



OPUS COLLEGE OF ENGINEERING

Design Day

May 1, 2026



OPUS

College of Engineering

MARQUETTE UNIVERSITY

Design Day

Dear Opus College of Engineering Community:



Welcome to our 11th annual Design Day, a celebration of the design and innovation that goes on throughout the Opus College of Engineering. I look forward to this event each year and the excitement it brings to our building.

Design Day is not only about recognizing the hard work our students have put into their projects over the past year, but it is just as much about celebrating how they

have grown as innovators. I believe that with the right mindset and the curiosity to learn, we can all lead innovative projects that will create real, new value and solve some of the world’s most pressing problems.

Each year I am proud to see that at the heart of all our student design projects, is a desire to deliver meaningful change. This year’s projects continue to deliver on that. As you walk through Engineering Hall, you will see senior, first year, and other course-related design projects on display. I hope you will take a moment to talk with our students and hear more about their work. I am confident that you, too, will be inspired by what you learn.

On behalf of our students, I would like to thank our many generous senior design project sponsors, as well as our college faculty and staff. Without you, this day would not be possible.

Thank you for joining us to celebrate another great year of hard work, innovation, and the students who are already setting our world on fire.

Sincerely,
Kristina Ropella, Ph.D.

Opus Dean – Opus College of Engineering
 Marquette University

Schedule of Events: May 1, 2026

		Posters/Demos																	
		Lower Level, Levels 1 & 2																	
		8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	10:00-10:30	10:30-11:00	11:00-11:30	11:30-12:00	12:00-12:30	12:30-1:00	1:00-1:30	1:30-2:00	2:00-2:30	2:30-3:00	3:00-3:30	3:30-4:00	4:00-4:30	4:30-5:00
	Rm. 423	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>BIEN Poster Exhibit & Competition (Levels 1 and 2)</p> </div> <div style="width: 45%;"> <p>Student-led Design & Course Design Projects (Levels 1 & 2)</p> </div> </div>																	
	Rm. 323	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>CCEE Senior Design</p> </div> <div style="width: 45%;"> <p>CCEE Senior Design</p> </div> </div>																	
	Rm. 236	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>BIEN Senior Design</p> </div> <div style="width: 45%;"> <p>BIEN Senior Design</p> </div> </div>																	
	Rm. 136	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>ELEN/COEN Senior Design</p> </div> <div style="width: 45%;"> <p>ELEN/COEN Senior Design</p> </div> </div>																	
	Rm. 128	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>MEEN Senior Design</p> </div> <div style="width: 45%;"> <p>MEEN Senior Design</p> </div> </div>																	

Design Projects Poster Exhibits and Competitions

12:00 p.m. – 1:30 p.m.

Biomedical Engineering (BIEN) Poster Exhibit and Competition Levels 1 and 2

This session will include 19 posters with prototypes from engineering students enrolled in BIEN 1110. This year's design project tasked students with designing and constructing a user-friendly assistive device to empower individuals with limited hand dexterity to enhance their ability to perform daily tasks and improve their quality of life.

1:30 p.m. – 3:00 p.m.

Student-Led Design and Course Projects Lower Level, Levels 1 and 2

Student-Led Projects

- Engineers without Borders (EWB) – Drinking Water Treatment & Distribution System for San Antonio Ixoc, Guatemala
- AI and Sustainability

Course Projects

- Introduction to Programming

3:30 p.m. – 5:00 p.m.

General Engineering (GEEN) Poster Exhibit and Competition Levels 1 and 2

This session will include posters and mock-ups/prototypes from 16 design teams of new engineering students enrolled in GEEN 1210. The theme of these projects is Water and Energy Sustainability.

Computer and Electrical Engineering Senior Design Projects

Engineering Hall 136

9:00-9:30

Convert a Go-Cart from IC to EV

Sponsor and

Faculty Advisor: H. Koti

Team Members: P. Kern, M. Mejia, A. Nowak, A. Pastrano Mercado, D. Smith, S. Vences

9:30-10:00

Enhancing Stroke Prevention with Predictive Modeling and m-Health Applications

Sponsor and

Faculty Advisor: P. Deshpande

Team Members: S. Ahmed, C. Blair, M. Casey, L. Lako

10:00-10:30

Continuation of the Redesign of a Low Cost Stethoscope for Use in Developing Countries

Sponsor: V. Cariapa

Faculty Advisor: S. Schneider

Team Members: E. Abduljalil, L. Gleason, A. Kubiak, J. Morris, J. Wendt

10:30-11:00

Grid Reliability – Keeping the Lights On

Sponsor: T. Pink, Dynamic Ratings, Inc.

