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Jackson Rayer, ME senior, poses for a picture next to the MSU Baja vehicle. Read about Baja SAE on page 8.
Students often ask, “Why do mechanical engineers need to learn how to program?” This is a great question and the answer has three key parts.

First, programming trains mechanical engineers in systematic, clear, problem solving.

Programming is difficult because computers do exactly what you tell them to do and nothing more. Learning how to make a computer complete a task is an exercise in taking a complex problem and breaking it down into very specific logic-based tasks. Humans are great at inferring meaning, determining intent, and filling in gaps in instructions. Computers don’t think like humans and because of this limitation they mercilessly point out where our instructions are incomplete or unclear. This can be frustrating, but working through the details of writing a program helps engineers develop the ability to be precise, logical, and specific in their work.

Learning to write computer code requires thinking ahead. I’ll never forget the first time I needed to write a computer program that was too large and complicated to fit in my head at one time. I got out a pencil and paper and outlined the problem using block diagrams starting with general code objectives. Each block in a diagram was fleshed out with its own set of block diagrams with more detailed objectives. This continued until I was confident I could code each piece of the program. Computer programming, done right, requires engineers to carefully organize their problem-solving process. Because many computer codes take inputs and return outputs, writing code asks us to carefully specify what data are needed and what output is important. As a mechanical engineer, scaffolding a complex problem is one of the more useful skills I have developed, and mastered it by learning how to properly write computer code.

Perhaps the most vexing part of programming is troubleshooting. We spend hours writing a code only to have it not work. Then we spend twice as long combing through the code to find our bugs. What a waste of time! Actually, troubleshooting is a key piece of mechanical engineering. Designs never work properly the first time. Manufacturing processes need to be tweaked and refined so they consistently produce highly accurate and precise parts. Experiments go wrong and data measurement devices need troubleshooting. As a mechanical engineer you will spend much of your time troubleshooting. While you may not be troubleshooting code, the skills you develop when learning to program are the same ones you will use to troubleshoot mechanical systems: carefully reviewing each line of code or component of a mechanical system, creating tests to make sure that piece is working properly, and creating more tests to make sure two pieces are working together correctly. These are imperative skills for any mechanical engineer. As a side note, laboratory classes are similar in this regard. Even though it can be frustrating to have to troubleshoot an experiment, it is one of the most valuable learning experiences you will have in college.

Second, programming provides mechanical engineers with a base level foundation for understanding computational tools.

The engineering challenges of the 21st century are complex and interdisciplinary. Fortunately, the tools we are developing are increasingly powerful. Computational tools like...
Dr. Minami Yoda joined the ME Department as chairperson this fall. She comes to us from the G.W. Woodruff School of Mechanical Engineering at Georgia Tech where she was a Ring Family Professor.

She is a former chair of the American Physical Society Division (APS) of Fluid Dynamics and former chair of the American Nuclear Society Fusion Energy Division and an editor of *Fluid Dynamics Research* and an associate editor of *Experiments in Fluids*. She was elected a Fellow of the APS in 2012 and the American Society of Mechanical Engineers in 2008.

Her research interests in experimental fluid mechanics and optical diagnostics are focused on colloidal dynamics, flow boiling of dielectric fluids, super-resolution microscopy, and the thermal-fluids performance of plasma-facing components for magnetic fusion energy. The goal of her work in nanofluidic diagnostic techniques is to optimize liquid transport at the submicron scale, a critical technology for the next generation of biochemical microsensors.

Dr. Yoda was a postdoctoral researcher at the Technical University of Berlin in Germany and a visiting researcher at the Delft University of Technology in the Netherlands. Her undergraduate studies were at the California Institute of Technology. She received master’s and Ph.D. degrees at Stanford University.

### Curriculum News

**Co-op Students:** Before you leave for your Spring 2024 co-op rotation, be sure to discuss your schedule for next Summer and Fall 2024 with your academic advisor.

