Let’s Create for Good

THE RUSS COLLEGE OF ENGINEERING AND TECHNOLOGY
You were the child who took your toys apart and found new ways to put them back together.

You were the student who actually liked math and science – but were just as passionate about art and music.

You’re CURIOUS.

You’re CREATIVE.

You’re SMART.

You have a deep desire to solve some of the world’s most pressing issues, and to transform society for the better.

You want to do more than make things.

You want to CREATE FOR GOOD.

And at the Russ College, that’s exactly what you’ll do.
There are so many ways to Create for Good. Find the one that fits you.

ENGINEERING. TECHNOLOGY. THEY’RE COMMON WORDS, BUT NOT EVERYONE KNOWS EXACTLY WHAT THEY MEAN – OR EXACTLY WHAT IT IS THAT ENGINEERS AND TECHNOLOGISTS DO.

Most of them create things: highways, software programs, and energy systems, for example. But at the Russ College, you’ll go beyond technical expertise, learning how to consider the entire life cycle so you can make a sustainable mark on the world. You’ll create more efficient highways, more effective software, and more responsible energy systems.

You’ll master the practical – but you’ll also learn how to think and work critically, creatively, and collaboratively. You’ll gain the knowledge and skills to become an innovative, well-rounded leader who consistently finds new ways to improve society for good.
Whether it’s in the lab, in the field, or even in the air, our mission lives in every part of our college – and each and every one of us is fulfilling it in our own unique way. That’s why we asked students, faculty, and staff to tag themselves and tell us how they Create for Good. What would your tag say?

Create for Good.

THIS IS HOW WE
You’ve always wanted to fly. Here, you’ll soar.

AS A PART OF THE AVIATION PROGRAM:

• You’ll start flight training during your very first year. As a freshman flight student, you’ll obtain pilot certification through the department’s FAA-approved flight program. You’ll work your way up to more advanced training courses and eventually get a chance to train on the University’s turboprop aircraft.

• You’ll learn the business side of flight. If you’d rather keep your feet on the ground, you’ll have the option to earn a non-flight degree and gain a strong background in aviation and business.

• You’ll find a second home at our airport. No matter which aviation degree you’re after, part of your time here will be spent at our University-owned airport, which houses an entire fleet of cutting-edge aircraft, including single- and twin-engine planes.

• You’ll participate in world-class research projects. Through collaborative research with the Russ College’s Avionics Engineering Center and sponsorships from the FAA and NASA, you can take part in projects like safety research and investigating the effect of new cockpit technology on pilot training.

• You’ll find new ways to stretch your wings. The Department of Aviation sponsors student chapters of organizations like Women in Aviation International and the American Association of Airport Executives, and competes nationally via the Flying Bobcats, the University’s official flight team.

Whether you see yourself in the cockpit of a fighter jet or in the corner office of an airline’s headquarters, our aviation program will help you learn to successfully navigate every part of the industry. Through hands-on training with experienced flight instructors, a University-owned airport with a cutting-edge fleet of planes, and a comprehensive curriculum that includes the business side of aviation, you’ll lay the groundwork that will take your career even higher.

DEGREES OFFERED:
B.S. IN FLIGHT EDUCATION
B.S. IN AVIATION MANAGEMENT
A.A.S. IN AVIATION TECHNOLOGY

Employers of our graduates include:
American Airlines, CommuterAir, Chautauqua Airlines, Nortwest Ohio University Airport Operations, U.S. Military, and Federal Aviation Administration

Student aviators can practice instrument flying — including departures, en route flying, and approaches — on desktop training devices that emulate the actual aircraft in our training fleet.

This is how I want to Create for Good:

DEGREE
B.S. IN AVIATION
CLASS
CLASS OF 2018

When he isn’t earning certification hours working as a flight instructor at UNI – the Ohio University airport – you can find Matt on rock climbing at the Ping Recreation Center or the surrounding Appalachian foothills.

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As a part of the chemical engineering program:

- You’ll have options. You can choose a track that centers on biological science, energy and the environment, or materials engineering, and take specialty coursework that focuses on employment or advanced study in a specific field. And with a broad spectrum of elective options, you can explore even more areas that interest you.

- You’ll put your knowledge into practice. More than 60 percent of chemical engineering students take part in undergraduate research and complete internships in industry. About 40 percent have presented at a professional conference.