Faculty Advisor: S. Schneider

Team Members: L. Barreras-Koster, J. Corlett, L. Fanapour, E. Momoa, N. Paz Lopez

11:00-11:30

Infra Red Detection – Eyes on the Power

Sponsor: T. Pink, Dynamic Ratings, Inc.

Faculty Advisor: S. Schneider

Team Members: K. Keller, H. Mendrycki, D. Ryazanov, S. Winn

11:30-12:00

Smart Air Quality Index Calculator

Sponsor and

Faculty Advisor: C. Ababei

Team Members: P. Giannetos, J. Islas, G. Passanante, E. Potter

1:00-1:30

MRI-Based Epilepsy Detection Using Machine Learning

Sponsor: R. Povinelli, K. Wurzel

Faculty Advisor: R. Povinelli

Team Members: Z. Baker, A. Connolly, J. Harlan, M. Tolczyk

1:30-2:00

Electro-Magnetic Firing Mechanism for Cordless Nailer

Sponsor: I. Spayer, J. Gasteiner, Milwaukee Tool

Faculty Advisor: J. Richie

Team Members: D. Bruer, M. Eberhardt, R. Sangl, T. Sayad, G. Schaffer, D. Serdiuk

Biomedical Engineering Senior Design Projects

Engineering Hall 236

9:30-10:00 Mouthguard for Monitoring Nocturnal Bruxism

Sponsor and
Faculty Advisor: G. Garcia
Team Members: A. Janey, J. Wasilewski, E. Poth, E. Montanez, R. Burgos

10:00-10:30 Wireless EMG Sensors for Control of Bionic Hand

Sponsor: R. Saavedra, Alt-Bionics
Faculty Advisor: S. Beardsley
Team Members: N. Othman, M. Kahate-Desouza, D. Donahoe, R. Jacoby, J. Zigmant

10:30-11:00 Wheelchair Adaptation to Accommodate Two Children

Sponsor and
Clinical Advisors: A. Morgan, J. Schnell, Children's Wisconsin
Team Members: T. Oldenborg, Z. Frankenberg, R. Cunningham, J. Kuehn
MIAD Partners: A. Maza Koubelian, M. Iding, I. Aguiar, S. Scalia

11:00-11:30 Improved Cranial Stabilization System for Intraoperative MRI

Sponsor: M. Krucoff
Faculty Advisor: A. Greenberg
Team Members: M. Honey, G. Walton, T. Nichol, I. Serrano
MIAD Partners: A. Ibarra Cruz, C. Plautz, A. Bettanin, J. Fairley

11:30-12:00 Multiple Sclerosis App

Sponsor and
Faculty Advisor: B. Schmit
Team Members: D. McElvain, S. Mrusek, M. Gnorski, W. Ricamoto, G. Schneider

1:00-1:30 Wearable Visual-Feedback System to Display Real-Time Activation of Muscle

Sponsor and
Clinical Advisor: D. Neumann, Marquette University Physical Therapy
Faculty Advisor: S. Beardsley
Team Members: N. Nichols, P. Spencer, I. Ortega, A. Zager, L. Littell

1:30-2:00 Development of Affordable Adaptive Cooking Equipment

Sponsor: V. Bjelic, Penfield Children's
Faculty Advisor: M. Erickson
Team Members: H. Mallman, M. Kuntaras, M. Nelson, O. Mongoven, S. Saran
MIAD Partners: R. Monzo, L. Mathew

2:00-2:30 Improved Ergonomic Design of an Ultrasound Probe

Sponsor: A. Lehman, Froedtert Hospital
Faculty Advisor: A. Starsky
Team Members: L. Boone, C. Andrzejak, H. Hunter, C. Keppen, L. Thibaudeau
MIAD Partners: P. Gonzalez, S. Christian, C. Grant, J. Nikolaev

2:30-3:00 Reducing or Eliminating Pain During Mammography

Clinical Advisor: S. Aaronson-Sheinkop
Faculty Advisor: T. Onushko
Team Members: E. Wintersheimer, M. Santucci, M. Jasper, L. Kemp, S. Osborn

