2027 ASME/SME
Student Manufacturing Design Competition



Entry Deadline: March 15, 2027

Submission to: teresa.rinker@gm.com & ihab.ragai@psu.edu

Competition held on Tuesday, June 22, 2027, at the NAMRC 55 / MSEC 2027 Conferences at Oregon State University, Corvallis, Oregon, USA

The purpose of the competition is to foster interest in manufacturing, provide the manufacturing engineering community with fresh new perspectives on design, and create a forum for students to share their new and innovative ideas. It is held during the co-located SME's North American Manufacturing Research Conference (NAMRC 55) and ASME 2027 International Manufacturing Science and Engineering Conference (MSEC), June 21-25, 2027, hosted by Oregon State University, Corvallis, Oregon. The 2027 Student Manufacturing Design Competition (SMDC) is sponsored by the ASME Manufacturing Engineering Division (MED), and co-organized by ASME MED and the SME North American Manufacturing Research Institution (NAMRI).

Competition websites: https://event.asme.org/MSEC and https://namrc.sme.org/

Introduction

Original student designs that focus on manufacturing engineering and science are sought. Any design of a system, component, or process that can be used to promote the art, science and practice of manufacturing engineering is acceptable.

Including but not limited to:

- **Digitally integrated manufacturing**
- **Robotics and automation**
- **Additive and subtractive operations**
- **Manufacturing systems innovations**
- **Materials - process interaction**
- **Energy-efficient manufacturing**
- **Any creative new way to make things!**

Requirements

The project report is limited to a PDF report of 1,500 to 3,000 words with supporting figures and/or photographs. Items that must be included in the project description are:

- Project Title
- Names and addresses of the participating students, with one designated as corresponding
- The name and signature of a faculty sponsor with complete contact information

A successful entry might also include a description of the problem(s) being addressed and key requirements, a functional description of the concept/idea/model/system, comprehensive design analyses, and experiments or tools used, discussion of how the concept improves upon existing designs, and a statement listing the percent contribution of the group members and any outside assistance (e.g., faculty, shop personnel).

Due to the deadline for the application and the fact that such student design projects are often part of a senior design capstone project, it is understood that a working prototype will not necessarily have been completed by the time of the submission. Such projects will be judged based on the design and analysis of the concept.

Process

Entries from either teams or individual contestants must be submitted in electronic form to teresa.rinker@gm.com and ihab.ragai@psu.edu **received by March 15, 2027**. Please make sure to receive a notice of receipt. Subject of the email must indicate "2027 SMDC – [team institution]." Up to eight finalist teams will be selected from the entrants and will be expected to give an oral, in-



person presentation at the NAMRC 55/ MSEC 2027 conference. The demonstration of working models is highly encouraged.

Judging

Up to eight finalists will be selected on the basis of the project descriptions by a panel of judges representing industry, academia, and/or government organizations related to manufacturing. The first round of judging will be a panel review of the submitted project descriptions and will focus on the quality of the project description, creativity of the design, and integrity of the analysis and test approach for evaluating the solution in light of requirements. The **finalists will be notified by April 20, 2027** and are expected to hold a fifteen-minute presentation followed by a five-minute question session on **June 22, 2027** at the NAMRC 55/ MSEC 2027conference. Judging for the final round will be based on the quality of the presentation as well as on creativity of the design and integrity of the analysis and test approach for finding the best solution based on stated requirements. Judging criteria include but are not limited to:

- Communication of the problem to be solved
- Effectively meeting requirements
- Integrity of the analysis
- Creativity of design
- Goal-driven testing approach
- Design for manufacturing metrics– i.e., Impact of design on manufacturing cost, quality, sustainability, or other manufacturing and performance measures
- Quality of the presentation (on time, clear, professional)

Awards

Cash prizes and awards of recognition will be presented at the ASME Award Ceremony during the conference. First Prize is $1,000, Second Prize is $750, and Third Prize is $500.

Eligibility

Any undergraduate or graduate student, who is registered in school full time through Spring of 2027 or beyond can participate. Both individual and group projects are welcome, and individuals may participate in several entries provided each entry is on a clearly different subject. [Note: Graduate student entries will only be eligible if they do not fit other presentation avenues at the conference]

Conference Registration and Travel Support

The 2027 NAMRC/MSEC conference will held at the Oregon State University, Corvallis, Oregon. At least one presenter from each of the finalist teams must register for the conference. Travel expenses to the conference and accommodation will be the responsibility of the students and/or faculty sponsor. However, pending funds availability, a complimentary conference registration will be provided to only one member per presenting team.

Information

Still have questions? Please contact the organizers, Dr. Teresa Rinker , General Motors at teresa.rinker@gm.com and Prof. Ihab Ragai, Penn State University, Erie, at ihab.ragai@psu.edu with the subject line "SMDC 2027 Inquiry."

First Prize: $1000 **Second Prize: $750** **Third Prize: $500**