

WVU Maker's Competition: Registration Form

COMPETITION DAY: Friday March 6, 2020; Display 10:00am-3:00p, Challenge at 2:00p

*Registration form required for EACH entry

Sponsored by WVU Student Chapters of Material Advantage and Materials Research Society, the Dept. of Mechanical and Aerospace Engineering, and the Statler College of Engineering and Mineral Resources

Name(s) (Last, First): _____

Contact Phone Number: _____

Contact Email Address: _____

Will you be using our Printing Services (Y or N): _____

Category Entering (Circle One for each unique design entry):

(1) Artistic

(2) Engineering Assembly

(3) Challenge Category: Bridge Design Challenge

WVU MA/MRS holds the right to refuse to print any design deemed indecent or an improper representation of WVU as a whole. The use of premade designs from online sources is strictly prohibited. Any entrant found to be in violation of this will be disqualified from the competition.

Registration Fees:

Early Registration Printed Part (at a cost of \$5 per submission) ends Friday February 28, 2020.

Late Registration Printed Part (at a cost of \$8 per submission) ends at 12:00pm Friday March 6, 2020. All entries must be submitted by 12:00 pm Friday March 6, 2020.

Early Registration Digital Design (at a cost of \$10 per submission, includes 25 cm³ print material) deadline ends at 4:00pm Friday February 28th, 2020 (i.e. 1 week prior to competition day). You submit a digital design (must be in ".stl" format) and we print it. *If you are participating in the Challenge Category then the deadline to submit a digital design to us is Monday February 24th, 2020 at 5:00pm.

Digital registration forms can be emailed to WVU.Materials@gmail.com. Hard copies of registration form and non-refundable fee (cash or check) can be given to **Kande Brandt** at **Engineering Science Building room 813** or by mailing to:

MA/MRS Student Chapter, 395 Evansdale Dr. PO Box 6106, Engineering Science Building, West Virginia University, Morgantown, WV 26506

Any checks must be made out to "Material Advantage Student Chapter."

If paying via credit card, email WVU.Materials@gmail.com. *Additional 4% in processing fess applicable.

*Any questions? Contact WVU Material Advantage/Materials Research Society @ WVU.Materials@gmail.com or check out our web site <https://materialadvantage.orgs.wvu.edu>.

Signature(s): _____

Date: _____

WVU Maker's Competition – Rules and Regulations

Important Dates and Deadlines

Printed Part Early Registration Deadline: The Friday prior to the competition at 4:00pm (Registration Fee is \$5)

Printed Part Regular Registration Deadline: The day of the competition (Registration Fee is \$8)

3D Design Submission Deadline:

General Categories: Friday at 4:00p 2 weeks prior to competition (Registration and Printing Fee \$10)

Challenge Category: Friday at 4:00p 2 weeks prior to competition (Registration and Printing Fee \$10)

Live Display Competition Day: 3/6/20 @ 10:00am-3:00pm

Challenge Category Competition: 3/6/20 @ 2:00-3:00pm

Online Voting: 1 Week Prior – Day of Competition @ 2:00pm

**In order to have the early registration fee, the participant must submit their design along with their registration form & payment before the deadline.*

Voting

Winners of the Artistic and Assembly categories will be selected by votes from the student body and faculty. Live voting will be open the day of the competition from 10:00am to 3:00pm at the display table on the Ground Floor of ESB. Online voting will be available throughout Engineers Week. Images of competition submissions will be posted online at the WVU MA/MRS social media and students and faculty may vote by liking or hearting the posts of their favorite submissions.

Each entry will be given its own post that can be viewed and like on the WVU MA/MRS Social Media.

Votes will be tabulated in addition to live voting on the day of the competition and winners announced that afternoon (after 3p). Voters are allowed as many votes as they like per category but may only vote once for each individual submission/post. That means you can only like or heart something once.

Fees and Pricing

A \$5 Registration Fee will be collected for each printed design that is submitted, this will be increased to \$8 if designs are submitted the week of, through the day of the event. Designs must be uniquely different in each category submitted (i.e. students can not submit one design in all three categories). Participants may submit multiple unique designs to a single category as they wish with one registration fee but only one submission can win. The submission taking the highest award will be granted the prize for said award and other winning submissions of the same entrant will be disqualified and the respective prize awarded to the runner up in that category.

