

MSEC 2017 – ASME Website

Student Manufacturing Design Competition

**Held at the ASME 2017 International Manufacturing Science and Engineering Conference (MSEC), June 4-8, 2017, University of Southern California, Los Angeles, CA, USA
Sponsored by ASME Manufacturing Engineering Division (MED), Co-organized by ASME MED and SME North American Manufacturing Research Institution (NAMRC)**

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.

- Computer integrated manufacturing and robotics
- Machine tools, sensors and controllers
- Manufacturing systems development
- Materials processing
- Emerging materials and processes for manufacturing
- Software and hardware solutions contributing to improvements in manufacturing productivity and throughput

Objective

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.

Entry

A project may be entered in the competition by submitting a project description to the Student Manufacturing Design Competition Organizer. Entries must be received by **March 20, 2017**. Entries may be electronic if all materials are letter size (8.5 x 11.0 inches, or A4). One copy of oversized or nonstandard materials must be mailed and received by the deadline.

Finalists selected from the entrants (individual or group) will be expected to give an oral presentation of their project at the 2017 MSEC. The use of visual aids and demonstration of actual working models are highly encouraged.

Submissions should be sent to the Student Manufacturing Design Competition Organizer:

Dr. Radu Pavel
TechSolve, Inc.
pavel@techsolve.org

Description

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

- Project Title
- Names and permanent addresses of the participating students with one of the students indicated as the designated contact person
- The name and signature of a faculty sponsor complete with postal address, email address, phone number and fax number

A successful entry might also include:

- Description of the problem being solved including key requirements
- Functional description of the concept/idea/model/system for solving the problem including a description of the salient design features and manufacturing engineering content
- Design analyses of the concept based on key requirements
- A description of any tools, equipment and/or experimental setups to be used in evaluating the solution
- Discussion of how the concept improves upon existing designs and approaches to the problem
- A statement listing the percent contribution of the group members and any outside assistance (faculty, shop personnel, etc.)

Due to the deadline for the application (**March 20, 2017**) 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.

Eligibility

Any graduate or undergraduate student who is registered in school full time through Spring of 2017 or beyond. Both individual and group projects are welcome. Individuals may participate in several entries provided each entry is on a different subject.

Finalists and Judging

Finalists will be selected on the basis of the project descriptions. Judges for the competition will be from industry, academia, and/or government. The first round of judging will be a panel review of the submitted project descriptions. The first round of judging 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 based on stated requirements. **Finalists will be notified no later than April 6, 2017.**

For the final round of judging, finalists will be asked to make a fifteen minute presentation with three to five minutes for questions at the 2017 MSEC. 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 evaluating the solution based on stated requirements.

Judging criteria include but are not limited to:

- Compliance with requirements
- Integrity of the analysis
- Creativity of design
- Testing approach
- Impact of design on manufacturing cost, quality, or other manufacturing and performance requirements
- Quality of the presentation (timeliness, graphics, clarity)

Travel Expenses and Support

Travel expenses to the conference will be the responsibility of the students and/or faculty sponsor. However, the teams in the finalists may request travel support of up to US\$500 per team from MED. Further, a one-day complimentary conference registration will be provided to the finalists (one per team). Information regarding travel support will be sent with the notification of the selected finalists for the competition. Alternatively, conference student participants may apply for competitive travel awards (covering full registration and lodging) from an anticipated NSF grant, though there are certain obligations, such as participating through the entire conference. Detailed information of NSF student travel award applications, selections and requirements will be posted on the website (<https://www.asme.org/events/msec>) and sent to the student teams.

Awards

Cash prizes and awards, listed below (subject to the quality of the entries), will be presented at the MED's Banquet during MSEC, which will take place on the same day as the presentations from the finalists. A complimentary banquet ticket will also be provided to the finalists (one per team).

First Prize - \$1,000

Second Prize - \$750

Third Prize - \$500