- You’ll engage in friendly competition. More than a third of our undergraduates join teams for intercollegiate engineering competitions like the Chem-E-Car, a race for chemically powered and controlled cars, or the WERC environmental design contest.

- You’ll have a place to experiment. You can take advantage of a modern instructional space that houses pilot-scale chemical process equipment, materials testing equipment, and process control experiments.

This is how I want to create for good:

Eliminate single-use plastic waste.

Evan Streator, B.S. in chemical engineering, Class of 2019. Evan’s grandpa told him he’d make a great engineer. Now Evan is an undergraduate researcher working on esophageal cancer identification. He’s also an organic chemistry mentor and has been part of an online campus environmental magazine, the Biomedical Engineers Society, and the Russ College drone team.
This is how I want to Create for Good:

Turn pollution into paint

ERIN MILLIGAN, B.S. IN CIVIL ENGINEERING, CLASS OF 2019. Erin dove right in to undergraduate research and creating for good—she’s helping design and implement a pilot scale plant to treat acid mine drainage and turn the byproduct into marketable paint pigment. Meanwhile, she received a nationally competitive Udall Scholarship.

You want to improve modern civilization. In this program, you’ll start from the ground up, learning how to transform society by developing, designing, maintaining, and upgrading infrastructure like roads, bridges, buildings, and water supply and waste treatment systems. Even better, you’ll develop the creativity and expertise to meet the world’s needs in smarter, safer, more energy-efficient ways.

AS A PART OF THE CIVIL ENGINEERING PROGRAM:

• You’ll learn to think big before narrowing your focus. Our program will give you a broad background with opportunities to specialize in more specific areas like construction, environmental, geotechnical, land surveying, structural, transportation, and water resources engineering.

• You’ll build more than just knowledge. Undergraduates have opportunities to take part in real-world research projects with the Federal Highway Administration, the Ohio Department of Transportation and other state DOTs, other government organizations, and private-sector agencies.

• You’ll work with professional equipment. As a civil engineering student, you’ll have access to state-of-the-art facilities, like our full-scale, environmentally controlled Accelerated Pavement Load Facility, and equipment including our driving simulator and near-surface and down-hole ground-penetrating radar.

• You’ll stay engaged outside the classroom. You’ll have the opportunity to become a chapter member of groups like the American Society of Civil Engineers and Chi Epsilon, the national civil engineering honor society. Plus, you can participate in competitions with other universities and attend speaker presentations and social events.
Computer software, mobile phones, video games – you’ve always been into all things technological. In this program, you’ll turn that passion into a full-fledged career. You’ll learn the basic elements of computing – programming, analysis, and systems – and you’ll also work on fun projects like iPhone apps and video game engines. By the time you complete your degree, you’ll be ready to develop your own technological breakthroughs and make a real impact in any industry.

DEGREES OFFERED:
- B.S. IN COMPUTER SCIENCE
- M.S. IN COMPUTER SCIENCE
- PH.D. IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

Employers of our graduates include:
- Google, Amazon, Apple, CGI, Progressive Insurance, and Imgur

The VITAL lab offers students a chance to research and test virtual worlds by designing educational programs, while teaching users of the programs about subjects like finance, science, or the environment.

HOLLY FOX, B.S. IN COMPUTER SCIENCE, CLASS OF 2019.
Holly loves technology and sees every day how it’s becoming more important – so she’s going beyond the classroom with a security engineering internship at Fifth Third Bank, as part of a special leadership program.

This is how I want to Create for Good:
Connect people and ideas through new technology
Turn knowledge into power. Literally.

You’re full of energy. Here, you’ll learn how to harness it to power the world. In this program, you’ll learn the fundamentals of electrical engineering – power, circuits, and electromagnetics – as well as how to research, design, develop, and test new products in technologies like nano- and optoelectronics, wireless communication, and GPS. And just as important, you’ll learn how to look at your designs from a user’s perspective and understand how your creations can enhance the lives of others.

AS A PART OF THE ELECTRICAL ENGINEERING PROGRAM:

- You’ll gain a thorough understanding of every part of engineering. Because electrical engineers regularly interact with other disciplines, you’ll take basic courses in mechanical, civil, chemical, and industrial engineering as part of the curriculum.

- You’ll become more adaptable. Our program is designed to help students keep up with an ever-changing flow of information, while maintaining a focus on efficient, high-level problem solving.