**ME 451-Control Systems & ME 481–ME Design Projects** require department approval before you can enroll. If you have an accurate long-term schedule on file with either Jeffrey Tsang or Gaile Griffore, request approval by submitting the following forms:
- ME 451: [https://me.msu.edu/me-451-enrollment-approval-form](https://me.msu.edu/me-451-enrollment-approval-form)
- ME 481: [https://www.egr.msu.edu/me/me481-approval-form](https://www.egr.msu.edu/me/me481-approval-form)

**ME 456-Mechatronics** has been added to the official list of design intensive senior electives. It has also been added to the list of options on the Aerospace Concentration.

**ME 465-Computer Aided Optimal Design** has been canceled for Spring 2024. Students who are completing the Computational Design concentration can substitute either ME 456 or ECE 448.

**Class Standing.** ME juniors and seniors can obtain this information by emailing their academic advisor:
- Jeffrey Tsang (Last Name A-K): tsang@egr.msu.edu
- Gaile Griffore (Last Name L-Z): griffore@egr.msu.edu

Be sure to use your MSU email address.

**Job Search Advice:** The Center is available to answer questions about your job search. To ask a question or schedule an appointment, go to: [https://www.careers.egr.msu.edu/](https://www.careers.egr.msu.edu/)

### Academic Advising

Margo Glew advises ME sophomores whose last names begin with L-Z.

Jeffrey Tsang advises ME sophomores, juniors, and seniors whose last names begin with A-K.

Gaile Griffore advises ME juniors and seniors whose last names begin with L-Z.

**To schedule an appointment with your advisor, go to student.msu.edu**

### Tutoring

- The ME Learning Center [https://me.msu.edu/me-learning-center](https://me.msu.edu/me-learning-center) has free mentors for ME 201, 222, and 361. It is open at 6-10 p.m. on Sunday through Thursday.

- Paid Undergraduate Tutors are available for many ME courses. Students in need of tutoring help for a particular course are matched with fellow students who have performed well in that course. Payment is negotiated privately between the tutor and the student within appropriate limits. For help go to: [https://sites.google.com/view/msu-tbp-pts-tutoring-database/home](https://sites.google.com/view/msu-tbp-pts-tutoring-database/home)

**Prerequisites:** The ME department expects all students, including members of the Honors College, to observe all course prerequisite requirements. If you have a question about prerequisites, contact your academic advisor.

**Deadline: Nov 8**

**Department News**

**Dr. Minami Yoda** joined the ME Department as chairperson this fall. She comes to us from the G.W. Woodruff School of Mechanical Engineering at Georgia Tech where she was a Ring Family Professor.

She is a former chair of the American Physical Society Division (APS) of Fluid Dynamics and former chair of the American Nuclear Society Fusion Energy Division and an editor of *Fluid Dynamics Research* and an associate editor of *Experiments in Fluids*. She was elected a Fellow of the APS in 2012 and the American Society of Mechanical Engineers in 2008.

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Dr. Yoda was a postdoctoral researcher at the Technical University of Berlin in Germany and a visiting researcher at the Delft University of Technology in the Netherlands. Her undergraduate studies were at the California Institute of Technology. She received master’s and Ph.D. degrees at Stanford University.
ME Juniors & Seniors Select Dr. Anthony for the 2023 Withrow Teaching Excellence Award!

Professor Anthony received the 2023 Withrow Teaching Excellence Award last spring at a special awards dinner and ceremony. She was presented with an inscribed plaque, a medallion, and a small stipend. Each year a committee consisting of student representatives from ASME and Pi Tau Sigma reviews nominations from ME juniors and seniors and makes the selection.

Dr. Rebecca Anthony grew up in Maryland and attended Carleton College in Minnesota, where she majored in physics. She received her Ph.D. in mechanical engineering from the University of Minnesota in 2011, and after that she stayed at UMN to do postdoctoral research on the diagnostics of dusty plasmas.

