contest requirement

Clothing – clothing meets the contest requirements.

**Students are expected to attend the Freshmen Events General Session, see the State Conference Program for the location and time.**

**Eligibility:** This contest is open to active SkillsUSA members currently enrolled in the Freshman Exploratory. Exploratory may be completed before participating in the competition but contestant must still be in their Freshman year of their CTE experience.

**Observer Rule:** Observers will be allowed to hear the speeches in the presentation room provided space is available. No talking or gesturing will be permitted. No observers will be allowed in the assembly area. No member of the audience will be permitted to enter or leave the demonstration room while a contestant is speaking. Members of the audience will not be allowed to use cameras, video recorders or tape recorders.

**Arrangement of Rooms:**

The commentary presentation room will be furnished with a podium, two tables, each with chairs for judges, timekeeper and room monitor.



# EXPLORATORY PROJECT DEMO CONTEST (FRESHMEN ONLY)

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) or official attire for the occupational area of the demonstration.

NO cell phones allowed

**Equipment and Materials, Supplied by the Technical Committee:**

Stopwatch      Performance space

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

All materials and equipment needed for the demonstration

**Purpose:** To evaluate each contestant's ability to demonstrate and explain the steps involved in creating the contestant's favorite project from the freshman Exploratory experience. *The actual finished project from Exploratory must also be presented.*

**Eligibility:** This contest is open to active SkillsUSA members currently enrolled in the Freshman Exploratory.

Exploratory may be completed before participating in the competition but contestant must still be in their

Freshman year of their CTE experience.

**Arrangement of Rooms:**

The commentary presentation room will be furnished with a podium, two tables, each with chairs for judges, timekeeper and room monitor.

**State Skills:**

**Knowledge Performance:** There is no written exam for this contest.

**Skill Performance:** The contest requires the demonstration of the steps involved in creating their project sample. The contestant must bring the finished project with them, but may bring additional components to demonstrate the creation of the finished project. The demonstration shall be accompanied by a clear explanation of the project and why this particular project was chosen.

**Contest Guidelines:**

1. An actual technical skill must be performed as opposed to an illustrated talk.
2. Note cards and other reference materials *are permitted.*
3. Any Freshman exploratory project may be demonstrated.
4. The demonstration shall be *at least three minutes in length but shall not exceed five minutes.* Penalty: Five points will be deducted for each 30 seconds under three minutes or fraction thereof over five minutes.
5. Time will be started when the demonstration begins. The timekeeper will signal the speaker at three minutes, four minutes, and four minutes thirty seconds.
6. Contestants will be allowed *five minutes to set up* the demonstration and *five minutes* to clear the demonstration room. Five points will be deducted for each thirty seconds or fraction thereof over the five-minute allowance.
7. A performance space of 8'x12' will be provided, that contains a 30"x96" table and one duplex (two plug ins) 110-volt electrical outlet.
8. Any visual or auditory aids (signs, charts, transparencies, slides, diagrams, CD's) are to be prepared by contestants. Professionally



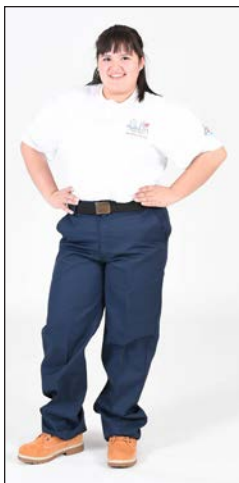
## EXPLORATORY PROJECT DEMONSTRATION Continued

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prepared visuals and audio may not be used. No open flames; no combustible or hazardous chemical compounds, no fluids containing pathogens or toxic chemicals and no pressurized containers will be allowed.

9. The contestant will not mention his or her name, school or city.
10. The demonstration is an individual performance; however, assistants may be used to set up and dismantle the demonstration. Models or assistants may be used in the demonstration, but will not say or do anything that assists the demonstration other than to serve as a model as needed for a facial, clothing design demonstration, etc.
11. Basic safety practices related to the skill performed must be followed. Safety violations will be subject to penalties of one to ten points. Judges may interrupt the demonstration for serious violations.

**Students are expected to attend the Freshmen Events General Session, see the State Conference Program for the location and time.**



# STEM IMMERSION CHALLENGE (FRESHMEN ONLY)

## (LIMITED DEMO)

### REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Safety shoes

Safety glasses

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Equipment and Materials, Supplied by the Technical Committee:**

LittleBits

Stopwatch

Performance Space

Presentation Schedule

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

All materials and equipment needed for the presentation, such as (optional) laptop, notebook, pens, pencils, markers, list of STEM careers

STEM agents are the wave of the future. Many STEM careers that will exist over the next 20 years have not even been defined yet. Therefore, students whose general knowledge of technology and understanding between devices and their primary capabilities will be those students best ready for the STEM careers of the future. Data from the Bureau of Labor Statistics shows that STEM professions are expected to expand 1.7 times faster than non-STEM occupations between 2010 and 2020, and the annual average wage for STEM workers is high at a collective \$85,570 – 81 percent more than the national average of \$47,230 for all jobs.

**Eligibility:** This contest is open to active SkillsUSA members currently enrolled in the Freshman Exploratory.

Exploratory may be completed before participating in the competition but contestant must still be in their Freshman year of their CTE experience. The Freshmen STEM Immersion Challenge competition is designed to serve students who have completed 2-3 of the Freshman Exploratory courses in the following areas:

- CAD
- Electronics
- Robots
- Mechatronics
- Automated Manufacturing
- Engineering
- IT or IST
- Graphic Arts

**General Requirements:**

Students will apply general skills used in the exploratory courses and LittleBits to solve a new problem that will assist someone with restricted abilities. Students will work in teams of two. **Students must bring a laptop computer** with the LittleBits code kit software downloaded. The software is free and available on the LittleBits web site. The link to download is:

<https://shop.littlebits.com/pages/code-kit-download>

If you are unable to download the software successfully and need assistance with the software download please arrive at the competition **30 minutes early for technical assistance**. You must be able to connect to the Internet. Students will use parts and pieces from the LittleBits Stem Classroom Solution (available from Educational STEM Solutions, LLC).

Other miscellaneous supplies will be donated by workshop coordinator.

# STEM IMMERSION CHALLENGE Continued

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## Contest Guidelines:

### 1. Introduction to LittleBits: **1 Hour**

- a. Give the Students an introduction to LittleBits
  - i. Covering the Engineering process
  - ii. Bit basics: What they are and how they work.
  - iii. How to use the bits.
  - iv. Coding with bits.
- b. Students will get a hands-on experience with LittleBits and have a chance to do a sample design problem.

### 2. Design Problem: **2 Hours**

- a. Introduction to the design subject and the problem: Question and Answer period.
- b. Design Problem must consider the following:
  - i. Safety
  - ii. Energy Efficiency
  - iii. Design and build a project/device to assist someone with restricted abilities.
- c. Students should attempt to map the subject to the Career area in which they are enrolled.

### 3. Design Presentation: **lasting no more than 5 minutes**

- a. The students will be required to create a presentation lasting no more than five minutes on their design solution to the judging committee.

**Students are expected to attend the Freshmen Events General Session, see the State Conference Program for the location and time.**



# STICKER DESIGN CONTEST (FRESHMEN ONLY)

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

1. Supplied by the technical committee:
  - a. Timekeeper and judges
  - b. All necessary information for the judges and technical committee
  - c. Projector and screen
  - d. 8.5"x11" document/photo frame
2. Supplied by the contestant:
  - a. Rendering of sticker design
  - b. All competitors must create a one-page résumé and submit it at the contest site.
  - c. Means of presentation: Computer, tablet, notebook, poster or other media of your choice if desired to make your presentation to the judges. Contestant must supply his or her own adaptor connection for the projector. Digital presentation is not required.

**THE CONFERENCE PROGRAM WILL HAVE A STICKER TRADING GALLERY FOR PARTICIPANTS TO TRADE AND DISPLAY SCHOOL STICKERS.  
ALL STICKER DESIGN PARTICIPANT SCHOOLS SHOULD SUPPLY THEIR DELEGATION WITH STICKERS TO TRADE (ESPECIALLY DELEGATES).  
SCHOOLS NOT COMPETING IN STICKER DESIGN WILL ALSO BE ENCOURAGED TO BRING STICKERS!**

**Purpose:** To evaluate a contestant's creative, technical and oral presentation skills and to recognize outstanding students for excellence and professionalism.

**Eligibility:** This contest is open to active SkillsUSA members currently enrolled in the Freshman Exploratory. Exploratory may be completed before participating in the competition but contestant must still be in their Freshman year of their CTE experience.

### State Skills:

The contest consists of two parts:

1. Evaluation of the sticker design
2. Oral presentation and questions and answers session. All contestants will be asked the same questions, which judges will determine before the start of the contest.

### Skill Performance:

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.

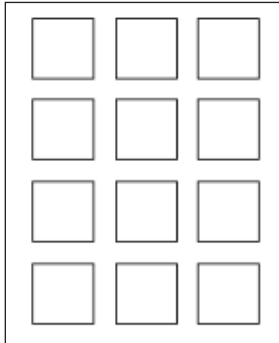
### Contest Guidelines:

1. All entries must be rendered in color (full color or two color).
2. Entries can be created in a design software package such as Illustrator, Photoshop or other comparable software. Entries may also be hand-drawn, painted or rendered in colored pencils or markers.

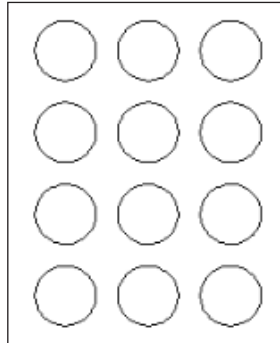
## STICKER DESIGN Continued

3. All entries should be submitted with **two versions of the art** on a single 8.5"x11" page. The sticker design will be restricted to 2" (2 1/2" for oval) preformatted labels: Avery Labels - Product #80510 or similar, which gives contestants 3 options of sticker shape: Square, round, and oval.

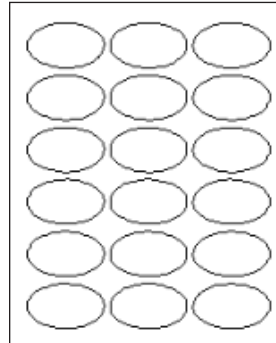
Avery Label #80510 Square



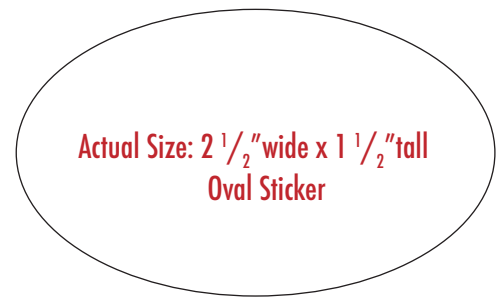
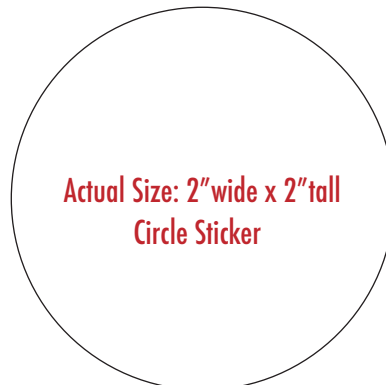
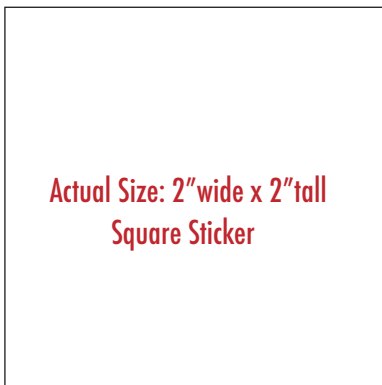
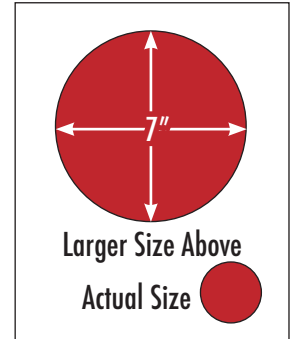
Avery Label #80510 Circle



Avery Label #80510 Oval



**Sample Submission**



All actual size sticker designs must be presented as one of the above three shapes and all stickers cannot exceed 2" maximum (2 1/2" at its largest dimension for oval)

**Deductions will be taken for every 1/8" over or under 7" on your larger artwork version and every 1/16" over or under 2" (2 1/2" at its largest dimension for oval) on your actual size artwork version. Both designs should be identical. Wording on the sticker must reference the name of your school. Your contest number for the state conference must be placed on the back of your submitted artwork.**

4. The SkillsUSA emblem or SkillsUSA logo should appear on the sticker.
5. All copyright laws must be followed in the creation of the design.
6. Contestants will deliver a three- to five minute presentation regarding their design. Talking points should include:
  - a. How he or she came up with the design of the sticker
  - b. The process in which he or she designed the sticker
  - c. Why he or she feels it represents their school
  - d. What are its unique qualities
  - e. Why other students/advisors would want to have it
7. After your presentation, the judges will ask questions related to Sticker Design, and SkillsUSA at your school.
8. A space will be provided for you to make a poster (not used for judging) to promote your sticker design/school to the public, for viewing at the state conference. Your board should be a single poster board.

**Students are expected to attend the Freshmen Events General Session, see the State Conference Program for the location and time.**

# HEALTH OCCUPATIONS A

**SERIES DIRECTOR:**  
TARA LANE

**CONTACT INFORMATION:**  
TRI-COUNTY RTHS  
147 POND STREET  
FRANKLIN, MA  
(781) 864-6537  
lane@tri-county.us

## EVENTS:

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### HEALTH OCCUPATIONS KNOWLEDGE BOWL

Briefing: Zachary's Restaurant  
Competition: Holiday Inn, Marlborough  
Event Manager: Peggy Reilly-O'Brien

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### MEDICAL ASSISTANT

Briefing: Marlboro Room  
Competition: Blackstone - Competition Center  
Event Manager: Penny Hennessy

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### NURSE ASSISTANT

Briefing: Marlboro Room  
Competition: Blackstone - Competition Center  
Event Manager: Tricia Munger

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### PRACTICAL NURSING

Briefing: Marlboro Room  
Competition: Blackstone - Competition Center  
Event Manager: Justine Naper



# HEALTH KNOWLEDGE BOWL CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

Please refer to the 2019-2020 SkillsUSA Technical Standards for additional information

### Clothing Requirements:

**failure to do so will result in a clothing penalty**

Official SkillsUSA Attire (review National Technical Standards)

Blazer is optional or Professional Business Attire.

### Tool Requirements:

**One-page type-written resume required for every contestant,**

**failure to do so will result in a 50-point penalty**

**NO cell phones allowed**



2019-2020 SkillsUSA Championships Technical Standards  
available on-line to all professional members

**State Skills:** The state contest will reflect the standards adopted by the National Technical Committee. Please go the SKILLS USA web site and print up the contest description for HEALTH KNOWLEDGE BOWL. Scope of Contest information reads: Core standards from the National Health Care Core Skill Standard Project make up the categories from which Questions are developed for the Health Knowledge Bowl contest.

**Standards and Competencies:** The categories from which questions will be developed have been clarified in the technical standards for 2018-2019. Please read. The content of the contest is under Standards and Competencies. Included in the BOWL 3.0 Standard is the Current Event topic. There will be four Current Event questions (2 per Half). Questions will be chosen from the HEALTH SECTION of the USA TODAY newspaper, dated from December 1, 2018 to April 15, 2019.

**Resource Text Books:** The only references used for determining the questions are: USA TODAY (NEWSPAPER); DIVERSIFIED HEALTH OCCUPATIONS; HEALTH CAREERS TODAY; AND HEALTH CARE SCIENCE TECHNOLOGY; CAREER FOUNDATIONS (CURRENT EDITION TEXTBOOKS). For the State Contest, the postsecondary teams' questions will be the same questions as the secondary teams' questions. Although both secondary and post-secondary teams are completing simultaneously at the state level, please remember that there is one national slot for each education level.

Each contestant will be required to submit a one-page, typewritten résumé and submit it to the state technical committee. The résumé will be collected Friday at the competition site. There will be a point deduction of 5 points for each team member that does not submit a résumé. This point deduction will be taken off the total final score. Each Team is responsible to arrive with the required supplies: Thick Black markers, pencils, 75 sheets of white paper, and 30 sheets of colored paper for scrap. Any team that does not have the required supplies will not be allowed to participate in the contest.



# HEALTH KNOWLEDGE BOWL Continued

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Carefully Review the SCORING section of the New Technical Standards (next page): Please be aware of the game rule that requires each team to identify a “captain”. The captain will be the team member who stands with the team’s answer.

**Judges:** We will follow the national contest standard, 3 to 4 impartial judges will be utilized.

For new advisors there are sample questions on the National SkillsUSA Championships “Contest Projects” available on our website.

**Observer rules:** will be enforced according to National Standards. No observers will be allowed to talk or gesture to the contestants. In accordance with the National Standards no recording devices will be permitted to be used during the contest unless approved by the State management team. There will be no recording of questions or topics allowed during the contest, this includes note taking by anyone present. Cell phone and other electronic communication equipment use are prohibited within the room where the contest will be held.

## Scoring:

- a. Each team will begin each quarter with 0 points.
- b. A team may choose to answer the question or not answer the question.
- c. If the team does not answer the question (signified by remaining seated) it will neither gain nor lose points.
- d. If a team chooses to answer and is correct, it will be awarded 10 points. If a team chooses to answer and is incorrect, 10 points will be deducted.
- e. The judges will make the scores visible to all teams before the start of each quarter.
- f. Contestants may use calculators to assist with medical math questions.
- g. Score discrepancies must be addressed by the team captain prior to the next question.
- h. A written test will be administered during the contest. This test will be completed as a team. The score from the written test will not be announced but will be added to the final total score.
- i. The winning team is that team which has accumulated the highest total points (total score, plus written test score, less clothing penalties).
- j. In the event of a tie, the tie will be broken as follows:
  1. First tiebreaker: The team with the highest written test score.
  2. Second tiebreaker: The compiled score of team members on the Employability Skills Test.



# PRACTICAL NURSING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

White scrubs, as shown

Hair must be off face and collar

Nails short and clean

White stockings / socks

White Lab coat (optional)

Clean all-white leather shoes (No canvas)

Athletic style shoes are acceptable, must meet criteria

Safety glasses

NO personal name/school ID on clothing

NO heavy perfume/makeup/cologne

NO nail polish, gels or tips

NO gum chewing

NO jewelry except watch with second hand

NO open toes or open back shoes

No facial piercing allowed

NO cell phones allowed

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Small notebook

Watch with second hand

2 pens - black ink only

Bandage scissors

STUDENTS SHOULD BE TRAINED IN BOTH CPR AND FIRST AID.

FOR THE NATIONAL CONTEST YOU WILL HAVE TO BRING CURRENT CPR CARD FROM EITHER THE AMERICAN HEART ASSOCIATION OR AMERICAN RED CROSS AND A CURRENT FIRST AID CERTIFICATION CARD FROM EITHER THE AMERICAN RED CROSS OR NATIONAL SAFETY COUNCIL

### National Skills:

Students competing in the Practical Nursing contest are required to demonstrate knowledge and skill in performing patient care procedures representative of the general areas of competence required in a practical nursing program, including CPR. These include the ability to use and identify equipment; manipulate medical materials in the taking of vital signs, patient assessment, infection control, sterile technique, medication administration, proper delegation and appropriate scope and practice.

### State Skills:

Contestants should be familiar with all the Standards and Competencies as mentioned in National Technical Standards 2019-2020 as follows:

PN 1.0 – Provide coordinated care to meet clients' individualized needs

PN 3.0 – Implement procedures that provide quality assurance

PN 4.0 – Provide goal-oriented patient care through the development of nursing care plans, communication within the healthcare team and individualized patient care

PN 5.0 – Create a safe environment for patients and coworkers to ensure safety to meet individualized client needs

PN 6.0 – Prepare a client for medical treatments and procedures including diagnostic tests, surgery and delivery

PN 9.0 – Observe and communicate changes in a client's medical status

PN 10.0 – Evaluate a patient's health state and provide emergency medical care to a patient when needed

PN 14.0 – Anticipate client's needs for pain management and educate client on pain coping methods

PN 15.0 – Provide patients with basic care such as monitoring patient health and ensuring patient comfort

PN 17.0 – Educate clients on adaptation and coping skills needed to deal with emotional and physical illness



# MEDICAL ASSISTANT CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

White scrubs, as shown

Hair must be off face and collar

Nails short and clean

White stockings / socks

White Lab coat (optional)

Clean all-white leather shoes (No canvas)

Athletic style shoes are acceptable, must meet criteria

NO personal name/school ID on clothing

NO heavy perfume/makeup/cologne

NO nail polish, gels or tips

NO gum chewing

NO jewelry except watch with second hand

NO open toes or open back shoes

NO cell phones allowed

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

2 pens– black ink only Safety glasses/shields

Watch with second hand

STUDENTS SHOULD BE TRAINED IN BOTH CPR AND FIRST AID. NO CARD NEEDED FOR THIS CONTEST

### National Skills:

Professional medical assisting technicians judge contestants on the basis of general office skills, communication skills, identification of anatomy and instruments, and on a variety of clinical procedures and techniques. The contestants are asked to assess a situation in a short period of time and perform a skill required for that situation. They are judged on speed, the use of correct safety measures, and their ability to interact personally with a patient.

### State Skills:

Contestants should be familiar with all the Standards and Competencies as mentioned in National Technical Standards 2019-2020 as follows:

MA 1.0 – Perform general office procedures to accreditation and certification standards recognized by the American Medical Association

MA 4.0 – Perform general laboratory procedures to accreditation and certification standards recognized by the American Medical Association

MA 5.0 – Perform hematology procedures to accreditation and certification standards recognized by the American Medical Association

MA 6.0 – Perform electrocardiogram (EKG) procedures to accreditation and certification standards recognized by the American Medical Association

MA 8.0 – Perform clinical office procedures to accreditation and certification standards recognized by the American Medical Association Health

Occupations: Core Knowledge and Skills reference 1. Academic Foundations 3. Safety Core. 4. Infection Control and Asepsis



# NURSE ASSISTANT CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

White scrubs, as shown

Hair must be off face and collar

Nails short and clean

White stockings / socks

White Lab coat (optional)

Clean all-white leather shoes (No canvas)

Athletic style shoes are acceptable, must meet criteria

NO personal name/school ID on clothing

NO heavy perfume/makeup/cologne

NO nail polish, gels or tips

NO gum chewing

NO jewelry except watch with second hand

NO open toes or open back shoes

NO cell phones allowed

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Small notebook

Watch with second hand

2 pens - blue or black ink

Safety glasses

STUDENTS SHOULD BE TRAINED IN BOTH CPR AND FIRST AID, BUT DO NOT NEED CERTIFICATION CARDS FOR STATE CONTEST. THEY WILL NEED TO SHOW CPR CARDS AT THE NATIONAL CONTEST.

### National Skills:

Students competing in the nurse assisting contest are required to demonstrate knowledge and skill in performing patient care procedures representative of the general areas of competence required in nurse assisting, including CPR. All procedures must be performed using safety precautions and correct body mechanics. All skills demonstrated will be based on nationally accepted accreditation and certification standards recognized by the American Medical Association. Contestants, as part of the demonstration, should voluntarily express pertinent information. Examples may include the ability to use and identify equipment; manipulate medical materials in the taking vital signs, height, weight.

### State Skills:

Contestants should be familiar with all the Standards and Competencies as mentioned in National Technical Standards 2019-2020 as follows:

NA 4.0 – Explain infection control and methods of preventing the spread of infections

NA 5.0 – Perform nurse assistant skills/procedures including dressing, undressing and bathing patients, Foley catheter care, providing hair and oral care, and transferring, turning and assisting patients with walking

NA 7.0 – Provide patient with basic nursing procedures and restorative care

NA 8.0 – Monitor patient's vital signs

NA 9.0 – Perform adult, child and infant CPR and first aid

# HEALTH OCCUPATIONS B

**SERIES DIRECTOR:**  
ERIN ROY

**CONTACT INFORMATION:**  
1327 PROVIDENCE ROAD  
WHITINSVILLE, MA  
(774) 280-1426  
erinroy6912@gmail.com

## EVENTS:

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### **BASIC HEALTH CARE**

Briefing: Marlboro Room  
Competition: Blackstone - Health Services Shop—310B  
Event Manager: Jane Case

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### **DENTAL ASSISTING**

Briefing: Marlboro Room  
Competition: Blackstone - Dental Lab—670B  
Event Manager: Tricia Wosney

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### **FIRST-AID/CPR**

Briefing: Marlboro Room  
Competition: Blackstone - Competition Center  
Event Manager: Rob Cecil



# BASIC HEALTH CARE CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

White scrubs, as shown

Hair must be off face and collar

Nails short and clean

White stockings / socks

White Lab coat (optional)

Clean all-white leather shoes (No canvas)

Athletic style shoes are acceptable, must meet criteria

NO personal name/school ID on clothing

NO heavy perfume/makeup/cologne

NO nail polish, gels or tips

NO gum chewing

NO jewelry except watch with second hand

NO open toes or open back shoes

NO cell phones allowed

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Safety glasses

Watch with second hand

Pen (black ink)

Any equipment and supplies for oral table-top presentation

### State Skills:

The contest evaluates a contestant's beginning level of health occupations knowledge and skills and recognizes outstanding students for excellence and professionalism. The contestants' skills may be evaluated through a written test and/or a skill performance.

Contestants will demonstrate their knowledge and ability to perform procedures or skills selected from the following list of competencies. These skills may be evaluated through a written test and/or a skill performance at ten (10) different stations.

1. **Employment Skills:** This station will consist of completing a job application and demonstrating interview skills. (Refer to the SkillsUSA Championships Technical Standards 2019-2020) Each contestant must submit a one-page typewritten resume prepared in advance to be handed in at the competition site on Friday. The following information must be contained in the one-page resume:
  - a. Name, Address and Phone Number
  - b. Career Objective
  - c. Education and Training
  - d. Work Experience (beginning with present employment listing specific responsibilities)
  - e. Community/Volunteer Work
  - f. Memberships, Major Accomplishments, Awards Earned
  - g. References Upon Request
2. **Academic Foundations** - CARE 1.0 Apply academic knowledge of life sciences as related to the health care professions.
3. **Safety** - CARE 6.0 Create a safe working environment.
4. **Career Opportunity Concepts** - CARE 3.0 Perceive major career opportunities and system available in health care.
5. **Communication Skills** - CARE 2.0 Express verbal and nonverbal communication skills CARE 4.0 Epitomize quality employment and teamwork skills.

# BASIC HEALTH CARE Continued

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6. **Ethical/ Legal - Care 5.0** Differentiate between law and ethics
7. **Infection Control / Advanced Asepsis - CARE 6.0** Create a safe working environment
  - 6.3 Practice infection control
  - 6.4 Employ standard safety precautions/body substance isolation techniques
  - 6.5 Demonstrate aseptic technique
8. **Measurements - CARE 4.0** Epitomize quality employment and teamwork
  - 4.2.1 Measure and record through 4.2.4 Time clock
9. **Emergency Care Component:** Perform basic adult, child, or infant CPR/ demonstrate emergency measures or treatments for choking, shock, bandages, splints and common medical emergencies. Latest American Red Cross/American Heart Association CPR standards will be used.
10. **Prepared Presentation** – each contestant will deliver a prepared 5-7 minute presentation.
  - a. The purpose of the presentation is to present a topic related to basic health care through demonstration, display and/or explanation. (see Scope of the Contest Section Presentation Guidelines and Purpose in the SkillsUSA Championships Technical Standards 2019-2020)
  - b. A presentation will be compact, no larger than 30" x 30" x 30". A 4' x 6' space and table will be available. Any visual aids (signs, charts, transparencies, slides, diagrams) are to be prepared by the contestants. No pressurized aerosol cans of any kind will be permitted, and no compressed air, gas, or flammable liquid may be used.
  - c. All employers' names and manufacturers' trade names must be covered or removed.
  - d. The demonstration will neither promote nor advertise any commercial organization or product.
  - e. The title should designate the exact nature of the presentation. Catchy titles are not appropriate to the scientific and educational purpose of the presentation.
  - f. The prepared presentation does not include another person acting as a patient.
  - g. Contestants will have access to a laptop and smartboard in the presentation room.