If designs are submitted as digital entries and 3D printing by MA/MRS is requested, there will be an additional fee incurred of \$5 for printing services (total print volume of 25 cm³) and material (this is built into the \$10 digital submission price). The MA/MRS club will offer use of their *Ultimaker2+* 3D printer to participants. Participants are not required to use the club's printing services. For participants that do decide to use the *Ultimaker2+*, please keep in the mind that the build volume of the printer is limited to 22.3 x 22.3 x 20.5 cm (8.78 x 8.78 x 8.07 in). Also note the earlier deadline set to allow for printing time. If your parts are larger than the print volume of the printer then we reserve the right to scale down your parts to fit within the allotted volume.

Registration Fee:	Early - \$5	Regular - \$8	Digital Design - \$10	(Unlimited unique submissions)
Printing Services:	\$5 / total print volume: 25 cm ³ (within Ultimaker build volume)			

Categories

Participants will submit their entry to one of the three category options listed below. All submitted designs should prominently feature 3D printing. That is to say, the majority of the design should be made using a 3D printer (no less than 75% of your design must be 3D printed). Non-3D printed components (e.g., electric motors, batteries, gears, etc.) are allowed, but should not take up a significant portion of the full design.

Artistic - Design something that is creative, visually appealing, thought-provoking, etc. Design winners will be judged by popular vote of WVU students and faculty.

Engineering Assembly – Designs submitted must contain a minimum of three separately printed pieces which can be assembled (and disassembled) to create an entirely new object. The goal of this challenge is to transform the assembly components into something different and unique. The designs do not have to contain moving parts, but they can if desired. Assembly may contain as many parts as desired by the designer, with a minimum of 3. Design winners will be judged by popular vote of WVU students and faculty.

Challenge Category: Bridge Design – This category challenges students to produce a bridge that can hold a suspended weight from its center across a span of 4 inches. The span of the bridge must be 5in, with ½in. overhang on the edges of the table on each side. The maximum weight of the bridge is 13g. Over 75% of the design weight must be 3D printed and any additional string or adhesive needed to create your bridge design is acceptable if it does not go beyond 25% of the bridge’s total composition. Bridges will be loaded via a bucket suspended via the center-most point along the bridge, spanning two table-tops. A schematic of the loading configuration is below (Figure 1). Bridges will be loaded until collapse with winners decided by the amount of weight that can be held (which correlates to the strength of the structure’s design) as well as the total weight of the bridge itself (correlating to a conservation of materials).

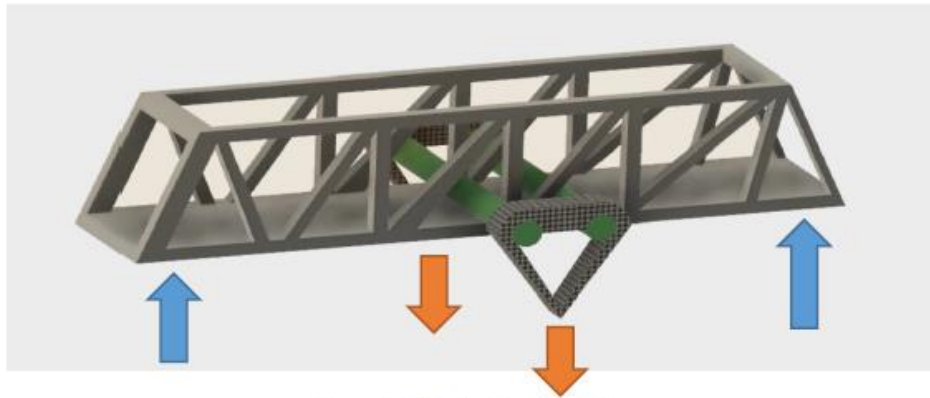


Figure 1: Bridge Loading Schematic

Winners will be selected by the following equation:

$$Final\ Score = \frac{Weight\ Held\ by\ Bridge}{Weight\ of\ Bridge}$$

The largest score will win.

*You must be within a reasonable range of the design constraints to be considered for the winning design.

Awards and Prizes

Gift cards will be given out to the top three finishers in each category. If not enough participants register for the respective competition category, awards can be subject to modifications. Additionally, if no more than 2 entries are submitted for one category, that section may be merged with another existing category.

Artistic and Engineering Categories (each):

First Place: \$50

Second Place: \$25

Challenge Category:

First Place: \$75

Second Place: \$50

Third Place: \$25

Notes

1. Please email wvu.materials@gmail.com for any questions or comments you have.
2. These rules are not final and are subject to change at any time up until the day of the competition.
3. We reserve the right to refuse entry of any design to this competition for any reason at any time.