Her research interests include plasmas for synthesis of semiconductor nanostructures, gas-phase processing and functionalization of nanostructures, and aerosol deposition of functional films. The applications for these nanostructures and materials range from energy-oriented devices like light-emitting diodes and solar cells to biological imaging agents.

Dr. Anthony is described as a professor who is “welcoming, optimistic, and friendly - and a person who takes the time to check on the wellbeing of her students.”

Her classes, while focusing on engineering issues, move beyond the topics and generate community in the assembled group. Students describe her ability to make personal engagement an integral part of the educational process.

One student remarked: “I felt as though I was learning from a person and not a screen.” For students who were transferring to MSU (especially into an online environment), she has given them the support needed to make the leap to a new level of academia. Transfer students have remarked that they could not have asked for a better first impression of the mechanical engineering program.

Another nominator noted: Covid created many problems for students and faculty alike, but Anthony always cared. The mental health of her students was at the forefront of her dedication to their learning. For these reasons and many more, she is a worthy recipient of this award.

Dr. Anthony lives in Lansing with her husband and two kids (10 and 5). She enjoys outdoor activities such as hiking, running, and cross-country skiing, as well as printmaking and baking. Dr. Anthony was motivated to study engineering as a way to contribute to the world’s transition from fossil fuels to renewable energy, and paired that with her interest in nanomaterials to arrive at her current research area. She is teaching ME 201 this semester.

Nominate a professor for the 2024 Withrow Teaching Excellence Award!

Deadline: Wednesday, Nov. 8

To access the Nomination Form:
1) Go to the ME Website: [https://www.egr.msu.edu/me/](https://www.egr.msu.edu/me/)
2) Click on Undergraduate
3) Click on Forms and Policies
4) Select Withrow Nomination

THANKS!
The Fifty Thousand Dollar Question: Are You Creative? by Craig Gunn, Director of Communications

I am not sure how many years ago I listened to young starting engineers talking about their technical process and how creativity meant nothing. In thinking about that idea, someone may have told you, or tweeted, or put on your Facebook page that you are an engineer and therefore you are NOT creative. Some misinformed character may have lumped you into a black box filled with technical terms, equations, and random figures and tables and relinquished your life to a fathomless depth of unconventionality. Well, it is time to set the record straight and respond to that indictment. Are you CREATIVE?

This is kind of a foolish question and the answer is YES! No matter how hard you try to remove yourself from the juices that flow beyond the technical, one of the most important parts of your existence is how you approach your own creativity. Think about all the designs that have hit the market in the last 100 years or go back a further 1000 years. New car designs, cellphones, games, boats, you name it and there is an enormous amount of creativity involved. Yes, the technical aspects are vastly important in the design of the specific item, but it is the creativity that is shown in that design that makes or breaks the acceptance of it. And who provides that creativity? Obviously, you and your fellow engineers do!

Engineers as a group are some of the most creative people on the planet. You think out of the box to come up with designs that will wow the public. You are constantly on the forefront of making something out of nothing and getting the public to buy in mass.

When you start to think that creativity is not just writing a novel, painting a picture, or putting words together to form a poem, you will understand the power of the creative engineer and use your technical knowledge and your inner creativity to give the world what it both needs and wants.
Low-level Purification of Helium for Cryogenic Applications

by Dr. Nusair M. Hasan

Process gas purifiers are an essential sub-system for large-scale cryogenic helium refrigerators, such as those used at the Facility for Rare Isotope Beams (FRIB) at MSU. At the very low operating temperature (typically 4.5 K or below) of these refrigerators, any impurities present in the refrigerant fluid (helium) will solidify. Even trace amounts of these impurities in the refrigerant can block and/or change the flow distribution in the process heat exchangers and potentially damage rotating equipment (e.g., turbo-expanders, centrifugal compressors / circulators etc.) operating at high speeds. Helium purifiers for cryogenic refrigerators are typically designed for a low level, i.e., less than 100 ppmv of impurity (typically moisture and constituents of air) removal. However, effective removal of the low-level moisture contaminant is challenging with adsorption-based purifiers, since the adsorbent (typically, molecular sieve) tend to lose its capacity over time and require a meticulous regeneration process. Freeze-out purification is a very effective method for removing low level moisture contamination due to the exponential behavior of the saturated vapor pressure with temperature. But this process requires careful process and mechanical design of a freeze-out heat exchanger to allow high thermal effectiveness with sustained frost formation.