## PLEASE NOTE

1. All skills demonstrated will be based on nationally accepted accreditation and certification standards.
2. The latest American Red Cross/American Heart Association CPR standards will be used. Note: First Aid & CPR cards are not required for this event.
3. Refer to the 2019-2020 National SkillsUSA Championships and Technical Standards Book for further explanations.

### Observer Rules:

Observers will not be allowed to view the students during the competition.

Talking or gesturing by the observers may result in disqualification of the contestant.

Observers will not be permitted to communicate with contestants in the holding/assembly.









# FIRST AID/CPR CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *required for every contestant, failure to do so will result in a clothing penalty*

White scrubs, as shown

Hair must be off face and collar

Nails short and clean

White stockings / socks

White Lab coat (optional)

Clean all-white leather shoes (No canvas)

Athletic style shoes are acceptable, must meet criteria

NO personal name/school ID on clothing

NO heavy perfume/makeup/cologne

NO nail polish, gels or tips

NO gum chewing

NO jewelry except watch with second hand

NO open toes or open back shoes

NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Safety glasses

Watch with second hand

**STUDENTS SHOULD BE TRAINED IN BOTH CPR AND FIRST AID.**

**FOR THE CONTEST YOU WILL HAVE TO BRING CURRENT CPR CARD FROM EITHER THE AMERICAN HEART ASSOCIATION OR AMERICAN RED CROSS AND A CURRENT FIRST AID CERTIFICATION CARD FROM EITHER THE AMERICAN RED CROSS OR NATIONAL SAFETY COUNCIL**

### State Skills:

To evaluate each contestant's ability to react positively in simulated demanding first aid intervention and to recognize excellence and professionalism in the career and technical student's first aid skills.

1. Contestants will demonstrate their ability to perform procedures or take appropriate action based on scenarios presented related to the following topic areas:
  - CPR 1.0 Contestants will demonstrate competency to proficiently perform procedures or take appropriate action based on scenarios presented related to the following topic areas:
  - CPR 2.1 Demonstrate skills in performing CPR with AED (only college/postsecondary will demonstrate AED skills)
  - CPR 3.1 Demonstrate skills in performing CPR for child
  - CPR 4.1 Demonstrate skills in performing CPR for infant
  - CPR 5.1 Demonstrate skills in performing choking emergencies for conscious/unconscious adult
  - CPR 6.1 Demonstrate skills in performing choking emergencies for conscious/unconscious child
  - CPR 7.1 Demonstrate skills in performing choking emergencies for conscious/unconscious infant
  - CPR 8.1 Demonstrate skills in performing interventions and care for seizures/diabetic emergencies
  - CPR 9.1 Demonstrate care dealing with muscle, bone and joint injuries
  - CPR 10.1 Demonstrate care/control dealing with bleeding/wound care
  - CPR 11.1 Demonstrate care for first-degree, second-degree, and third-degree burns
2. All skills demonstrated will be based on nationally accepted standards as identified by the American Red Cross for first aid emergencies and the American Red Cross/American Heart Association for CPR and the National Safety Council. Latest American Red Cross/American Heart Association CPR standards will be used.
3. Contestants will take a written test that will constitute no more than 20% of the total score. Based on the American Red Cross and American Heart Association manuals.

## FIRST AID / CPR Continued

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4. Employability - each contestant must submit a one-page typewritten resume prepared in advance to be handed in at the competition site on Friday. The following information must be contained in the one-page resume:
  - a. Name, Address and Phone Number
  - b. Career Objective
  - c. Education and Training
  - d. Work Experience (beginning with present employment listing specific responsibilities)
  - e. Community/Volunteer Work
  - f. Memberships, Major Accomplishments, Awards Earned
  - g. References Upon Request

### Observer Rules:

Observers will be allowed to view the scenarios as the contestants participate provided there is space available.

Talking or gesturing by the observers may result in disqualification of the contestant.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Refer to General Regulations, 2019-2020 SkillsUSA Championships Technical Standards regarding photography rules.

# HEALTH OCCUPATIONS C

**SERIES DIRECTOR:**  
DEBORAH BRIGHTMAN

**CONTACT INFORMATION:**  
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NEW BEDFORD, MA 02745  
(508) 998-3321  
deborah.brightman@gnbvt.edu

## EVENTS:

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### EARLY CHILDHOOD EDUCATION

Briefing: Marlboro Room  
Competition: Blackstone - Health Services Shop—311B, 300B  
Event Manager: Judith Thornhill & Pauline McCready

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### HEALTH OCCUPATIONS PROFESSIONAL PORTFOLIO

Briefing: Marlboro Room, **bring notebook/binder**  
Employability Testing: Blackstone - At contest Site  
Competition: Blackstone - 502, 501  
Event Manager: Grace Gwozdz

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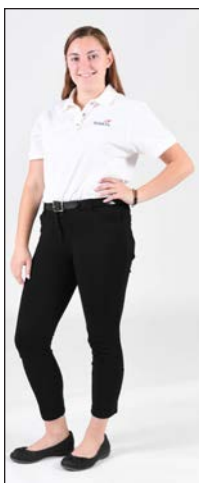
### MEDICAL MATH

Briefing: Marlboro Room, **bring resumé**  
Competition: Blackstone - 512A  
Event Manager: Grace Gwozdz

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### MEDICAL TERMINOLOGY

Briefing: Marlboro Room  
Competition: Blackstone - 533B  
Event Manager: Brenda Carvalho



# EARLY CHILDHOOD EDUCATION

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Black dress pants

Black shoes, no heels

White polo shirt, or official SkillsUSA polo shown

NO school ID or name on clothing

NO jeans or leggings

NO sneakers

NO cell phones allowed

NO heavy perfume/makeup/cologne

NO nail polish, gels or tips

NO gum chewing

Nails short and clean

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Provided by the Technical Committee:

Massachusetts Guidelines for Preschool Learning Experiences (the Green Book)

Social and Emotional Learning and Approaches to Play and Learning

Students will bring supplies needed to create their lessons, such items as:

Crayons

Elmer's glue

Wiggly eyes

Markers

Scissors

Construction paper

Glue sticks

Felt

Glue gun

Pipe cleaners

Storybooks about how plants grow, primary and secondary colors, the five senses, and the life cycle of a butterfly.

Misc. any other arts and craft supplies that they might want to use in creating your lesson.

No patterns, or templates are to be used. Just your own creativity.

### State Skills:

To evaluate a contestant's ability to plan and present age appropriate activities for pre-school age children relating to a specific theme and demonstrate a general knowledge of quality early childhood education.

### Major Project/Activity: (650 points)

Science: This lesson is designed for preschooler's ages 4 to 5 years old.

A felt board will be provided for the contestants on competition day, if they wish to use it.

The contestant will write a lesson plan for this lesson.

Contestants will choose from **one** of these Science lessons to present to a class of preschoolers.

The four Science lessons choices are:

a. How plants grow

b. Primary and Secondary Colors

c. The five senses

d. Life cycle of a butterfly

### Lesson Plan: (250 points)

The lesson plan should be detailed so that any person can easily read it and present the lesson.

All props for this lesson must be made at the competition. Nothing is to be pre-made.

### Presentation:

The presentation must be 5 to 7 minutes before a panel of 3 judges.

**(If under 5 minutes or over 7 minutes there is a penalty of -50 points.)**

## EARLY CHILDHOOD EDUCATION Continued

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The Massachusetts Guidelines (The Green Book) will be provided to the contestants on competition day. Also the Social and Emotional Learning, and Approaches to Play and Learning will be provided to the contestants on competition day.

### Early Childhood Education Rating Sheet:

<b>Presentation of Lesson:</b>	<b>650 Points</b>
Personal Qualities Skills	250 pts.
Presentation Technique Skills	200 pts.
Originality/Creativity Skills	100 pts.
Lesson Material	100 pts.
<b>Presentation's Lesson Plan:</b>	<b>250 Points</b>
Printing, Spelling, Neatness	50 pts.
Age Appropriate Teaching Methods	50 pts.
Age Appropriate Goals	50 pts.
Procedure and use of Materials Support Goals and Content Area	50 pts.
Five Areas of Lesson Plan Completed Correctly	50 pts.
<b>Quiz:</b>	<b>100 Points</b>
Time Penalty: over or under	minus 50 pts.
Resume: not turned in	minus 50 pts.
Clothing penalty:	minus 50 pts.



# EARLY CHILDHOOD EDUCATION LESSON PLAN OUTLINE

Contestant # \_\_\_\_\_

1. Goal: (Be Specific) \_\_\_\_\_

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2. Objectives: (Be Specific) \_\_\_\_\_

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3. Materials needed: \_\_\_\_\_

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4. Introduction/Motivation: \_\_\_\_\_

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5. Presentation: Explain it in specific details so that another person would be able to do this lesson following your lesson plan. \_\_\_\_\_

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6. Closure/Review: \_\_\_\_\_

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**Please list 5-7 standards:**

This image shows a single sheet of white paper with horizontal blue or grey ruling lines, typical of notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

**Please list 3-5 standards:**

[illegible]



# HEALTH OCCUPATIONS PROFESSIONAL PORTFOLIO CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire.

Nails short and clean

NO nail polish, gels or tips

NO gum chewing

NO school ID or name on clothing

NO heavy perfume/makeup/cologne

NO cell phones allowed

NO jewelry except watch with second hand

Refer to the 2019-2020 National Technical Standards for updates on requirements to the portfolio

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

### State Skills:

To recognize students for their successful development of a professional portfolio and evaluate the ability of an individual to present himself/herself to an employer using effective communication skills.

The contest will consist of two parts: (1) A notebook and (2) Live presentation by the contestant.

**Notebook:** Each contestant is required to submit an official SkillsUSA three-ring, 1-inch loose-leaf binder available from the current SkillsUSA Supply service Catalog. Photographs, news articles, illustrations and other informative material may be included to support and enhance written evidence of the contestant's participation in activities as described in the notebook. Pages must be limited to 25 (50 surfaces), divider pages do not count toward maximum numbers of pages allowed in the Notebook setup section.

**Notebook:** must include the following, presented in progressive order, and typed (hand written pages are not acceptable).

General order of setup of Notebook:

- Title Page-include name of contestant, name of school, grade, training program, and a picture of the contestant.
- Table of contents with page numbers.
- Components of an Employment Portfolio: organizations, professional appearance, (No handwritten or colored pages), White or beige pages.

### NOTEBOOK CONTENTS:

**Section I: Resume and Career Objectives: 40pts.**

Prepare a current resume. Students should include a written statement describing his/her career objectives, plans to achieve that objective, and competencies that have been met. (See PDP, Level 3.1 for assistance in developing your resume).

**Section II: References: 40pts**

Letters of reference from teachers, mentor, supervisors, employers, others who verify student's skill ability (Limit: three references).

**Section III: Awards and Recognitions: 40pts.**

Include copies of certificates, documentation of leadership activities, news articles and supportive material to serve as proof of your achievements. Reflect the highest level of achievement.

**Section IV: Work Sample Documentations: 200pts.**

Summary of work site experiences pertaining to health occupations. Students should distinguish project documentation that is a result of school-based learning and/or work-based learning. Can be supported with photographs that are reflective of the learning.

# HEALTH OCCUPATIONS PROFESSIONAL PORTFOLIO Continued

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## Section V: Community Service: 40pts.

List of activities conducted that provided a benefit to the community. Concentration should be on excellence and professionalism in the area of service.

- A. School based
- B. In the community outside of school

## Section VI: Membership and Affiliations: 40pts.

List of organizations and community groups in which the student is actively involved.

Total of 400pts for Notebook

### Live Presentation:

- a. Oral Presentation: students should be prepared to make a 5-7 minute presentation of their portfolio to the judges. Oral Presentation 200pts.
- b. Visual Presentations must be brought to contest on a flash drive. Contestants are to use the equipment supplied by the host school. Visual Presentation 100pts.
- c. Responses to questions: Contestants should anticipate questions from the judges. Responses 50pts.
- d. Closing. Closing remarks: 50pts.

Total of 400pts for Presentation

**Judging: Notebooks will be submitted on Thursday night at the contestant briefing. (Late notebooks may be accepted by Event Manager but will be subject to point deductions). The notebooks will be returned to the contestant at the end of the live presentation. Contestants will be required to report to the contest area at a designated time with all equipment for their presentation. Students will be required to stay until dismissed by the judges.**



# MEDICAL MATH CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Supplied by the technical committee: test problems with instructions, scratch paper and pencils

Supplied by the contestant: basic hand-held calculator (no graphing or scientific calculator [with fraction keys] will be permitted)

**Bring the resumé to the orientation meeting on Thursday night after opening ceremonies**

**Purpose:** To evaluate the students' ability to understand and solve mathematical problems commonly used in the various health care settings.

### State Skills:

1. The test questions will be taken from problems encountered in the medical field and are selected from the area that might be used in the real world applications. Contestants will demonstrate their ability to solve math problems that deal with the following area:
  - a. Measurements including vital signs, temperature conversions, and height and weight.
  - b. Metric and household measurements
  - c. Conversions
  - d. Ratio and proportion
  - e. Percentage
  - f. Intake and output
  - g. Roman numerals
  - h. Dosage calculations
2. The test will comprise 50 problems that will allow contestants the opportunity to utilize their problem-solving skills as well as their mathematical ability.
3. The contestants will have two hours to complete the test. No bonus points will be given for early completion of the test, and no contest will be allowed to go in or out of the testing site during the testing. Suggested references: "Standardized Medical Abbreviations"
4. Prepare a current resumé. **Students should include a written statement describing his/her career objectives, plans to achieve that objective, and competencies that have been met.** (See page 6 for assistance in developing your resumé).



# MEDICAL TERMINOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire.

Nails short and clean

NO nail polish, gels or tips

NO gum chewing

NO school ID or name on clothing

NO heavy perfume/makeup/cologne

NO cell phones allowed

NO jewelry except watch with second hand

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

2 No. 2 pencils

### State Skills:

To evaluate the knowledge of medical terminology and abbreviations of an individual preparing for employment in the health occupation field and to recognize outstanding students for excellence and professionalism.

Core standards from the medical terminology portion of the National Health Care Core Skills Standards Project make up the category from which questions are developed for the Medical Terminology contest.

### Skills Performance:

Contestants will demonstrate knowledge of medical word roots, prefixes, suffixes, and medical abbreviations by successfully answering the questions.

# METAL TRADES A

**SERIES DIRECTOR:**  
KEN GIACOMUZZI

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## EVENTS:

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### AUTOMATED MANUFACTURING TECHNOLOGY

Briefing: Northboro Room  
Competition: Blackstone - Facilities Garage—180D  
Event Manager: Mark O'Brien

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### CNC MILLING

Briefing: Northboro Room  
Competition: Blackstone - 131D  
Event Manager: William Weir

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### CNC TECHNICIAN

Briefing: Northboro Room  
Competition: Blackstone - Machine Shop—M130D  
Event Manager: Michael Pasciuto

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### CNC TURNING

Briefing: Northboro Room  
Competition: Blackstone - 139D  
Event Manager: Scott Brooks

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### SHEET METAL

Briefing: Northboro Room  
Competition: Blackstone - Metals Shop—150D  
Event Manager: Kendall Sprague

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### WELDING

Briefing: Northboro Room  
Competition: Blackstone - Metals Shop—150D  
Event Manager: Scott Houle





# AUTOMATED MANUFACTURING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Safety shoes

NO jeans

Safety glasses with side shields or goggles

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Provided by the Technical Committee:

Part(s) Design

Blank Diskettes or thumb drive

Competition Notebook

Material for Machining

Pencils

Provided by the Contestants:

CNC Machining center with:

Two Computers, a third may be utilized

Machinist vise

Hold-downs and clamps

Tool holders

End mills

One Computer loaded with CAD software for CAD program

One Computer loaded with software for CAM program

This computer must have an open full-sized PCI slot and Windows 98 or higher operating system.

This computer will be connected to the CNC machine.

One 6" dial or digital vernier caliper

One Calculator

One pair of 2/4" or 1" parallels

One soft-face hammer

One 6" or 12" steel rule

Licensed versions of the above CAD and CAM software

One dial indicator, Dial indicator must have 3/8" or 1/2" holding shank to fit into tool holder supplied by the technical committee.

**Purpose:** To evaluate each contestant's preparation for employment in automated manufacturing and the team approach to problem solving work environment. To recognize outstanding students for excellence and professionalism in the field of automated manufacturing technology.

### State Skills:

1. Teams must be composed of three members. Teams will demonstrate their ability to perform, exhibit, and compile skills and knowledge necessary from the following list of competencies determined by the technical committee.
2. The teams will be presented with dimensioned drawing(s) of a part(s) to prototype.
3. Each team will be issued a notebook. This will be a three-ring binder. Included in the binder will be all the necessary information and forms to complete the project. These forms will not be highly specific but will coach the teams. All binders, forms and drawings must be turned in to the judges at the end of the competition.
4. The competencies required for contestants to successfully compete are as follows:
  - a. Performing Mathematical and Measurement Calculations

# AUTOMATED MANUFACTURING Continued

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1. Measure work piece to the nearest .001 inch
  2. Calculate CNC speed and feeds
  3. Calculate stock utilization and setup
  4. Calculate tolerances
- b. Designing, Sketching, Planning Machine Work
1. Transfer information from drawing to CAD drawing
  2. Create CAD file for manufacturing
  3. Begin manufacturing documentation process
  4. Process Plan
  5. Plot CAD file #1
  6. Export CAD file
- c. Create Tool path (CAM file), CNC Code
1. Create process plan (Job Plan)
  2. Read-in CAD export file
  3. Create tool path
  4. Verify tool path
  5. Create CNC Code
  6. Send CNC code to machine tool
- d. Perform CNC Machining Functions
1. Verify CNC file existence
  2. Verify tool path
  3. Setup part on mill
  4. Set all offsets and tooling
  5. Adjust to speeds and feeds as needed
  6. In-process quality assurance
  7. Perform tool changes
  8. Perform multiple machining operations in one setup
  9. Verify (TQM) process and part
- e. Inspection of Part TQM process
1. Verify part to standards
  2. Document process

## Group Organizational Goal:

This is a group competition, and members may interact at will. The competition should run much like industry. The CAD operator will construct the part geometry, the CAM operator will generate the tool paths, and the CNC operator will do the setup and machine the part. When a team member has spare time, he or she will help others in the group.

One person should not dominate a team by doing the CAD drawing, the CAM tool path, and running the CNC machine while using the other members simply as support. The contest is designed to promote creativity in organization of production responsibility.

All group members are responsible for double-checking each other's work and quality control.

# AUTOMATED MANUFACTURING Continued

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## Special Note: Clarification of Rules

The scope of the contest states that the equipment supplied by the contestant will be two separate computers, one with CAD on it and one with CAM on it. SkillsUSA Massachusetts has decided that the computers that will be used do not have to remove any software to compete but will only be allowed to use one software program on each computer. IE one will be using a version of CAD and one will be using a version of CAM. At no time will contestants be allowed to use the CAD component of the CAM software. The Drafting student's ability to use his/her skills on CAD software is essential to the integrity of the contest and in the preparation of our students for the National level of competition. It is, however, important to allow the students the ability to create bounding boxes for the purpose of machinability only. This is an industry acceptable standard and will be put in place. This is the only CAD feature they will be allowed to use in their CAM software. Contestants will not be allowed to make any CAD Engineering changes to the parts in their CAM software. If you have any questions please contact the Series Director, using the contact information provided.

## The Following observer rules apply to all contests in Metal Trades A.

Observers will be allowed to view the students during the competition from the designated area only. Any infraction will result in contestant disqualification.

Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Talking to judges will not be permitted.

All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)



# CNC MILLING CONTEST

COMPETITOR LUNCHES SPONSORED BY HAAS

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Safety shoes

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Provided by the Technical Committee:

CNC Mill with proper holding devices

Workbench

Necessary hand tools and cutting tools

Necessary information and furnishings for judges and technical committees

Provided by the Contestants:

0-1" micrometer

6 inch caliper (digital or vernier)

Non-programmable calculator

Pencils and paper

Machinery's Handbook (optional)

Deburring tools (files, Emory cloth, etc.)

**Purpose:** To evaluate each contestant's preparation for employment in Computer Numeric Control machining. To recognize outstanding students for excellence and professionalism in the CNC machining field.

## Scope of Contest:

Each contestant will receive a dimensioned drawing and material to CNC-machine a part. Participants are expected to write a CNC program, set up the machine and tool offsets and machine a part without the use of CAD/CAM software. Only the part will be evaluated, not the CNC program. Participants are given 15 minutes to study the task and ask questions before beginning. The competition may run 6-8 hours, depending on the project design.

Competencies required are as follows:

### 1. Programming

- Write and verify CNC program without the use of CAM software (competitor has the opportunity to correct any program errors on the machine.)
- Display complete knowledge of DIN/ISO programming (G and M codes)
- Apply the correct use of cutter compensation (G41/G42)
- Adjust speeds and feeds as needed

### 2. Setup

- Setup machine and establish a zero reference point for machining the part
- Select and mount necessary tools from the provided set
- Establish tool offsets and enter them into the CNC machine control
- Enter any necessary tool corrections into the CNC machine control

# CNC MILLING Continued

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3. Perform mathematical calculations
  - a. Calculate CNC speeds and feeds
  - b. Calculate programming coordinates from the drawing
  - c. Calculate radius tangent points
4. Measuring
  - a. Measure test part to the nearest 0.001"
5. Communication
  - a. Read and interpret technical blue prints
  - b. Understand all symbols on technical blue prints, such as geometric tolerances, surface-finish symbols, corner-break symbols, etc.

**Test Project Scoring:** The three evaluation criteria for the test part are:

1. Conformity to Print:
  - a. Visual conformity and accuracy of part to drawing. (Look for shape and features of part)
  - b. Edges broken
  - c. Transition of surfaces
  - d. Part is burr-free
  - e. Damage to part (clamp marks, scratches)
2. Dimensions:

This is an objective scoring. Scores will only be granted if dimension is in compliance with the print. The score for each dimension will either be full points or zero points.
3. Use of Material:

Contestant will receive one piece of stock for the contest. Material may be Steel, Aluminum, Wax, or Delrin.

**The Following observer rules apply to all contests in Metal Trades A.**

Observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification.

Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Talking to judges will not be permitted.

All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)



# CNC TECHNICIAN

COMPETITOR LUNCHESS SPONSORED BY HAAS

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Supplied by the Technical Committee:

Haas Programmable Controller

CNC Lathe & CNC Mill

All tooling for program execution on CNC Lathe and Mill

Flash Drive if needed

Inspection equipment. (Inspection Station)

Deburring and finishing tools (Finishing station)

Supplied by the Contestant:

2 pencils

Scratch paper

Machinist Handbook

Trigonometry Book

Calculator

### State Skills:

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

Contestants will be judged on the following areas:

MILLING: Programing using HAAS Simulators, Program execution on HAAS CNC Mill. (Parts are judged as a finished Product)

TURNING: Programming and program execution on HAAS CNC Lathe (Parts are judged as a finished Product)

CNC Theory

G & M Codes

Blueprint Reading

Communications

Use of calculators, Machinery Handbook, Trig books are allowed at worksite. All miscellaneous worksheets, note cards, etc. that are not otherwise obtainable by all contestants are not allowed.

Contest site will provide all equipment and tooling for tasks required. Contestants will need to maintain a safe and professional working environment. Care and usage of tooling, inspection equipment, and overall workplace etiquette expected of a professional will be considered in final score.

# CNC TECHNICIAN Continued

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## CNC Technician Skills:

- Work Station 1A: CNC Machining - This station will allow competitors to program a HAAS CNC Turning center from prints, load and set tools and execute their program.
- Work Station 1B: CNC Machining - This station will allow competitors to program a HAAS CNC Milling Center from prints using a HAAS Simulator. Programs will then be loaded in to a HAAS CNC Milling Center to execute their program.
- Work Station 2: CNC Machining - Setup procedures- This station will allow a competitor to review a print/ program and pre-machined part. Competitor will properly mount the finished piece into the (HAAS) CNC Milling Center and locate a given datum point. No actual machining operations will take place at this station.
- Workstation 3: Measuring and Gauging - This session is performance based; competitors will physically measure and record actual parts through instructions and print specifications.
- Workstation 4: Print Reading and GDT - This station will allow competitors to interpret provided drawings and dimensioning/toleranceing.

These are subject to change slightly without losing main scope or ideas. There will be additional more timed workstations which will encompass simple tooling identification, program reading (identification of line by line code), and interviewing & employability assessments.

## The Following observer rules apply to all contests in Metal Trades A.

Observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification.

Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Talking to judges will not be permitted.

All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)





# CNC TURNING CONTEST

COMPETITOR LUNCHES SPONSORED BY HAAS

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Safety shoes

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Provided by the Technical Committee:

CNC Lathe with proper holding devices

Workbench Necessary hand tools and cutting tools

Necessary information and furnishings for judges and technical committees

Provided by the Contestants:

0-1" micrometer

6 inch caliper (digital or vernier)

Non-programmable calculator

Pencils and paper

Machinery's Handbook (optional)

Deburring tools (files, Emory cloth, etc.)

**Purpose:** To evaluate each contestant's preparation for employment in Computer Numeric Control turning. To recognize outstanding students for excellence and professionalism in the CNC turning field.

### State Skills:

Each contestant will receive a dimensioned drawing and material to CNC-turn a part. Participants are expected to write a CNC program, set up the machine and tool offsets and turn a part without the use of CAD/CAM software. Only the part will be evaluated, not the CNC program. Participants are given 15 minutes to study the task and ask questions before beginning. The competition may run 6-8 hours, depending on the project design.

Competencies required are as follows:

#### Programming

- Write and verify CNC program without the use of CAM software (competitor has the opportunity to correct any program errors on the machine.)
- Display complete knowledge of DIN/ISO programming (G and M codes)
- Apply the correct use of cutter compensation (G41/G42)
- Adjust speeds and feeds as needed

#### Setup

- Setup machine and establish a zero reference point for machining the part
- Select and mount necessary tools from the provided set
- Establish tool offsets and enter them into the CNC machine control
- Enter any necessary tool corrections into the CNC machine control

# CNC TURNING Continued

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## Perform mathematical calculations

- a. Calculate CNC speeds and feeds
- b. Calculate programming coordinates from the drawing
- c. Calculate radius tangent points

## Measuring

- a. Measure test part to the nearest 0.001"

## Communication

- a. Read and interpret technical blue prints
- b. Understand all symbols on technical blue prints, such as geometric tolerances, surface-finish symbols, corner-break symbols, etc.

