

SkillsUSA 2024 Additive Manufacturing State Challenge

Medallion Models

Welcome to the “logo Medallion” challenge! The task at hand is to design an eye-catching Medallion that represents your school, yourself, mascot, state, country, event, or hobby.

Design Examples:

- Bump Maps
- Displacement Texture
- Embossed/Debossed Text
- Motion



Example of a Basic Design for reference only

Competition Requirements

1. The design must be completely 3D printed
2. The design must contain at least two legibly printed words.
3. The design can contain 3D printed bodies that are glued together for the final part, glue must be dry by judging time.
4. Parts can be colored or painted, must be dry by judging time.
5. The printed part can have moving bodies.
6. The design must be at least 3" X 3" X ¼" minimum.
7. 3D Printed Design - Students must create a design that:
 - Is original and designed by contestants.
 - Prints all parts in less than 8 hours.
 - Uses less than 5 cubic inches of model and/or support combined for all parts.
8. Students must submit files to be printed via State designated file share site no later than **5pm cst** on **March 22**. Final prints will be delivered the day of the contest so that students can test, assemble/modify and be evaluated.
9. A student's Advisor can contact the event coordinator with questions at: childebrand@southeast.edu

Tips for Competitors

Here are some tips to maximize the points awarded to you:

- Build debossed text on a horizontal surface for best results. This may require building the part on its edge or standing up.
- Leverage post-processing techniques to smooth or color printed bodies.
- Additional moving parts may add to your score but can produce more points of failure on the final assembly.
- Use online resources (YouTube, GrabCAD Tutorials)
- Whenever intellectual property (IP) deters you from a project, try using approximate geometries to communicate the design intent.
- Optional design for additive manufacturing learning resources:
- Stratasys Think Additively™ Masterclass:
 - <https://youtube.com/playlist?list=PLUYaY5EIPtNBdU-s-7I9rl05IBHHITarl>

State Competition Procedure

Before or on contest day:

1. Students attend orientation on Thursday evening and complete a written test.
2. Students submit Engineering Notebook on day of competition to the judges.
3. Students submit print files in both CAD (.step) and mesh (STL) format to (childebrand@southeast.edu) before 5pm CST 03/22/2024.
 - GrapCAD Print will be the used for printing and set to default settings, no custom settings allowed.
 - Stratasys F170 & F370 printers loaded with ABS plastic will be used.
4. Students submit their Presentation on day of Competition to the Judges.
5. Students submit a complete resume on day of competition to the judges.
6. Students are allowed to bring post processing tools and supplies.