Contact us!
The call is yours.

The future of technology is literally at your fingertips. So get out that cell phone, click on your browser, or drop us an e-mail today.

Better yet, come and visit us in Ames.
(We think you’ll be back!)

For more information about engineering, contact Engineering Enrollment Services staff at:

Phone—515 294-8355 or 800 262-3810

E-mail—engineering@iastate.edu

Web—www.engineering.iastate.edu/discovery

Address—College of Engineering
113 Marston Hall
Ames, Iowa 50011-2152

Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, gender identity, sex, marital status, disability, or status as a U.S. veteran. Inquiries can be directed to the Director of Equal Opportunity and Diversity, 3680 Beardshear Hall, 515 294-7612.
Join those who have taken the challenge.
Not even the sky is the limit!

Where you go to school matters to your career.
But where you work and live after college matters not just to your career but to your life, the lives of your friends and family, and the lives of people the world over that your work as an engineer will touch.

So here’s a challenge for you.
Do you know how by mid-century you’ll…

- Fuel a car without polluting the atmosphere?
- Stop the oceans from swamping coastal cities?
- Ensure quality health care for everyone?
- Protect information in a totally online world?
- Provide safe food and water for nine billion people?

This is the “2050 Challenge”—our challenge at the College of Engineering at Iowa State, where you can challenge yourself with one of twelve majors that will prepare you for a career in:

- Biosciences and Engineering
- Engineering for Extreme Events
- Energy Sciences and Technology
- Information and Decision Sciences
- Engineering for Sustainability

David Lantz in the Neutral Buoyancy Lab at NASA

NASA astronaut Clayton Anderson, Iowa State distinguished alum, Aerospace Engineering, ’83

2050 Challenge
An Iowa State education is something your family can afford. The College of Engineering is dedicated to providing the resources for all qualified applicants to enroll at Iowa State.

- In-state tuition at Iowa State averages less than $6,000 per year—one-fifth the cost of a comparable education at a private college or university.

- Iowa State administered $78 million in scholarships and $22 million in grants in the 2006–2007 academic year.

- Iowa State students were further supported by $148 million in loans and $43 million in student employment.

Our financial aid specialists can help you take advantage of these resources and other means of realizing your dreams of a rewarding, well-paid career in engineering.

For more information, visit www.financialaid.iastate.edu.
There are many challenges, and each can be approached from a number of traditional engineering fields. Yet today’s technologies are so complex that they must engage not only other kinds of engineers, but people from all walks of life.

For instance, a chemical engineer might use data sets generated by a computer engineer to formulate a new vaccine against cancer. A materials engineer might develop a polymer for timed release of the vaccine in a reactor designed in part by an electrical engineer. And you’ll work with others, from microbiologists in the lab to physicians in clinical trials to business analysts to determine the economic viability of your work—the same broad range of collaborators who participate in any technological innovation.
The rewards aren’t merely academic.

When it’s time to move from classroom to career, you’ll find opportunities in the College of Engineering at Iowa State second to none—even while you’re still enrolled!

• Engineering co-ops and interns are paid an average of $2,700 per month.

• Over 300 employers search for our grads at Iowa State’s Engineering Career Fair—the largest in the nation.

• Iowa State engineers average more than $56,000 to start.

• 98% of our engineers land jobs within six months of graduation.
Iowa State engineers are breaking through boundaries between the digital and biological worlds. Professor Julie Dickerson is an electrical engineer who explores the metabolic networks of plant cells with Meta!Blast, a video game she and her collaborators developed in Iowa State’s C6 virtual reality chamber.
Leadership Opportunities

Be a team leader!

Leadership doesn’t mean getting out in front of the crowd so much as getting into it in a big way. With more than 40 student-run organizations in engineering alone, Iowa State builds real leaders through a wide variety of programs both in and across all majors.

Iowa State’s Solar Car Team includes students from any major—including non-engineers.

Designed to hone leadership skills at the highest level, the Engineering Leadership Program offers experiential learning opportunities for a select number of students wishing to explore the interactions between technology and public policy.
For families devastated by hurricanes, floods, earthquakes, or a host of other extreme events, the technologies you explore and develop at Iowa State and in your career can make all the difference in the world.

Maybe you’ve seen the tornado simulations of Iowa State aerospace engineers on The History Channel. Data from those experiments can be used by mechanical and construction engineers to design and build wind-resistant structures.