## Test Project Scoring, the three evaluation criteria for the test part are:

### Conformity to Print:

- a. Visual conformity and accuracy of part to drawing. (Look for shape and features of part)
- b. Edges broken
- c. Transition of surfaces
- d. Part is burr-free
- e. Damage to part (clamp marks, scratches)

### Dimensions:

This is an objective scoring. Scores will only be granted if dimension is in compliance with the print. The score for each dimension will either be full points or zero points.

### Use of Material:

Contestant will receive one piece of stock for the contest. Material may be Steel, Aluminum, Wax, or Delrin.

## The Following observer rules apply to all contests in Metal Trades A.

Observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification.

Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Talking to judges will not be permitted.

All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)



# SHEET METAL CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Safety glasses

Tool box

Calculator

Hammer (sheet metal tinners)

12" or 24" Combination and framing square

Left and right aviation snips

Straight shears

8' min. Tape measure and 48" steel rule

Strapping tape rule

6" and 12" dividers

Pop rivet / blind rivet gun

30ct. 1/8" dia. x 1/4" long stl. blind rivets

40ct. 1/8" dia. x 3/8" long stl. blind rivets

Scratch gauges

Scratch awl

Center or prick punch

Hand dolly

Baldy Joe or use back end of vise grip

1/4" or 3/8" electric / battery drill

Two 1/8" or 9/64" drill bits

Flat blade screw driver

Two pencils and paper pad

Permanent marker pen

Steel protractor

20ct. #8 x 1/2" zip screws w/1/4" nut driver

Wooden or rubber mallet

Two 4" and one 7" or 8" straight jaw vise grips

One 11" C-clamp vise grip

Decimal Equivalent Chart

One 3/8" drill bit to hand ream out 1/8" holes

8" offset or str. Hand seamer or 3" wide blade clamping Vise Grip

### State Skills:

Contestants in the Sheet Metal contest are tested on their ability to perform such jobs as connecting sheet metal pieces with Pittsburgh seams and dovetails. Professional Sheet Metal workers judge contestants on the basis of use of hand tools, correctness of layout and shop safety procedures.

### Blue Print Reading Test:

Contestants will be tested in their knowledge of blue print reading.

### The Following observer rules apply to all contests in Metal Trades A.

Observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification.

Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Talking to judges will not be permitted.

All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)



# WELDING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Blue cotton work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

Head shield with filter plate lens

Welding hat

Gloves and leathers as needed (such as long sleeve welding jacket or shoulder sleeves with bib and apron)

**Long sleeve shirts** with a collar that fits up tight to the neck and shirt pockets should have flaps over them

**Safety: avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

NO wool or synthetic clothing

NO cuffs on pants

**NOTE: A WELDING OPERATOR MUST WEAR PROTECTIVE CLOTHING AND BE SAFETY CONSCIOUS WHILE WELDING**

**Tool Requirements: One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Supplied by the Technical Committee:

A. **The Technical Committee WILL BE PROVIDING ALL MATERIAL NECESSARY.**

B. All the necessary welding equipment to complete the projects

C. Instructions, blueprints and any other miscellaneous information required.

D. Aluminum plate will be supplied for the Aluminum weld test

**The contestants will NOT have to bring a helmet AND there will NOT be an advanced look at the print for the competition**

Supplied by the Contestant: **EACH CONTESTANT SHOULD HAVE THEIR OWN TOOL BOX.**

Combination square

Number stamp set

Vise grips

Welding helmet w/ #10 min. shaded lens

6' Tape measure (minimum)

Safety glasses

Chipping hammer with a wire brush attached

Hack saw with extra blades

Carbon Steel wire brush

GTAW and GMAW style welding gloves

Stainless Steel wire brush

Ball peen hammer

Half round metal file with a handle

Spark lighter

Soap stone

Assorted hand picks and cold chisels (deslagging)

### State Skills:

On contest day each competitor receives the 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. The contestant will be tested on various aspects of welding:

1. Contestants will work on a steel project, making welds in various positions utilizing: gas metal arc welding (GMAW) (both mild steel & SS filler wire processes), shielded metal arc welding (SMAW), Flux Core Arc Welding (FCAW), and gas tungsten arc welding (GTAW).
2. Contestants will weld an aluminum project. Welds are made in various positions using a variety of filler metals.

### The Following observer rules apply to all contests in Metal Trades A.

Observers will be allowed to view the students during the competition from the designated area only. Any infraction will result in contestant disqualification. Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area. Talking to judges will not be permitted.

All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)

# METAL TRADES B

**SERIES DIRECTOR:**  
CORY RUGG

**CONTACT INFORMATION:**  
PATHFINDER RTHS  
240 SYKES STREET  
PALMER, MA 01069  
(413) 283-9701  
crugg@pathfindertech.org

## EVENTS:

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### ENGINEERING TECHNOLOGY

Briefing: Westboro Room  
Employability Testing: At Contest Site  
Competition: Blackstone - 620D, Holding Room 640B  
Event Manager: Megan Abella-Bowen

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### MECHATRONICS

Briefing: Westboro Room  
Competition: Blackstone - 221C  
Event Manager: David Kempiski

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### WELDING SCULPTURE

Briefing: Westboro Room  
Competition: Blackstone - 202B  
Event Manager: James Tamulen



# ENGINEERING TECHNOLOGY

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

SkillsUSA will provide:

a space for the live model no bigger than 10' x 12'

one standard 120 volt electrical outlet

a space for the storyboard

one standard 8' conference table

Supplied by the contestant team:

live model cannot be hazardous in any way

if the live model is not conducive to being presented in an indoor facility, notify headquarters in advance to make arrangements

live models must be transported and set-up in the contest area by the contestant team. No help will be provided by SkillsUSA

NO cell phones allowed

### Purpose:

To recognize an outstanding engineering innovation project which has been developed by a three-member team of engineering students. The student team will present their innovative idea along with a display and live model.

### State Skills:

A team consisting of 3 students, all enrolled in the same educational institution during the current year. Students may be members of only one team per contest year. The project must be designed and constructed by students who are (or were enrolled immediately preceding the NLSC) enrolled in an engineering program (see definition in the eligibility section). Each team will have one storyboard explaining the new innovation they collaboratively worked on. Each storyboard may be smaller than, but may not exceed a maximum of 4' x 4'. The live model must be an accurate reflection of what is being claimed in the oral presentation. Importance is placed on the oral presentation that lasts no longer than ten minutes. Following the oral presentation, there will be a possible ten-minute question and answer session by the judging panel to clarify any questions that arise during the presentation. High school and college/post-secondary educational institutions are eligible to participate. Leadership from the team's career and technical instructor, academic teachers and business/industry is highly encouraged. The panel of judges will consist of engineers, engineering educators and members from business and industry.

**Judging Criteria:** Each engineering presentation will be judged according to its own merits and compliance with the listed criteria. Participants should read the guidelines carefully and make sure the project presentation covers all the criteria.

**Live model** – The live model is a working model that demonstrates the results of the teams' research and how the team has put their research into action (i.e. a newly designed air-intake system for a high mileage vehicle). The live model must accurately reflect the engineering design accomplishment referred to in the presentation. If judges wish, they will be able to inspect the model at the conclusion of the presentation.

**Presentation** – Students should demonstrate appropriate mastery of the engineering project. Each student should take an equitable role during the allotted time. The presentation given by the entire group should reflect excellent presentation skills, clear communication and explanation of the technical process related to the engineering innovation and design project. The use of technology presentation equipment is highly encouraged to convey a clear presentation.

# ENGINEERING TECHNOLOGY Continued

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**Integration of business and industry** – The project must demonstrate evidence of the integration and involvement of business and industry related to the engineering field. This involvement might take many forms (i.e., technical assistance), but must be evident during the presentation process. The team must have engaged business and industry in at least one phase of the project – research, planning, and/or construction of the model or assistance in a quality presentation.

**Storyboard presentation model** – The storyboard will chronicle the history of the innovation from idea to reality. The storyboard will be rated on gaining attention, explaining the engineering process involved, quality, imagination and overall effectiveness as a history of the project.

**Overall effect** – The entire presentation and supplied materials (i.e., storyboard, live model, etc) were projected in a businesslike and professional manner. The live model and presentation materials were well organized. The students' display of knowledge and clear connection to engineering business/industry has been firmly established.

**Observer Rule:** No observers will be permitted during the judging phase of the team presentation.

Live models and presentation displays may be viewed on the day of the competition. All teams will be invited to repeat the team presentation to the public following the judging phase.

**The Following observer rules apply to all contests in Metal Trades B.**

Observers will be allowed to view the students during the competition from the designated area only. Any infraction will result in contestant disqualification.

Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Talking to judges will not be permitted.

All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)





# MECHATRONICS CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Mechatronics Technical Committee provides:

Laptops with FluidSIM software	Terminal Strip	Mechanical, fluid power, electronic components
Status Box	Pneumatic tubing and cutter	24 VDC 2 AMP Power supply (for components)
Mini Compressor	Integration cables and patch cords (for components)	3' x 6' workstations
2 Chairs at each workstation	110VAC at each workstation	

SkillsUSA and Festo partners will be providing Meclab kits for the state competition

Teams provide:

Pen/pencil	Safety glasses	Small Screw Drivers (Phillips and Regular)
Multimeter	Wire Cutter/Stripper	Allen Wrench Set (Inch and Metric)
Open-Ended Wrenches (Inch and Metric)		

### Scope of Contest:

To better reflect the emerging industrial technology called "Mechatronics", this year's competition will include mechanical, fluid power, electronic and control components. Teams of 2 students will be required to assemble, integrate and program these components to create an automated system capable of completing a specific task. Programming can be done with committee-provided FluidSIM software. Scores will be based on task completion, accuracy and efficiency.

### Control System Notes:

**This year the use of a PLC will not be allowed for secondary (high school) students in an effort to provide a fair and equitable contest for all participants. In the past there has been some concern regarding the use of PLC's for the Mechatronics competition. After a review of the national contest and the wording of the state contest, it has been decided that the use of PLC's should only be for students competing at the post-secondary level. Please refer to the 2019-2020 SkillsUSA Technical Standards for additional information.**

The Following observer rules apply to all contests in Metal Trades B.

Observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification. Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Talking to judges will not be permitted. All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)





# WELDING SCULPTURE CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant,*

*failure to do so will result in a 50-point penalty*

Supplied by the Technical Committee: One 4-foot table

Supplied by the Contestant: Student designed and produced sculpture, Professional-detailed portfolio of the sculpture's creation

### State Skills:

The contest is designed to assess the ability of the competitor to create a concept and produce a sculpture of that design, as well as give a presentation regarding all aspects of his or her creation of the design.

Part 1. Evaluation of the Sculpture

Part 2. Oral presentation and questions and answers session. All contestants will be asked the same questions, determined by the judges, before the start of the contest

### Contest Guidelines:

#### Sculpture Design and Workmanship:

Materials used must be ferrous or non-ferrous metals. The sculpture must be an original and creative work of the student. Sculptures may be welded, brazed, or soldered, depending on the material used. Projects are to be left unpainted, including primers and other opaque coatings. All copyright laws must be followed in the creation of the design. Sculptures may be delivered to the contest site on **Thursday, April 25th, 2019 between the hours of 12:00 noon and 3:00 p.m.** The sculpture must be one continual piece, not multiple pieces unconnected. The sculpture cannot exceed the maximum size of 18" tall x 12" wide x 18" long and cannot exceed a weight of 250 lbs.

#### Portfolio:

A portfolio must be placed with the sculpture prior to judging. It must be tabbed and must contain pictures and supporting evidence (i.e. receipts). It must include a description of the concept development and manufacture of the project and processes used to develop the sculpture. A hard copy portfolio must be submitted if part and presentation is to be considered for judging. The first page of the portfolio must include a letter certifying that the sculpture was designed and constructed by the student. The letter must contain an itemized list of all expenses. The letter must identify the school, city, state and local advisor. The letter must identify the student to be interviewed, division (high school or post-secondary), and the letter must be signed by the instructor and vocational-director or principal.

**NOTE: A digital copy of the portfolio must be submitted to: [crugg@pathfindertech.org](mailto:crugg@pathfindertech.org) NO LATER THAN April 22, 2019 at 5:00 p.m. All portfolio documentation must be submitted as .pdf to eliminate software issues.**

#### Presentation:

The student will participate in a 4 to 5 minute presentation. Elements of the presentation should include:

1. General information (Individual's name, school, and title of project).
2. Discuss elements of the portfolio (concept, material, design and manufacture).
3. Inspiration for project design.
4. Details of processes and workmanship in the sculpture.

## WELDING SCULPTURE Continued

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### Question and Answer Session:

After each presentation the individual will be asked questions from the judges. Questions will be about the sculpture, presentation, materials, processes and workmanship.

### The Following observer rules apply to all contests in Metal Trades B.

Observers will be allowed to view the students during the competition from the designated area only. Any infraction will result in contestant disqualification.

Talking or gesturing by the observers may result in contestant disqualification.

Observers will not be permitted to communicate with contestants in the holding/assembly area.

Talking to judges will not be permitted.

All communications are to be directed to the series director only and only at the end of the contest.

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)

# OCCUPATIONAL SUPPORT TRADES A

**SERIES DIRECTOR:**  
MARK HAMILTON

**CONTACT INFORMATION:**  
KEEFE TECHNICAL SCHOOL  
750 WINTER STREET  
FRAMINGHAM, MA  
WORK (508) 416-2321  
CELL (617) 803-6870  
mhamilton@jpkeefehs.org

## **EVENTS:**

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### **PRINCIPLES OF ENGINEERING TECHNOLOGY**

Briefing: Boxboro Room  
Employability Testing: At Contest Site  
Competition: Blackstone - 308B, 309B  
Event Manager: Jessica Perry

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### **TECHNICAL COMPUTER APPLICATIONS**

Briefing: Boxboro Room  
Competition: Blackstone - Business Tech Shop—401B  
Event Manager: James Sullivan

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### **WEB DESIGN**

Briefing: Boxboro Room  
Competition: Blackstone - Computer Labs—510, 511  
Event Manager: Steve King

# PRINCIPLES OF ENGINEERING TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

Please refer to the 2019-2020 SkillsUSA Technical Standards for additional information

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### EMPLOYABILITY SKILLS TESTING:

Employability Skills Testing takes place at the contest site.

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2019-2020 SkillsUSA Championships Technical Standards  
available on-line to all professional members



# TECHNICAL COMPUTER APPLICATIONS CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

2 #2 Pencils with erasers

1 Tablet of paper

**Hardware:**

IBM PC's

**Software:**

Office Products including: Word, Excel, PowerPoint, Access and Windows 10. The host site has Office 2016 and that will be the preferred product. If you would like to use another version please contact the series director ASAP.

**State Skills:**

The contest will test the student skills through written exam, which will covers the installation and operation of the software, hardware and cabling plus general computer support knowledge. Topics also include information as related to the Internet, networking and data sharing. A practical exam will test the students skills using Microsoft Office 2016 or later, specifically Word, Excel, and PowerPoint.



# WEB DESIGN CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Pencil and paper for storyboard/wireframe

**Hardware Requirements:** The team must provide all the computers, and interconnecting equipment.

**Software Requirements:** Any software can be used as long as it is properly licensed.

### **Purpose:**

To evaluate each member teams preparation for employment and to recognize outstanding students for excellence and professionalism in the field of web development.

### **State Skills:**

The contest will require each team to build a web-site.

### **Hands-on Evaluation:**

Each team will be required to build a web-site for a non-profit organization. Each team will be given a flash drive with graphics, which can be used. They may be altered as the team sees fit. Teams will be required to submit a wireframe/storyboard to show their planning process. There will be no server side scripting or web server requirements. All projects will be submitted to the judges via a memory stick. **Any previously developed documents or graphics that are used by the team will disqualify that team.**

# OCCUPATIONAL SUPPORT TRADES B

**SERIES DIRECTOR:**  
KATIE CUNNINGHAM

**CONTACT INFORMATION:**  
BLACKSTONE VALLEY RTHS  
65 PLEASANT STREET  
UPTON, MA 01568  
(508) 529-7758 EXT. 2012  
kcunningham@valleytech.k12.ma.us

## **EVENTS:**

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### **COMPUTER PROGRAMMING**

Briefing: Boxboro Room  
Competition: Blackstone - Computer Lab—625D  
Event Manager: TBA

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### **INFORMATION TECHNOLOGY SERVICE**

Briefing: Boxboro Room  
Competition: Blackstone - IT Shop—011B  
Event Manager: Scott Soucy

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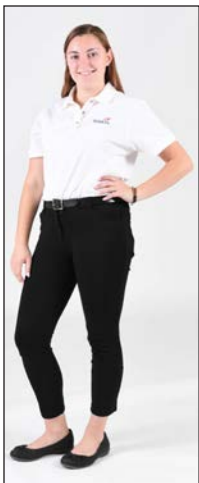
### **INTERNETWORKING**

Briefing: Boxboro Room  
Competition: Blackstone - IT Shop—010B, 011B  
Event Manager: Steve Ricciardi

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### **TELECOMMUNICATIONS CABLING**

Briefing: Boxboro Room  
Competition: Blackstone - Computer Lab  
Event Manager: Walter Ramsey



# INFORMATION TECHNOLOGY SERVICE CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Black dress pants

NO jeans or leggings

Black shoes, no heels

NO sneakers

White polo shirt, or official SkillsUSA polo shown

NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

1. Supplied by the technical committee:

All materials, schematics and equipment required for the contest. Internet whitepaper documents or Internet research documents are not permitted. If determined by the committee such documentation is required for the module, the technical committee will supply it.

2. Supplied by the contestant:

- a. Pencils
- b. Basic hand tools suited for accessibility to a device, such as screwdrivers, needle-nose pliers, etc.
- c. Anti-static wrist strap with alligator clip end. Straps must be in proper working order.
- d. Digital multi-meter
- e. Contestants may bring diagnostic software with proof of ownership such as original disk or original software license, proof of payment of shareware license fee, or proof of software released into public domain (freeware)
- f. Contestants may use standard technical data reference books such as those that include BIOS codes, HDD parameters, etc. Books normally used as a classroom text will not be permitted
- g. Contestants may use malware detection and removal software with proof of ownership, as described in Item E
- h. All competitors must create a one-page résumé, which will be submitted at the contest site the day of the actual contest

### State Skills:

The purpose is to evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of information technology. The contest is defined by industry standards as determined from elements of the CompTIA A+ including elements of Network + and Security + guides. Certification objectives may be found at the following website: [www.comptia.org](http://www.comptia.org). These are also free by request. Write to: CompTIA 3500 Lacey Road, Suite 100, Downers Grove, IL 60515; 630-678-8300.

### Skill Performance:

This portion of the contest will be a series of modules through which each contestant will rotate on a fixed time schedule to troubleshoot end user computing issues. Adaptive research is not in the current scope of the contest.

### Contest Guidelines:

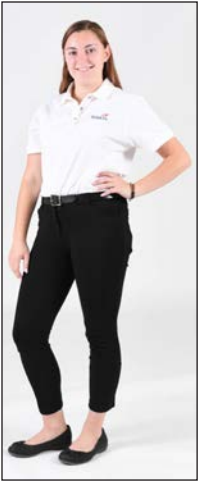
1. The contests will have several hands-on skill scenarios that demonstrate one's entry-level employment skills selected from the list of competencies as determined by the SkillsUSA technical committee. Scenarios may include but are not limited to the following:
  - a. Diagnose and service client issues with their relation to server or network interaction
  - b. Diagnose and resolve operating system and startup problems
  - c. Demonstrate ability to use utility software, drives and other peripherals



## INFORMATION TECHNOLOGY SERVICE Continued

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2. The software problems will relate to Windows operating systems, powershell and command-line skills.
3. Contestants will be awarded points based on their ability to solve problems or complete tasks within the allotted time. Partial points may be awarded for solving partial problems.
4. Competence is determined when the contestant acquires 60 percent of the available points.
5. Contestants will be provided, as required, manufacturers' documentation of the devices to be installed and/or serviced.
6. Winners will be determined on the basis of their total scores.
7. Specific penalties will be assessed for the failure to properly use anti-static straps at all times when in contact with the contest equipment. Penalties will be assessed at 5 points per occurrence, and notice of infractions will be communicated to the contestant when they occur.
8. Penalties will be assessed for failure to follow a judge's instruction that results in damage or loss of equipment or when improper handling is determined. Penalty may be assessed up to 10 points per infraction.



# COMPUTER PROGRAMMING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Black dress pants

NO jeans or leggings

Black shoes, no heels

NO sneakers

White polo shirt, or official SkillsUSA polo shown

NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

**All equipment is to be supplied by the contestant**

Recommending that students download the free copy of Visual Studio 2017 Download or newer version and/or Microsoft C Sharp to prepare for the contest. Contest can be presented in either software application.

Flash drives will be provided to store the completed program, which will be left with the judges

The students are required to have Visual Studio 2017 Community Edition <https://www.visualstudio.com/downloads/>

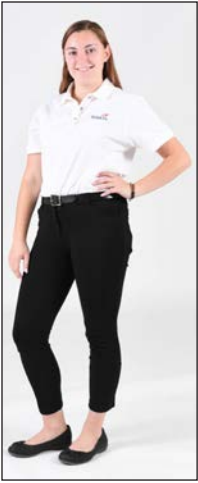
One reference manual

### Purpose:

To evaluate the contestants knowledge and understanding of computer programming and to evaluate the students preparation for employment in the software industry.

### State Skills:

Contestants will build a business application in Windows Desktop application in C# or Visual Basic. Skills include concise well documented code, good User Experience and proper use of coding conventions, exception handling and a good general knowledge of application design.



# INTERNETWORKING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Black dress pants

NO jeans or leggings

Black shoes, no heels

NO sneakers

White polo shirt, or official SkillsUSA polo shown

NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Pencil and paper (for notes)

### Equipment Provided for Contest:

Cisco Routers

Cisco Switch

All Cat 5e Cables

All V.35 Cable Used to Interconnect Network Equipment

Computers

Console Cables for Network Equipment

**Purpose:** To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of internetworking.

### Written Evaluation:

The purpose of the written portion, of the contest, is to test a student's complete knowledge of Internetworking. Questions from the written evaluation will be taken from the following general Internetworking topic areas:

OSI model and industry standards

Network topologies

IP addressing, including subnet masks

Basic Network Design

Beginning router configurations

Routed and routing protocols

Advanced router configurations

LAN switching theory and VLANs

Advanced LAN and LAN switched design

WAN theory and design

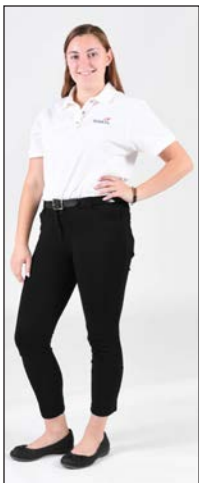
WAN technology, PPP, Frame, Relay, ISDN

Network troubleshooting

### Hands-on Evaluation:

The purpose of the hands-on component of the contest will be to test a student's ability to design, install, and maintain Internetworks. Given a set of networking equipment (cable, switch, routers, etc.), the students must, in a finite amount of time, install network equipment and configure.

This would be similar to doing an installation at a trade show. The vision and context is that client companies would request a demonstration booth which runs a particular Internet application – and students, given equipment and tools, would provide the appropriate connectivity for the application to run successfully.



# TELECOMMUNICATIONS CABLING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Black dress pants

NO jeans or leggings

Black shoes, no heels

NO sneakers

White polo shirt, or official SkillsUSA polo shown

NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

**NOTE: IF THE CONTESTANT DOES NOT HAVE TOOLS THEY WILL BE DISQUALIFIED. NO TOOLS WILL BE PROVIDED AT CONTEST SITE**

Supplied by the technical committee:

Mock wall, Cable Ladder, Equipment Racks, Racks, Cable, Patch Panels, Telecommunications Outlets, Termination Blocks and Modular Plugs

Other Various Connectors

Fiber Optics Connectors

Supplied by contestant:

- a. Personal eye protection and Hard Hat
- b. Stripping Tools
- c. 8 pin modular plug crimping tool
- d. Cable prep tool for F-style compression connector using RG 6 Cable
- e. F-style coax compression tool
- f. Compression tool to do BNC and RCA connectors
- g. Electrician's scissors
- h. Probe-pics
- i. Volt ohmmeter (needed to test continuity), 4 pair tester and Coax tester or combo tester
- j. Electrical tape
- k. Cable tester
- l. Fish tape
- m. Other cable/wire preparation and installation/termination tools
- n. Cable labeling device
- o. Tone Generator and probe
- p. 6 inch tie wraps

## State Skills:

### Knowledge Performance

The purpose is to evaluate each contestants preparation for employment, to recognize outstanding students for excellence, and professionalism in the field of Information technology. The contest includes a written knowledge exam to assess knowledge of structured cabling. Questions from the written evaluation will be taken from the following general telecommunications cabling topic areas and are verbalized in the attached competencies: cable pulling, copper media (UTP cabling), grounding and bonding, horizontal cabling, installation of support structures, plans (blueprint and drawing), safety practices, splicing, standards and codes, telecommunications cabling systems, testing UTP cabling, transmission theory and troubleshooting.

# TELECOMMUNICATIONS CABLING Continued

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## Skill Performance:

The purpose of the hands-on component of the contest will be to evaluate the ability to install, terminate and manage telecommunications cabling.

## Contest Guidelines:

1. An installation will be tested to industry TIA/EIA standard requirements.
2. The cabling project must be completed within the given time and certified for use.
3. Equipment and tools needed to install the appropriate connectivity for the project will be provided by the contestant.
4. Skills that are to be evaluated are outlined in the competencies provided by the contest technical committee. Standards are congruent with those established by the ETA Competency Requirements for Certified Data Cabling Installers.
5. Contestants should have a 10-hour OSHA Card

For students interested in voice and data network cabling and installation, this competition tests to worldwide industry standards for data and voice connections, physical and logical networks and signal transmission. Contestants demonstrate skills in reading network design documentation, parts list set-up and purchase, pulling and mounting cable, choosing wiring closets, patch panel installation and termination, installing jacks and cable testing. Both CAT 5/6e and fiber optics cable connector are presented.

The contest stresses safety and working effectively in group environments as well as customer service skills. Student will build:

**EIA/TIA Color Wire Standard for T568B or T568A will not be provided to contestants or used by the contestant when building the describe cables.**

## Cables to be terminated and tested:

1. Cat6 cable from bottom of wall (jack plate) up and over head to punch-down panel to the designated terminal.
2. Coaxial cable crimped at both ends one end screwed onto jack plate at bottom of wall, the other end will be left hanging next to punch-down panel run with the Cat6 cable.
3. A Cat5e cable terminated to the 66 block on the left run up the outside wall to the wire trough hanging from the ceiling and across to the punch-down panel to the designated terminal.
4. A 25 pair cable terminated at 110 blocks on right side of wall run into wall and left hanging. This is for demonstrating knowledge of color code termination only.
5. We will have a selection of fiber optic cables with various connectors on them that the contestant must write down and identify the different terminals.
6. Contestant will assemble two cables on a bench and demonstrating knowledge of color code termination only.

