MICHIGAN STATE UNIVERSITY COLLEGE OF ENGINEERING

FUTURE ENGINEERS
PREVIEW DAY
2018
DEAR STUDENTS AND PARENTS:

On behalf of our faculty, staff and students, we welcome you to the MSU College of Engineering. We hope your visit today will find you agreeing that Spartan Engineers are “built better.”

To prepare our students for the global and rapidly changing workplace of the 21st century, we provide degree programs that emphasize developing all of the qualities sought by employers and graduate schools, including:

• A solid technical foundation through classroom education
• Experiential education through co-ops, internships and undergraduate research
• A global perspective through study abroad
• Communication and teamwork skills
• Immersion in innovation through hands-on design from your very first days on campus
• A grounding in social understanding through living in the CoRe community, service learning, and community outreach opportunities.

More than 1,400 first-year engineering students are part of the MSU CoRe Experience; most living together in MSU’s South Neighborhood. CoRe immerses you in a living-learning environment where you’ll work in teams with other engineering students, get exposed to engineering careers, and network with professional engineers and employers.

CoRe classes let you dive into engineering design through hands-on projects solving real-world problems. And, you have access to engineering-dedicated computer and design labs conveniently located in South Neighborhood. CoRe also brings a whole network of people – tutors, advisors, peer mentors, and other faculty and staff members dedicated to your success – right to your door.

CoRe helps you build life-enriching connections with fellow students, faculty members, advisors, and industry representatives through social programs and activities that help build the whole engineer.

We hope you enjoy your day interacting with our faculty, staff and students, and seeing what is only a sampling of their many activities and accomplishments. We invite you to return for a family visit to learn even more about opportunities in the MSU College of Engineering.

Go Green!!

Leo Kempel
Dean
College of Engineering

Neeraj Buch
Associate Dean for Undergraduate Studies

Drew Kim
Assistant to the Dean
Recruitment, Scholarships, & K-12 Outreach
We are excited to have you here in the College of Engineering to show you all that Michigan State University has to offer. Preview Day is designed to help you explore your options and learn more about the many different engineering programs available at MSU.

Today’s event will be run conference style. Most sessions will be offered twice, so you have an opportunity to visit the programs in which you are most interested. Please read through the descriptions on the following pages and choose the sessions you would like to attend. If the session you choose first is full, move to your next choice, then come back for the second session. Each session will last 50 minutes.

A resource fair will follow the sessions, providing information on admissions, financial aid and a number of other campus resources, as well as an opportunity to speak with representatives from each academic unit within the College of Engineering, and some of our corporate partners.

Tours of the MSU CoRe Experience and the Mechanical Engineering Manufacturing Teaching Lab, CAD/CAM and Design Project Labs will also be offered. Check the program for meeting locations.

**SCHEDULE OVERVIEW**

October 13, 2018 • 8:30 AM - 1:00 PM

8:30 AM ............................................................. Arrival

9:00 - 9:20 AM .................................................... Welcome Session
1281 Anthony Hall

**CHOOSE ONE PROGRAM TO ATTEND IN EACH SESSION**

9:30 - 10:20 AM ................................................. Session 1

10:30 - 11:20 AM ............................................... Session 2

11:30 AM - 1:00 PM ............................................. Mechanical Engineering Tour
ME Manufacturing Teaching Lab
CAD/CAM & Design Projects Labs

11:30 AM - 1:00 PM .......................................... Resource Fair

11:30 AM - 1:00 PM ............................................. CoRe Tours of South Neighborhood
(meet at Engineering Circle Drive, location is shown on pg 10)
A Resource Fair will be available in the First Floor lobby (near Sparty’s) and surrounding hallways following the morning sessions. Representatives from campus resources will be available to answer your questions and discuss their programs and services. Be sure to stop by and visit with them!

Representatives will be available from:

- Engineering Academic Advisors
- Admissions
  - Incoming Freshmen
  - Transfer Students
- Campus Living Services/Residence Life (On-Campus Housing)
- CANVAS (Connected and Autonomous Networked Vehicles for Active Safety)
- Corporate Partners (Employers)
- Diversity Programs Office (DPO)
- Division of Engineering Computing Services (DECS)
- Engineering CoRe Experience (First-year Engineering experience)
- Honors College
- Office of Financial Aid
- Residence Education and Housing Services
- Student Organizations
- Study Abroad
- The Center for Spartan Engineering (Career Services)
- VEX & VEX IQ Robotics
- Women in Engineering (WIE) Program
MECHANICAL ENGINEERING LAB TOURS

Tours of the Mechanical Engineering Manufacturing Teaching Lab, CAD/CAM and Design Project Labs will be available after the second session. Presentations will begin every half hour (11:30 a.m., noon and 12:30 p.m.)

ME Design & Explore Computer Aided Design Technology (CAD)

1307 Engineering Building

As a future engineer, you will learn how to design, model and build complex mechanical components and assembly structures using state of the art CAD software. Stop in to see the latest technology in 3D printing and learn how to you can be part of the excitement!

