Design Day Spring 2019

April 25, 2019

Innovations to help society and business featured at MSU Spring Design Day April 26

If lifting heavy packages out of your trunk is literally a pain in your back – Spartan Engineering students at Michigan State University can offer a solution.

Perhaps you have experienced the frustration of misplacing a wheelchair’s footrest just when you need it? There’s an innovation for that, too.

Spring 2019 Design Day at Michigan State University will showcase the creative work of almost 1,100 engineering students on Friday, April 26. More than 210 teams will present imaginative projects from 7:30-11:30 a.m. in the Engineering Building, 428 S. Shaw Lane, East Lansing.

Design Day, celebrating its 25th year, will include all 10 academic programs in the College of Engineering. The annual event is free and open to the public.

“Design Day is a reflection of the growth of our undergraduate student numbers and the College of Engineering’s focus on building better engineers,” said Executive Director of Design Day and Professor of Computer Science and Engineering Wayne Dyksen. “At Design Day, student teams present their ideas to their client, defend their ideas before faculty and industry experts, and have to think on their feet. You can walk down the halls of the Engineering Building and see how ready our students are to enter the engineering profession.”

Dyksen said almost 650 students will present capstone projects this spring.

Among them, a program for Midwest retailer Meijer was created by computer science seniors Blaire Izbicki, Chris Le, Jacob Kalt, Sasha Morford, and Jack Studzinski that helps personalize and create shopping efficiencies for customers.
“At Meijer, we applaud and appreciate outside-the-box thinking because our history is rich with innovation,” said Meijer Chief Information Officer Terry Ledbetter. “The digital landscape continues to change, and with that comes a highlighted importance on understanding science and engineering. We are pleased to be involved with Design Day that showcases the talents of our future leaders.”

Other Design Day capstone projects include:

- **Civil Engineering Senior Design - Team McLaren.** More than 70 civil and environmental engineering students received real-world experience by digging through the detailed plans for the new $450 million health care campus at McLaren Greater Lansing for their senior capstone project. Students worked in teams on specific and intricate aspects of the infrastructure for a project of this size and scope. The new facility will have 240 beds, a cancer center, and ambulatory care center. It will be nine stories tall and have 18 operating rooms. Construction begins in spring 2019 and should be completed by 2021.

- **Team Aptiv: Analysis of Autonomous Vehicle Testing.** Aptiv is testing self-driving cars around the world, which has generated thousands of hours of video out of the front of the automated cars. The videos can provide data to refine driving situations, like approaches to a tunnel, toll booth or bridge, but searching thousands of hours of testing video is not feasible. So, the computer science and engineering capstone team wrote software that automatically analyzes video looking for situations of interest. Once found, Aptiv engineers can deep-dive and analyze the performance of their self-driving cars in specific situations and improve the performance of autonomous vehicles.

Design Day includes competitions and project presentations from a variety of engineering classes. The 15-week capstone course, which is required for graduation, provides a platform for students to apply the knowledge and experiences gained throughout their engineering education. Working in teams of four or five, seniors put their best efforts into solving real-world problems for big and small companies. At the end of each semester, teams present at Design Day.
Spring 2019 Design Day by the numbers
- 213 teams
- 1,080 students

Capstone projects represent:
- 648 students
- 128 teams
- 112 sponsored projects
- 89 Michigan-based companies and institutions (79 percent)

Pre-college outreach programming includes:
- 3 schools + Women in Engineering
- 120 middle school students
- 15 teachers

Design Day Awards Ceremony: 1:15 p.m., Anthony Hall Room 1281

- 13 awards conferred to top Design Day teams
- Judges include faculty and corporate representatives

Background
- All 10 MSU College of Engineering undergraduate degree programs represented
- Twice yearly event on last day of each semester (before finals week)
- 25th Year for Design Day (initiated in 1994 by the Department of Mechanical Engineering)

See the team members and their 2019 Spring Design Day Program Guide.

Approximately 120 middle school students will attend activities at the Middle School Innovation & Creativity Day for students and teachers. This year, students will get hands-on experience with VEX robotics – controlling a robot and writing Robot C language – plus teaming up to create an engineering support system – from a simple beam to an intricate bridge with gussets, trusses, and cables. There is also a fun Trebuchet Launch Competition, with scores...
earned on proximity to a target point. Additionally, visiting students play a key role on Design Day, serving as judges for “People’s Choice” awards for the college students’ most popular projects. Also featured at Design Day will be projects developed in the first year Cornerstone engineering courses, EGR 100: Introduction to Engineering Design. It introduces students to the engineering profession and design process through team-based assignments. The course is an integral part of the MSU CoRe Experience, a residential program for all first-year engineering students.

For more information on Design Day, contact Dyksen, dyksen@msu.edu, or Jill Bielawski, bielawsk@msu.edu

**Related Website**: [Communications contact: Patricia Mroczek](https://www.egr.msu.edu/news/2019/04/25/design-day-spring-2019)