- You’ll always have a place to study. We maintain two student computer labs and eight additional specialty labs in areas like communications and electromagnetics, industrial digital controls, and energy conversion.

- You’ll collaborate on cutting-edge research. You can take part in research in areas including optoelectronics, photonics, robotics, circuit design, electronics, and industrial controls. Plus, you can work with the Russ College’s Avionics Engineering Center on electronic research projects like instrument landing systems, navigation systems, and test-flight evaluation systems.

- You’ll connect with students who share your energy. Through organizations like the Institute of Electrical and Electronics Engineers and the Institute of Navigation, you’ll discover ways to share your interests and goals – and you’ll get leadership opportunities, too.

DEGREES OFFERED:

- B.S. IN ELECTRICAL ENGINEERING
- M.S. IN ELECTRICAL ENGINEERING
- PH.D. IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

Employers of our graduates include: American Electric Power, Boeing, General Electric, Intel, and Siemens

This computer engineering student worked alongside a faculty expert in GPS to configure and integrate a software-defined radio system with a satellite dish for a larger GPS research project.

This is how I want to Create for Good:

Turn knowledge into power. Literally.
Energize the world.

This is how I want to Create for Good:

Advance urban sustainability practices

NICOLAS M. MONENTE, B.S. IN ENERGY ENGINEERING, CLASS OF 2019. Things are always moving for Nicholas, who’s a Voinovich Scholar performing research on how to compost without oxygen. He also maintains the digester at OHIO’s compost facility, handling daily feedings and testing.

Energy engineering students can work at the Institute for Sustainable Energy and the Environment on algal biofuels, sustainable energy, and natural gas drilling issues such as the remediation of wastewater.

DEGREES OFFERED:

B.S. IN ENERGY ENGINEERING

Potential employers of our graduates would include companies like: American Electric Power, GE Energy, Babcock & Wilcox, Johnson Controls, and FMC.

As a part of the energy engineering program:

• You’ll learn outside the box. Our curriculum is unique, with fundamental courses from mechanical, electrical, and chemical engineering to give you a broad foundation and different perspective on the complex problems facing the energy industry.

• You’ll explore the front line of energy innovation. A host of technical electives allow you to specialize your learning, focusing on topics such as coal conversion, fuel cell design, nuclear power engineering, and solar cells.

• You’ll be one of a kind. Our energy engineering program is one of the first four-year degrees of its kind in the country, and you’ll be poised to lead the charge within an industry that will change the way the world works.

You’re innovative. You’re unique. You’re ready to take on one of the world’s great challenges. One of just a few in the nation, our energy engineering program is as ground-breaking as you are, preparing you to develop sustainable energy solutions, evaluate life cycle energy costs, and address fossil fuel shortages and the environmental effects of energy. Studying topics from energy economics and policy to fuel conversion and energy systems, you’ll become a well-rounded engineer, ready to face the most significant challenges of the century.
You’ve always been a problem solver. In this program, you’ll take that skill even further. You’ll study how things work and how they’re made, and discover ways to make them safer, more efficient, and higher quality. By the time you enter the workforce, you’ll be ready to solve problems in a whole range of industries – and better yet, you’ll be able to identify problems that society hasn’t even recognized yet.

AS A PART OF THE ENGINEERING TECHNOLOGY AND MANAGEMENT PROGRAM:

• You’ll get expertise in every facet of today’s industry. Our curriculum combines technical content with courses in general education, quantitative sciences, natural sciences, and business, so you’ll be prepared for engineering and management careers. Plus, all students take the required courses to earn a minor in business.

• You’ll see your education in action. In nearly all the program’s courses, you’ll devote more than half of your class time to hands-on lab activities, where you’ll apply your newfound knowledge and see real-time results.

• You’ll get a competitive edge by learning how to take organizations to the next level with our optional certificates in project management and Lean Six Sigma.

• You’ll learn from the pros. All full-time faculty have industrial experience and a passion for teaching. They’ve authored textbooks and held offices in national industry organizations, and many routinely consult for business, industry, and government agencies.

• You’ll discover opportunities outside the classroom. Whether you’re taking part in team-based research, competing with the robotics team, or attending a social event for the Society of Manufacturing Engineers, you’ll find plenty of ways to get involved.

DEGREES OFFERED:
B.S. IN ENGINEERING TECHNOLOGY AND MANAGEMENT

Employers of our graduates include: Honda, Toyota, Lincoln Electric, General Motors, American Showa, Actuant, PepsiCo, Lockheed Martin, and Flowserve.

