

# PROPOSAL

## STEEL BRIDGE TEAM

### 2026-2027



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## ABOUT US...

# OUR PROJECT

Our team is composed of engineering students from the University of Puerto Rico – Mayagüez Campus. We participate in the Steel Bridge student competitions held in the United States and Canada. Our goal is to apply the knowledge acquired in our engineering courses to design, fabricate, and assemble a 1:10 scale steel bridge. The bridge must excel in structural efficiency, construction economy, and aesthetics in order to achieve a competitive advantage and succeed in the competition.

In addition to representing our University and Puerto Rico in competitions, we also dedicate time to educational outreach activities both on and off campus. These activities include engineering convention exhibits, design software workshops, and educational presentations for children, youth, and adults.

## ESSENTIAL INFORMATION

- The current team consists of 16 engineering students.
- Team members with more experience share their knowledge with newer members through workshops and training sessions.
- Each member develops a bridge design, and from these proposals, a final design is selected. The bridge is then entirely fabricated by the team members.
- Prior to competition, the bridge undergoes load testing to verify its strength, performance, and quality.
- The bridge is divided into individual components and assembled against the clock during competition, where speed and accuracy are critical factors in the overall score.



## OUR HISTORY

# AWARDS & RECOGNITION



| YEAR | COMPETITIONS                                                                        |                       |                                                                                       |
|------|-------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------|
|      | REGIONAL<br>SOUTHEAST                                                               | NATIONALS<br>AMERICAN | NATIONALS<br>CANADIAN                                                                 |
| 2018 |    | 6/43                  | --                                                                                    |
| 2019 |    | 8/42                  | --                                                                                    |
| 2020 |    | 5/41                  | 4/18                                                                                  |
| 2021 |   | 12/25                 | --                                                                                    |
| 2022 |  | NF                    |  |
| 2023 |  | 12/44                 |  |
| 2024 |  | 22/47                 |  |
| 2025 |  | NF                    |  |
| 2026 | --                                                                                  | NF                    |  |

Over the past several years, our team has been invited to participate in the Canadian National Steel Bridge Competition. This year, we achieved 1st Place Overall Performance, 1st Place in Construction Speed, 1st Place in Construction Economy, 1st Place in Circular Engineering, 2nd Place in Structural Efficiency, 2nd Place in Cost Estimation, 2nd Place in Lightness, and 3rd Place in Stiffness.

The combination of these results allowed the team to achieve 2nd Place Overall in the competition, marking the fifth consecutive year that the team has finished among the top three teams in Canada. In addition, the team earned 3rd Place in the Video Submission category at the American competitions, further demonstrating its commitment to excellence and innovation.

## PROJECT PHASES

# HOW DO WE WORK?

### PHASE 1: SUMMER WORKSHOPS

#### DURATION: 2 MONTHS

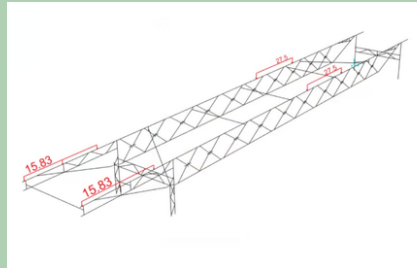
The first phase of the project focuses on preparing for the competitions. To accomplish this, we begin with a series of workshops in which experienced team members teach new members how to use design software and safely operate tools in the structural laboratory.



### PHASE 2: DESIGN

#### DURATION: 2 MONTHS

Once the competition rules are released, the design phase begins. During this stage, the bridge's digital model is developed and optimized in accordance with the competition specifications. Finally, the drawings and fabrication molds required for construction are prepared.



### PHASE 3: PRE-CONSTRUCTION

#### DURATION: 1 MONTH

During this phase, a 2D template is first prepared by attaching the bridge drawings to a wooden surface according to the required dimensions and geometry. Next, a 3D steel fabrication jig is constructed, allowing the bridge to be suspended and accurately assembled while joining its individual components.