The researchers at MSU Cryogenics Initiative with support from FRIB Cryogenics department staff have designed and fabricated a prototype freeze-out purification system for helium. This design employs a coiled finned-tube heat exchanger (also known as Collins heat exchanger) for the freeze-out of moisture and a liquid nitrogen cooled adsorption bed for the removal of the other major constituents of air (e.g. nitrogen, oxygen). When designed properly, the coiled finned-tube heat exchanger can offer a large surface area while maintaining geometrical compactness, and providing good moisture accumulation capacity and mechanical robustness for contaminant freeze-out in the flow channels. The prototype purification system is estimated to increase the moisture collection capacity by 3-5 times as compared to the conventional, commercially available designs and significantly reduce the helium losses associated with the regeneration process and make the purification process more efficient. It is expected to be commissioned in the coming months.

ME graduate students working with the MSU Cryogenic Initiative have developed predictive models to estimate the moisture collection capacity of this purification system (see figure above). The prototype purification system is equipped with adequate instrumentation, and extensive performance testing will be carried out to validate and improve these predictive models.

Freeze-out purification system with heat exchangers designed by MSU Cryogenics Initiative and FRIB (left), estimated contamination (frost) freeze-out profile along the purifier heat exchanger (top right) and fabrication of the purification system (bottom right).

For further information, please contact Dr. Venkatarao Ganni (ganni@frib.msu.edu), or Dr. Nusair M. Hasan (hasann@frib.msu.edu).
Congratulations to these 531 ME majors who made the Dean’s List after Spring and Summer 2023. To be on the Dean’s List, you must have a semester GPA of 3.5 or better. This list is from September 25. For updates, go to: [http://www.reg.msu.edu/ROInfo/GradHonor/DeansList.aspx](http://www.reg.msu.edu/ROInfo/GradHonor/DeansList.aspx)

**SPRING 2023:**

**SUMMER 2023:**
- Tommy McGowan, Saransh Mehta, Raad Mohammed, Courtnev Smith, Gabriel Lippis, Emilio Ruma.
Baja SAE

MSU Baja represents MSU at Baja SAE competitions across the country where we compete with 60-80 other teams from around the world to design, build, and compete with the best off-road vehicle. This year we are returning from a successful season finishing 20th overall in Oshkosh and 13th overall in Ohio. We were able to score 5th place in the grueling suspension and traction course in Ohio and secure a 3rd place finish in the 4 hour endurance race - MSU Baja’s first endurance podium finish in over 40 years! Highlights from the endurance race include holding off some of the traditional competition winners such as UofM and Cornell.

Last year our team poured thousands of hours of engineering design and precision manufacturing into our vehicle and the results really showed during the competition. We demonstrated a high level of reliability that allowed us to drive by our competitors as they pitted their own vehicles for repairs.

This year, as we begin the design and manufacturing of our new vehicle, we plan on continuing the upwards trend that we are on and improving our overall standings to become a top 10 team overall. Submitted by Jacob Greca, Project Manager.

Formula SAE

Michigan State University’s Formula Racing Team is revving up for an electrifying debut as they finalize designs and kickstart the manufacturing process for their inaugural electric racecar that will compete in June 2024. Known for their prowess in combustion engine racing, this marks a significant shift towards sustainable technology.