Manufacturing Teaching Lab & Computer Aided Manufacturing (CAM)

1240 & 1252 Engineering  (Please note: closed-toe shoes are required.)

Design, Build, and Test are at the heart of mechanical engineering. Check out our state-of-the-art teaching lab and all the tools that are available for the use of students, faculty, and staff. Watch a live presentation of the Computer Numerical Control (CNC) machine, which is operated through a computer interface.

MSU ENGINEERING CoRe EXPERIENCE

Walking tours of the CoRe Experience in South Neighborhood - Every 15 minutes beginning at 11:30 a.m. Meet in the Engineering Circle Drive on the west side of the Engineering Building facing Red Cedar Road).

Come join us on a tour of some of the dedicated Engineering spaces in South Neighborhood! This tour will include the Project Lab, the Hive, some of our sponsored floors, and a residential room. CoRe will also be represented at the Resource Fair with information on the learning objectives and activities associated with the academic and co-curricular programs taking place in the South Neighborhood.
APPLIED ENGINEERING SCIENCES (AES)
1230 Engineering - Session 1 & 2 (9:30 & 10:30 a.m.)

The Applied Engineering Sciences major is a unique interdisciplinary major that combines three academic components: 1) the foundation of traditional engineering programs (calculus, physics, chemistry, computing, and engineering science courses such as statics, thermodynamics and circuits), 2) systems-based coursework in the major, and 3) coursework in a concentration area outside the College of Engineering. Available concentrations are Supply Chain Management, Technical Sales, Packaging, Business Law, Computer Science, and Media and Information. In this session, you will have the opportunity to meet faculty and students in the program and learn more about the many opportunities.

BIOSYSTEMS ENGINEERING (BAE)
116 Farrall Hall - Session 1 & 2 (9:30 & 10:30 a.m.)

Biosystems engineers integrate engineering and biology to improve our world. Biosystems engineers protect our natural environment as ecosystem engineers, protect human health as food engineers and biomedical engineers, and promote sustainable energy as bioenergy engineers. In this three-part session, you will: (1) visit with current students about undergraduate research; (2) participate in a panel of biosystems engineering faculty and students, learning about the curriculum, internships, design projects, and careers; and (3) tour laboratories in the areas of biosensors, food safety, ecosystems engineering, and bioenergy.

CHEMICAL ENGINEERING & MATERIALS SCIENCE (CHEMS)
1145 Engineering - Session 1 & 2 (9:30 & 10:30 a.m.)

The Department of Chemical Engineering and Materials Science (CHEMS) combines two exciting engineering disciplines in one department! Chemical Engineering explores the processing of materials and the production or utilization of energy through chemical reactions. Materials Science and Engineering studies material properties and applies fundamental knowledge of physics and chemistry to developing new materials for applications ranging from energy and transportation to communications and medicine. Chemical engineers and materials scientists are employed in wide areas of industry, government, and academia. Come see and hear an introduction to CHEMS, and ask faculty members and current undergraduate students about our two programs. Presentations will focus on the two exciting curricula and opportunities for our student and graduates. Remember, everything is made of something!

CIVIL AND ENVIRONMENTAL ENGINEERING (CEE)
2243 Engineering - Session 1 & 2 (9:30 & 10:30 a.m.)

Civil and environmental engineers are responsible for designing, constructing, and maintaining the infrastructure that support our lives as we know it. This infrastructure includes the roads and bridges on which we drive, the buildings in which we live and work, the water treatment plants that ensure we have safe drinking water, and the wastewater treatment plants that protect our streams, lakes, and rivers. In this session you will learn about the undergraduate curriculum along with research, extracurricular, and internship opportunities supported by the department. The Department of Civil and Environmental Engineering invites you to visit with students and faculty from the department.

Steel bridge and concrete canoe displays will be set up in the 1200 Engineering Hall wing.
COMPUTER SCIENCE & ENGINEERING (CSE)
1279 Anthony Hall - Session 1 & 2 (9:30 & 10:30 a.m.)

Computers and computing touch nearly every aspect of our lives and their impact will only continue to grow. Computer scientists face diverse challenges to create technological advances and solutions to society's critical problems. As a result, Computer Science graduates are employed in essentially all areas of industry, government and education. The Department of Computer Science and Engineering invites you to visit with students and faculty from the department. Come hear about the exciting opportunities in computer science and engineering! You will also tour the state-of-the-art labs within the department.

ELECTRICAL AND COMPUTER ENGINEERING (ECE)
2250 Engineering - Session 1 & 2 (9:30 & 10:30 a.m.)

Come learn about the undergraduate curriculum, research activities and opportunities in the ECE department. You will meet the different student groups in ECE, such as Audio Enthusiasts and Engineers (AEE). After the student panel, you will have the chance to see the latest cutting-edge research demonstrated by our students, including the Robotic Fish and mind-controlled robots and games.

MECHANICAL ENGINEERING (ME)
1345 Engineering Auditorium - Session 1 & 2 (9:30 & 10:30 a.m.)