Confidential Projects

Project 1

Sponsor: A. Monk, Visionary League
Faculty Advisor: B. Tefft
Team Members: J. Asimacopoulos, G. O'Toole, D. Ruffolo, J. Scholin, L. Bartolomei

Project 2

Sponsor: A. O'Reilly, Abbott Laboratories
Faculty Advisor: S. Audi
Team Members: C. Giamis, G. Martin, G. Alcalá, L. Wagner

Project 3

Sponsor: M. Gudeman, EndoPlus
Faculty Advisor: L. Olson
Team Members: S. Fino, M. Castro, A. Winke, K. Kowal, E. Bronikowski

Mechanical Engineering Senior Design Projects

Engineering Hall 128

9:00-9:30 Portable Solar-Powered Vaccine Cooler

Faculty Advisors: F. Elyasigorji, V. Cariapa

Team Members: C. Cintron-Gorrin, A. Portalatin, D. Rivera

9:30-10:00 Low-Cost Safe and Efficient Wood Burning Stove

Faculty Advisors: S. Singer, F. Elyasigorji, V. Cariapa

Team Members: C. Schwarz, J. Burns, P. Zeh, I. Reagen, L. Klacik

10:00-10:30 Two-Speed Gearbox

Sponsor: Marquette Eagle Racing

Faculty Advisors: J. Moore, F. Elyasigorji, V. Cariapa

Team Members: S. Kellogg, N. Avdich, C. Lab, S. Grable, A. Antonelli

10:30-11:00 NASA Lunabotics Competition

Sponsor: S. Cash, NASA

Faculty Advisor: P. Voglewede, F. Elyasigorji, V. Cariapa

Team Members: F. Torres, C. Betancourt, M. Janecek, J. Thul, J. Mora,
S. Salomon Ruiz, A. Cuarenta, E. Wilson, L. De Alba, A. Maurya

11:00-11:30 Affordable Generator Emissions Reduction Device

Faculty Advisors: F. Elyasigorji, V. Cariapa

Team Members: R. Suva, Q. Barrington, M. Krzak, S. Jay, L. Ruffolo

11:30-12:00 Omron XYZ Gantry

Faculty Advisor: P. Voglewede, F. Elyasigorji, V. Cariapa

Team Members: I. Farroll, L. Brady, G. Mavica, C. Cosgriff, K. Gerdes

1:00-1:30 Second Generation Mouse/Rat/Bandicoot/Squirrel Killer

Faculty Advisors: F. Elyasigorji, V. Cariapa

Team Members: P. Chapa, R. Barca, J. Murnan, M. Chruszczyk, N. Pautsch,
D. Jackson

1:30-2:00 Duplo Tree Assembly Line

Faculty Advisor: P. Voglewede, F. Elyasigorji, V. Cariapa

Team Members: J. Schumacher, T. Garcia, W. Dababneh, C. Taira, B. Deger,
B. Koncel

2:00-2:30 Utility Bikes for Zambia

Faculty Advisors: F. Elyasigorji, V. Cariapa

Team Members: M. Whitney, N. Bobofchak, M. Turczewski, F. Ardoin, N. Bellin

2:30-3:00 Predictive Sensors/Indicators of Faulty Gait for Middle-Aged Adult Walkers