As ocean levels rise, civil engineers will be called upon to defend coastal cities from flooding. And software engineers must develop computational tools that not only can help predict extreme events, but that can survive them as well.
In a world where the sun never sets, your understanding of other cultures and ways of doing business will give you a tremendous advantage, not only as an engineer but also as a citizen of the world.

Engineering International Programs and Services offers growth opportunities through study abroad at leading universities, as well as internships with multinational companies. Costs are comparable to Iowa State, and pre-approved courses transfer back for full credit.

All engineering programs are offered, including options for study in English or a foreign language. Africa, Australia, Germany, Ireland, Mexico, Singapore, the United Kingdom: wherever you go, your focus will expand beyond the world you know today to include a world of possibilities for tomorrow.

Beyond Iowa and the nation
Engineering for Extreme Events

Aerospace engineering

Professor Bong Wie established the Asteroid Deflection Research Center at Iowa State to bring researchers from around the world to develop asteroid deflection technologies.

50,000 years ago, a 50-m asteroid struck near Winslow, Arizona, forming the 1-km wide Barringer Meteor Crater.

Make your own deep impact.
Learning only begins in the classroom: it grows in wider communities where expanding minds power increasingly expanding lives. Whether living off campus or in any of the university’s wide variety of campus housing options, as an Iowa State student you can

- Develop a global outlook through exposure to students and thinkers from every corner of the world, including leaders from business, government, and the arts
- Enjoy Big 12 athletics and world-class entertainment in Hilton Coliseum and Stephens Auditorium
- Challenge your body as well as your mind through more than 50 intramural sports and other recreation services, including $53 million in scheduled facilities upgrades
Who will your partners be?

College isn’t just “academic.” Once here, you’ll discover that Iowa State is every bit a part of the real world. In fact, change in the real world starts here, in the labs and classrooms of the College of Engineering.

Filled a gas tank lately? (It doesn’t get much more real than that!) Our partners in solving the energy challenge include auto manufacturers, oil companies, and other real-world organizations you might work for once you leave college.
Electrical Engineering  America’s electric grid must be rebuilt for the 21st century. But you’ll handle the small stuff too, down to the tiniest circuit boards that drive our communications and nanotechnologies to control biological and other systems.

Industrial Engineering  If your ambition goes beyond a given engineering field, consider industrial and manufacturing systems engineering. Broad training in manufacturing, operations research, human factors, and management will help any business stay competitive—maybe even yours!

Materials Engineering  Iowa State has been “making materials matter” for 100 years. They’ll matter even more in the future, as you manipulate matter down to the atomic scale for materials that are lighter, stronger, and more energy efficient.

Mechanical Engineering  You’ll design equipment and machinery across the technological spectrum, including environmentally friendly products such as engines that don’t pollute or refrigerants that don’t deplete the ozone layer. You’ll also develop the software and visualization technologies that aid innovations in design.

Software Engineering  Software is central to our lives in the future. You’ll learn how to manage intricate projects and their associated risks using teamwork and communication skills to plan, develop, and maintain complex programs.

Minor in Bioengineering  Breakthroughs in agriculture, medicine, energy, and chemicals require innovators with broad, interdisciplinary knowledge in basic life sciences and engineering. Consider this opportunity to explore the growing links between the man-made and natural worlds.

Minor in Nondestructive Evaluation  Nondestructive evaluation uses noninvasive techniques to determine if materials, components, or structures have defects that might affect critical functions. The NDE minor is a great way to get a multidisciplinary exposure to this rapidly emerging field.
While Iowa State mechanical engineers are hard at work making internal combustion engines more efficient, others are driving new forms of energy. Materials science professor Steve Martin and his undergraduate research team are exploring innovative ceramic membranes for the fuel cells that will eventually drive fleets of hydrogen-powered cars.

Above, Martin measures the ability of a ceramic specimen to conduct protons at varying temperatures, a critical function for the efficiency of any fuel cell.
Get ready for some MAJOR achievement in your life!

**Aerospace Engineering**  More than rocket science, aerospace engineers work with anything that moves through air or that air moves through or around, from golf balls to suspension bridges—and the occasional lunar orbiter too!

**Agricultural Engineering**  If we’re going to feed nine billion people by 2050, it begins at Iowa State, home of the world’s first program in agricultural engineering. You’ll study systems, machinery, and related technologies from a global perspective to safeguard our planet.

