

NTC Welding Contest - 2022

ENTRY DIVISIONS

Prizes will be awarded in two separate divisions – Utilitarian entries and Artistic entries.

Both types of entry must conform to the project parameters listed below.

Utilitarian projects serve a specific function. (can crusher, bench vise, grill, etc.)

Artistic projects have a purely aesthetic value. (abstract or representational sculpture, scale models, etc.)

PROJECT PARAMETERS

TEAMS

Participating teams may have a 1 - 6 members. Schools can have multiple teams.

FABRICATION

Your project must include fillet welds and at least one groove weld.

Welding, cutting and forming processes may be manual, semi-automatic, or CNC.

SIZE

Your *assembled* project's overall footprint must be 20 cubic feet or smaller.

Your project may fit in 2' x 2' x 5' space, or a 1' x 2' x 10' space, or some other 20 cubic foot space.*

** See SIZE LIMITATION illustration.*

FINISHING

Do not grind your finished welds or paint your project. Your welds must be visible so that the judges can evaluate them.

REGISTERING

Your instructor will receive a link to our online registration form. Include your school, team name, project title and the division you're entering (artistic or utilitarian). Submit the form by the deadline listed in "Dates and Deadlines".

DOCUMENTING YOUR PROJECT – ELECTRONIC PORTFOLIO

Document your project to show the steps you took from beginning to end. Your portfolio can include photos, video, drawings, and/or written descriptions. Use Google Slides or Microsoft Powerpoint to create your electronic portfolio. A sample portfolio will be available for reference. Submit your portfolio by the deadline listed in "Dates and Deadlines".

Photos/Video/Drawings/Documents in your electronic portfolio must include the following:

Your school, team name, team members, instructor, and the division you're entering.

The inspiration and intent behind your project

The function of your project (Utilitarian Entries)

Conformance of your project to the size requirement

Your project timeline and the steps you took

The processes, tools, and techniques you used in your project

Your fit up before welding, and the methods you used to preserve critical dimensions and geometric features such as squareness, straightness, flatness, perpendicularity, etc.

Your weld processes, quality and size

The challenges you encountered and solutions you employed

PRESENTING YOUR PROJECT

At NTC, each team will give a 2 to 3 minute presentation about its project. Presentation points may include the specific purpose or function of your project, the steps your team took to complete the project, the challenges your team encountered, and what you learned or accomplished in the process. The contest judges will be present for presentations, and will likely ask questions after each team's presentation.

JUDGING

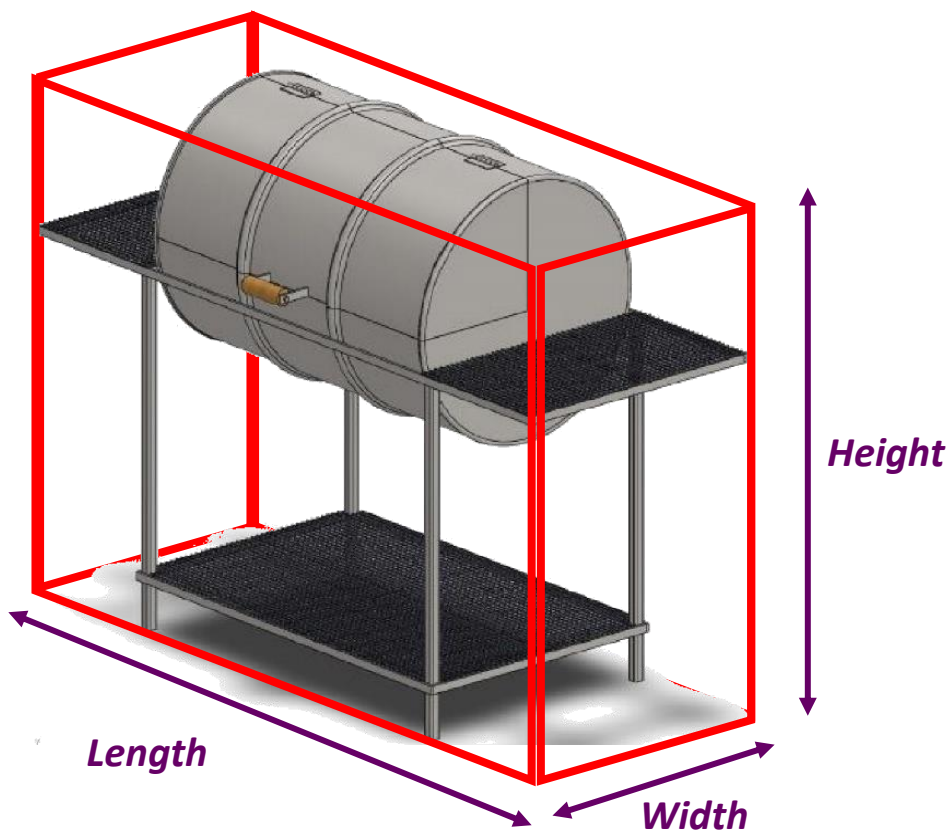
Your project will be rated in the four categories below. See “Judging Criteria” for more details.