Mechanical engineers design, build, analyze, and test devices ranging from the largest power plants to the micro-electronic accelerometers in video-game controllers. Graduates are employed in fields such as aerospace, automotive, biomedical, electronics, energy generation, manufacturing, naval architecture, refrigeration, and robotics. ME at MSU emphasizes development of an outstanding technical foundation, an understanding of the global impact of engineering, and the tools for lifelong learning. The senior year culminates with an industry-sponsored, team-oriented design project synthesizing much of what has been learned throughout the undergraduate experience. Come hear about ME at MSU from professors and students, and learn how you can tailor your program with options in biomedical engineering, engineering mechanics, manufacturing, and global engineering.

NO-PREFERENCE ENGINEERING
2400 Engineering - Session 1 & 2 (9:30 & 10:30 a.m.)

This information session is designed for students interested in learning more about the engineering profession and will be especially useful for no-preference students. It will provide an overview of the 10 degree programs offered here at MSU and how MSU prepares its graduates to be competitive in the global marketplace. Learn how Spartan Engineers are built better!

TRANSFER STUDENTS
2205 Engineering - ONLY AVAILABLE FOR SESSION 2 (10:30 a.m.)

What Does it Take to Transfer into the MSU College of Engineering? Learn the ins and outs of transferring from another institution into Michigan State University and the College of Engineering.
OVERVIEW:
Engineering Building • Anthony Hall • Farrall Hall

FARRALL HALL:
Biosystems Engineering Sessions:
9:30 & 10:30 a.m. Room 116
WELCOME SESSION: 9 a.m. Room 1281
COMPUTER SCIENCE & ENGINEERING SESSIONS: 9:30 & 10:30 a.m. Room 1279
ENGINEERING BUILDING - FIRST FLOOR:

EGR Lobby- CoRe tours start here beginning at 11:30 a.m.
VARIOUS DEPARTMENT SESSIONS: 9:30 & 10:30 a.m.
RESOURCE FAIR: 11:30 a.m. - 1:00 p.m.
LAB TOURS: 11:30 a.m., noon & 12:30 p.m.
CoRe EXPERIENCE TOURS: 11:30 a.m. - 1:00 p.m.
ENGINEERING BUILDING - SECOND FLOOR:
VARIOUS DEPARTMENT SESSIONS: 9:30 & 10:30 a.m.

- Applied Engineering Sciences (1230 Engineering)
- Biosystems Engineering (116 Farrall Hall)
- Chemical Engineering & Materials Science (1145 Engineering)
- Civil and Environmental Engineering (2243 Engineering)
- Computer Science and Engineering (1279 Anthony)
- Electrical and Computer Engineering (2250 Engineering)
- Mechanical Engineering (1345 Engineering)
- No Preference Engineering (2400 Engineering)
- Transfer Students (2205 Engineering)
- Resource Fair (1st Floor Hallways)
MSU COLLEGE OF ENGINEERING

FUTURE SPARTAN ENGINEERS

SUMMER CAMPS

HIGH SCHOOL ENGINEERING INSTITUTE

WHO
Young women and men grade 10 - recent graduates in Fall 2019

WHEN
Residential. Session 1: June 16-20; Session 2: June 23-27; Session 3: July 15-19

MAKING A GAME OF IT
Learn programming skills, including building video games

WHO
Young women and men grade 11 - recent graduates in Fall 2019

WHEN
Residential. June 23-28

SPARTAN LEGO® ROBOTICS PLUS

WHO
Girls and boys entering grades 4-8 in Fall 2019

WHEN
Commuter. Session 1: June 17-21; Session 2: June 24-28; Session 3: July 15-19

LADY SPARTANS: WOMEN IN ENGINEERING

WHO
Young women entering grades 9-12 in Fall 2019

WHEN
Residential. June 23-27

SPARTAN GIRLS: WOMEN IN ENGINEERING

WHO
Girls entering grades 7-8 in Fall 2019

WHEN
Residential. June 16-20

ENGINEERING RESEARCH EXPERIENCE FOR TEACHERS (RET)

WHO
Partner school district teachers of middle and high school STEM courses.

WHEN
Commuter. June 17 - July 26

FALL & SPRING EVENTS

SPARTAN ENGINEERING PREVIEW DAY

WHO
High school juniors, seniors, transfer prospective students and their families; school groups and teachers

WHEN
October 13, 2018 and Fall 2019
Visit www.egr.msu.edu/future-engineer for updates

VEX ROBOTICS STATE CHAMPIONSHIP AT MSU

WHO
Middle and High School VEX Robotics teams

WHEN
February 24, 2019

SPARTAN INNOVATION & CREATIVITY DAY @ DESIGN DAY

WHO
Middle & high school students and special sessions for teachers (see Design Day Teachers’ Workshop information)

WHEN
December 7, 2018; April 26, 2019

DESIGN DAY TEACHERS’ WORKSHOP

WHO
Teachers of middle and high school science, technology, engineering and math (STEM) courses.

WHEN
December 7, 2018; April 26, 2019

CHECK OUR WEBSITE FOR UPDATES & FUTURE CAMPS!

LEARN MORE AND REGISTER AT:
www.egr.msu.edu/future-engineer