With sustainability at the forefront, the team has been meticulously refining their electric vehicle (EV) design, optimizing every aspect for maximum performance. From aerodynamics to powertrain efficiency, their goal is not only to compete but to excel in the world of electric racing. This ambitious endeavor showcases the university’s commitment to innovation and environmentally friendly transportation solutions. It also highlights the growing importance of electric mobility in motorsports, pushing the boundaries of what’s possible on the track while promoting cleaner, greener alternatives.

As the team rolls into the manufacturing phase, anticipation is building for their maiden EV racecar’s unveiling, promising an exciting future for Michigan State University’s Formula Racing Team on the electric racing circuit. Submitted by Ronak Patel, Project Manager.
Create Your Resume with AI Technology!

By Bernadette Friedrich, Ph.D., Director of Student Engagement

The Center for Spartan Engineering Career Team has introduced a new AI technology to help you create the best resume, while also making sure that it will get through the Applicant Tracking System (ATS) or as we like to say “Beat the Bot”. VMock is an on-demand resume review tool leveraging AI to deliver instant and personalized feedback that benchmarks your resume with your College of Engineering Peers. Our VMock was trained by the MSU College of Engineering career staff to make sure that your resume is in the best shape it can be for the employers who recruit at Michigan State University and beyond.

VMock reviews your resume in three distinct ways, presentation, competencies, impact. Presentation is all about how it looks, formatting, spelling, and grammar. Competencies are your skills, how well are you demonstrating both technical and soft skills on your resume. Finally, Impact! Impact is the reflection of your ability to use WHO on your resume. Have you demonstrated to an employer your worth? What outcomes have you talked about?

Basically, you upload your document and the system takes a look and identifies weaknesses in your resume. It will then walk you through the comments and help you to repair any issues that it identified. You can use the Smart Editor to fine tune the details.

Here is what I want to share, this is a tool to help you based on what "WE" know from talking to employers, working with students, and generally having years in this business. But it is still your resume, work with VMock to develop a resume that best represents you in a way that employers will respond positively! You can access VMock from our website: https://www.careers.egr.msu.edu/vmock. Once you are happy with your resume, don’t forget to upload the new version to Handshake and let’s get this job search started!

Don’t forget The Center has walk-in hours, Monday – Thursday from 12-6 in Room C 108 Wilson Hall, where we can assist you in utilizing VMock, prepare for an interview, or learn how to most effectively navigate Handshake. Juniors and Seniors are also encouraged to take advantage of the “Career Café” located in the main lobby of the Engineering Building for career assistance, employer engagement, and snacks.

Recktenwald, Cont’d from pg 2

finite element analysis, computational fluid dynamics, machine learning, optimization, and artificial intelligence expand our ability to explore the space of possible design solutions. Mechanical engineers need to be competent with these tools, and the first step in developing this competence is to learn how to program. Writing code teaches engineers about the ways computers think … and don’t think. Nothing is more important to using modern computational tools than watching your carefully written code spit out garbage solutions. While that may sound strange, the first lesson of computational tools is never blindly trust the output. Mechanical Engineers cannot use software as a black box. By writing your own code, you learn the importance of verifying the computational results of any software package you use.

Finally, you never know when your career may require coding.

In your first job, you may get by with computations in Excel or maybe a Matlab script. But I’ve seen many cases where a problem really needed a well-written piece of Python code. Being flexible in your mechanical engineering career means having a broad set of tools you can use to design, analyze, and test. For the modern mechanical engineer, being able to write a computer program is one of these skills.

So, when you’re sitting in a programming class thinking, “I signed up to be a mechanical engineer, why do I have to take this class?” The answer is, because we want you to be an excellent, highly competent mechanical engineer; and learning to program is a key piece of that training and an invaluable career skill.