Our state-of-the-art Parker Hannifin Motion and Control Lab gives students hands-on experience in control circuits for hydraulic systems.
You’re the kind of person who believes that everything can be improved. In this program, you’ll build on that philosophy to become a big-picture thinker who can design systems, solve complex problems, and find inventive ways to streamline operations—and make them better for the environment as well.

AS A PART OF THE INDUSTRIAL AND SYSTEMS ENGINEERING PROGRAM:

• You’ll develop marketable job skills. Industrial engineers work in every sector of the economy, including distribution, health care, manufacturing, and government. And as manufacturing, distribution, and computer systems become costlier and more complex, the need for industrial engineers just keeps growing. You’ll be in immediate demand when you hit the workforce.

• You’ll be well-versed in other disciplines. Because industrial engineers often integrate the work of other disciplines, you’ll supplement the core curriculum with courses in engineering science and business.

• You’ll be prepared to make an immediate impact. In your senior year, you’ll select a concentration area to develop professional skills in a particular industry such as manufacturing, supply chain management, health care, human factors, and information systems.

• You’ll create something real. Before you graduate, you’ll complete a system design project for a local company or organization, an impressive addition to any student’s portfolio.

• You’ll stay engaged. Through our research centers like the Center for Advanced Systems and Transportation Logistics Engineering and student organizations like the Institute of Industrial and Systems Engineers, you’ll find plenty of ways to immerse yourself in your field.

DEGREES OFFERED:

B.S., M.S. in Industrial and Systems Engineering
Ph.D. in Mechanical and Systems Engineering
M.E. in Engineering Management

Employers of our graduates include:

Amazon, FedEx, Honda, Nationwide Children’s Hospital, General Electric, J.P. Morgan Chase, Boeing, and U.S. Air Force

As part of her work in ergonomics, an ISE student studies elements of the human spine to determine ways to reduce injury and fatigue in the workplace.

This is where you’ll find it.

THERE’S ALWAYS A MORE EFFICIENT WAY.

This is how I want to Create for Good:

ALVIN PAUL CHANEY, B.S. IN INDUSTRIAL AND SYSTEMS ENGINEERING, CLASS OF 2020. He wants to make things work more efficiently and effectively—and he will. Appointed to the select OHIO Presidential Leaders Society as a sophomore and selected for the Russ College Engineering Ambassadors as a junior, Alvin is combining his technical know-how with leadership skills to become an intellectual property attorney.
Make something that moves the world forward.

You’re forward thinking in the most literal sense of the word. As a mechanical engineer, you’ll channel that dynamic mindset into creations as diverse as new motors and engines to drive the future, lightweight snow skis and mountain bikes for fun, improved power plants to energize society, and artificial hearts and prosthetic limbs to help people live more fully. You’ll gain the technical skills to succeed professionally, but you’ll also develop the creativity and entrepreneurial spirit to meet the needs of our ever-evolving world.

DEGREES OFFERED:

- B.S. AND M.S. IN MECHANICAL ENGINEERING
- PH.D. IN MECHANICAL AND SYSTEMS ENGINEERING

Employers of our graduates include:

- Boeing
- Daimler AG
- Honda
- General Electric
- American Electric Power

A mechanical engineering student sets up a CNC (computer numerical control) mill, which senior design teams use to create working prototypes from CAD designs for their Designing to Make a Difference capstone course projects.

AS A PART OF THE MECHANICAL ENGINEERING PROGRAM:

- You’ll design to make a difference. Our curriculum focuses on the design of mechanical and thermal systems with applications in machinery and energy technology, but courses in engineering fundamentals, social sciences, and the humanities build a strong foundation for your life and career. It all leads up to a nationally award-winning senior capstone design program, where you’ll build a working product prototype for a real customer while analyzing cost, manufacturability, and impact on society. Student teams have won almost $150,000 at national competitions in recent years.
- You’ll sharpen your competitive edge. Mechanical engineering students have plenty of ways to participate outside the classroom — including activities organized by the American Society of Mechanical Engineers (ASME) or the American Institute of Aeronautics and Astronautics (AIAA) — such as taking part in ASME’s human-powered vehicle competitions.
- You’ll find new ways to apply your knowledge. You can pursue research in areas such as computer-aided design, biomechanics, medical devices, energy and the environment, advanced materials and manufacturing, or robotics and mechatronics.