# SERVICE OCCUPATIONS A

**SERIES DIRECTOR:**  
HEATHER K. McCALL

**CONTACT INFORMATION:**  
GREATER LAWRENCE RTHS  
57 RIVER ROAD ANDOVER, MA 01810  
(978) 686-0194 Ext. 2017  
hmccall@glts.net

## EVENTS:

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### COMMERCIAL BAKING

Briefing: Seminar Room  
Competition: Blackstone - Baking Kitchen—143D, 019D  
Event Manager: TBA

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### CULINARY ARTS

Briefing: Seminar Room  
Competition: Blackstone - Culinary Kitchen—140D, 019D  
Event Manager: Richard McKinney

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### RESTAURANT SERVICE

Briefing: Seminar Room  
Competition: Blackstone - 3 Seasons Dining Room 142D, 019D  
Event Manager: Suzanne Bagnera



# COMMERCIAL BAKING CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

Baker/Chef uniform without school name  
White chef's scarf (Optional)  
Pen, Pencil, Black Sharpie  
Non-Slip Black Work shoes  
White chef's hat, (paper or cloth)

Apron (white)  
4 side towels,  
Pocket Notebook  
No Sneakers allowed  
No cell phones allowed

Hair net  
2 cleaning rags  
No nail polish/No artificial nails  
NO jewelry

**CONTESTANTS WILL NOT BE ALLOWED IN THE CONTEST AREA WITHOUT CORRECT SHOES.  
EACH CONTESTANT WILL BE GRADED ON DRESS AND SANITARY WORK HABITS.**

**Tool Requirements:** One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty

- |  |  |   |
|--|--|---|
| 1 - Hand rolling pin or  | 1 - Grease brush                                   | 1 - Regular rolling pin                           |
| 2 - Muffin tins  | 1 - Pastry wheel (straight or fluted)              | 1 - Egg wash brush                                |
| 3 - 9" Pie tins (no deep dish)                                     | 1 - Bench brush                                    | 1 - Metal bench scraper                           |
| 1 - Hand whip  | 1 - Plastic scraper                                | 1 - #10 or #12 Scoop                              |
| 1 - Rubber spatula   | 1 - Dough thermometer                              | 3 - Pastry bags at least 3                        |
| 1 - Glaze brush  | 1 - Bench canvas (approximately 3' x 5')           | 3 - Spatulas (2 straight, 1 off-set)              |
| 1 - Wooden spoon   | 1 - Dough knife                                    | 1 - Asst. Cake decorating tips with food coloring |
| 1 - Pair of scissors   | 1 - Cake turn table                                | 1 - Lg. kitchen spoon                             |
| 1 - Timer  | 1 - Paring knife                                   | 1 - Serrated knife                                |
| 1 - set measuring spoons   | 1 - Baker's Scale, spring scale, or digital scale) | Graduated Measures (cup, pint, quart, gallon)     |
| 4 - S/S side bowls (1 - 8 qt. capacity, 3 - 3/4 to 1 qt. capacity) |  |   |

### Optional Tools:

Cream Horn Irons

Round or fluted cookie cutters only

**No other food items allowed (e.g., sprinkles, decorates, etc.) DECORATING ICING WILL BE PROVIDED BY THE HOST SCHOOL.**

ALL FORMULAS WILL BE PROVIDED. Serve Safe/HACCP sanitation procedures will need to be followed.

### National Skills:

The commercial baking contest covers a variety of production techniques and knowledge of the modern baking industry. The contestants are given a written test covering basic baking science. The performance phase is the actual preparation of goods and presentation of finished products ready for sale to customers. Contestants are given a predetermined selection of all necessary food items.

### State Skills:

Each contestant will be supplied with the raw ingredients and/or ready-to-use dough(s) to produce bakery items. Formula and mix/bake procedures for each item, with the exception of cake icing, white, will be provided to each contestant.

Contestants will also be graded on the following: Scaling, Mixing, Dough Make-up Skills, Batter Mixing Methods, General Baking and Finishing, Presentation

## COMMERCIAL BAKING Continued

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### Each student receives:

2 lbs. Puff Pastry Dough (or 3 sheets)  
2 lbs. Danish Pastry Dough  
Recipe for White Bread Dough  
Recipe for Pie Dough  
Recipe for Muffin Batter  
2 cake layers (or one cake to be split)  
Frosting  
Fillings

### Each student will prepare:

From the Bread Dough:

(raw dough weights)

1 12 oz. pan loaf  
1 12 oz round loaf  
2 three strand braided loaves 18 oz each loaf  
1 sheet pan of 2 oz. single knot dinner rolls

From Puff Pastry Dough: Prepare 3 varieties of Puff Pastry Products

From the Danish Dough: Prepare 3 varieties of Danish

Prepare Pie Dough:

Prepare one 9" two crust pie  
Prepare one 9" lattice top pie  
Using 1 #12 ounces of fruit filling

Students will cut and fill and decorate two (2) cake layers with the inscription of "Happy Birthday"

Two (2) different styles of borders

Three (3) to five (5) roses, leaves, appropriately colored and decorated for size of cake.

Cake will be professionally presented.

Pie Dough Recipe:

20 ounces Pastry flour  
14 ounces Shortening, all-purpose  
6 ounces Cold water  
2 teaspoons Salt  
1 ounce Sugar

1. Gather ingredients and equipment.
2. Rub or cut shortening into flour to form nuggets the size of peas.
3. Dissolve salt and sugar in water.
4. Add water mixture to flour mixture.
5. Refrigerate. Use as needed



## COMMERCIAL BAKING Continued

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### Blueberry Muffin Recipe:

8 ounces	Sugar
1½ ounces	Butter, unsalted
1⅓ teaspoon	Salt
1 teaspoon	Vanilla extract
5 ounces	Eggs
9 ounces	Bread flour
1¼ ounce	Baking soda
9 ounces	Sour cream
7 ounces	Blueberries, frozen

1. Gather ingredients and equipment.
2. Preheat oven. Grease muffin pans or line with muffin liners.
3. Cream sugar, butter, salt and vanilla together.
4. Add half of the eggs and cream together for one (1) minute. Scrape bowl. Add rest of eggs and cream for one (1) more minute.
5. Mix flour and soda together and add to mix. Mix until flour is absorbed into mixture.
6. Add sour cream and scrape bowl for one (1) minute until blended.
7. Fold in blueberries into batter.
8. Scoop with appropriate-sized scoop.
9. Bake 20-25 minutes or until golden brown and springy.

### White Pan Bread Recipe:

2½ pounds	Bread flour
4 ounces	Sugar
4 ounces	Shortening
2 ounces	Dry milk
1 ounce	Dry active yeast
1 ounce	Salt
4 ounces	Eggs
1¼ pounds	Water

1. Gather ingredients and equipment.
2. Dough temperature: 80°F
3. Allow dough to rise (approximately 90 minutes) punch and allow to rise again. (Approximately 45 minutes)
4. Make up bread products as indicated.
5. Wrap excess dough and leave on rolling rack.
6. Finish fermentation and bake 400°F.

**Notes:** Students should come to competition with a work schedule and notes.



# CULINARY ARTS CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Baker/Chef uniform without school name	Apron (white)	Hair net
White chef's scarf (Optional)	4 side towels	2 cleaning rags
Pen, Pencil, Black Sharpie	Pocket Notebook	No nail polish/No artificial nails
Non-Slip Black Work shoes	No Sneakers allowed	NO jewelry
White chef's hat, (paper or cloth)	No cell phones allowed	
No school I.D. may be worn on any part of the uniform.		
A 10% point total will be deducted for infractions or unprofessional looking contestants.		

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Equipment:	1 ea. - Food Mill, small	1 ea. - Wire bowl sieve
2 ea. - S/S Bowls small and medium	1 ea. - Portion scale	1 ea. - Instant Read Thermometer
1 ea. - Graduated Measuring Containers – Cup, Quart, Half Gal.		

Pots and Pans:	2 ea. - Sauce pan 1 qt.	2 ea. - Sauce pan 2 qt. with cover
2 ea. - Sauté pan 10"-12"	1 ea. - Cast Iron Skillet 10"-12"	

Knives:	1 ea. - Paring knife	1 ea. - French knife
1 ea. - Serrated knife	1 ea. - Boning knife	1 ea. - Butcher's steel

Hand tools:	1 ea. - Solid and slotted spoon	1 pr. - Tongs
1 ea. - Wooden Spoon	1 ea. - Potato peeler	1 ea. - Zester
1 ea. - Ladle, 8oz	1 ea. - Parisienne scoop	2 ea. - Rubber spatula
1 set - Graduated measuring spoons	1 ea. - Wire Wisk, med.	

**Specific listed tools are not required, but you will not be given tools at the site Tools that are not listed above will not be allowed**

Judges will check that each contestant has only the exact tools and equipment stated.

**NO OTHER TOOLS AND EQUIPMENT ARE ALLOWED, INCLUDING UNIFORMS.**

**PLEASE MARK EACH PIECE OF EQUIPMENT** with your initials only (attach a piece of masking tape and mark with a marker).

Note: Familiarize yourself with the following:

CIA Chart of Vegetable Cuts  
Avocado  
Shallots

### State Skills:

The contest for culinary arts is a five (5) hour competition, encompassing both hot and cold food preparation and presentation. Contestants are rated on their technical culinary skills, sanitation and food safety techniques, and above all, the quality of their prepared items, particularly their creative presentation.

NOTE: EACH CONTESTANT WILL PREPARE A MEAL FOR FOUR PEOPLE. THE CONTESTANT WILL PLATE TWO PORTIONS OF HIS/HER CHOICE, ONE FOR TASTING. RECIPES ARE PROVIDED VARIATIONS OF RECIPES ARE ALLOWED.

## CULINARY ARTS Continued

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### Meat Fabrication:

Contestants will breakdown and fabricate one (1) whole chicken into 8 pieces and be presented to the judging panel before proceeding.

### Knife Work:

Contestants will demonstrate and identify 5 different knife cuts and display them to the judging panel before utilizing in the recipes or cooking process.

### Hot/Cold Food Preparation and Presentation:

Utilizing the fabricated chicken along with other available food items, the contestant will produce two plates/portions the following food items to the judging panel. There are recipes included in this packet; you are NOT required to adhere to them and variation is allowed but you may only use the available food items.

Sautéed Chicken Breast Entrée– Served with appropriate Sauce, Starch and Garnish

Braised Chicken Leg/Thigh Entrée– Served with appropriate Sauce, Starch and Garnish

Appetizer– Generally utilizing the Wing Portions of the Chicken served with appropriate Sauce

Chicken Broth– Prepare Chicken Broth/Stock utilizing the carcass and scraps of the fabricated Chicken

Minestrone Soup– 2 portions of soups , variation of recipe allowed

Rice Pilaf

Broccoli with Hollandaise Sauce

Glazed Carrots

Salad with an Emulsion Dressing

Variations of recipes are allowed

### Note to Contestants:

1. Read each recipe carefully prior to beginning. **All recipes have been included on the following pages.**
2. Underline items which must be cooked and cooled, or which must sit prior to cooking.
3. Check all your ingredients prior to cooking. Notify a judge immediately if you are missing an item.
4. Prepare your items according to the time each item requires for cooking, holding, maintaining, chilling, etc. Note well any items, which require special handling, such as "keep warm" or "chill." However, remember that you will present your menu in the following order as soon as they are ready.
  - A. Appetizer
  - B. Soup
  - C. Salad
  - D. Entree/Vegetable/Starch (must be presented as a unit)

**The contest manager will keep you informed of the remaining time.**

## CULINARY ARTS Continued

### STEWED CHICKEN ENTREE - Skill Component: Braise

Yield: 2 Servings

Legs, thighs - Large dice,	Chicken
to taste	Salt
to taste	Pepper
as needed	Flour for dredging
1 oz	Clarified Butter or Oil
1 clove	Garlic, crushed
From knife cuts	Onions
From knife cuts	Carrot
From knife cuts	Turnip
From knife cuts	Celery
From knife cuts	Tomato concassee
2 t	Tomato Paste
$\frac{1}{4}$ C	White Wine
$\frac{3}{4}$ C	Chicken Stock
1 - $1\frac{1}{2}$	Demi Glace
As desired	Aromatics - Seasonings and/or herbs
From knife cuts	Toume Potatoes

1. Season chicken
2. Dredge lightly m. flour - brown m hot oil on all sides - remove from pan
3. In same pan saute onions and carrots to a hght brown. Add and saute celery to aroma
4. Add tomato concasse and paste and cook out 3 minutes
5. Deglaze with wine - add chicken stock and reduce by  $\frac{1}{2}$
6. Add demi glaze, turnips, and aromatics - bring to a simmer
7. Add chicken back to sauce - cover and cook on stove top or in a 325 degree oven until done, 35-40 minutes
8. During the cooking process, add the potatoes at an appropriate tune to assure proper doneness
9. Degrease Sauce and adjust seasoning and consistency as necessary
10. Plate two portions and garnish as desired.

**For creative variation you may utilize additional herbs and seasonings from the contest supplies at your discretion.**

### VEGETABLE ACCOMPANIMENT FOR SAUTEED ENTREE - Skill Component: Green Vegetable Cookery Broccoli

Yield: 2 servings

2 each	Egg Yolks
1 oz	Water
1 oz	Fresh Lemon Juice
to taste	Hot Sauce
6 oz	Clarified Butter

1. Cut broccoli into uniform cuts, enough for two orders, blanch and hold for service.
2. Several minutes before service, cook broccoli so that they are tender.  
Toss with melted butter, salt and pepper. Place on plate and top with Hollandaise Sauce,
3. To make Hollandaise: egg yolks in SS bowl. Add lemon juice and water.
4. Place the bowl over double boiler, whipping the mixture continually with whip.  
As the yolks cook, the mixture will thicken. When the mixture is thick enough Remove from the heat. Do not overcook the egg yolks.
5. Adjust consistency of the yolk mixture with a touch of water.
6. Begin to add the warmed clarified butter to the egg yolk mixture, Whisking constantly to form an emulsion.
7. Adjust the seasonings with salt and pepper and Tabasco sauce to taste.  
Hold for service in/over warm brain marie.

**For creative variation you may utilize additional herbs and seasonings from the contest supplies at your discretion.**

## CULINARY ARTS Continued

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### STARCH ACCOMPANIMENTS FOR SAUTEED ENTREE - Skill Component: Pilaf Yield: 2 servings

1/2 cup	Butter	1 cup	Rice
1/4 cup	Diced Onion	2 cups	Water
1/4 cup	Diced Carrot	1	Bay Leaf
1/2 cup	Orzo	to taste	Salt
1 tablespoon	Chicken Base	to taste	Black Pepper

1. Melt butter in 2 quart sauce pot
2. Brown orzo in butter, be careful not to burn
3. Add vegetables, rice and stir to coat.
4. Add stock and season to taste.
5. Bring to boil, cover and reduce to simmer
6. Cook until all liquid is absorbed and rice is tender.
7. Reserve for service.

**Plate two (2) plates of entree with appropriate starch and vegetable accompaniment**

### CHICKEN STOCK - Skill component: Stock

Yield: 2 Qts

Chicken bones and trim	From your fabricated chicken
2 1/4 Quarts	Water
1/2 Pound	MirePoix
1	Sachet

1. Add cold water to chicken bones and meat. Bring to a boil-reduce to a simmer.
2. Simmer 30 minutes skimming fat and scum
3. Add mirepoix and Sachet
4. Simmer until desired flavor is reached
5. Strain- use as needed

### SALAD WITH EMULSION DRESSING, Contestants Choice - Skill Component: Emulsion

Yield: 2 Servings

Instructions:

Each contestants will have a selection of greens for this salad.

Prepare emulsion dressing of choice using ingredients available.

Prepare appropriate garnish (Croutons, nuts, etc.).

Immediately prior to the designated plating time for the salad course, assemble and plate your salad.

Deliver one plate to Tasting Judges and plate to Presentation area.

### GLAZED CARROTS - Skill Component: Glazed Vegetables

Yield: 2 portions

From knife cuts	Batonnet Carrots
1 oz	Butter
2 T	Sugar or honey
2 oz	Stock
to taste	Salt
to taste	Pepper

1. Place carrots in pan with butter, sugar, and stock
2. Cover with a parchment paper and bring to a simmer
3. Simmer until vegetables are tender and they are glazed.

**You may utilize seasonings from the contest supplies at your discretion.**

## CULINARY ARTS Continued

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### MIINESTRONE SOUP

1/2 cup	Oil	2 cups	Fresh Spinach, cleaned, rough chop
1/4 cup	Onion	4 cup each	Chicken and Beef Stock
1/4 cup	Carrots	1 cup	Rich Tomato Sauce
1/4 cup	Celery	1 cup each	Kidney White Beans
1/4 cup	Zucchini	1 cup	Cooked Pasta, Dittalini
1/4 cup	Summer Squash	to taste each	Fresh Basil, Oregano, Thyme, Salt, Pepper

1. Wash and clean all vegetables.
2. Dice vegetables paysanne and saute in olive oil.
3. Then add all stock, tomato sauce, and the beans, season to taste.
4. Simmer until the vegetables are al dente, adjust seasonings.
5. Add the cooked pasta

### GARLIC BREAD CROUTONS FOR SOUP:

French bread	Butter
Chopped Garlic	Paprika
Chopped Parsley	Parmesan Cheese

1. Slice bread cross ways, 1/4 inch slices.
2. Sprinkle with garlic butter.
3. Sprinkle with paprika, Parmesan cheese, and chopped parsley.
4. Bake 400°F oven until golden brown and hot.
5. Reserve for service.

### SAUTEED CHICKEN BREAST WITH TARRAGON CREAM SAUCE - Skill Component: Saute with pan sauce

Yield: 2 servings

2 each	Chicken breasts from morning to session	1 oz	Clarified Butter or Oil
As needed	Salt	1/4 cup	White Wine
As needed	Pepper	1/4 cup	Chicken stock
As needed	Flour for dredging	2 t	Shallot, chopped
6 oz.	Heavy Cream	1 t	Tarragon, chopped

1. Season chicken and dredge lightly in flour
2. Saute to correct color and doneness - remove and keep hot
3. Quickly saute shallot in hot pan
4. Deglaze pan with wine and reduce almost dry
5. Add stock and reduce almost dry
6. Add tarragon and cream and reduce to desired consistency. Season to taste
7. Serve chicken with sauce

#### Instructions:

- Use chicken breasts fabricated during Morning Session
- Execute saute cooking method
- Prepare pan sauce



# RESTAURANT SERVICE CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Black work pants

White oxford shirt

Hairnet for below the collar hair

Black leather shoes

Black socks or neutral hose

NO sneakers allowed

Black tie

$\frac{3}{4}$  length bistro style apron

NO cell phones allowed

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Supplied by the Technical Committee:

All necessary equipment and food items

All necessary information and furnishings for judges and technical committee.

Supplied by the Contestant:

Black pen

Guest check presenter (black)

Pencil

Table crumber

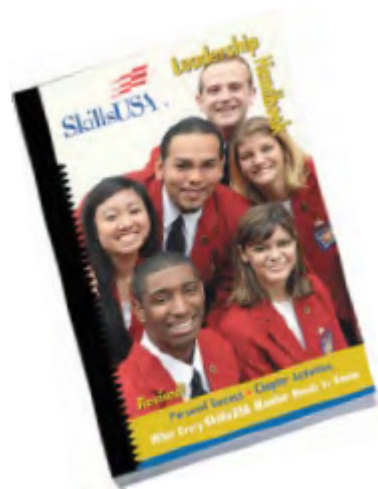
Guest check book

Manual calculator

### State Skills:

1. The practical contest will be geared toward American Style Table service cover as seen in the SkillsUSA Leadership Handbook (Formal Service) in a commercial restaurant.
2. The performance phase will be actual customer service of customers (judges) in a restaurant setting.
3. Contestants will be given a written test covering different styles of table service, proper table set up, side work, taking a customer's order, personal hygiene, sanitation and general table service techniques. This test will be given prior to the actual practical test at the test location.
4. Contestants will demonstrate their ability to perform jobs and skills selected from the following lists of competencies:
  - A. Table set up as seen in the SkillsUSA Leadership Handbook
    - Flatware
    - Dishware
    - Glasses
    - Linen/napkin folding (8 different folds)
    - Condiments
  - B. Professional Presentation
    - Greeting
    - Attitude
  - C. Taking an order
  - D. Sequence of service
  - E. Carrying a service tray
  - F. Meeting customers' needs/handling problems
  - G. Computation and presentation of guest check
  - H. Breakdown of table
  - I. Sanitation/personal hygiene

SkillsUSA's Leadership Handbook to be used for reference for table setting



# RESTAURANT SERVICE Continued

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## Skill Performance:

The contest will focus on guest service and guest relations in the dining room and “front of the house” skills of guest hospitality and food and beverage services. Contest Guidelines:

1. Contestants should be prepared to perform the duties of a dining room server as well as seating host/hostess.
2. Actual food from a kitchen may or may not be used, depending on the facility. Mock plates will be used. Mock beverages will be served.
3. Contestants will be judged on personal appearance, tableside manner, professionalism, ease with guests, courtesy, general knowledge and technical and verbal skills.
4. Presentations will be made to actual “guests” who will not rate contestants
5. A minimum of one table-side service will be demonstrated, which could include any of the following (Demos will be done in front of customers and/or judges):
  - a. Caesar salad
  - b. Guacamole
  - c. Wine presentation (college/postsecondary only)
6. Judging will be in separate increments:  
Grooming/uniform, table setup and service, host and greeting.  
One tableside presentation will be mandatory during the service time. For college/postsecondary, a basic wine knowledge to include proper glass and wine service will be judged. Menu knowledge and chef’s special will also be judged.

## Standards and Competencies:

- 1.0 Set up various table arrangements per standards outlined by the technical committee
- 2.0 Perform the role of host to guests per standards outlined by the technical committee
- 3.0 Perform the role of dining room server/waiter/waitress per standards outlined by the technical committee. Each contestant will have 90 minutes in total (10 minutes to review menu, 10 minutes for pre-meal meeting with judge to ask relevant questions about the menu identified in the first viewing of the menu, 10 minutes for napkin folding (8 different folds), 15 minutes for table set-up and 45 minutes from introducing themselves to guest check presentation. During the service experience as a server, you will be required only ONE (1) guest requested tableside menu preparation item.
- 4.0 Display appropriate grooming and uniform per guidelines of the contest technical committee



# SERVICE OCCUPATIONS B

**SERIES DIRECTOR:**  
DONNA McMAHON

**CONTACT INFORMATION:**  
NASHOBA VALLEY TECHNICAL HIGH SCHOOL  
100 LITTLETON ROAD  
WESTFORD, MA 01886  
(978) 692-4711  
dmcmahon@nashobatech.net

## EVENTS:

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### COSMETOLOGY (UNDER 500 HOURS)

Briefing: Salon A  
Employability Testing: At contest Site for models only  
Competition: Blackstone - Cosmetology Shop—631D  
Event Manager: Sharon Clohesy

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### COSMETOLOGY (OVER 500 HOURS)

Briefing: Salon A  
Competition: Blackstone - Cosmetology Shop (Clinic Area)—637D  
Event Manager: Gail Fabri-Schwartz

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### ESTHETICS

Briefing: Salon A  
Employability Testing: At Contest Site  
Competition: Blackstone - Room 625D  
Event Manager: Joni Leahey

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### NAIL CARE

Briefing: Salon A  
Employability Testing: At Contest Site for models only  
Competition: Blackstone - Library Media Center—710A, 111D  
Event Manager: Grace Moschetto



# COSMETOLOGY CONTEST (UNDER 500 HOURS)

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Contestants:

White top & bottom, as shown	White professional shoes	Minimal jewelry
Minimal Make-up for women	NO jeans or leggings	NO cell phones allowed
NO sneakers	NO open toes or open back shoes	

Models:

Black work pants, as shown	Black shoes, no heels	NO sneakers
White polo, or official SkillsUSA polo shown	NO jeans or leggings	NO cell phones allowed
No visible piercing on face or body OF YOUR MODEL FOR SAFETY REASONS		
Any JEWELRY should be put on after last comb-out		

Models will arrive with clean faces with No make-up and clean hair. All models will take a SkillsUSA employability skills test at contest site. For SAFETY reasons there should not be any visible piercing on face or body OF YOUR MODEL. Any JEWELRY should be put on after last comb-out.

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Trash bag	Towels (enough for all services)	Blow dryer
Capes	Spray Bottle	Hair Sprays
Neck bands (saneek strips)	Combs	Brushes
Hair Cutting Tools	Cosmetics for makeup application	Mannequin Stand
Clips (butterfly, double prong)	Styling Products	Curling Iron (Marcel)
Flat Irons	Bobby Pins	Hair Pins
Hand Sanitizer	Mannequin	

1 Mannequin Needed - GABRIELA #560 19"-21"

MAIL TO: BURMAX COMPANY  
28 Barretts Ave.  
Holtsville, NY 11742  
Attn: School Division

FAX:  
1-631-289-7590

CALL TOLL FREE:  
1-800-645-5118



Note to All Competitors: Additional equipment maybe brought to the contest site, but will be subject to the approval of the judging team.

## State Skills

All contestants must present a resume to the Events Manager on the day of the competition. *Please do not include the name of your school on the resumé.* All contestants must have the required mannequin listed on the tool list. Refer to attached order form for information on how to order your mannequin.

Overview: Cosmetology contestants are required to create a hair style and make-up based on a given theme. Live models will be used for this portion of the contest. Models should come to the competition with clean dry hair ready to be styled. They will also duplicate a preselected haircut and style on a manikin. Contestants will also be required to answer a question during a brief professional interview.

## COSMETOLOGY (UNDER 500 HOURS) Continued

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1. Fantasy Hairstyle on model, 60 minutes for 250 possible points
  - a. Style hair to produce fantasy effects. (Disney Fantasy Style)
  - b. Incorporate braids, twists, and or curls.etc.
  - c. Secure hair with bobby pins, hair pins, and covered bands if needed.
  - d. Demonstrate balance, proportion, and form in the finished look.
2. Fantasy Make-Up on model, 45 minutes for 250 possible points

After combing out the fantasy hairstyle, perform a dramatic fantasy make-up to compliment the hairstyle. False eyelashes may be attached using the appropriate adhesive. Creativity and artistry, safety and sanitation are being judged here.

No Masks can be use on the face.

Preselected Haircut and Finish Hair Style, on GABRIELA #560 long-haired mannequin (12 "or more):



## COSMETOLOGY (UNDER 500 HOURS) Continued

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3. Preselected Haircut as shown, 45 minutes for 200 possible points  
Perform a haircut with tools necessary to complete the (pre-selected) style.
4. Finish Hair Style (after haircut) as shown, 30 minutes for 100 possible points  
Blow dry and style using a curling iron and/or flat iron to complete the finished look.
5. Overall Results of Workmanship for 100 possible points  
Execution of skill, precision and professionalism throughout the contest  
Cleanliness and organization of the working environment  
Sanitation and safety procedures throughout the contest
6. Interview Question, 5 minutes for 100 points  
During the competition, all contestants will be briefly interviewed. During the interview, all contestants will have a choice of three (3) questions at random to be answered within a five (5) minute time period. However, all contestants will be allowed to complete these interviews and will not be marked down for any additional time needed. Contestant scores will not be based on the answers they give but focused on the professional presentation and their ability to sell themselves during the interview. One of the following questions will be asked:
  - a. Within the beauty industry, where do you see yourself in the next two (2) years?
  - b. How will a salon benefit by hiring you?
  - c. Explain two (2) qualities you are looking for in a salon and why?

### Special Notes:

1. No hair pieces, weaves or extensions will be allowed for any portion of the competition. Only the hair on the model's head may be used to create the style.
2. Hair accessories of any type may be used provided that no more than 1/4 of the completed hairstyle is covered.
3. No contestant or model should enter the testing site with any items containing their school name.
4. Follow all sanitation and safety rules!

### Follow the observer rules for all contests in Service Occupations B.

Advisors and observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification.

Talking or gesturing by the advisors or observers may result in contestant disqualification.

Advisors or observers will not be permitted to communicate with contestants in the holding/assembly area.