IF YOU THINK THE UNIVERSE IS BIG YOU SHOULD SEE THE SOURCE CODE!
Aerospace Concentration

A mechanical engineering degree with the aerospace engineering concentration recognizes the expertise of students in subjects related to aerospace applications and to the aerospace industry, which provides many career opportunities for mechanical engineering graduates. Students who meet the requirements of this concentration will have expertise in aerodynamics, propulsion, and structures, supplemented by other strengths in the core Mechanical Engineering degree program.

To complete a Bachelor of Science degree in mechanical engineering with an aerospace engineering concentration, students must complete the requirements for the B.S. degree, including:

- ME 440 Aerospace Propulsion
- ME 441 Aerodynamics and Aircraft Performance
- Plus one course from the following list:
  - ME 423 Intermediate Mechanics of Deformable Solids
  - ME 426 Introduction to Composite Materials
  - ME 456* Mechatronic System Design
  - ME 475* Computer Aided Design of Structures

CREDIT DISTRIBUTION: The 12 credits in the concentration will be applied to the Senior Elective requirement (including the “design intensive” course component). Completion of the concentration will be noted on the final transcript.

The asterisk (*) signifies that the course is design intensive.

*ME 465 has been CANCELED for Spring 2024. Either ME 456 or ECE 448 can be used as a substitute.

Computational Design Concentration

A mechanical engineering degree with the computational design concentration signifies the interests and expertise of students in computational techniques and approaches for the design and optimization of structural, thermal and fluid systems in engineering applications. To complete a Bachelor of Science degree in mechanical engineering with a computational design concentration, students must complete the requirements for the B.S. degree, including:

- ME 416* Computer Assisted Design of Thermal Systems
- ME 433 Computational Fluid Dynamics
- ME 465* Computer Aided Optimal Design
- ME 475* Computer Aided Design of Structures
- Plus one course from the following list:
  - ME 422 Introduction to Combustion
  - ME 433 Computational Fluid Dynamics
  - ME 442* Turbomachinery

CREDIT DISTRIBUTION: The 12 credits in the concentration will be applied to the Senior Elective requirement (including the “design intensive” course component). Completion of the concentration will be noted on the final transcript.

The asterisk (*) signifies that the course is design intensive.

IMPORTANT: 1) For the latest and most accurate version of any ME concentration, please refer to the Dept. of Mechanical Engineering website. Earlier versions are invalid and will not be honored. 2) You MUST meet with your ME junior/senior advisor and arrange for the concentration code to be added to your record PRIOR to applying for graduation. This ensures that the concentration statement will appear on your final transcript.
SPRING SEMESTER SENIOR ELECTIVES

The asterisk (*) after a course number indicates that it has been officially designated as “Design Intensive.” The instructor information is subject to change.

ME 413 Cryogenic-Thermal Systems. 3(3-0). Prereq: (ME 410 or concurrently). Hasan.
ME 417* Design of Alternative Energy Systems. 3(3-0). Prereq: (ME 410 or concurrently). Bénard.
ME 426 Introduction to Composite Materials. 3(3-0). Prereq: (ME 222). Xiao.
ME 433 Introduction to Computational Fluid Dynamics. 3(3-0). Prereq: ME 410 or concurrently. Yuan.
ME 441 Aerodynamics and Aircraft Performance. 3(3-0). Prereq: (ME 332). Allison.
ME 442* Turbomachinery. 3(3-0). Prereq: (ME 332). Mueller.
ME 445* Automotive Powertrain Design. 3(3-0). Prereq: ME 444. Schock.
ME 456* Mechatronic System Design. 3(2-3). Prereq: (ECE 345 or concurrently) and (ME 391 or concurrently). Zhu.
ME 464 Intermediate Dynamics. 3(3-0). Prereq: (ME 361). Tai.
ME 477 Manufacturing Processes. 3(3-0). Prereq: (ME 222) and (MSE 250). Sahasrabudhe.
ME 478* Product Development. 3(3-0). Prereq: (ME 477). Chung.
ME 490 Independent Study. 1-4 credits. See Override Instruction #2 below. You may reenroll for a maximum of 6 credits.
ME 495 Tissue Mechanics. 3(3-0). Prereq: (ME 222). Biomedical Concentration Course. Pence.
ME 497* Biomechanical Design in Product Development. 3(3-0). Prereq: (ME 370 or concurrently). Biomedical Concentration Course. Bush/Nguyen.
BE 444 Biosensors for Medical Diagnostics. 3(3-0). Prereqs: (BS 161) and (CEM 141) and (ECE 345). Biomedical Concentration Course, Alocilja.
CE 407 Materials Engineering: Properties, Selection and Processing. Prereq: (CE 221) and (ME 222). Recommended Background: MSE 250. TBA.
CHE 483 Brewing and Distilled Beverage Technology. See Override Instruction #3 below. See the Schedule of Courses for location information. Prereq: (Age 21 or higher) and (Senior standing) and (ME 410-Heat Transfer or concurrently). Shriner.
ECE 448 Modeling and Analysis of Bioelectrical Systems. 3(3-0). Prereq: (PHY 184). Biomedical Concentration Course. Saha.
ENE 422 Applied Hydraulics. 3(2-2). Prereq: ME 332. Pokhrel.