### PHASE 4: CONSTRUCTION

#### DURATION: 3 MONTHS

During this phase, all steel members are cut and polished, then placed into the fabrication jigs and welded together. Once fabrication is complete, the bridge is removed from the jig and inspected to ensure that all components comply with the competition rules. Finally, load tests are conducted to verify the bridge's performance and structural integrity, and the team begins preparing for the assembly phase.



### PHASE 5: ASSEMBLY

#### DURATION: 2 MONTHS

During this phase, the team focuses on the economic and logistical aspects of construction. The assembly team is selected, and an assembly procedure is developed with the goal of maximizing speed and efficiency. Finally, the procedure is practiced repeatedly to reduce assembly time and improve overall performance during competition.



### PHASE 6: COMPETITIONS

#### DURATION: 1 WEEKEND

Finally, all the work completed throughout the year is put into practice. During the exhibition day, the team presents the bridge, and its aesthetics are evaluated by the judges. The bridge is then assembled, weighed, and subjected to load testing. At the conclusion of the competition, the teams achieving the highest scores in each category are recognized and awarded for their performance.



## PROJECT BREAKDOWN BUDGET

### CATEGORY | ESTIMATED BUDGET

| CONSTRUCTION MATERIALS          |          | COMPETITIONS                                                                     |          |
|---------------------------------|----------|----------------------------------------------------------------------------------|----------|
| Steel                           | \$13,000 | Registration and Travel:<br>Regionals, Canadian Nationals,<br>and U.S. Nationals | \$45,000 |
| Connections, Nuts,<br>and Bolts | \$8,000  | Official Team Uniforms:<br>Jackets, T-Shirts, and Polo<br>Shirts                 | \$6,000  |
| Tools and<br>Equipment.         | \$2,000  | TOTAL                                                                            | \$51,000 |
| Transportation<br>Crates        | \$1,000  |                                                                                  |          |
| TOTAL                           | \$24,000 | TOTAL PROJECT COST                                                               | \$75,000 |



# How You Can Help

## SPONSOR BENEFITS

Our team is able to travel and compete thanks to the generous support of our sponsors. There are many ways to become part of our project through sponsorship. We welcome donations of construction materials such as steel and tools, as well as team uniforms and additional safety equipment. The most direct way to support the team is through a monetary contribution. Donations may be made through direct deposit, check, or cash contributions. In return, we offer a variety of promotional opportunities for your company. Sponsorship benefits are provided according to the level of support contributed, allowing your organization to gain visibility while helping our team achieve its goals.



| CATEGORY                      | Reports | Social Media | Transportation Boxes | Shirts | Hard Hats | Jackets | Competition Poster      |
|-------------------------------|---------|--------------|----------------------|--------|-----------|---------|-------------------------|
| <b>COPPER</b><br>-\$299       | ✓       | ✓            |                      |        |           |         | <b>Technical Paper</b>  |
| <b>BRONZE</b><br>\$300-\$499  | ✓       | ✓            | ✓                    |        |           |         | <b>Small Logo</b>       |
| <b>SILVER</b><br>\$500-\$1499 | ✓       | ✓            | ✓                    | ✓      |           |         | <b>Medium Logo</b>      |
| <b>GOLD</b><br>\$1500-\$2999  | ✓       | ✓            | ✓                    | ✓      | ✓         |         | <b>Large Logo</b>       |
| <b>PLATINUM</b><br>+\$3000    | ✓       | ✓            | ✓                    | ✓      | ✓         | ✓       | <b>Extra Large Logo</b> |

# How You Can Support Our Team

Monetary contributions may be made in cash or by check payable to:  
**"Equipo de Puente de Acero 2026-2027".**

Additionally, we accept money orders and/or direct deposits to Banco Popular de Puerto Rico account 206-572207, under the name "Steel Bridge Team 2026-2027."

Contributions and donations may be sent to the following mailing address:  
**P.O. Box 2611 Mayagüez, PR 00681**

We also accept material donations for the construction of our steel bridge, as well as merchandise donations for our fundraising activities. If needed, we can coordinate the delivery or pickup of donated items.

For more information, please contact us at [uprmsteelbridgeteam@gmail.com](mailto:uprmsteelbridgeteam@gmail.com) or through our social media platforms.



## Join Our Family of Sponsors!