As in the past, advisors will not be allowed to communicate in any way with the event manager or judges involved in the contest until the contest is complete and all judges' score sheets are marked and turned in.

Any violation of this will result in the disqualification of the advisor's student(s).
















Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)



## ORDER FORM

  	
<b>COMPETITION MANIKINS</b>	
<p><b>SUPER LOW PRICES! Good thru March 31, 2019.</b>  <b>ALL 100% HUMAN HAIR</b></p>	
 <p><b>DELUXE DEBRA MANIKIN</b>  <b>DLX804</b>            18" – 20" brown hair.  <b>\$31.95</b> ea.</p>	 <p><b>SAM II MANIKIN – BROWN</b>  <b>S153</b>            19" – 22" brown hair.  <b>\$37.48</b> ea.</p>
 <p><b>SAM II MANIKIN – BROWN</b>  <b>S153-DUO WITH H-222 HOLDER</b>  <b>\$40.52</b> ea.</p>	 <p><b>GABRIELA MANIKIN</b>  <b>560</b>            19" – 21" brown hair. Natural neck and actual human hair growth pattern. Perfect for hair designs with forward styling.  <b>\$39.40</b> ea.</p>
 <p><b>RACHEL MANIKIN</b>  <b>451</b>            24" – 26" blonde hair. Natural neck and actual human hair growth pattern.  <b>\$72.50</b> ea.</p>	 <p><b>SAMANTHA SHOULDER MANIKIN</b>  <b>SAM-4</b>            23" blonde hair. Shoulder manikin with natural neck. Pierced ears.  <b>\$56.95</b> ea.</p>
<p><b>CHEMICAL-FREE</b>      <b>100% VIRGIN EUROPEAN HAIR</b>      <b>100% YAK ANIMAL HAIR</b></p>	
 <p><b>NICKI CHEMICAL-FREE MANIKIN</b>  <b>N333</b>            22" light brown hair. 100% natural, hand-implanted human hair, free from all chemicals and hair color. Perfect for color treatments and chemical processes. Features a vinyl head, facial make-up, and natural neck.  <b>\$65.55</b> ea.</p>	 <p><b>JADE MANIKIN</b>  <b>758</b>            100% Virgin European hair. Unprocessed, naturally soft. 20" – 22" light brown hair.  <b>\$51.00</b> ea.</p>
 <p><b>JAKE BUDGET MANIKIN</b>  <b>658</b>            Great for barbering techniques: clipper cuts, fading, flat-topping, and layering. 18" brown hair.  <b>\$27.95</b> ea.</p>	 <p><b>MR. SAM SHOULDER MANIKIN WITH BEARD</b>  <b>SAM-9</b>            Great for barbering techniques: clipper cuts, fading, flat-topping, and layering. 19" medium brown hair.  <b>\$46.20</b> ea.</p>
 <p><b>YOLANDA MANIKIN</b>  <b>E600</b>            21" brown hair. 100% yak animal hair.  <b>\$22.95</b> ea.</p>	
<p>FAX: 631.289.7590            PHONE: 800.645.5118</p>	

BURMAX COMPANY • 28 Barretts Avenue • Holtsville, NY 11742 • Attn: School Division



# COSMETOLOGY CONTEST

## (OVER 500 HOURS)

### REQUIREMENTS AND SCOPE OF CONTEST

#### Clothing Requirements: **failure to do so will result in a clothing penalty**

White top & bottom, as shown

Minimal Make-up for women

NO sneakers

Remember, you will be judged on professional image, as well as professional attitude

White professional shoes

NO jeans or leggings

NO open toes or open back shoes

Minimal jewelry

NO cell phones allowed

NO high heels or platform

#### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Spray bottle

Neck strips (sanek strips)

Blow dryer

Curling Iron (Marcel)

End Wraps

Gel/Setting lotion (enough for chemical relaxer technique)

Applicator bottles for perm/neutralizer, bowl and brushes

Towels (enough for all services)

Brushes

Hair Spray

Flat Iron

Manikin Stand

Combs

Perm rods (enough for a full head)

Clips (butterfly, double prong, etc.)

Bobby and Hair Pins

Cotton

Styling Products

Capes

Haircutting Tools

3 Manikins (See Below)

Discard bag

Note to All Competitors: Additional equipment maybe brought to the contest site, but it will be subject to the approval of the judging team.

2 Mannequin Needed - Nicki 100% Chemical Free Manikin #N333

1 Mannequin Needed - Jake Budget Manikin #658

MAIL TO: BURMAX COMPANY  
28 Barretts Ave.  
Holtsville, NY 11742  
Attn: School Division

FAX: 1-631-289-7590

CALL TOLL FREE: 1-800-645-5118



#### State Skills:

All contestants will demonstrate their ability to perform skills on mannequins. Cosmetology contestants are required to duplicate preselected haircuts and styles on a mannequin. Pre-selected haircuts will be shown to all competitors at the competition site.

1. Long Hair Design on Nicki Manikin Burmax #N333, 60 minutes - 200 possible points (includes color binder/poster)

**Steps must be followed in the exact order.**

**Tools assembled and station prepared.**

**Begin to work in the hairstyle of choice, create an evening look, use your creativity to achieve an outstanding up to date style.**

**Once the hairstyle is completed, clean up and leave the manikin at the station to be judged.**

- a. Long Hair Design Students show their skills involved in creating an elegant and balanced upswept style that can be worn for a special event. Bobby pins and hair clips should be hidden, and no back combing or back brushing exposed.
- b. The techniques they incorporate should follow current trends and be proportionate to the manikin. "No lose hair or just curl down hair will be allowed". The use of heating tools such as curling iron or hot rollers, and any type of hair product such as spray, mousse, pomade, etc. is allowed. **No hair extensions or ornaments allowed.**

# COSMETOLOGY (OVER 500 HOURS) Continued

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- c. This manikin should have dimensional texture created with hair color/lightener previously done on the manikin.
  - d. Students must present a poster board or binder for presentation of their pre-hair coloring techniques and include formulas used.
2. Permanent Waving/Relaxing (Mock) on Nicki Manikin Burmax #N333, 60 minutes - 200 possible points
- a. On a long-haired mannequin section hair into 9 Panels.
  - b. Demonstrate a straight set perm wrap, spiral wrap, piggyback wrap and curvature wrap
  - c. Demonstrate a mock solution and or neutralizer application.
  - d. Demonstrate the basic procedure for a virgin chemical relaxer.
3. Hair Cutting - Men Short Cut and Design on Jake Budget Manikin #658, 45 minutes - 200 possible points  
Judges will select cut and style at the event - student will perform haircut, blow dry and style to the given picture.
- a. Duplicate a predetermined haircut and design that has been selected by the judges at the event. Students may use shears, razor, clippers, and thinning shears as needed.
  - b. Duplicate the finish design using a blow dryer, and thermal tools as needed.
  - c. Use appropriate styling products, tools to duplicate the selected haircut.
4. 90 Degree Haircut 60 minutes - 200 possible points  
Haircut on previously used Nicki Manikin Burmax #N333, after judges have scored the Permanent Waving/Relaxing (Mock)  
Judges will select cut and style at the event - student will perform haircut, blow dry and style to the given picture.
- a. Duplicate a predetermined haircut and design that has been selected by the judges at the event. Students may use shears, razor, clippers, and thinning shears as needed.
  - b. Duplicate the finish design using a blow dryer, and thermal tools as needed.
  - c. Use appropriate styling products, tools to duplicate the selected haircut.
5. Overall Results of Workmanship for 100 possible points  
Execution of skill, precision and professionalism throughout the contest  
Cleanliness and organization of the working environment  
Sanitation and safety procedures throughout the contest
6. Interview Question - Interview Question, 15 minutes - 100 possible points  
During the competition, contestants will be briefly interviewed. During the interview, all contestants will be asked the **same** question, to be answered within a five (5) minute time period. However, all contestants will be allowed to complete these interviews and will not be marked down for any additional time needed. Contestants scores will not be based on the answers they give but focused on the professional presentation and their ability to sell themselves during the interview.

## Follow the observer rules for all contests in Service Occupations B.

Advisors and observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification.

Talking or gesturing by the advisors or observers may result in contestant disqualification.

Advisors or observers will not be permitted to communicate with contestants in the holding/assembly area.

As in the past, advisors will not be allowed to communicate in any way with the event manager or judges involved in the contest until the contest is complete and all judges' score sheets are marked and turned in.








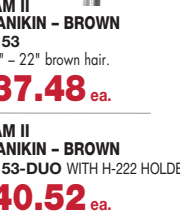







Any violation of this will result in the disqualification of the advisor's student(s).

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)

## ORDER FORM

							
<h3>COMPETITION MANIKINS</h3>							
<p><b>SUPER LOW PRICES! Good thru March 31, 2019.</b>  <b>ALL 100% HUMAN HAIR</b></p>							
 <p><b>DELUXE DEBRA MANIKIN</b> DLX804 18" – 20" brown hair. <b>\$31.95 ea.</b></p>		 <p><b>SAM II MANIKIN – BROWN</b> S153 19" – 22" brown hair. <b>\$37.48 ea.</b></p>		 <p><b>GABRIELA MANIKIN</b> 560 19" – 21" brown hair. Natural neck and actual human hair growth pattern. Perfect for hair designs with forward styling. <b>\$39.40 ea.</b></p>		 <p><b>RACHEL MANIKIN</b> 451 24" – 26" blonde hair. Natural neck and actual human hair growth pattern. <b>\$72.50 ea.</b></p>	
		 <p><b>SAM II MANIKIN – BROWN</b> S153-DUO WITH H-222 HOLDER <b>\$40.52 ea.</b></p>		 <p><b>SAMANTHA SHOULDER MANIKIN</b> SAM-4 23" blonde hair. Shoulder manikin with natural neck. Pierced ears. <b>\$56.95 ea.</b></p>			
<p><b>CHEMICAL-FREE</b></p>		<p><b>100% VIRGIN EUROPEAN HAIR</b></p>		<p><b>100% YAK ANIMAL HAIR</b></p>			
 <p><b>NICKI CHEMICAL-FREE MANIKIN</b> N333 22" light brown hair. 100% natural, hand-implanted human hair, free from all chemicals and hair color. Perfect for color treatments and chemical processes. Features a vinyl head, facial make-up, and natural neck. <b>\$65.55 ea.</b></p>		 <p><b>JADE MANIKIN</b> 758 100% Virgin European hair. Unprocessed, naturally soft. 20" – 22" light brown hair. <b>\$51.00 ea.</b></p>		 <p><b>JAKE BUDGET MANIKIN</b> 658 Great for barbering techniques: clipper cuts, fading, flat-topping, and layering. 18" brown hair. <b>\$27.95 ea.</b></p>		 <p><b>MR. SAM SHOULDER MANIKIN WITH BEARD</b> SAM-9 Great for barbering techniques: clipper cuts, fading, flat-topping, and layering. 19" medium brown hair. <b>\$46.20 ea.</b></p>	
				 <p><b>YOLANDA MANIKIN</b> E600 21" brown hair. 100% yak animal hair. <b>\$22.95 ea.</b></p>			
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# NAIL CARE CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

**Contestants:**

White top & bottom, as shown

Minimal Make-up for women

NO sneakers

**Models:**

Black work pants, as shown

NO jeans or leggings

White polo, or official SkillsUSA polo shown

White professional shoes

NO jeans or leggings

NO open toes or open back shoes

Black shoes, no heels

NO cell phones allowed

Minimal jewelry

NO cell phones allowed

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

**Supplied by Technical Committee:**

Tables, chairs, foot bath, and electrical hook-ups

Technical guidelines for the specific applications required to be performed

All necessary information and supplies for judges and the technical committee

Score sheets for each of the respective contest applicants

FOOT BATH WILL BE PROVIDED AT COMPETITION SITE

**Supplied by Contestant:**

Electrical extension cord

Cuticle pusher

Acrylic nail brushes

Instrument for cutting nail tips

Water bottle dispenser

Goggles and mask

Polish/Lacquer- Dark crème lacquer/polish (i.e., dark red)

Plastic zip lock bags, gallon size for disposal of refuse

Portable kit organizer (to transport all necessary items needed for the contest)

Cuccio products gel kit should include: IF YOU HAVE AN LED LIGHT, ONLY PRODUCTS NEED TO BE ORDERED.

1 UV light

1 gel brush

1 pack of assorted clear tips

1 veneer top coat

Manicure table lamp (optional)

Disposable contestant work area placemat

Orangewood stick

Forms for sculptured extensions

Nail sanitizer

Lint free pads and/or cotton

1 primer pen

1 veneer base coat

1 small brush on glue for tips

Hand Sanitizer

Assorted files and buffers

Dappen dishes with covers

Portable air purifier if you have one

Half Well Nail Tips ONLY

1 T3 opaque pink hard gel

1 T3 white hard gel

1 cleanser for induction layer

Cuccio product nail kit should include:

1 odorless monomer 2 ounces

1 acrylic brush

1 sealer

1 odorless white powder 2 ounces

1 primer pen

1 small sani spray

1 odorless pink powder 2 ounces

1 pack of 50 large rectangular sculpting forms

Cuccio product pedicure kit should include:

1 pair foam pedicure slippers

1 pair toe separators

1 nail brush

1 Birchwood stick

1 sani nail file

Supplies, sanitized implements, and products needed to complete a basic pedicure on one foot

White terry towels (15 x 26) - NO holes, stains or colors allowed

Disinfectant/sanitation surface spray (for work environment)

Disinfectant tray system or sanitizing jar (for implements)

Anti-bacterial solution for foot bath

Anti-microbial cleanser (for pre-cleaning feet)

Lotions and creams needed for pedicure

# NAIL CARE Continued

## Optional Items Allowed

Oil (can only be used after the judging has been completed)  
Hand lotion/crème (can only be used after judging has been completed)

Cushion for chair  
Fine tip art brush for polish/lacquer clean-up

## Supplies Not Allowed

No mix and match of chemicals (i.e., the acrylic polymer and odorless monomer used for the sculptured application must be produced by the Cuccio Manufacturer and the resin and catalyst used for the tip and gel application must be produced by the same manufacturer.) No exceptions. Any other items brought by the contestant will be subject to the approval by the technical committee and must be declared at the time of the pre-contest site kit check.

## NOTE: CONTESTANTS MUST BE PREPARED TO COMPETE IN ALL SEGMENTS OF THE CONTEST TO ENTER THE SKILLSUSA CHAMPIONSHIPS.

State Skills: To evaluate each contestant's preparation for employment, to recognize outstanding students for excellence and professionalism. Initial degree of difficulty (pre-judged before the start of the contest at the contest site). Based on condition and characteristic of natural nails.

Initial preparation (pre-judged before the start of contest at the contest site) for 100 possible points

### Table Set-Up

- Table setup can only consist of items needed for the specific contest application in progress (i.e., if sculptured is in progress, the tip and wrap and nail art materials should not be visible during this time). Time will be allowed between each contest to reset the table set-up.
- All products and solutions must be properly identified with the manufacturer's original packaging, original labeling, and be odorless.
- Product labels cannot be defaced.
- Required tools and products accounted for and professionally organized.
- Sanitation solutions must be newly activated and labeled properly.

**NOTE: ANY PRODUCT THAT APPEARS TO HAVE BEEN ALTERED, AS DETERMINED BY THE TECHNICAL COMMITTEE, WILL BE JUST CAUSE FOR THE CONTESTANT TO BE DISQUALIFIED FROM THE COMPETITION.**

Models: All models will take a SkillsUSA employability skills test at contest site.

Hands must be properly prepped.

- NO jewelry is allowed during competition (i.e., rings, watches or bracelets).
- Contestants and models will be required to have hands cleansed with an anti-microbial cleanser under the supervision of a Technical Committee member prior to entering the contest site and after each (escorted) break.
- Models and contestants will use a hand sanitizer in the contest area.

### Product and Tool Control

- Proper control and usage of all items.
- Neatness and professionalism in which all items are used.

## 1. Gel/Tip Application, 60 minutes for 200 possible points

### Tip Application

Tip customizing	Proper fit
Tip application technique	Air pockets
Extension length	Tip blending
Color distinction	

Tip alignment  
Amount of gel/glue utilized for each nail  
Clarity with no visible plastic

## 2. Sculptured Nails Application, 60 minutes for 200 possible points

Efficiency in working with product	Monomer contamination
Color distinction	File marks
Degree of thinness and thickness	

Clarity  
Void of bubbles and ridges

## NAIL CARE Continued

### Cuticle and Nail Groove

Cuticle	Healthy, with no abrasions	Cuticle free of any product
Nail Groove	Extension alignment	No ridge or unevenness
Shape and Length		
Shape	Consistent	Proportionate to the hand
Contour	Degree of thinness and thickness	Continuity
Length	Appropriate to nail bed	Consistency
Arch and C-Curve		
Arch	Left and right hand side view taper	highest point of the arch
C-Curve	Conformity with nail plate	Lower arch clean and symmetrically balanced
Surface Finish		
Smooth High gloss sheen	NO file marks, cloudiness, ridges, dull spots	White fiber lines – tip & wrap application
Lacquer/Polish		
Neatness	Brush marks	Skill in evenness and accuracy

3. Perform foot care in a nail care situation on one foot, 30 minutes for 100 possible points

Perform a basic pedicure

- A. Demonstrate proper steps for a basic pedicure
- B. Demonstrate knowledge of a safe and sanitary pedicure procedure.

4. Wearable Nail Art Application, 30 minutes for 200 possible points

The contestant will complete wearable nail art on nails. Contestant will have prepared the models nails in the first two required contests. (One hand will have a complete set of sculptured nails. One hand will have a complete set of tips with gel overlay.)

All contestants will submit to the Events Manager a short summary describing in detail their nail art theme before the competition.

**Nail art will be done on one hand only.**

**THE NUMBER OF NAILS USED FOR NAIL ART WILL BE DECIDED AT THE COMPETITION.**

All nail painting and artwork must be done during the wearable nail art application. Items NOT allowed for use in the wearable nail art application: gems, skins, feathers, rhinestones, glitters, threads, fabrics, foils, beads, tapes, jewelry. No 3-D medium art, airbrushing, decals/stencils or cast moldings will be allowed.

Creativity:	Clarity of line	Notable precision of expression
Color Coordination:	Colors must work together harmoniously	
Level of Difficulty:	Degree of being inventively unique	

5. Overall Results of Workmanship for 100 possible points

Execution of skill, precision and professionalism throughout the contest

Cleanliness and organization of the working environment

Sanitation and safety procedures throughout the contest

6. Interview Question, 5 minutes for 100 possible points

During the competition, all contestants will be briefly interviewed. During the interview, all contestants will have a choice of (3) three questions at random to be answered within a five (5) minute time period. However, all contestants will be allowed to complete these interviews and will not be marked for any additional time needed.

Also, contestants' scores will not be based on the answers they give but focused on the professional presentation and their ability to sell themselves during the interview. **ONE of the following questions will be asked:**

1. Describe the importance of a thorough client consultation.
2. Within the professional industry, where do you see yourself in 5 years?
3. What expectation do you have about being employed in a salon?

## NAIL CARE Continued

Follow the observer rules for all contests in Service Occupations B.

Advisors and observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification.

Talking or gesturing by the advisors or observers may result in contestant disqualification.

Advisors or observers will not be permitted to communicate with contestants in the holding/assembly area.

As in the past, advisors will not be allowed to communicate in any way with the event manager or judges involved in the contest until the contest is complete and all judges' score sheets are marked and turned in.

Any violation of this will result in the disqualification of the advisor's student(s).

Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)

## ORDER FORM

GO FOR IT @SkillsUSA

Complete Professional Nail Supplies for Competition  
from  
**BURMAX**

Item #  
SKILLS USA 2017  
**Only \$127.53**  
A savings of OVER \$20!  
Regular price \$149.75



# ESTHETICS CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Contestants:

White top & bottom, as shown

NO jeans or leggings

NO open toes or open back shoes

White professional shoes

NO jewelry

NO sneakers

Hair must be pulled back off face

NO cell phones allowed

There will be a clothing penalty for clothing violations

Models:

Black work pants, as shown

White polo, or official SkillsUSA polo shown

Hair should be pulled away from the face. Faces should be clean and cosmetic-free. Models should not wear earrings, facial piercings or necklaces. Jewelry may be worn in the fantasy portion of the contest at the completion of the look. If any piercings are not removed, points will be deducted. **NO EXCEPTIONS!** All models will take a SkillsUSA employability skills test at contest site.

Black shoes, no heels

NO jeans or leggings

NO sneakers

NO cell phones allowed

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

2 Facial Bed Sheets 78X40

2 Capes

Trash Bag for Soiled Items

Facial Steamer

Gloves

Enough Towels and Washcloths to complete all services

Headband or Wrap

Decontamination Supplies

Skin Care products including:

Cleanser

Massage Cream

Hand Sanitizer

Mask

Toner

Makeup Remover

Moisturizer

Sunscreen

All cosmetics and Disposable items needed for Fantasy Make-up (Eyelashes, Adhesives, Tweezers)

All Cosmetics and Disposable items needed for Business Day time Make-up

**Towel warmers will be provided at the competition site. Follow all sanitation and safety rules!**

**State Skills:**

The contest will include separate skill performance tasks and oral communication assessment. All contestants will demonstrate their ability to perform skills selected from the following list of competencies. Live models are used for facials, massage, mask application, Business Day-Time and Fantasy make-up and should come to the competition with clean skin with no make-up.

### 1. Cleansing Facial, 60 minutes for 300 possible points

Demonstrate: Cleansing

Demonstrate Exfoliation

Massage using Tapotement (percussion), Petrissage, effleurage, Friction and Vibration...

The use of facial steamer and hot towels.

Mask application, and removal.

### 2. Business Makeup Application, 30 minutes for 200 possible points

Perform a basic makeup application for daytime business following all safety and sanitation regulations.



## ESTHETICS Continued

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3. Fantasy Make-up Application, 60 minutes for 300 possible points

Perform a dramatic evening fantasy makeup without removing the pre applied business make-up. Sequins, feathers, etc., may be attached with surgical or other appropriate facial adhesive. False eyelashes may be attached. Creativity and artistry are being looked for here. No Masks are to be used on the face. Following all safety and sanitation regulations.

The Fantasy makeup portion of the contest will have a preselected theme (movie, story, genre, time period, etc.) A written description of the contestant's character and interpretation within the theme is to be limited to one page, typewritten and contained within a plastic sleeve. The description must be submitted on the day of the competition. No exceptions; none or late descriptions will result in a 10-point deduction.

4. All safety and sanitation regulations must be followed throughout all procedures for possible 100 points

5. Interview Question for 100 possible points

During the competition, all contestants will be briefly interviewed. During the interview, all contestants will have the same question to be answered within a five (5) minute time period. However, all contestants will be allowed to complete these interviews and will not be marked down for any additional time needed. Also, contestants' scores will not be based on the answers they give but focused on the professional presentation and their ability to sell themselves during the interview.

Follow the observer rules for all contests in Service Occupations B.

Advisors and observers will be allowed to view the students during the competition from the designated area only.

Any infraction will result in contestant disqualification.

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Contestants are to stay until they are debriefed at the end. Any communication from observers will result in contestant disqualification.

No prints or information will be allowed to leave with the student participants/school personnel.

No videotaping of contests. (Still photography only)

# TECHNOLOGY EVENTS

**SERIES DIRECTOR:**  
JAYLENE DosSANTOS

**CONTACT INFORMATION:**  
WHITTIER TECH  
115 AMESBURY LINE ROAD  
HAVERHILL, MA  
(508) 282-7727  
jdossantos@whittier.tec.ma.us

## EVENTS:

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### ELECTRONICS TECHNOLOGY

Briefing: Southboro Room  
Competition: Blackstone - Electronics Shop—643B, 641B  
Event Manager: John Sefakis

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### MOBILE ROBOTICS TECHNOLOGY

Briefing: Southboro Room  
Competition: Blackstone - Competition Center  
Event Manager: Michael Ogilvy

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### ROBOTICS AND AUTOMATION TECHNOLOGY

Briefing: Southboro Room  
Competition: Blackstone - Room 320B  
Event Manager: Bryant Abbot

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### URBAN SEARCH AND RESCUE

Briefing: Southboro Room  
Competition: Blackstone - 200B  
Event Manager: Geoffrey Allen, Sergeant First Class



# ELECTRONICS TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Safety shoes

Safety glasses

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

### 1. Small Hand Tools and Supplies Provided by Contestant

- A. Diagonal cutters
- B. Long nose pliers
- C. Wire strippers
- D. Hook-up wire (10' of #22 gauge)
- E. 3 Solderless breadboard 3" x 6"
- F. Safety glasses
- G. Soldering iron
- H. Solder
- I. De-soldering tool
- J. Solder wick
- K. Jewelers slotted screwdriver

### 2. Test Equipment

All test equipment will be supplied, however, if you wish to bring your own DMM or VOM it will be acceptable.

OPTIONAL, STUDENTS MAY BRING THEIR OWN TRAINER

### National Skills:

The six-hour contest is divided into four sections that are designed to test the contestants' knowledge of analog and digital circuitry; ability to troubleshoot electronic circuits; ability to construct and test experimental circuits; to design and select circuit components; and to assemble an electronic circuit. In addition, all aspects of the contest test the contestant's ability to use and calibrate electronic equipment, record and organize data, and demonstrate good safety practices.

### State Skills:

Test will include construction of multistage circuit using digital, analog, and discrete components. Safety procedures will be observed.





# ROBOTICS AND AUTOMATION CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Safety shoes

NO jeans

Safety glasses

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

The team will require the following equipment and material to complete the competition. The Technical Committee provides most of the required equipment and materials, but the team must bring certain items.

Robotics and Automation Technical Committee provides:

Speed-controlled conveyor

Microswitches

Plastic and metal blocks

Power strips and Extension cords

Proximity sensor

Template storage area

Task assignment

Scorbot-ER 4u robot with controller, power supply, cables and Scorbase Pro software

Photoelectric sensor

Templates, portable and overlays

Notebooks

Contest Site provides:

3' x 6' Tables

Chairs (2 at each table)

110 VAC at each workstation

Teams provide:

Computer System (Pentium 4 800MHz or higher, 2GB RAM, 2GB free space on hard drive, USB port, CD-ROM drive, Windows XP or Windows 7 with administrative access.)

Each Team's computer MUST have a MINIMUM of 2GB of RAM available

Also, each team MUST download and install the SCORBASE software before they arrive at the contest site. It can be downloaded from the following link: [Scorbase\\_Robocell\\_V5335.zip](#)

When installing the software, please select "SCORBASE for the ER-4u"

Hookup wire 20-24 awg (3 different colors, 100 feet total)

Wire Cutters

Phillips Screw Driver

Tie wraps

Templates allowed for Flow Chart

Wire Strippers

Needle nose pliers

Pencils (2)

Multimeter

Flat Head Screw driver

Safety Glasses with clear lens

Straight edge

Blue Painters Tape

**Notebooks:** Each team will be issued a notebook and information packet. This will be a three-ring binder in which the team will complete the documentation of its assigned task.

### State Skills:

Teams of two will demonstrate their ability to perform, exhibit, and compile skills and knowledge necessary from the following list of competencies determined by the Robotics and Automation Technology SkillsUSA Technical Committee members. The team will be provided with a written description of the task requirement and a list of the available equipment and material. The team will develop a system layout and robot program, and then demonstrate its product. Upon completion of this task, the team will be given a requirement to refine its system design and again demonstrate its functionality.