Category	Possible Points
Design	30
Portfolio	20
Presentation	10
Craftsmanship	40
<i>total</i>	100

SIZE LIMITATION

Entries will be measured in their *fully assembled* state. The *overall footprint* must be 20 ft³ or less. ($L \times W \times H$)
Here is an example

$$L \times W \times H \leq 20 \text{ ft}^3$$



Dates and Deadlines

Registration

Complete the online form at:

www.ntc.edu/k12events

Opens: Friday, February 11th

Closes: Friday, March 25th

Portfolio Submission

More instructions to come

Friday, April 22nd

Welding Competition

More details to come

Thursday, May 5th

JUDGING CRITERIA

DESIGN
Your design lends to the efficient function of your project (Utilitarian) - or - Your design lends to the aesthetic impact of your project (Artistic)
Your process/tool choices support your design intent
Your material/technique choices support your design intent
PORTFOLIO
Your portfolio shows the evolution of your project, from start to finish
Your portfolio details the processes, tool, and techniques you used
Your portfolio shows the function of your project
PRESENTATION
You clearly explain the inspiration and intent behind your project
You clearly describe the processes, tools, and techniques used
You reflect on challenges and lessons learned throughout the project
CRAFTSMANSHIP
Your weld processes serve your design intent, welds are free of defects
Your cut processes serve your design intent and are well executed
Your fit up preserves critical dimensions and geometric features

SCORES

Sub	Basic (C)		Good (B)		Excellent (A)				
≤ 6.5	7	7.5	8	8.5	9	9.5	10	total	
								x 3	
Sub	Basic (C)		Good (B)		Excellent (A)				
≤ 6.5	7	7.5	8	8.5	9	9.5	10	total	
								x 2	
Sub	Basic (C)		Good (B)		Excellent (A)				
≤ 6.5	7	7.5	8	8.5	9	9.5	10	total	
								x 1	
Sub	Basic (C)		Good (B)		Excellent (A)				
≤ 6.5	7	7.5	8	8.5	9	9.5	10	total	
								x 4	
									TOTAL POINTS

JUDGING CRITERIA - WELDS

The following discontinuities will be considered defects for the purpose of this Contest		
Voids, Cracks & Inclusions	Undercut	Greater than 1/32" in depth, any length
	Porosity	Sum of diameters of holes equals 1/4" or more on entire project
	Cracks	Any
	Slag inclusions	Any
Size & Contour	Convexity or Concavity	3/32" or greater, any length in any location
	Unequal Leg (Fillets)	Greater than 1/16", any length in any location
	Appropriate Size (Fillets)	Leg size = thickness of thinner member
	Underfill (Groove Welds)	Greater than 1/32" in depth, any length
	Reinforcement (Groove Welds)	Greater than 1/8", any length
Finish	Lack of finish	Slag, wire stubs, or weld spatter in any amount