**Biological Systems Engineering**  With a world view shaped by their understanding of the fundamental principles of engineering and life sciences, biological systems engineers solve problems related to microbes, plants, animals, and entire ecosystems—all for the benefit of both people and the planet.

**Chemical Engineering**  Today’s chemical engineers apply innovative biological techniques to develop new sources for food and fuel, while seeking better ways to use dwindling fossil resources. Biomedical applications could also be a big part of your work.

**Civil Engineering**  As a civil or environmental engineer, you’ll balance engineered systems with the natural environment by designing structures and systems for transportation, water, and environmental protection that will serve both people and the planet in the 21st century.

**Computer Engineering**  Computation is the fountain from which modern technological innovation flows. From new ways to protect networks to packing number-crunching power on ever-smaller chips, you’ll drive the discoveries that define life as it’s lived today.

**Construction Engineering**  Build a great career rebuilding America. As a construction engineer, you’ll build sustainable structures from mega-malls to airports. You’ll also learn about the bidding process, scheduling, quality control, project management, and more.
How will you decide?

You need reliable information on which to make a decision about your career. The fact is, engineering is driven by information, and in the 21st century information is driven by cutting-edge computation. So if we’re going to reach our destination as a society—and if you’re going to reach yours as an individual—we need the best information we can get. Call it our “road map to 2050.”

Students, faculty, and industry experts conduct “cyber wargames” using Iowa State’s Internet-Scale Event and Attack Generation Environment, or “ISEAGE.”

There can be no reliable road map to our technological future without effective security. Each year Professor Doug Jacobson of the Department of Electrical and Computer Engineering hosts a cyberdefense competition in which Iowa high school students test their skills against some of the best hackers in the business.
Academic support and opportunities

Rated among the nation’s best, Iowa State’s learning communities give entering students a leg up on success by letting them live and study with peers from their own majors.

And the people you’ll learn from have a record of real accomplishment. With an average of more than $60 million in research every year, Iowa State engineering faculty are:

- Developing the next generation of sustainable biofuels
- Opening new frontiers in the field of human-computer interaction
- Exploring and creating new materials atom-by-atom

And their success is yours: class size averages only 31 students, professors teach most introductory engineering classes, and undergraduates routinely play key roles on high-level research projects.
While most doctors use two-dimensional images to plan for surgeries, researchers at Iowa State’s Virtual Reality Applications Center such as mechanical engineering professor Eliot Winer are developing technologies to visualize and interact with 3-D images of patients’ complex internal systems. Here, a student demonstrates software that visualizes a human cranium for pre-operative planning, while below the chest cavity of a patient reveals bone and vascular structure—and an unusual tumor along the esophagus.
Iowa State’s engineering labs and classrooms are second to none. You’ll experience hands-on learning using 21st-century tools in state-of-the-art facilities like:

- The $63-million Engineering Teaching and Research Complex
- Advanced wind tunnels, including the Tornado/Microburst Simulator
- A National Security Agency “Center of Excellence” in information assurance

With tools like these and others to learn on, you’ll be more than up to the challenge of launching a great career.
As engineers—as people—we all want a world where the basic human needs for food, shelter, health care, and personal security can be met for everyone.

How will agricultural engineers feed nine billion people?
How will industrial engineers produce more goods with fewer resources, helped by the innovations of materials scientists? How will civil and construction engineers build homes that can withstand the weather of a warming planet?

And how will all of us sustain these technologies for generations to come? At Iowa State University, faculty and students are actively leading the way in places like Mali, Africa.

Ground charcoal bricks are dried in the sun and later used in the new stove.

Sustainable tools are developed for the village blacksmith.
Iowa State was one of the first land-grant colleges created under Abraham Lincoln and founded on three big ideas: higher education for all, practical classes, and knowledge for people beyond the campus.

A prestigious university with a hometown personality, today *U.S. News & World Report* ranks Iowa State among the nation’s top 50 public universities. Its 26,000 students study with world-class scholars in more than 100 majors.

And it all happens in one of America’s most beautiful settings. Featuring more than 200 works of art on green lawns amid historic buildings, Iowa State was one of only three college campuses named to a national list of great sites by the American Association of Landscape Architects.
A student works in the lab of Professor Robert Brown, who, together with engineers and agricultural experts from various disciplines, spearheads Iowa State’s drive to bring to the world the next generation of biofuels from cellulosic feedstocks such as switchgrass and corn stover.

Tomorrow’s vehicles will be powered by renewable energy sources.