# ROBOTICS AND AUTOMATION Continued

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- A. Perform Analysis of Task
  - 1. Evaluate written task
  - 2. Evaluate provided equipment and material
  - 3. Evaluate system revision
- B. Design, Sketching, Planning
  - 1. Determine sequence of operation
  - 2. Select equipment and material to meet functional need
  - 3. Create flow chart
  - 4. Create layout
  - 5. Process system revision
- C. Implement Design
  - 1. Develop robot program
  - 2. Install equipment
  - 3. Integrate equipment with system controller
  - 4. Modify system to meet revision requirements
- D. System Performance
  - 1. Perform functional test for total system operation
  - 2. Present system for evaluation
  - 3. Perform functional test to meet revision requirements
  - 4. Present revised system for evaluation

## Group Organization and Goals

This is a group competition and all members may interact at will. It is our hope that the competition will run much like actual industry.

- 1. The robot programmer will program the robot and peripheral equipment.
- 2. The electro-mechanical integrator will install the peripheral equipment and integrate it into the system.

We expect that when a team member has spare time he or she will help the other team member. It is our hope that one person will not dominate a team. It is in no way desirable for one person to do all the work while the other team member merely assists. Each team member must take an active role in this competition.

We have taken this course to promote creativity in the organization of production responsibility. All members are responsible for double-checking a team member's work and quality control.

## General Information

- 1. This competition will be executed using intelitek's Scorbor-ER 4u robot, speed-controlled conveyor, and experiment table.
- 2. Other equipment and material is from local supply sources.
- 3. Each team will provide one working computer with Windows XP or Windows 7, 2GB RAM, 2GB free space on hard drive. Student or instructor must have administrative access to install robot software (SCORBASE).
- 4. Teams will consist of two members.

## Goals

- 1. To have every team complete the contest.
- 2. To have each team member demonstrate reading and writing skills.
- 3. To have each team member use his or her critical thinking and problem-solving abilities.
- 4. To have each team member illustrate responsibility, teamwork, and self-management skills.



# MOBILE ROBOTICS CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Safety shoes

Safety glasses

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

**Team Provided Components:**

Quantity:	Product:	Product Number:
1	VEX EDR V5 Competitor Super Kit	276-6650
unlimited	V5 Smart Cables for connecting motors and sensors only	
unlimited	Zip Ties	
<b>OR</b>		
1	Vex EDR Cortex V4 Classroom & Competition Super Kit	276-3000
4	2-Wire Motor 393	276-2177
4	Motor Controller 29	276-2193
1	393 Motor Turbo Gear Set 4 Pack	276-3527
1	7.2V Robot Battery NiMH 3000mHh	276-1491
1	Power Expander	276-2271
1	Standard 9V Battery, used as the backup battery for the VEXnet System	
unlimited	Extension Cables for connecting motors and sensors only	
unlimited	Zip Ties	

VEX items can be purchased from Educational STEM Solutions, LLC with free shipping by contacting [mogilvy@e-STEM.com](mailto:mogilvy@e-STEM.com) or at our webstore [www.e-stem.com](http://www.e-stem.com) or by calling Mike Ogilvy at (603)591-0915

Engineering Notebook

Safety Glasses and Work Gloves

Imperial Allen Wrench Set

Power strip and extension cord

Calculator (standard or scientific)

Tape measure or ruler

Hammer

Philips and standard screwdriver

Metal file

Dremel (or similar) rotary tool with appropriate attachments

Drill and drill bits

Aircraft metal snippers for cutting Vex material

A WiFi enabled laptop equipped with licensed Vex programming software and suitable presentation software.

### THESE ARE THE ONLY ITEMS ALLOWED IN THE COMPETITION AREA DURING COMPETITIONS:

Pliers

Graph Paper

Pens and Pencils

Electrical Tape

Clear Tape

Markers

Scissors

Grease or graphite (NON-AEROSOL)

Empty small containers or part bins

Tap Set

Vex competition switch simulator

Vex programming cable

Replacement batteries and chargers

ALL 7.2V ROBOT BATTERIES MUST BE MADE BY VEX ROBOTICS

9V and AAA can be manufactured by any vendor

# MOBILE ROBOTICS Continued

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## Contest Guidelines:

1. Teams must be comprised of two members. **Teams should arrive to competition with robots already constructed.**
2. Teams are given a task that they will solve using a mobile robotic system provided by the technical committee.
3. Each team will have **up to 10 minutes** to present its engineering notebook to the judges.
4. Teams can only use an engineering notebook during the contest as a reference tool in the construction and programming of their robot.
5. The engineering notebook is a tool for students to document their designs prior to the competition. It can include pictures, printed out sections of code, detailed assembly instructions, etc. All pages must be bound and numbered.
6. Robot(s) can only be constructed **with the materials listed.**
7. Teams will have two scored chances to solve the mobile robotic challenge.
8. Once a team has performed the required task or set of tasks, a design change may be introduced.
9. Contestants are required to adhere to industry safety standards using the hardware and software provided.
10. All team members are responsible for double-checking each other's work and quality control.
11. All engineering notebooks, forms, documentation and programs **must be turned in to the judges.**
12. All team members and advisors are **invited to attend** a debriefing session after the competition has concluded.

## Standards and Competencies:

### Demonstrate knowledge in safety rules and practices

- 1.1 Maintain a safe work area
- 1.2 Demonstrate correct use of hand tools
- 1.3 Follow safety rules during robotic assembly
- 1.4 Demonstrate proper use of safety equipment
- 1.5 Define and document all safety issues

### Produce technical documentation

- 2.1 Maintain professional engineering notebook
- 2.2 Document assembly instructions and illustrations
- 2.3 Produce Bill of Materials (BOM)
- 2.4 Document the engineering design process

### Apply knowledge of robotic assembly and part identification

- 3.1 Identify various parts used on a mobile robot (wheels, motors, gears, etc.)
- 3.2 Identify the various systems in a mobile robot
- 3.3 Demonstrate the use of various components of a mobile robot
- 3.4 Demonstrate proper assembly techniques

### Understand mechanical systems of a robot

- 4.1 Understand and identify the various types of gears and their application
- 4.2 Demonstrate the use of gears on a mobile robot
- 4.3 Understand and identify the various types of chain and sprocket mechanisms
- 4.4 Demonstrate proper mechanical component alignment

### Wire a mobile robot

- 5.1 Demonstrate proper wiring techniques
- 5.2 Maintain and analyze battery voltage
- 5.3 Understand and use multiple types of mobile robotic sensors
- 5.4 Understand and differentiate different types of motors and motor controllers

### Produce examples of basic computer programming and flowcharting

- 6.1 Draw a programming flow chart representing a robot program for a given scenario
- 6.2 Develop a basic computer program to control robot
- 6.3 Manipulate feedback from robotic sensors in a program
- 6.4 Demonstrate proper commenting of code in a mobile robot program

### Presenting technical information and technical problem solving

- 7.1 Demonstrate the knowledge of various visual aids used to present technical information
- 7.2 Present technical material in a professional manner
- 7.3 Demonstrate proper presentation techniques
- 7.4 Define team roles and responsibilities
- 7.5 Demonstrate ability to solve problems as a team in a given time frame
- 7.6 Demonstrate and document a comprehensive plan to solve an engineering problem
- 7.7 Use proper time management when solving a problem
- 7.8 Demonstrate efficient project management and planning

### Identify communication protocols for mobile robots

- 8.1 Understand basic communication techniques in mobile robotics
- 8.2 Demonstrate proper communication between a transmitter and a robot



# URBAN SEARCH & RESCUE CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Safety shoes

Safety glasses

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

1. Supplied by technical committee:

- Challenge field: 12' x 12' simulated neighborhood
- Field elements: components of a residential area and obstacles to traverse, open, and manipulate in order to locate and dispose of simulated explosive ordnances
- A command center area equipped with a table, two chairs, and a video monitor
- General workspace for each team designated as a "pit" area, including one table, two chairs, and access to a 120-volt electrical supply

2. Supplied by the contestant:

- Safety equipment – eye protection is required at all times in the contest area
- Laptop computer (optional for technical presentation purposes only. Laptop not used for robot operation)
- Fully assembled, tested, and operational ordnance disposal robot conforming to the guidelines and parts restrictions listed in this document (see "Urban Search and Rescue Challenge Kit Bill of Materials" in Appendix)
- Team number affixed to robot
- Presentation software for oral presentation to judges (optional)
- CAD/CAM software for blueprint design (optional)
- Completed Engineering Notebook (Note: Technical drawing/blueprint of robot drive chassis must be included in notebook)
- Pens, pencils and paper

- |                                |                                 |  |
|--------------------------------|---------------------------------|--|
| i. Tools:                      | Pliers (needle nose or regular) | Set of box wrenches                      |
| Allen wrench set (English)     | Clamping vise                   | Metal tin snips                          |
| Power strip                    | Calculator                      | Tape measure                             |
| Hammer                         | Metal file                      | Flat-head and Phillips-head screwdrivers |
| Wire strippers (one set)       | Wire cutters/snips (one set)    | Roll of electrical tape                  |
| 4" nylon wire ties (25 pack)   | Multimeter                      | Multinut pliers                          |
| Metal-cutting hacksaw (manual) | Cordless drill with charger     | Set of standard drill bits               |

## Event

The 2019 Robotics: Urban Search & Rescue Challenge: Explosive Ordnance Disposal (EOD) enables students to create a mobile robot like those employed by emergency service personnel (fire, police, military). The robot is designed to secure an area by locating, neutralizing, moving, and disposing of explosive materials. The demand for designers, skilled technicians, and manufacturing workers who are fluent in mechanical design and electrical systems and highly skilled in troubleshooting and maintenance of robotic systems is projected to continue to grow. The current generation of students is expected to take artificial intelligence and robotics into the evolving world of emergency services, finding new ways to help trained personnel react more quickly and effectively. Therefore, it is imperative that our future labor force be on the leading edge of current and emerging technologies and possess the technical and team skills necessary to maintain industry leadership in design, manufacture, maintenance, and operation of life-saving robotic equipment.

# URBAN SEARCH AND RESCUE Continued

**Approved Materials:** Approved robot materials and quantity to be used:

Urban Search and Rescue Challenge Bill of Materials

4" wheel	6	L Bracket	6	Motor Speed Controller	1
16T sprocket	4	Flat Building Plate	2	1/2 SHCS	200
24T Sprocket	6	Flat Bracket	6	Hex Keys	1
32T Sprocket	2	2" Standoff Post	12	Zip Tie Pack	20
Chain w/Link	1	1" Standoff Post	12	Kep Nut	200
Chain Breaker	1	180 Servo	2	3/8" BHCS	50
Gear Hub Spacer	10	Single Servo Bracket	2	NiMH Battery Charger	1
100 mm Axle	12	Bronze Bushing	24	288 mm Flat Bar	4
DC Drive Motor	2	Axle Hub	12	Servo Pivot w/Bearing	1
Motor Mount	2	Motor Hub	2	80T Gear	2
Axle Set Collar	12	1/8" Axle Spacer	24	40T Gear	2
288 mm Channel	6	3/8" Axle Spacer	6	Electronics Deck	1
160 mm Channel	4	Motor Power Cable	2	Lid	1
96 mm Channel	4	On/Off Switch	1	Top Card	1
32 mm Channel	6	12-volt TETRIX Battery	1	Side Label Sticker	1
Camera Pack	1	900 MHz Camera 19-volt Adaptor	1	Camera Mount	1
Control System	2.4 GHz 6ch R/C Controller	1			

## Camera Specifications:

Camera Sensor Type: CMD

Camera Viewing Angle: 170 degrees

Camera Reverse Image: Selectable

Transmitter Voltage: 12 VDC

Transmitter Frequency: 2400-2483 MHz

Receiver Voltage: 12 VDC

Receiver Frequency: 2400-2483 MHz

## Additional parts and raw materials legal for use:

1. TETRIX Building System parts ([http://www.pitsco.com/Robotics\\_Urban\\_Search\\_and\\_Rescue\\_Challenge\\_Kit](http://www.pitsco.com/Robotics_Urban_Search_and_Rescue_Challenge_Kit), 800-835-0686, or [competitions@pitsco.com](mailto:competitions@pitsco.com))
2. Other robot parts similar in size and design to Urban Search & Rescue Challenge Kit materials
3. (1) 12" x 24" sheet of acrylic plastic, maximum thickness of 0.250"
4. (1) 12" x 24" sheet of aluminum, maximum thickness of .080"
5. 3D-printed parts of original design
6. Raw material used for fabricating custom robot parts

**Massachusetts State Competition Requirements:** **No Pneumatics or air compressors allowed**  
Teams should arrive to competition with robots **already constructed.**

**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.

# URBAN SEARCH AND RESCUE Continued

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## State Skills:

This portion of the contest will entail a knowledge exam. Competencies evaluated on the written portion will be general principles used in robotics. There will be a 30-minute limit for the written test.

## Challenge Overview

A two-member team builds its robot and arm mechanism prior to the competition and then, during the competition, remotely operates the robot, which should be capable of locating, grabbing and moving simulated ordnances on the challenge course. This remotely operated vehicle (ROV) must traverse the course, locate the ordnances, secure them and properly dispose of them. Each team will perform one round of competition consisting of **a time-limited mission to locate and dispose of two ordnances.**

- a. During the mission, each team must complete several procedures specified in the rules provided at the event.
- b. The mission will be limited to **six minutes.**
- c. Each two-member team will work from a command center to remotely operate its robot to carry out the mission. The command center will be equipped with a monitor displaying the video feed from an onboard wireless camera system attached to the robot. The robot will begin the challenge course from a starting point. The timed mission starts when the robot begins to move and ends when the robot drops the last ordnance into the containment unit, or when time runs out.

## Contest Field

12' x 12' simulated residential area

Features of neighborhood:

- a. Starting point from which robot deploys
- b. Containment boundaries marking the 12' x 12' challenge area
- c. Objects often found in a neighborhood setting: home, street, grass, mailboxes

**Note:** Ordnances are randomly and strategically positioned on the challenge course in locations that require a robot to open doors and reach for and grab items to deliver them to a safe disposal site. Some ordnances may be located outside a direct line of sight from the command center, in which case tele-op capabilities will be put to use.

## Command Center

The command center will be located within view of the contest field and equipped with a table, two chairs, and a video monitor.

## Pit Area

A pit area where teams modify their robots and arm mechanisms will be provided. Each team will have a conference table, two chairs, and access to a 120-volt electrical outlet.

**Note:** Cameras must remain off while in the pit area to minimize the chance of interference for the team actively driving the course.

## Challenge Checklist

1. Purchase robot challenge kit.
2. Design and build robot and arm mechanism within specifications that is capable of grabbing, holding, and moving objects. Document process and blueprints in Engineering Notebook.
3. Practice driving robot on various types of terrain while looking at a video monitor displaying the feed from the onboard camera.
4. Review basic mechanical, robotics, and electrical knowledge in preparation for written test.
5. Plan, prepare, and practice presentation.
6. Attend local, regional, state, and national Urban Search & Rescue Challenge competitions.



# URBAN SEARCH AND RESCUE Continued

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## Recommended Content for Urban Search & Rescue Challenge Kit

The Urban Search & Rescue EOD robot may be built using only components that comprise the Urban Search & Rescue Challenge Kit and/or other approved parts listed in the Appendix. Each kit contains everything necessary to construct a basic robot for the Urban Search & Rescue Challenge competition. Upon registering for the event, teams may purchase an Urban Search & Rescue Challenge Kit.

Each TETRIX®-based Urban Search & Rescue Challenge Kit contains:

- a. Metal construction elements for fabricating a robot chassis
- b. Metal construction elements for fabricating an arm mechanism
- c. Tools for construction
- d. Control system and power electronics of a 2.4 GHz R/C transmitter (up to 6 channels), receiver, DC motor controller, rechargeable battery pack, and charger
- e. Hookup diagrams and troubleshooting tips

**Notes:** Any off-the-shelf robotics building platform may be used for this event, as long as the robot complies with all parts restrictions (see list) and is operated by remote control; **autonomously controlled robots will be disqualified**. Any wireless camera system with a camera mounted to the robot and video display is allowed. A video monitor/TV with RCA inputs will be supplied by the Technical Committee for the purpose of displaying the team's video feed in the command center. A bill of materials for the Urban Search & Rescue Challenge Kit and a list of approved optional parts and raw materials can be found in the Appendix.

## Sample Event Agenda

Following is a sample agenda for an Urban Search & Rescue Challenge event.

1. **Orientation and Testing:** Teams will bring robots for inspection and Engineering Notebooks for judging. The written test will be administered (30 minute limit for written test).
2. Robot and Engineering Notebook **inspection** by judges (items then returned to teams)
3. The following can be done simultaneously if the number of event personnel permits:
  - a. Teams complete **technical presentation** (oral and physical) over robot, Engineering Notebook, and arm mechanism (following presentation, items will remain in judges' possession until challenge field competition).
  - b. Final robot and arm mechanism **inspection** by judges
4. Time trials conducted
5. Lunch
6. Challenge field **competition** conducted

## Contest Guidelines

**Note:** Guidelines and rules are subject to change.

1. Each team must be composed of two members. If a team member is absent, the lone team member will be allowed to compete but a 30 point penalty will be applied to the overall score.
2. Each robot must have an **identification label** with the team's number listed.
3. Each **technical presentation** should last a maximum of five minutes and should be primarily oral, with supporting materials of printed or electronic media and physical models. Students should be prepared to discuss the roles they played, their robot design, and the functions of their robot. (**Note:** The Technical Committee will **not** provide projector, screen, or other presentation equipment.)
4. **Before attending** the competition, team members should design, build, and experiment with robots constructed from the SkillsUSA Urban Search & Rescue Challenge Kit. Additional TETRIX or other approved parts and raw materials (see Appendix) may also be used. The prebuilt robot and arm mechanism will be required to grab, hold, and move objects during the mission.
5. The robot's arm mechanism must be capable of opening a standard-size mailbox and reaching **into the box up to five (5) inches**, grabbing the simulated ordnance, and pulling it out of the mailbox. The arm mechanism must be capable of reaching items positioned **up to nine (9) inches above the floor**.



## URBAN SEARCH AND RESCUE Continued

6. The simulated ordnances (wooden block, right) are not included in the competition kit and are **approximately 2.7 inches cubed** and **weigh 4.3 ounces**. The handles on doors and mailboxes (far right) are **3.3 inches long and .41 of an inch wide**.

7. **Part Restrictions:**

- Limit of **eight** motors/servos per competing robot
  - Maximum of **one** transmitter/remote
  - One** rechargeable battery pack for drivetrain motor power, maximum 12V 3,000 mAh.
  - Wireless camera system** that must be mounted on robot
  - Robot must fit into an **18" x 18" x 18"** space when starting **but may be expanded to a larger size during the challenge**.
8. Each team must provide in its Engineering Notebook a **technical drawing or blueprint** detailing the construction of its robot drive chassis and additional drawings/blueprints for its associated arm mechanism.
9. The robot and arm mechanism must be **assembled by the team prior to the competition**.
10. All robots will be required to **pass inspection** by judges to determine if all of the parts used are from the list of allowed parts. Any team whose robot fails inspection will be disqualified if proper modifications have not been made within 10 minutes.



Ordnance (wooden block)

Mailbox handle

Pass	Fail	Rule/Guideline	Notes
		Robot fits in size limitation of 18" L x 18" W x 18" H.	
		Team name/number is attached and visible on robot.	
		Robot does NOT contain components that will intentionally detach on playing field.	
		Robot does NOT contain any components that could damage the playing field.	
		Robot does NOT contain any parts that are sharp, jagged, or pointed.	
		Robot poses NO obvious unnecessary risk of entanglement with any element on the playing field.	
		Robot contains a total of no more than eight DC motors, servo motors, or a combination thereof.	
		Robot contains only ONE transmitter/controller and receiver.	
		Robot contains only ONE 12V 3,000 mAh battery for drive train.	
		Robot wiring MUST be secured to chassis, free and clear of any moving parts to avoid entanglement while competing.	
		Robot battery pack(s) MUST be securely fastened to robot's chassis away from sharp edges, corners, screws, and moving parts.	
		Robot MUST contain a securely fastened wireless camera.	
		Robots using chain and sprocket or tank treads MUST have sufficient slack in the chain and/or tank treads.	
		Robot is built from ONLY approved materials listed in Appendix A of the current Urban Search and Rescue Technical Standards.	

- Robots will not be allowed to compete with an arm mechanism that poses **danger** to competitors or could potentially cause damage to the challenge field.
- Accuracy of the robot's **construction matching the blueprint** will be considered during scoring. All necessary parts and tools for construction must be brought to the competition site.
- Team members will be required to follow proper safety procedures and use eye protection.
- Teams may bring a **laptop computer and blueprint drawings** of their robot and arm mechanism designs to the contest building area. A description of the assembly process is required to be within the Engineering Notebook. The designs also may be printed or hand-drawn copies.
- Teams **may view the challenge course** prior to the beginning of competition and may watch other competing teams during the challenge event.

# URBAN SEARCH AND RESCUE Continued

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## Engineering Notebook

The Engineering Notebook will be submitted for judging at check-in. Required elements include:

1. Overall neat and professional appearance
2. A complete bill of materials for the robot drive chassis and arm mechanism designed and used in competition at the event
3. A detailed description of the assembly process for the robot drive chassis and arm mechanism
4. Illustrations, sketches, photos, and written log entries accurately documenting the design and prototyping iterations detailing the evolution and logical progression of the robot's design
5. Explanations noting how testing was conducted, why modifications were made, skills learned, and how robot might further be modified to improve performance and achieve desired objectives if no restrictions were in place

## Scoring

Robot Drive Chasis	150 possible points
Arm Mechanism and Gripper	150 possible points
Engineering Technician Notebook	200 possible points
Technical Presentation	150 possible points
Challenge Field Skills	250 possible points
Written Test	100 possible points
Team Total	1,000 possible points
No Resumé	50 point penalty
No Safety Glasses	50 point penalty
Team Member Absent	30 point penalty

## Challenge Course Rules

**Note:** Team members must wear safety glasses at all times while they are in the competition area! All teams will be expected to adhere to the official rules for the Urban Search & Rescue Challenge competition and compete in a positive and professional manner.

1. A time trial must be completed prior to the timed mission. The ordnance will be placed in a specified location on the course and the route traveled to retrieve and dispose of the ordnance must be identical for all teams. This route will be determined by the event chairperson. The fastest time will be awarded a 50-point bonus; the second-fastest time will be awarded a 30-point bonus.
2. At the competition site, the **simulated residential area** will be provided and maintained by the technical committee. During competition, the course will be reset to its original state before each team competes. The ordnance pieces will be randomly placed before each team competes.
3. The Urban Search & Rescue Challenge: Explosive Ordnance Disposal event will consist of a time trial and **a single timed mission** for each team. During the mission, the robot has up to six minutes to navigate the course, complete the challenge, and return to home base.
4. Each team will **operate its mobile robot** and navigate by line of sight and by the video feed from an onboard wireless camera. The command center will be within view of the playing field, and team members must remain seated at the command center while competing.
5. An official will be in charge of placing the team's robot at the starting point on the challenge course. (**Reminder:** The robot must fit within an 18" x 18" x 18" space at the start but **may expand to any size after it enters the neighborhood.**)
6. After a "clear" signal is issued by a challenge course official, **time will begin** as soon as the robot moves. Following completion of a mission, **time will stop** upon successful return to home base following disposal of two simulated explosive ordnances.
7. Robots should remain on roads and paths within the neighborhood to avoid property damage. Shortcuts are not allowed and will result in penalties.
8. The mission will last a **maximum of six minutes**.
9. Team members are **not allowed to touch** their robot at any time while a mission is in progress, unless instructed to do so by a judge.
10. The **containment unit** where the ordnance pieces are placed by the robot after removal from the course must remain outside the field of play and as close to the starting position as possible. Any team that deliberately moves the containment unit from its starting point will be penalized.

# URBAN SEARCH AND RESCUE Continued

11. An official will award points for the team's mission based on the official "Challenge Field Skills" rubric.

Urban Search & Rescue Challenge – Possible Points: 250								Team: _____	
<b>Challenge Field Skills</b>									
<b>Time Trial Performance</b>	<b>Time:</b>								
<b>Objective</b>	<b>Points Performance Level</b>								<b>Points</b>
	0	50	100	125	150	170	200	Time	
<b>Challenge Course Mission: Ordnance retrieval and containment</b>	Robot became disabled on the course and could not continue.	Robot did not find any of the ordnances.	Robot found at least one of the ordnances but was unable to retrieve and dispose of it.	Robot was able to find both of the ordnances but not dispose of either within the allotted time.	Robot was able to retrieve and dispose of one of the ordnances.	Robot was able to retrieve but not dispose of the second ordnance within the allotted time.	Robot was able to retrieve and dispose of both of the ordnances within the allotted time.		

<b>Point Deduction Worksheet</b>				<b>Total Time</b>	
Infraction	Number of Incidents	Points to Deduct		<b>Time Trial Bonus</b>	
Loss of ordnance (5 points per incident)				1st Place Time . . . . . 50 points	
Vehicle stalled; official asked to help (5 points per incident)				2nd Place Time . . . . . 30 points	
Robot intentionally outside of boundaries (25 points per incident)			.....→	<b>Challenge Field Points</b> (subtotal)	
<b>Deduction Total</b> (insert into main scoring rubric)				<b>Deduction Total</b> (from Point Deduction Worksheet)	
				<b>Challenge Field Point Total</b>	



  

Judge's comments:
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## Penalties

1. A deduction will be assessed each time an ordnance is dropped.
2. Each time the **robot stalls or becomes hung up** and has to be freed by an official, a deduction will be assessed. An official will free a robot only at the request of a team member, but a deduction will be assessed.
3. A deduction will be assessed whenever a robot goes off the designated path within the neighborhood or **outside of the course boundaries**. **Shortcuts are not allowed.**

For additional **Scoring Rubrics and a complete list of competencies**, see the USAR2019 Challenge Guide.

## Robotics: Urban Search & Rescue Challenge

Explosive Ordnance Disposal (EOD)

2019 National Event

**Technical Standards**

(Version: January 31, 2019)

Note: Event rules/regulations are subject to revision prior to competition.

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# TRANSPORTATION SERVICE TRADES A

**SERIES DIRECTOR:**  
JEREMY GUAY

**CONTACT INFORMATION:**  
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## **EVENTS:**

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### **AUTOMOTIVE REFINISHING**

Briefing: Salon B  
Competition: Blackstone - Auto Body Shop 220C, 223C  
Event Manager: Ken Robbins

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### **COLLISION DAMAGE APPRAISAL (Limited Demo)**

Briefing: Salon B  
Competition: Blackstone - P&D Shop 060B  
Event Manager: TBA

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### **COLLISION REPAIR TECHNOLOGY**

Briefing: Salon B  
Competition: Blackstone - Auto Body Shop 220C, 223C  
Event Manager: Jim Marshall

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### **POWER EQUIPMENT TECHNOLOGY**

Briefing: Salon B  
Competition: Blackstone - QCC Area 230C  
Event Manager: Bill Hazeldine



# AUTOMOTIVE REFINISHING TECH.

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Blue work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

### Safety: **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Paint suite

Tack rags

Air pressure gauge (spray gun)

DA pad wrench

Hook-it and sticky back DA pads

DA sander

1/2"-7/8" wrench set

Sanding pads

Sanding blocks

Red, gray, and white scuff pads

Air blow gun

Calculator

Buffers will be provided but contestants can bring their own

Adjustable Wrench

Cartridge-type respirator (charcoal-filtered) for mixing, not spraying

Painting respirator

Any assorted tools that the contestant may feel they could need. Contestants will not be able to borrow any tools from the hosting school.