Graduate Level Courses: Honors College members and/or students with 3.5+ GPAs might consider taking a graduate course as a senior elective. Before enrolling, several signatures, including that of the instructor, are required. Possible choices for Spring 2022 include ME 814, 825, 861, and 872. See Override Instruction #4 below.

**SENIOR ELECTIVE OVERRIDE INSTRUCTIONS**

1) General Override Request Procedure: Complete and submit the ME Override Request Form: https://www.egr.msu.edu/me/me-override-request. Please note that the ME department cannot overfill required courses to resolve conflicts with Senior Electives, Other Electives, Integrative Studies courses and employment schedules.

2) ME 490–Independent Study Enrollment Procedure: Find a professor who is willing to supervise your independent study, and discuss your plans with him/her. Complete an ME 490/490H Enrollment Contract (independent study form), available in the ME Department Office in 2555 EB. After you and your professor have completed and signed both sides, return the form to the ME Department Office for the remaining signatures, override, and enrollment.

3) CHE 483—This course has a maximum enrollment of 100. When it is full, no additional overrides will be given. It would be a good idea to enroll in a back-up course. To request an override, go to: https://www.egr.msu.edu/chems/index_login.html

4) Complete the Graduate Course Override form, which can be obtained from Gaile (griffore@egr.msu.edu).
Fall Semester Calendar

October 30  Scheduled enrollment begins for Spring 2024.
November 8  Deadline for Withrow Teaching Award Nominations. The nomination form is on the ME website (https://www.egr.msu.edu/me). [Click on Undergraduate, and then Forms and Policies.]
November 13 Scheduled enrollment begins for Summer 2024.
Nov 23-24  Thanksgiving recess
December 10 Last day of classes & Design Day.
Dec 11-15  Final Exams
December 16 Undergrad Commencement Ceremony-2:00 p.m. in Breslin. Lasts about 2 hours.
Dec 16-Jan 7 Semester Break
January 12  On-line Open Add Period for Spring 2024 ends. Also, May 2024 and August 2024 graduates should apply for graduation by this date.

Undergraduate Program Educational Objectives
Department of Mechanical Engineering
Michigan State University
(Approved by the ME Department Faculty (August 29, 2022)

Our graduates will:
• Be recognized as competent and ethical engineers practicing in a diverse range of activities.
• Use their mechanical engineering education as a stimulus for personal and professional growth.
• Be recognized for their capability, creativity, leadership, and application of knowledge.
• Be recognized as critical thinkers, both independently and as members of a team, who identify problems and develop effective solutions.

MSU is an affirmative action, equal opportunity employer. MSU is committed to achieving excellence through cultural diversity. The university actively encourages applications and/or nominations of women, persons of color, veterans and persons with disabilities.