This is how I want to Create for Good:

MOETO SASAI, B.S. IN MECHANICAL ENGINEERING, CLASS OF 2020. A recent innovation in user engineering concepts and a CAD/CAM program to create 3D art sculptures. And at the annual Techstars Startup Weekend competition, he and his team spent 54 hours developing their business concept for a tabletop game matchmaking server — and won.

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Experience what we offer ...

**HE WASN’T SURE AT FIRST. NOW, HE CAN’T IMAGINE IT ANY DIFFERENT.**

- Initially attended another college, then realized Ohio University was where he’d find his place
- Mentored Learning Community students to help them adjust
- Worked in the Russ College academic records office
- Was a member of the National Society of Collegiate Scholars and the National Society of Black Engineers student chapter executive board
- Landed a job at Hyland Software, where he interned after freshman year

**“As a minority, it can be tough in college.”**

**MULTICULTURAL EXPERIENCES**

**WHAT WE DO FOR YOU:**
- Host monthly cultural activities and film screenings, Safezone training through the campus LGBT Center, and more
- Provide special academic advising and advocacy
- Host industry programs recruiting multicultural students and women
- Support student chapters of the National Society of Black Engineers, Society of Hispanic Professional Engineers, Society of Women Engineers, and more
- Provide three student success advisers

**“The Russ College has been everything and more than I thought it could be. I’ve been able to experience endless opportunities – traveling across the country, exploring career options, and excelling academically.”**

— Gyasi Calhoun, BS CS ’18

**PROFESSIONAL EXPERIENCES**

**WHAT WE DO FOR YOU:**
- Help you find internships and full-time employment
- Coach you on your resume, interviewing, networking and job offers
- Host career fairs, meet-and-greets, and information sessions with employers
- Organize on-campus interviews with employers
- Teach a career orientation course and career workshops
- Help you get internship work experience on your transcripts
- Connect you with Handshake, OHIO’s exclusive online job portal

**“There’s simply too much information out there for college to teach you everything.”**

— Emily Forrester, BS ME ’15

**SHE TURNED AN INTERNSHIP INTO THE CAREER OF HER DREAMS.**

- Chosen for one of 30, two-summer Pathways Internships at Kennedy Space Center from more than 2,000 applicants
- Updated training materials, helped develop a hazard analysis for a rocket engine test fixture to assess fuel mixtures, and attended “Rocket University” to learn basic aerodynamics and solid propellant design before building her own model, launching it and retrieving it

**“Not only did I get the learning experience of working professionally alongside engineers and upper management in my career field, but I also discovered how much more technical and procedural knowledge I had yet to learn.”**

— Emily Forrester, BS ME ’15

... and reap the benefits.
All of our programs share a steadfast commitment to creating for good. Here are some other things we offer – and no matter which program you choose, you’ll be able to take part in these valuable experiences.

A single collective mission. An infinite number of opportunities.

- **13:1** Student: Faculty ratio, ensuring access to your profs
- **0** in extra course fees (excludes Aviation)
- **98%** classes taught by faculty, not TAs
- **97%** job placement for undergrads within 6 months
- **$200K** sponsored research per faculty member each year
- **$205K** in student-proposed activities funded
- **7** Math and Fundamentals Instructors dedicated to your success
- **$5.15M** in scholarships awarded to 900 undergrads
- **$124M** from the estate of Fritz and Dolores Russ – the largest gift to a public engineering school, empowering students to create for good
- **$4800** average renewable Russ College Scholarship award
- **3** dedicated student success advisers
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For more info about scholarships, visit www.ohio.edu/engineering/future/financial-aid
Create for Good?

To us, Create for Good isn’t just a tagline. It’s a mission that drives every single thing we do, and we want you to become a part of it:

1. Fill out the card below with how you want to create for good.
2. Snap a picture of yourself with your tag like we did, post it to facebook.com/ohiouniversityengineering, and tag yourself.
3. Hang the tag somewhere cool – on the fridge at home or in your locker at school – as a source of inspiration and to share where you’re headed.

WANT TO LEARN MORE OR MEET US?
Visit http://www.ohio.edu/engineering/joinus to request information or to schedule a visit.

THERE’S MORE TO DISCOVER ABOUT US.

Use this pocket to keep it all in one place.