Resume along with their portfolios (students name and school should not be present on their resume)

Spray guns (Advisors/Contestants should make sure the air nipples attached to their air tools will work with host site equipment)

Students will be required to wear fresh air supplied hoods for the painting portion of the contest. These will be provided.

### State Skills:

The competition requires contestants to do metal work-welding including MIG welding, structural damage analysis and alignment of body and frame, estimation of damaged automobile, plastic identification and repairs. Contestants are judged on the overall appearance of the finished product, speed, and proper safety practices. Contestants will be required to remain in their testing area until judges direct them to their next assigned contest area.

**Contestants can be and will be disqualified immediately for any communication with people outside of the contest perimeters or any use of cell phones or other prohibited electronic devices. Contestants will be disqualified immediately for any safety violation that the judges/Series Director/Board Member deems places the contestant and or others in danger of injury.**

The contest is defined by the current industry technical standards. The contest is divided into six portions: a written ASE exam, an interview, a manually written estimate, and a series of workstations. Contestants will demonstrate their abilities to perform tasks selected from the following list of competencies as determined by the Skills USA Championship technical committee.

### Skill Areas of Competition:

Prep. Entire panel for BC/CC

1.25 hrs. Perform proper sanding techniques and final sand for sealer application in relationship to task.

Judge is looking for contestant's safety, proper use of tools, metal straightening, use of filler material, techniques and overall final appearance. NOTE: Should student prepare panel/fender for primer

Buffing

45 minutes. A painted panel to be colored sanded with appropriate sand paper for buffing. Using the correct material to achieve a high gloss finish. Judge is looking for contestant's safety, proper use of tools, equipment, supplies, as well as the overall finished product.

# AUTOMOTIVE REFINISHING TECHNOLOGY Continued

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Masking of vehicle	45 minutes. Appropriate masking techniques for refinishing fender and blending into adjacent panel application in relationship to tasks. Judge is looking for contestant's safety, mask and protecting of panels not to be refinished, mask door jambs and other aperture panels.
Paint test/Interview	45 minutes. ASE style test, with portfolio students name and school should not be present on their portfolio. Judge is looking for contestant's ability to communicate with the judge, good eye contact, fill out job application legibly.
Tinting/Color matching	45 minutes. Complete color assessment in relationship to the task. Selecting the correct toner for color within the formula. Judge is looking for contestant's ability to determine adjustment that must be made, ability to select the correct toner, ability to follow set directions.
Estimating/Paint ID	1.25 hrs. Proper vehicle ID, estimate written legibly, list parts in logical sequence, time involved repairing, parts material cost, estimate completed final figure. Locate and document vehicle manufacturer's paint code application in relationship to tasks. Identify the code using paint manufacturer manuals. Judge is looking for contestant's safety, Vehicle I.D., estimate written legibly, list of parts in logical sequence, time involved in repairing, parts and material cost, estimate completed final figure. Accurate location of paint ID and ability to look code up in manufacturer's manual.

## Contestants 1-3

8:30 AM	Briefing
8:45 AM	Estimating/Paint I.D.120
10:15 AM	Tinting/Color matching including mixing
10:50 PM	Buffing 40
11:30 PM	Bagging of vehicle
11:30-12:00	Holding Room
12:00-12:30 PM	Lunch
12:35 PM	Bagging of vehicle
1:15 PM	Interview
1:55 PM	Prep. Entire panel for BC/CC
3:10 PM	DONE

## Contestants 4-6

8:30 AM	Briefing
8:40 AM	Prep. Entire panel for BC/CC
10:05 AM	Buffing
10:45 PM	Bagging of vehicle
11:25	Holding Room
12:00-12:30 PM	Lunch
12:35 PM	Interview
1:15 PM	Tinting/Color matching including mixing
1:55 PM	Estimating/Paint I.D.
3:10 PM	DONE

## Contestants 7-9

8:30 AM	Briefing
8:40 AM	Bagging of vehicle
9:25 AM	Tinting/Color matching including mixing
10:10 AM	Prep. Entire panel for BC/CC
11:35-12:00	Holding Room
12:00-12:30 PM	Lunch
12:30 PM	Estimating/Paint I.D.
1:55 PM	Interview
2:45 PM	Buffing
3:25 PM	DONE

## Contestants 10-12

8:30 AM	Briefing
8:40 AM	Tinting/Color matching including mixing
9:25 AM	Bagging of vehicle
10:10 AM	Estimating/Paint I.D.
11:35-12:00	Holding Room
12:00-12:30 PM	Lunch
12:30 PM	Prep. Entire panel for BC/CC
1:55 PM	Buffing
2:45 PM	Interview
3:25 PM	DONE



# COLLISION DAMAGE APPRAISAL CONTEST

## (LIMITED DEMO)

### REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Supplied by the technical committee: Basic equipment of a collision damage appraisal and total loss evaluation laboratory

a. Materials for computerized estimating segment:

- i. Automated Estimating System (See SkillsUSA website for details on which estimating systems will be used annually).
- ii. Digital Camera or tablet with imaging capabilities.
- iii. Printer networked to estimating systems and digital camera and WI-Fi Capability.
- iv. Damaged vehicles for the frontal damage estimate, quarter panel damage estimate and the total loss evaluation

b. Materials for Total Loss Evaluation:

- i. A vehicle that is an obvious total loss
- ii. Total Loss evaluation Software or paper equivalent (See SkillsUSA website for details on which Total Loss and valuation systems will be used annually)
- iii. Digital Camera
- iv. Vehicle evaluation guide (See SkillsUSA website for details on which vehicle evaluation systems will be used annually)
- v. Conditioning Matrix

c. Materials for hand written estimating phase:

- i. Vehicle owner's name and address
- ii. Scratch pads
- iii. Estimate sheets
- iv. Estimate books
- v. Calculator
- vi. Parts price list for car involved

Note: Check the Contest Guidelines and/or the updates page on the SkillsUSA website: [updates.skillsusa.org](http://updates.skillsusa.org).

**Contestants can be and will be disqualified immediately for any communication with people outside of the contest perimeters or any use of cell phones or other prohibited electronic devices. Contestants will be disqualified immediately for any safety violation that the judges/Series Director/Board Member deems places the contestant and or others in danger of injury.**

### Purpose:

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of collision damage appraisal and total loss evaluation. First, download and review the General Regulations at: [updates.skillsusa.org](http://updates.skillsusa.org).

### Eligibility:

Open to active SkillsUSA members enrolled in programs with collision damage appraisal and total loss evaluation as an occupational objective.



# COLLISION DAMAGE APPRAISAL Continued

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## Scope of Contest:

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. National Committee membership includes: ABRA, ASE, Audatex, Caliber Collision, CCC, Collision Repair Education Foundation (CREF), GEICO, Gerber Collision & Glass, Insurance Auto Auction (IAA), and State Farm Ins.

## Knowledge Performance:

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 from this skill area:

1. Damage Analysis – 12 questions that cover tasks necessary to analyze vehicle damage.
2. Estimating – 13 questions that cover the tasks necessary to estimate vehicle damage.
3. Legal and Environmental Practices – 2 questions that cover the tasks associated with legal and environmental practices.
4. Vehicle Construction – 7 questions that cover the tasks associated with vehicle construction.
5. Vehicle Systems Knowledge - 8 questions that cover tasks to identifying vehicle systems.
6. Parts and Source Identification – 6 questions that cover the tasks for parts and source identification
7. Customer Relations and Sales Skills – 2 questions that cover the tasks associated with customer relations and sales skills.

## Skill Performance:

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). The competition includes a series of competencies to assess skills in the following areas: Handwritten Estimate preparation using paper manuals, two computerized estimates/appraisals on frontal damage including unibody damage and light mechanical damage and rear damage including quarter panel replacement, "Virtual" estimate prepared from images assessing virtual (remote) estimating skill and a total loss vehicle inspection report and vehicle evaluation including digital images associated with all computerized estimating and total loss evaluation. The competitors will also participate in an interview contest. The overall accuracy and quality of the finished products, speed and proper safety practices will be judged.





# COLLISION REPAIR CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Blue work pants, as shown

SkillsUSA Massachusetts T-Shirt, provided

Leather work boots

NO jeans

Safety glasses with side shields or goggles

NO cell phones allowed

### Safety: **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

Hammers

Board sanders

Adjustable wrench

Small grinder 3"-5"

DA sanding paper assortment

Welding vest

Tru-flat air nipples ¼ inch

2 green scuff pads

Air blow gun

No cell phones allowed

Dollies

(2) #2 pencils sharpened

Metal file

Grinding disc

Welding hood

Welding respirator

Safety glasses with side shields

Dust respirator

Sanding paper for shaping polyester body filler (example 80,180,320 grit)

Sanding blocks

Calculator

Cheese file

DA sander

Welding gloves

Tape measure capable of English and metric measure

2 gray scuff pads

Student portfolio and resume

## State Skills:

The competition requires contestants to do metal work-welding including MIG welding, structural damage analysis and alignment of body and frame, estimation of damaged automobile, plastic identification and repair, and a written test in multiple areas. Contestants are judged on the overall appearance of the finished product, speed, and proper safety practices. Contestants will be required to remain in their testing area until judges direct them to their next assigned contest area.

## Skill Areas of Competition

### Metal Working

1 ½ hrs. (Have a fender with E coat only/no paint). One dent to be worked out without the use of filler, one dent to be repaired using only body filler. Prepare panel (fender) for primer. Judge is looking for: Safety, proper use of tools, metal straightening, use of filler material, techniques and overall final appearance.

### Frame Analysis

45 minutes.. The following gauges may be used: Tram & Self Centering gauges. Judge is looking for: Safety, steering geometry and alignment, use of frame/body manuals, body measurements, describe damage on paper, draw out what you see.

### MIG Welding

45 Min. Plug weld, stitch weld, continuous weld (vertical weld and flat weld). Welders that will most likely be used Miller's 175 and 160's with .23 wire. Judge is looking for: Safety, good penetration of weld, proper set up of and tuning of the machine.

### Estimating

45 Min. Must be able to identify five types of vehicle damage, and prepare a hand written estimate. Judge is looking for: Vehicle identification, estimate written legibly, list of parts in logical sequence, time involved in repairing, parts and material cost, estimate completed with final figure.

### Job Interview

15 Min. (with portfolio and resume) Judge is looking for: The ability to communicate with the judge, good eye contact, fill out a job application legibly and completely.

### Plastic Repair:

1 ½ hrs. Bumper and bumper tab repair. Judge is looking for: Safety, surface preparation, featheredging, block sanding, overall finale appearance, and general knowledge test.

# COLLISION REPAIR Continued

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**Contestants can be and will be disqualified immediately for any communication with people outside of the contest perimeters or any use of cell phones or other prohibited electronic devices. Contestants will be disqualified immediately for any safety violation that the judges, Series Director, Board Member deems places the contestant and or others in danger of injury.**

## Contestants 1-3

8:30 AM	Briefing
8:40 AM	Metalworking
10:00 AM	Job Interview
10:50 PM	Frame Analysis
11:35 PM	Holding Room
12:05-12:35 PM	Lunch
12:40 PM	Estimating
2:00 PM	MIG Welding
2:50 PM	Plastic Repair on damaged bumper cover
4:05 PM	DONE

## Contestants 4-6

8:30 AM	Briefing
8:40 AM	Plastic Repair on damaged bumper cover
10:00 AM	Job Interview
11:05 AM	Frame Analysis
11:55 AM	Holding Room
12:05-12:35 PM	Lunch
12:40 PM	MIG Welding
1:30 PM	Estimating
2:50 PM	Metalworking
4:05 PM	DONE

## Contestants 7-9

8:30 AM	Briefing
8:40 AM	Frame Analysis
10:00 AM	MIG Welding
10:50 AM	Plastic Repair on damaged bumper cover
12:00 PM	Holding Rom
12:05-12:35 PM	Lunch
12:40 pm	Metalworking
2:05 PM	Estimating
3:20 PM	Job Interview
4:05 PM	DONE

## Contestants 10-12

8:30 AM	Briefing
8:40 AM	MIG Welding
9:30 AM	Estimating
10:50 AM	Metalworking
12:05-12:35 PM	Lunch
12:40 PM	Plastic Repair on damaged bumper cover
2:05 PM	Job Interview
2:55 PM	Frame Analysis
4:05 PM	DONE



# POWER EQUIPMENT TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

**Safety:** *avoid a safety violation or being removed from the contest*

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

1. Supplied by the technical committee:

- All necessary engines, engine parts, work stations, test stands, power equipment, gasoline, oil and all basic hand tools as well as necessary specialty tools.
- Industry manuals, including service and repair instruction manuals.

2. Supplied by the contestant:

- All competitors must create a one-page typed resume to be turned in at the time of the contest orientation.
- Contestants must provide a portfolio (without the school or contestants name) at the time of the interview. (Portfolios will be returned at the end of the contest).

### State Skills:

The competitions purpose is to evaluate each contestant's preparation for employment and recognize outstanding students for excellence and professionalism in engine and equipment diagnostics, overhaul and repair of both liquid and air-cooled engines. It will also evaluate the ability to troubleshoot and possibly overhaul the power train components of a piece of powered equipment and/or machinery.

**Contestants can be and will be disqualified immediately for any communication with people outside of the contest perimeters.**

### Score Sheet:

Items Evaluated	Point Value
Written Test	10
Parts I.D.	75
Customer Service Job Quote	100
Failure Analysis	150
Precision Measurements	150
4-cycle service	150
Interview/Portfolio	10
Explain how engines operate (2-cycle air cooled and 4-cycle)	175



# TRANSPORTATION SERVICE TRADES B

**SERIES DIRECTOR:**  
EDWARD (TED) FOOS

**CONTACT INFORMATION:**  
UNIVERSAL TECHNICAL INSTITUTE  
ONE UPLAND ROAD, BLDG. 200  
NORWOOD, MA 02062  
(401) 663-1984  
efoos@uti.edu

## **EVENTS:**

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### **AUTOMOTIVE SERVICE TECHNOLOGY**

Briefing: Salon B  
Competition: Blackstone - Automotive Shop—230C, Holding Room 231C  
Event Manager: George Sadowski

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### **DIESEL EQUIPMENT TECHNOLOGY**

Briefing: Salon B  
Competition: Milton CAT, Milford, MA  
Event Manager: Ronald N. Barton

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### **MARINE SERVICE TECHNOLOGY**

Briefing: Salon B  
Competition: Blackstone - Off Machine Tech 139D  
Event Manager: TBA



# AUTOMOTIVE SERVICE TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Blue work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

### Safety: **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

2 - #2 Lead pencils with eraser

All other tools and equipment will be supplied.

### Scope of Contest:

The contest will be consistent with the automobile technician task list outlined in guidelines published by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF) at: [www.natef.org](http://www.natef.org). General shop safety rules will be followed. In addition, contestants will be judged on general shop skills, problem-solving skills and shop safety. Points allowed will be assigned by the technical committee based on the difficulty of the assigned task. Contestants will demonstrate their ability to perform jobs or skills selected from the standards mentioned above as determined by the state technical committee.

### Skill Performance:

The contest will include a series of workstations. Workstations consist of a vehicle and/or simulators, components, service publications, and interpersonal skills stations. Contestants will rotate among multiple test stations. Each station will be timed and one rest station is built into the rotation. Test stations may include the following:

HVAC

Engine Performance

Charging Systems

Environment, Health and Safety

Electrical Circuit Diagnosis

Electronic Service Information

Steering and Suspension

Information Systems – ChiltonPro

Professionalism – Job Interview Skills

Brake Service

Engine Mechanical



# DIESEL EQUIPMENT TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Blue work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

### Safety: **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

2 - #2 Lead pencils with eraser

All other tools and equipment will be supplied.

### Scope of Contest:

The contest will include a series of stations where students will potentially service and repair large diesel engines, transmissions, drive trains, electrical systems, brakes, hydraulic systems and cab components used in farm equipment, trucks and construction equipment. General shop safety rules will be followed. In addition, contestants will be judged on general shop skills, problem-solving skills and shop safety. Points allowed will be assigned by the technical committee based on the difficulty of the assigned task.

### Skill Performance:

Contestants will be tested on multiple work stations, which may include the following:

Shop Skills

Drive Train

Precision Measurement

Electronic Diagnosis

Safety

Hydraulic Components

Machine Inspection

Electric Power Generation

On Highway

Live Engine Test



# MARINE SERVICE TECHNOLOGY CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

### Clothing Requirements: **failure to do so will result in a clothing penalty**

Blue work pants, as shown

Leather work boots

Safety glasses with side shields or goggles

SkillsUSA Massachusetts T-Shirt, provided

NO jeans

NO cell phones allowed

### Safety: **avoid a safety violation or being removed from the contest**

NO loose/long hair (must be secured)

NO loose clothing

NO jewelry

NO sneakers

### Tool Requirements: **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

2 - #2 Lead pencils with eraser

All other tools and equipment will be supplied.

### Scope of Contest:

The national contest is defined by industry standards as established by the American Boat and Yacht Council and industry manufacturers. The contest will include knowledge of marine diagnostics, service and repair of boats and personal water craft with accessory items. The state contest strives to align with the national contest, which includes skill stations assessing skills in two- and four-cycle engines, outboard and stern drive applications, and two and four-cycle inboard troubleshooting/repair. In addition, proficiency must be demonstrated in marine application electrical/ignition systems, fuel systems, cooling systems, lubrication systems, drive/transmission systems, and boat and trailer rigging and repair.

### State Skills:

General shop safety rules will be followed. In addition, contestants will be judged on general shop skills, problem-solving skills and shop safety. Points allowed will be assigned by the technical committee based on the difficulty of the assigned task. Contestants will be tested on multiple work stations, which may include the following:

Fuel Systems

Outboard Valve Adjustment

Remote Control Key Switch Tests

Control Harness

Engine Component Identification

Precision Measuring

Service Manual Navigation

Electrical Board Set up and Testing

Principles of Navigation

Capacitor Discard Ignition Systems

Two and Four Cycle Engine Theory of Operation

Sterndrive Shim Calculations

Lower Unit Service

# DISPLAY EVENTS & TECHSPO

**SERIES DIRECTOR:**  
STEPHEN P. CONDON

**CONTACT INFORMATION:**  
GR. NEW BEDFORD TECHNICAL HIGH SCHOOL  
1121 ASHLEY BLVD.  
NEW BEDFORD, MA  
(508) 998-3321  
scondon@gnbvt.edu

## EVENTS:

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### CHAPTER DISPLAY

Briefing: Court Yard  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Courtyard  
Event Manager: Len Gauvin

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### CRIMINAL JUSTICE

Briefing: Court Yard  
Competition: Blackstone - Multi-media Shop / Outside Venue  
Event Manager: Kellie Martin and Leanne Fisher

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### PROMOTIONAL BULLETIN BOARD DISPLAY

Briefing: Court Yard  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Court Yard  
Event Manager: Stephen Marciszyn

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### TECHSPO

Briefing: Court Yard  
Competition: Trade Center Rear Section (BW)  
Event Manager: Mindy Kempner  
**Notes: Techspo exhibits are to be set up  
on Thursday, 4:00 p.m.–7:00 p.m. in the Trade Center.  
Please check in with Series Director upon arrival.**  
Techspo judging will take place on Friday, 9:00 a.m.–12:00 p.m.  
Techspo will be open to the public on Friday, 3:00 p.m.–7:00 p.m.



# Refer to the 2019-2020 Technical Standards for Information, Standards and Rules for these **DISPLAY EVENTS**

CHAPTER DISPLAY  
PROMOTIONAL BULLETIN BOARD DISPLAY



2019-2020 SkillsUSA Championships Technical Standards  
available on-line to all professional members

## EMPLOYABILITY SKILLS TESTING:

All contestants in Chapter Display and Promotional Bulletin Board will take their Employability Skills Exams **at the Best Western Hotel in Zachary's Restaurant**. There will be "rolling administration" of the test between 7:00 a.m and 10:00 a.m.

During the briefing meetings, Series Directors will provide information on what time each group of contestants will take the test.

- Chapter Display competitors should review this year's theme on page 7.  
A map of the competition area will be shared, to show the location of your display for competition.
- **Techspo contestants need to be registered to compete**, as part of the registration process. Use the TECHSPO PROJECT form provided.  
Techspo exhibits are to be set up on Thursday, 4:00 p.m.–7:00 p.m. in the Trade Center.  
Please check in with the Series Director upon arrival. The complete double-sided Techspo Form should be displayed next to the project.  
Techspo judging will take place on Friday, 9:00 a.m.–12:00 p.m.  
Techspo will be open to the public on Friday, 3:00 p.m.–7:00 p.m.
- Promotional Bulletin Board competitors should review this year's theme on page 7 and will need to bring an easel to display their board.  
A map of the competition area will be shared, to show the location of your board for competition.



# CRIMINAL JUSTICE CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Blue work pants	Leather work boots	Safety glasses with side shields or goggles
Light blue oxford shirt, as shown	NO jeans	NO cell phones allowed
<b>Safety:</b> <i>avoid a safety violation or being removed from the contest</i>		
NO loose/long hair (must be secured)	NO loose clothing	NO jewelry
		NO sneakers

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

Small pocket notebook for field notes	25' tape measure	Pens and pencils (two each)	Handcuffs
Handcuff case	Fingerprint kit	Accident template	Flashlight
Belt and training holster with weapon	Camera (can be on phone)		
Clipboard or Posse box for paperwork			

**State Skills:** Review the National contest details as written in the 2019-2020 SkillsUSA Championships Technical Standards. The competitions purpose is to evaluate each contestant’s preparation for employment and recognize outstanding students for excellence and professionalism in Criminal Justice. The contest will include activities that simulate situations encountered by criminal justice professionals.

**Contest Guidelines**

1. Each contestant must work independently without assistance from instructors, other contestants or observers.
2. The judging criteria and points assigned will be determined by the difficulty of the tasks assigned.



# TECHSPO PROJECT

This form needs to accompany the project to the judging area.

## Student Division:

Grade 9 ☐ Grade 10 ☐ Grade 11 ☐ Grade 12 ☐

## Adult Division:

Post-Grad ☐ Adult ☐

Member's Name, Entering the Project \_\_\_\_\_

Trade Area \_\_\_\_\_

## School Information:

School Name \_\_\_\_\_

School Address \_\_\_\_\_

City, State & Zip \_\_\_\_\_

Phone Number \_\_\_\_\_

Chapter Advisor's Name \_\_\_\_\_

Is this Member Registered as a Techspo Contestant? \_\_\_\_\_ (the \$10 fee has been paid as part of the conference registration)

Is this Member Attending the State Conference? \_\_\_\_\_

If Yes, What are they Participating In? \_\_\_\_\_

If No, Who will Set-up and Take Down the Techspo Entry? \_\_\_\_\_

Project Description \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The project binder must include the projects process including but not limited to: paperwork with descriptions and explanation of the process. Pictures/drawings of ideas that the project was developed from and a time sheet showing the dates and time/length spent on the project with the names and career areas of the individuals involved.

A representative from the sending school for each entrance must be present at the contest briefing. Attendance will be taken and important information will be given.

**Techspo Entry Number:** \_\_\_\_\_ (inserted by the MA SkillsUSA Event Manager)

Possible Student Division Project Category: \_\_\_\_\_

Possible Adult Division Project Category: \_\_\_\_\_

# TECHSPO GRADING SHEET

**DIVISION:**      STUDENT DIVISION      ADULT DIVISION

PROJECT:	POINTS:	JUDGE'S AWARDED POINTS:
EDUCATIONAL VALUE/RELEVANCE	1-10	_____
DESIGN/FORMAT	1-10	_____
CREATIVITY/ORIGINALITY	1-10	_____
QUALITY OF WORKMANSHIP	1-10	_____
PROJECT PROCESS BINDER	1-40	_____
OVERALL PRESENTATION	1-20	_____
CLOTHING PENALTY      (minus 0-5% of Total Points)		_____
	<b>TOTAL:</b>	_____

**COMMENTS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**JUDGE:** \_\_\_\_\_

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**Techspo Entry Number:** \_\_\_\_\_ (inserted by the MA SkillsUSA Event Manager)

Possible Student Division Project Category: \_\_\_\_\_

Possible Adult Division Project Category: \_\_\_\_\_

# OCCUPATIONALLY RELATED EVENTS

**SERIES DIRECTOR:**  
KATHY CONOLE

**CONTACT INFORMATION:**  
(978) 846-2775  
kconolemava@aol.com

## EVENTS:

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### COMMUNITY SERVICE

Briefing: Salon C, **with notebook/binders**  
Employability Testing: At contest Site  
Competition: Marriott Courtyard - Worcester Room  
Event Manager: June Renaghan

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### CUSTOMER SERVICE

Briefing: Salon C  
Competition: Marriott Courtyard - Boston 1 Room  
Event Manager: Bonnie Carr & Kim McFarland

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### ENTREPRENEURSHIP

**Business Plan emailed no later than April 5, 2019**  
Briefing: Salon C  
Employability Testing: At Contest Site  
Competition: Marriott Courtyard - Boston 2 Room, **with 4 copies of Business Plan in binders**, a SkillsUSA binder is not required  
Event Manager: Rebecca McInnis

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### RELATED TECHNICAL MATH

Briefing: Salon C  
Employability Testing: At Contest Site  
Competition: Zachary's Restaurant (BW)  
Event Manager: Stacey O'Keefe

Refer to the 2019-2020 Technical Standards for  
Information, Standards and Rules for these

# OCCUPATIONALLY RELATED EVENTS

COMMUNITY SERVICE  
CUSTOMER SERVICE  
ENTREPRENEURSHIP  
RELATED TECHNICAL MATH



2019-2020 SkillsUSA Championships Technical Standards  
available on-line to all professional members

## EMPLOYABILITY SKILLS TESTING:

Employability Skills Testing for Community Service, Customer Service and Entrepreneurship takes place at the Marriott Courtyard, at the contest site.

All contestants in Related Technical Math will take their Employability Skills Exams **at the Best Western Hotel in Zachary's Restaurant.**

There will be "rolling administration" of the test between 7:00 a.m and 10:00 a.m.

During the briefing meetings, Series Directors will provide information on what time each group of contestants will take the test.

- A computer, LCD projector and screen WILL BE PROVIDED for Entrepreneurship Contest presentations. Teams should bring their presentation on a flash drive.
- The Community Service Team must **bring their completed notebooks TO THE BRIEFING MEETING on Thursday night.** The notebooks will be handed off for judging after the briefing meeting.
- The Entrepreneurship Contest requires electronic Business Plans to be submitted to the State SkillsUSA Office, **emailed no later than April 5, 2019.**
  - E-mail one copy to: [kward@maskillsusa.org](mailto:kward@maskillsusa.org) (.pdf format)
  - Four printed copies, in binders are also required at the competition, a SkillsUSA binder is not required.**
  - The four printed copies given to the judges must exactly match the PDF version or the team will be disqualified.**
- Notebooks and binders may be picked up at the Conference Information Booth Saturday morning, before the Awards Ceremony.
- Observers will not be allowed to view the students during these competitions.