Faculty Advisors: F. Elyasigorji, V. Cariapa

Team Members: L. Vergara, B. Valdez, D. Zuege, R. Bendt, R. Sheehan

Confidential Projects

Project 1

Sponsor: A. Servais, Milwaukee Tool

Faculty Advisors: J. Schimmels, F. Elyasigorji, V. Cariapa

Team Members: K. Campos, W. Squires, R. O'Donnell, E. Routhieux

Project 2

Sponsor: I. Eke, Zurn Elkay Water Solutions

Faculty Advisors: F. Elyasigorji, V. Cariapa

Team Members: P. Nguyen, L. Jackson, F. Illescas, L. Tinsley, C. Hellmann

MIAD Partners: L. Cihlar, A. Schwartz

Project 3

Sponsor: C. Sitter, Milwaukee Tool

Faculty Advisors: J. Domblesky, F. Elyasigorji, V. Cariapa

Team Members: E. Schindler, B. Herrera Tello, J. Wagner, R. Mishka

Civil, Construction, and Environmental Engineering Senior Design Projects

Engineering Hall 323

- 8:00-8:45** **The Beacon**
Sponsor: HGA & Mortenson
Lead Mentors: M. Zak, R. Pell, G. Corbett, HGA, S. Simpson, Mortenson
Team Members: S. Jansma, J. Kuczowski, N. Rupar, N. Vlk
- 8:45-9:30** **New Construction on Existing Conditions**
Sponsor: Thorton Tomasetti & Findorff
Lead Mentors: E. Diels, A. King, and N. Collins, T. Tomasetti, C. Baures, Findorff
Team Members: D. Annett, H. Bell, M. Joubert, T. Sedlack
- 9:30-10:15** **Industrial Park Group 1**
Sponsor: Arco Design Build
Lead Mentors: T. Hefferon, I. O'Mahoney
Team Members: K. Herzog, S. Mathiowetz, P. O'Brien, K. Sheehan
- 10:15-11:00** **General Mitchell International Terminal Redevelopment**
Sponsor: Findorff
Lead Mentor: M. Stern
Team Members: C. Collins, J. Fornek, J. Mills, E. Schamberger
- 1:30-2:15** **Industrial Park Group 2**
Sponsor: Arco Design Build
Lead Mentors: T. Hefferon, I. O'Mahoney
Team Members: T. Flaherty, B. Hartman, L. Johnson, A. Ozers
- 2:15-3:00** **Walkway Between Haggerty and EHall – Group 1**
Lead Mentor: A. Sen, Marquette University
Team Members: E. Cvetezar, R. Etta, S. Schmitt, R. Shea
- 3:00-3:45** **Tunnel between Haggerty and EHall**
Sponsor: Kiewit Corporation
Lead Mentor: D. Murphy, Kiewit Corporation
Team Members: L. Chin, N. Craft, B. Hanson, G. Villegas

- 3:45-4:30** **Walkway Between Haggerty and EHall – Group 2**
Lead Mentor: A. Sen, Marquette University
Team Members: R. Allred, M. Guerzon, G. Pierce, A. Walsh

Engineering Hall 423

- 9:30-10:15** **Arthur Avenue Resurfacing**
Sponsor: raSmith
Lead Mentors: A. Stasiukevicius, A. Axt, A. Utic, R. Wielgos
Team Members: C. Clark, J. Oestermeyer, O. Perez, J. Retzlaff
- 10:15-11:00** **400 South Olympic Multimodal Redesign Group 1**
Sponsor: City of Salt Lake
Lead Mentor: M. Sizemore
Team Members: H. Gonzalez, P. Kashishian, A. Otero, C. Wilson
- 11:00-11:45** **400 South Olympic Multimodal Redesign Group 2**
Sponsor: City of Salt Lake
Lead Mentor: M. Sizemore
Team Members: F. Henry, A. Lukanus, N. Russo, O. Zeisler
- 11:45-12:30** **Global Water Stewardship – San Rafael de Guatuso, Costa Rica Group 2**
Sponsor: CSWEA
Lead Mentor: M. Castillo and the Central States Water Environment Association
Team Members: S. Cushing, C. Grace, C. Kaplan, C. O'Malley
- 1:30-2:15** **IH 43 Becher St Interchange Project**
Sponsor: WISDOT
Lead Mentors: D. Del Conte, C. Hanna
Team Members: D. Gutierrez, J. Jett, S. Morrissey, B. Smith
- 2:15-3:00** **South Shore Wastewater Treatment Plant – Primary Clarifier Design**
Sponsor: MMSD
Lead Mentor: D. Zitomer, Marquette University
Team Members: B. Deshotel, A. Farahany, R. Kruse, Z. Tenuta
- Previously Presented:** **Global Water Stewardship – San Rafael de Guatuso, Costa Rica Group 2**
Sponsor: CSWEA
Lead Mentor: M. Castillo and the Central States Water Environment Association
Team Members: A. D'Amato, C. Lollino, S. Razin, X. Sorice

Dear Graduating Seniors,

Congratulations on your upcoming graduation!

We in the Opus College of Engineering have watched you transform from freshman engineering students into dedicated, ethical, and mission-driven engineers with a desire to serve others. Allow this mission to guide you and remain open to continued growth and transformation. You are the difference; go forth and set the world on fire.

We know that your career will benefit from the same commitment and effort that you devoted to your academic work. We wish you the best!

Warmest Regards,
Opus College of Engineering Faculty and Staff



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