# INDIVIDUAL LEADERSHIP EVENTS

**SERIES DIRECTOR:**  
GAYLE BEGLEY

**CONTACT INFORMATION:**  
(413) 519-1537  
gabegley@comcast.net

**SERIES DIRECTOR ASSISTANT:**  
JULIE BOWEN

**CONTACT INFORMATION:**  
WEYMOUTH HIGH SCHOOL  
1 WILDCAT WAY  
WEYMOUTH, MA 02190  
(617) 791-0168  
julie.bowen@weymouthps.org

## EVENTS:

### EMPLOYMENT APPLICATION PROCESS

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Briefing: Salon D (advisor may attend briefing with this student)  
Competition: Best Western - TBA  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Sherry Anderson & Diane Swenson

### EXTEMPORANEOUS SPEECH

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Briefing: Salon D  
Employability Testing: 7:45 a.m. at Zachary's  
Competition: Best Western - Executive (Prep), Corporate (Speeches)  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Diane Lyman

### JOB INTERVIEW

---

Briefing: Salon D  
Employability Testing: 7:45 a.m. at Zachary's  
Competition: Best Western - Duchess, Draped Hallway  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Martha McCarthy

### PREPARED SPEECH

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Briefing: Salon D  
Employability Testing: 7:45 a.m. at Zachary's  
Competition: Best Western - Boxboro  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Jillian Gentle

Refer to the 2019-2020 Technical Standards for  
Information, Standards and Rules for these

# INDIVIDUAL LEADERSHIP EVENTS

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EMPLOYMENT APPLICATION SKILLS  
EXTEMPORANEOUS SPEECH  
JOB INTERVIEW  
PREPARED SPEECH

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2019-2020 SkillsUSA Championships Technical Standards  
available on-line to all professional members

## EMPLOYABILITY SKILLS TESTING:

All contestants in Leadership Events (except Employment Application Skills) will take their Employability Skills Exams **at the Best Western Hotel in Zachary's Restaurant**. There will be "rolling administration" of the test between 7:00 a.m and 10:00 a.m.

During the briefing meetings, Series Directors will provide information on what time each group of contestants will take the test.

- The Employment Application contest **requires documentation** from a school administrator, verifying each student's eligibility.
- Prepared Speech should review this year's theme listed on page 7.
- Job Interview contestants need to follow a specific resumé format, with a sample provided on the next page.



# JOB INTERVIEW CONTEST

**THIS CONTEST REQUIRES COMPETITORS TO BRING  
A ONE-PAGE, TYPEWRITTEN RESUMÉ**

TO BE DELIVERED TO THE TECHNICAL COMMITTEES AT THE COMPETITION ON FRIDAY.

## **Specific resumé requirements for JOB INTERVIEW contest:**

The following information must be contained in the one-page resumé:

- Name, address and phone number
- Career objective
- Education and training
- Work experience beginning with present employment listing specific responsibilities
- Professional memberships, major accomplishments, awards earned
- References are to be on a separate page, not on the one-page resumé**

The image shows two sample resumes for 'Joe Student'. The top resume is a one-page summary, and the bottom resume is a more detailed version showing how to format the information.

**Top Resume (One-Page Summary):**

Joe Student  
123 Main Street • West Anytown, MA 01234  
Home (508) 123-4567 • Cell (774) 123-4567 • jStudent@gmail.com

References: Kevin Smith, Anytown High School Marine Service Technology Instructor  
Lisa Jones, Anytown High School, English Instructor  
Joe Handy, Service Manager Ocean Marine

(508) 123-4567 ext. 321  
(508) 123-4567 ext. 123  
(508) 987-6543

**Bottom Resume (Detailed Format):**

Joe Student  
123 Main Street • West Anytown, MA 01234  
Home (508) 123-4567 • Cell (774) 123-4567 • jStudent@gmail.com

**Career Objective:** To work within the field of Marine Service Technology, so I may be able to contribute in a professional manner.

**Education & Training:** Currently attending Anytown Regional Technical High School • Anytown, MA September 2014 - Present  
Marine Service Technology student for four full years  
Focused on all aspects of the industry within shop and theory classes using a hands-on approach to learn

**Work Experience:** Co-operative Education at Ocean Marine • Beachside, MA September 2015 - Present  
Responsible for installing electronic equipment on new and used boats  
Troubleshoot and repair problems within electronic and digital equipment on boats  
Service and repair boat engines, including inboard, outboard as well as back-up engines  
Troubleshoot and repair problems within engine and electrical systems on boats  
Focused on customer service needs and customer satisfaction

Internship at Seaward Boatyard • Watertown, MA May & June 2015  
Responsible for launching boats for the summer season  
Serviced and prepared boats for launch, based on customer needs and launch schedule

**Other Experience:** Baseball Player Various Years  
Anytown Middle School • Watertown, MA 2013  
Anytown High School, Junior Varsity Team • Watertown, MA 2014 & 2015  
Senior Babe Ruth Team • Watertown, MA 2015 - 2016  
Anytown High School Varsity Team • Watertown, MA 2016 & 2018

**Professional Member:** National Honor Society member September 2016 - Present  
Created Community Service project for members to work on  
Attended Leadership Training program offered through the Anytown Sheriff's Department  
Sold Yankee Candle items for the Honor Society Fundraiser

**SkillsUSA member** September 2014 - Present  
Participated in Fall State Leadership Conference during my junior year  
Competed in Marine Service Technology Competitions at both the District and State levels as a junior  
Competed in Marine Service Technology Competition at the District level senior year

**Marine Service Technology Advisory Committee member, student representative** September 2015 - Present  
Discussions include various technical framework updates and assessment standards for the Certificate of Occupational Proficiency  
Organized classmates each year to represent our shop during our Open House Event

**Accomplishments:** MVP Award for Baseball, from Anytown Middle School June 2013  
SkillsUSA silver medallion for Marine Service Technology District competition March 2016  
SkillsUSA bronze medal for Marine Service Technology State competition May 2016  
MVP Award for Varsity Baseball, from Anytown Regional Technical High School June 2017

**Make sure your resumé is as complete  
as it would be, if you were actually  
applying for a job!**

# TEAM LEADERSHIP EVENTS

**SERIES DIRECTOR:**  
BRIAN BENTLEY

**CONTACT INFORMATION:**  
PHONE: 508-246-9815  
briansbentley@comcast.net

## EVENTS:

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### CAREER PATHWAYS SHOWCASE

Briefing: Trade Center Rear Section  
Employability Testing: Best Western - 7:30 a.m. at Zachary's  
Competition: Best Western - Seminar, Salon A, Princess Ballroom (BW),  
Set-up hour 8:00-9:00am Friday morning  
(all presentation materials must be set-up within this time frame)  
Holding: Best Western - Salon B  
Event Manager: Amanda Reis, Glenn Koocher and Raymond Medeiros

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### CHAPTER BUSINESS PROCEDURE

Briefing: Trade Center Rear Section  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Zachary's (Prep), Marlborough (Demo)  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Stacey Pacheco

---

### COMMUNITY ACTION PROJECT

Briefing: Trade Center Rear Section  
(advisor may attend briefing with this student)  
Competition: Best Western - Marlborough (before OCC & CBP)  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Sherry Anderson & Diane Swenson

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### OPENING & CLOSING CEREMONIES

Briefing: Trade Center Rear Section  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Marlborough  
(after Community Action Project)  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Stacey Pacheco

# Refer to the 2019-2020 Technical Standards for Information, Standards and Rules for these **TEAM LEADERSHIP EVENTS**

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CHAPTER BUSINESS PROCEDURE  
OPEN & CLOSING CEREMONIES



2019-2020 SkillsUSA Championships Technical Standards  
available on-line to all professional members

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## EMPLOYABILITY SKILLS TESTING:

All contestants in Leadership Events (except Community Action Project) will take their Employability Skills Exams **at the Best Western Hotel in Zachary's Restaurant**. There will be "rolling administration" of the test between 7:00 a.m and 10:00 a.m.

During the briefing meetings, Series Directors will provide information on what time each group of contestants will take the test.

- Chapter Business Procedure, Knowledge Performance: The written exam consists of 100 multiple-choice questions found in the National Association of Parliamentarians Exam which is based on Roberts Rules of Order Newly Revised 11th Edition will be administered at the same time as Employability Skills Testing.
- **The Opening & Closing Ceremonies Contest will allow adult observers only and contestants will be prohibited from watching other teams.**



# CAREER PATHWAYS SHOWCASE CONTESTS

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** **failure to do so will result in a clothing penalty**

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

**Tool Requirements:** **One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty**

1. Supplied by the technical committee:  
One 8' wide by 8' deep space supplied with a 6' table (chairs may be available) and one standard 120-volt electrical outlet
2. Supplied by the contestant:  
Project for display and if needed, one three-prong, 20' 110v electrical power strip

**State Skills:** **Please refer to 2019-2020 National Technical Standards for more contest details**

Student teams will use their course of study as the basis of a project that will benefit their class, school, community or industry. Student teams will develop a learning-based project that will benefit their school, industry or community with a focus on their career preparation. Student teams will develop a display to use in their community to explain the project, their studies and its benefits. This contest will judge mastery of students' training, its application, the project's benefit to their community, and display and presentation techniques. The set-up time for Career Pathways Showcase is 8:00am to 9:00am in the presentation room assigned. Time limit: Maximum time limit for a presentation/demonstration is eight (8) minutes. Following the presentation, judges may ask questions.

All contestants will take their Employability Skills Exams **at the Best Western Hotel in Zachary's Restaurant**. There will be "rolling administration" of the test between 7:00 a.m and 10:00 a.m. During the briefing meetings, Series Directors will provide information on what time each group of contestants will take the test.

**Judging Criteria:** Each project will be judged according to its own merits and compliance with the listed criteria, as well as competitively within each pathway. Participants should read the guidelines carefully and make sure the project presentation covers all the criteria.

Knowledge Attained	(150 points)
Demonstration/Evidence of Technical Skill	(150 points)
Presentation Skills	(200 points)
Community Impact	(200 points)
Integration of Business and Industry	(150 points)
Overall Effect	(150 points)

**Schools may register one team in each of the six available clusters: (Register the Team based on their Technical Program Enrollment)**

Each team will need to identify the student's **career cluster** and use the **reference number** to identify the correct competition category, to properly register each team. (See next page for competition categories)

The SIX Career Pathways for SkillsUSA Competition include the following Cluster options:

Cluster #1 – Arts and Communication

Cluster #2 – Business, Management and Technology

Cluster #3 – Human Services

Cluster #4 – Health Services

Cluster #5 – Industrial and Engineering Technology

Cluster #6 – Natural Resources/Agriculture/Food

## CAREER PATHWAYS SHOWCASE Continued

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Register for **Cluster #1 - Arts and Communications Cluster**, which includes:

- 1a. Arts, A/V Technology & Communications: A/V Technology & Film • Journalism & Broadcasting • Performing Arts • Printing Technology • Telecommunications • Visual Arts

Register for **Cluster #2 – Business, Management and Technology**, which includes:

- 2a. Business Management & Administration: Administrative Support • Business Information Management • General Management • Human Resources Management • Operations Management
- 2b. Finance: Accounting • Banking Services • Business Finance • Insurance • Securities & Investments
- 2c. Information Technology: Information Support & Services • Network Systems • Programming & Software Development • Web & Digital Communications
- 2d. Marketing: Marketing Communications • Marketing Management • Marketing Research • Merchandising • Professional Sales

Register for **Cluster #3 – Human Services**, which includes:

- 3a. Education & Training: Administration & Administrative Support • Professional Support Services • Teaching/Training
- 3b. Government & Public Administration: Foreign Service • Governance • National Security • Planning • Public Management & Administration • Regulation • Revenue & Taxation
- 3c. Hospitality & Tourism: Lodging • Recreation, Amusements & Attractions • Restaurants & Food/Beverage Services • Travel & Tourism
- 3d. Human Services: Consumer Services • Counseling & Mental Health Services • Early Childhood Development & Services • Family & Community Services • Personal Care Services
- 3e. Law, Public Safety, Corrections & Security: Correction Services • Emergency & Fire Management Services • Law Enforcement Services • Legal Services • Security & Protective Services

Register for **Cluster #4 – Health Services**, which includes:

- 4a. Health Sciences: Biotechnology Research & Development • Diagnostic Services • Health Informatics • Support Services • Therapeutic Services

Register for **Cluster #5 – Industrial and Engineering Technology**, which includes:

- 5a. Architecture & Construction: Construction • Design/Pre-Construction • Maintenance/Operations
- 5b. Manufacturing: Health, Safety & Environmental Assurance • Logistics & Inventory Control • Maintenance, Installation & Repair • Manufacturing Production Process Dev. • Production • Quality Assurance
- 5c. Science, Technology, Engineering & Mathematics: Engineering & Technology • Science & Mathematics
- 5d. Transportation, Distribution & Logistics: Facility & Mobile Equipment Maintenance • Health, Safety & Environmental Management • Logistics Planning & Management Services • Sales & Service • Transportation Operations • Transportation Systems/Infrastructure Planning, Management & Regulation • Warehousing & Distribution Center Operations

Register for **Cluster #6 – Natural Resources/Agriculture/Food**, which includes:

- 6a. Agriculture, Food & Natural Resources: Agribusiness Systems • Animal Systems • Environmental Service Systems • Food Products & Processing Systems • Natural Resources Systems • Plant Systems • Power, Structural & Technical Systems Architecture & Construction



# COMMUNITY ACTION PROJECT CONTEST

## REQUIREMENTS AND SCOPE OF CONTEST

**Clothing Requirements:** *failure to do so will result in a clothing penalty*

Official SkillsUSA Attire (review National Technical Standards) Blazer is optional or Professional Business Attire. NO cell phones allowed

Note: Contestants must wear their official contest clothing to the contest orientation meeting.

**Tool Requirements:** *One-page type-written resume required for every contestant, failure to do so will result in a 50-point penalty*

1. Supplied by the technical committee:
  - a. Judges
  - b. 110 volt outlet and one extension cord
  - c. Timer and Time cards
2. Supplied by the contestant:
  - a. Notebook documenting project.
  - b. Presentation media, such as posters, Laptop computer, LCD projector or other visual equipment as necessary for the presentation. Recommendation is to have a backup presentation should technical problems occur when using a computer.
  - c. One-page, typewritten resume for student(s) involved in the presentation.
  - d. Documentation from a school administrator, verifying each student's eligibility as listed below.

**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 Community which provides a benefit or learning experience to the Community or School.

### Eligibility:

The contest is available to students who are classified under the provisions of Public Law 105-17, Individuals with Disabilities Education Act, 1997. This contest **requires documentation** from a school administrator, verifying each student's eligibility.

An individual or a team of two students from the same school may organize the Community Action Project. The students may enlist the assistance of others at their school in completing the Project, including other shops or chapters within the school. However, only the individual student or team who developed the Project must present the results at the competition. The students need not necessarily be from the same shop, just the same school. If a team, both members must be actively involved in the presentation.

### Knowledge Performance:

There is no written knowledge test required in this contest.

**State Skills:** **Please refer to 2019-2020 National Technical Standards for more contest details**

The contest will require contestant(s) to develop and execute a Project in their Community or School Community. Documentation or recording of the events will be maintained in a Notebook to be presented at the competition. The presentation shall last a minimum of 5 minutes and a maximum of 10 minutes, explaining the purpose and scope of the Project, how the Project was developed, methods used, implementation and execution of the project, and results.

# COMMUNITY ACTION PROJECT Continued

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The contest will consist of two parts:

1. At Home School:

Project will be completed prior to competition.

- a. Determine the need or desire for a Project
- b. Scope or outline of the Project
- c. Develop the timeline of the Project
- d. Implement the Project
- e. Anticipate results of the Project or impact to the Community
- f. Include participation of others involved; school peers, school administration, community leaders, or other support people.
- g. Evaluate final results of the Project by the student or team.

Notebook:

Purpose of the notebook is to document and capture the chronological events in the completion of the Project. The Notebook will be judged at the contest. The Notebook may be of a design by the student or team. However, the format listed below must be followed.

- a. Title Page – Name of the Project
- b. Table of Contents
- c. Section 1: Methodology for determining the project to be completed. How did you decide on the Project, who did you enlist at this stage, what was the anticipated goal of the Project?
- d. Section 2: How was the Project organized? What was the timeline? Who was responsible for which steps? How did you determine this?
- e. Section 3: Implementation schedule, specific steps to be followed.
- f. Section 4: Result of the Project. Impact of the Project on the School or Community, who benefited from the Project.
- g. Section 5: Recognition of Publicity gained. Was this recognition in any local papers, other media, school assembly, local community group, letters of appreciation, etc?
- h. Section 6: Your evaluation of the Project and recommendation. Do you feel the Project was successful or not? If yes, why? If not, why?

2. Presentation:

Purpose of the presentation is to provide the judges with an understanding of the Project, how the project was decided or determined, how it was completed, results achieved, and thoughts or recommendations for others to do a similar project.

- a. Presentation shall be a minimum of 5 minutes and a maximum of 10 minutes in length.
- b. Time Penalty: 5 points will be deducted for each 30 seconds (or fraction thereof) under the five minutes or for each 30 seconds (or fraction thereof) over the ten minutes. Time will be started with the presentation begins. The timekeeper will signal the presenter at 5 minutes, eight minutes, and ten minutes.
- c. Presentation can use any type of media, such as PowerPoint, slides, transparencies, posters, etc. Be creative to express to the judges your presentation. All presentation materials must be produced by the students involved in the project whether they are presenting or not.
- d. If team of 2 students, both must participate in the presentation.

## Standards and Competencies:

CAP 1.0 – Create a community project.

Determine the need/desire of the project

Develop the project

Obtain assistance in completing the project

Execute the project

CAP 2.0 – Create a professional notebook that follows guidelines and effectively expresses Project.

Design a title page that lists the name of the project

Construct a table of contents and organize subjects in order and list with page numbers

Write clear and effective objectives and scope of Project

Describe impact of the Project on the school or community

Secure any publicity, including newspaper articles, letters of commendation from appropriate sources



# COMMUNITY ACTION PROJECT Continued

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Clearly evaluate and recommend (or not) your Project.

**CAP 3.0** – Design and prepare an effective presentation that provides the judges with an overview of the Project, including the results achieved

Prepare a five to ten minute presentation of the Project

Organize the demonstration in a logical and coherent manner

Incorporate at least one of the following visual aids in the presentation: posters, flip chart, overhead transparencies, 35mm slide presentation and/or PowerPoint or other computer presentation.

**CAP 4.0** – Deliver the presentation in a professional manner meeting the standards outlined by the technical committee.

Explain the Project through the use of media you have chosen

Demonstrate an effective and pleasing delivery style

Effectively use verbal illustrations and examples

Make a formal and effective introduction to the presentation that clearly identifies the scope of the Project.

Use a variety of verbal techniques including: modulation of voice, changing volume, varied inflection, modifying tempo and verbal enthusiasm

Demonstrate poise and self-control while presenting

Demonstrate good platform development and personal confidence

Tie organizational elements together with an effective closing

Complete the Presentation within the time limits set by the contest requirements

**CAP 5.0** – Wear appropriate clothing per SkillsUSA National requirements.

Display clothing that meets national standards for competition

Demonstrate good grooming in dress and person hygiene.

## Rating Sheet

Initial proposed rating sheet is attached. Notebook documenting the project will be worth 400 points with the presentation worth 600 points.

<u>Notebook</u>	<u>Points</u>
Title Page	5
Table of Contents	5
Section 1	80
Section 2	80
Section 3	50
Section 4	80
Section 5	50
Section 6	50
<b>TOTAL</b>	<b>400</b>

<u>Presentation</u>	<u>Points</u>
Introduction, involvement of members	75
Project Scope, Creativity	100
Organization	75
Steps/Timeline	75
Results	75
Closing	50
Organization of Presentation	100
Presence, Demeanor, Self-Confidence	50
<b>TOTAL</b>	<b>600</b>



# DEMONSTRATION SKILL EVENTS

**SERIES DIRECTOR:**  
KRISTINE SMITH

**CONTACT INFORMATION:**  
GREATER LAWRENCE TECHNICAL HIGH SCHOOL  
57 RIVER ROAD  
ANDOVER, MA 01810  
(978) 686-0194  
ksmith@glts.net

## EVENTS:

### ACTION SKILLS

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Briefing: Salon E (advisor may attend briefing with this student)  
Competition: Best Western - Northboro  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: TBA

### AMERICAN SPIRIT AWARD

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Briefing: Salon E, with notebook/binders  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Conference Room  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Joseph Martins

### JOB SKILL DEMONSTRATION A

---

Briefing: Salon E  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Southboro  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Robert Wilby

### JOB SKILL DEMONSTRATION OPEN

---

Briefing: Salon E  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Westboro  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Jaime Hennessy

### OCCUPATIONAL HEALTH & SAFETY

---

Briefing: Salon E, with notebook/binders  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Conference Room  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: Joseph Martins

### OUTSTANDING CHAPTER

---

Briefing: Salon E, with notebook/binders  
Employability Testing: Best Western - 7:45 a.m. at Zachary's  
Competition: Best Western - Conference Room  
Holding: Best Western - ALL-STAR Restaurant  
Event Manager: TBA

# Refer to the 2019-2020 Technical Standards for Information, Standards and Rules for these **DEMONSTRATION SKILL EVENTS**

ACTION SKILLS  
AMERICAN SPIRIT AWARD  
JOB SKILL DEMONSTRATION A  
JOB SKILL DEMONSTRATION OPEN  
OCCUPATIONAL HEALTH & SAFETY  
OUTSTANDING CHAPTER



2019-2020 SkillsUSA Championships Technical Standards  
available on-line to all professional members

## EMPLOYABILITY SKILLS TESTING:

All contestants in Demonstration Skill Events (except Action Skills) will take their Employability Skills Exams **at the Best Western Hotel in Zachary's Restaurant**. There will be "rolling administration" of the test between 7:00 a.m and 10:00 a.m.

During the briefing meetings, Series Directors will provide information on what time each group of contestants will take the test.

- The Action Skills contest **requires documentation** from a school administrator, verifying each student's eligibility
- For Action Skills, Job Skill Demonstration A and Job Skill Demonstration Open: **No open flames allowed during competition!**
- The Occupational Health & Safety **Single Team** should be made up of students from **one technical program**
- The Occupational Health & Safety **Multiple Team** should be made up of students from **multiple technical programs**
- American Spirit, Occupational Health & Safety, and Outstanding Chapter teams must **bring their completed notebooks TO THE BRIEFING MEETING on Thursday night**. The notebooks will be handed off for judging after the briefing meeting
- Notebooks and binders may be picked up at the Conference Information Booth Saturday morning, before the Awards Ceremony

# OTHER STATE EVENTS

## EVENTS:

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### STUDENT ADVISORY COMMITTEE

Check the state program for details related to your schedule  
Student Advisory Committee Liaison: Jillian Gentle

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### VOTING DELEGATES

**The number of Voting Delegates is determined by the number of SkillsUSA members from your Chapter**

Briefing: Trade Center  
Delegate Sessions: Trade Center  
Delegate Sessions Coordinator: Mary-Theresa Tringale

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### STATE OFFICER CANDIDATES

Briefing: Best Western's Executive Room  
Competition: Trade Center  
State Officer Candidate Liaison: Katelyn Fitzsimmons

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### T-SHIRT DESIGN AND PIN DESIGN WINNERS

Check the state program for details related to your Invited Guest Reception  
General Sessions Coordinator: Karen Maguire

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### NATIONAL VOTING DELEGATES

National Voting Delegates may participate in a contest or as a voting delegate  
Selected National Voting Delegates will be announced during the Awards Session  
Winners will need to attend a meeting before the National Conference  
National Delegate Coordinator: Katelyn Fitzsimmons / Samantha Dorwin

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### NON-TRADITIONAL CAREER PORTFOLIO

Properly submitted portfolios will be judged during the State Conference  
Winners will be announced during the Awards Session  
Event Manager: Jeff Perrotti

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### COSTELLO FAMILY COMMUNITY SERVICE AWARD

Properly submitted portfolios will be judged during the State Conference  
Winners will be announced during the Opening Session  
Event Managers: Community Service Commission Members

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### CHAPTER EXCELLENCE PROGRAM AWARD

Properly submitted applications will be judged prior to the State Conference  
Winners will be announced during the Chapter Excellence Reception  
Event Manager: Karen Ward

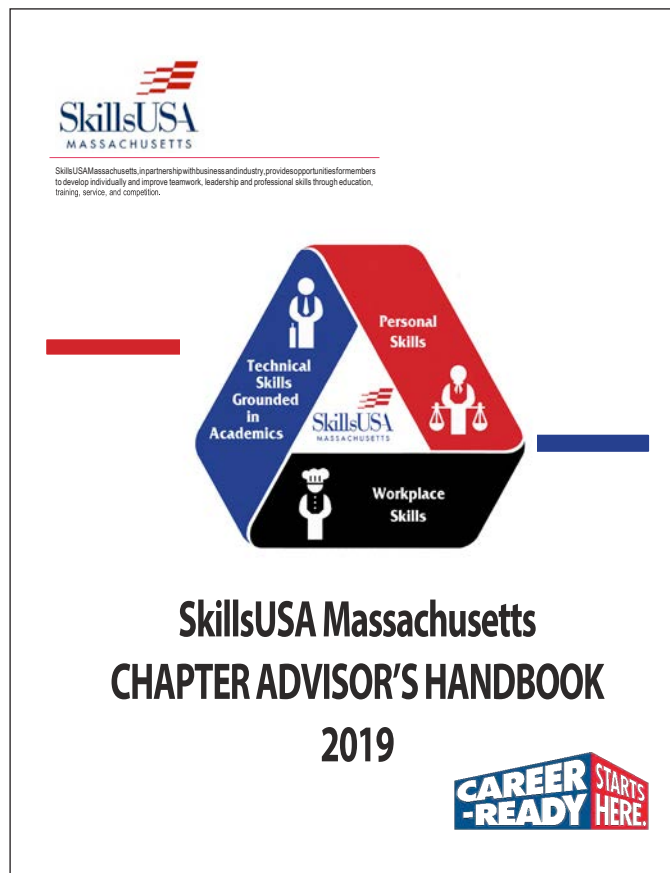
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### ADVISOR OF THE YEAR AWARD

Nominated Advisors will be introduced during the Opening Ceremony  
Check the state program for a schedule of Nominee Interviews  
The Advisor of the Year will be announced during the Awards Session  
Event Manager: Michelle Roche

# Refer to this year's Advisor Handbook for Information, Standards and Rules for **OTHER STATE EVENTS**

- Information and forms required for these events may be found in the Chapter Advisor's Handbook each year
- Employability Testing will take place in Zachary's restaurant (start time 7:00am, on a rolling basis according to presentation time.)
- Voting Delegates need to follow their own Delegate schedule during the State Conference, local officers and representatives will assemble in the conference's voting delegate sessions and regular business meetings to elect SkillsUSA state officers and decide on changes to the state SkillsUSA constitution and by-laws. All voting delegates will be required to:
  - Attend and participate in three delegate sessions and participate in the election of State Officers
  - Complete and turn in all task force assignments
  - Prepare to meet using parliamentary procedure under Robert's Rules of Order, Newly Revised
- State Officer Candidates are reminded to bring campaign materials **and invoices** to the conference and to appoint a campaign manager from their collection of delegates, reference the SLSC Delegate Guide for details
- The published Non-Traditional Career Portfolio submission deadline is **April 1, 2019**
- The published Costello Family Community Service submission deadline is **April 1, 2019**
- The Advisor of the Year may be selected to represent Region One as a National Advisor of the Year Nominee, during the following year (**Congratulations Jason McCuish**)





- Don't forget the scholarship opportunities from the Chapter Advisor's Handbook, which have a submission deadline of **April 1, 2019**

# Champions at Work



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SkillsUSA Massachusetts   
@maskillsusa 



SkillsUSA Massachusetts, in partnership with business and industry, provides opportunities for members to develop individually and improve teamwork, leadership and professional skills through education, training, service and competition.

