What do engineers do?
Cover photo: Students from one of WVU’s robotics teams test the Mars Rover robot. For the past two years, WVU has been one of eight universities selected to compete nationally in this NASA-sponsored competition at the Johnson Space Center in Houston, Tex.

The WVU Board of Governors is the governing body of WVU. The Higher Education Policy Commission in West Virginia is responsible for developing, establishing, and overseeing the implementation of a public policy agenda for the state’s four-year colleges and universities.

West Virginia University is an Equal Opportunity/Affirmative Action Institution.
### Degree and Certificate Programs

- aerospace engineering
- biomedical engineering
- biometric systems
- chemical engineering
- civil engineering
- computer engineering
- computer science
- electrical engineering
- industrial engineering
- mechanical engineering
- mining engineering
- petroleum and natural gas engineering
- software engineering
- computer forensics
- global competency
- information assurance and biometrics
- interactive technologies and serious gaming
- software engineering

### Dual Degree Programs

- biometric systems and computer engineering
- civil and mining engineering
- computer science and computer engineering
- electrical and computer engineering
- mechanical and aerospace engineering
- mining and civil engineering
- mining engineering and geology
Energy is produced from traditional natural resources, such as petroleum, natural gas, and coal, as well as sustainable sources, such as wind, sunlight, and water. Engineers develop techniques to collect, process, store, and deliver this energy to consumers. In addition, engineers work to improve these processes and to increase energy efficiency.

“As a kid, I always dreamed of making people’s lives better. Through the Solar Decathlon, I got to work with one of the largest, interdisciplinary, on-campus project teams at WVU, plus an international architectural team in Rome to create a net-zero energy home that is aesthetically pleasing and functional and, most importantly, affordable for the average person. It’s been amazing to apply classroom theories to the real world to create a finished product that will change lives.”

Frankie Ceglia

Hometown: Los Angeles, California
Major: mechanical engineering with minors in sculpture and nano-technology
Activities: Solar Decathlon HVAC lead 2013; secretary, Society of Hispanic Professional Engineers; American Society of Mechanical Engineers; Campus Light; Statler College Ambassador
Faced with the challenges of moving toward sustainability, engineers are working to protect our environment by developing more energy-efficient manufacturing processes; creating technologies that remove pollutants from our air, water, and soil; improving upon current recycling methods; and devising new ways to manage solid waste and wastewater. By assessing the environmental impact of everything we do, engineers are protecting life on our planet and ensuring a sustainable future.

“I am involved in environmental research because it has direct applications to solving real-world issues. For example, I got involved in a National Science Foundation summer research experience in Potsdam, N.Y., that aimed to study the effects of air pollution on high-elevation forests in the northeastern United States. Through this project, I learned to set up a research schedule so that I could achieve my research goals on time, to design an experiment, and to work independently on an open-ended research project. All of the skills I learned through this project can be directly applied to my work as an engineering student.”

Hometown: Kearneysville, West Virginia
Major: civil engineering
Activities: Engineers Without Borders; Society of Women Engineers; Chi Epsilon; Microgravity Research Team; WVU Newman Club; short-term study abroad trips to Jamaica, Chile, and eastern Europe; Statler College Ambassador
Honors: WVU Foundation Scholar
engineers protect our planet

Rebecca Posa
Working in either private or government sectors, engineers keep us safe by designing computer systems and software that secure our identities and personal data; developing biometric tools that can identify an individual by his or her iris, fingerprint, or voice patterns; creating structures that protect us from natural disasters such as earthquakes, floods, and hurricanes; and advancing weapons systems and protective gear for military personnel, police officers, and firefighters.

“As a student, I’ve made it a personal goal to learn as much as I can about the technology we use every day. Cyber security is simply a piece of that puzzle. I joined Cyber WVU, a group that focuses on cyber security. From operating system security, to building a network of servers, this student organization has enhanced my skill set more than I could have by only attending classes. I’ve also learned management skills from being the team captain. While the technical skills are important, I value the experience of managing a club and team members, too.”

Adam Minter
Hometown: Charleston, West Virginia
Major: computer science
Activities: Cyber WVU; Association of Computing Machinery; LCSEE Systems
Edwin Velasquez

Hometown: Falls Church, Virginia
Majors: biometric systems and computer engineering
Activities: Society of Hispanic Professional Engineers; Student Society for the Advancement of Biometrics; Engineers Without Borders
Honors: Dean’s List

Zach Cox

Hometown: Hewett, West Virginia
Majors: mechanical and aerospace engineering, minor in nanosystems
Activities: American Society of Mechanical Engineers; undergraduate research; Statler College Ambassador
Honors: Dean’s List; Chester A. Arents Scholarship; State Service Award; 130th Airlift Wing; honor graduate, USAF Basic Military Training

Becoming an engineer requires hard work and dedication, but that doesn’t mean you’ll be spending all of your time in the classroom. At WVU there are a variety of ways for you to get involved, make new friends, give back to the community, and even have a little fun.

student life
For more information on ways to get involved outside the classroom at WVU, visit the student organizations website: [sos.wvu.edu](http://sos.wvu.edu).

**Shelby Chapman**

**Hometown:** Buckhannon, West Virginia  
**Major:** petroleum and natural gas engineering  
**Activities:** assistant drum major, Mountaineer Marching Band; National Band Fraternity; WVU Basketball Pep Band; WVU Student Dance Association; American Association of Drilling Engineers  
**Honors:** Petroleum Engineering Outstanding Sophomore, Petroleum Engineering Outstanding Junior, WVU Dance program’s “Dance Now!” concert

**Kevin Peake**

**Hometown:** Fairfax, Virginia  
**Majors:** mechanical and aerospace engineering  
**Activities:** WVU Swim Club; mentor, FIRST Robotics Team; triathlete; Statler College Ambassador  
**Honors:** Eagle Scout

**Andy Maloney**, a National Merit Finalist and a chemical engineering student from Morgantown, W.Va., is taking advantage of undergraduate research opportunities to conduct nanotechnology research. One day, he hopes to participate in research that will contribute to Alzheimer’s treatment and prevention.
Moses Ajemigbitse, a petroleum and natural gas engineering student, from Abuja, Nigeria, is a residential assistant (RA) in Braxton Tower. “The key to balancing being an engineering student and my other responsibilities is time management and prioritization of tasks. The greatest joy in being an RA is seeing the positive impact you are able to have on students who come to college not knowing what to expect and helping them develop into a successful student through your influence.”

ENGINEERING/COMPUTER SCIENCE
Resident and Non-Resident Criteria
High School GPA: **3.0**
ACT/SAT Composite/Total: **24/1110**
MATH ACT/SAT: **28/630**

GENERAL ENGINEERING
Resident and Non-Resident Criteria
High School GPA: **2.5**
ACT/SAT Composite/Total: **22/1030**
MATH ACT/SAT: **25/570**

PRE-ENGINEERING
Resident Criteria
High School GPA: **2.5**
ACT/SAT Composite/Total: **19/910**
MATH ACT/SAT: **18/480**

Non-Resident Criteria
High School GPA: **2.5**
ACT/SAT Composite/Total: **21/990**
MATH ACT/SAT: **18/480**

SCHOLARSHIP REQUIREMENTS
Engineering Excellence Scholarship
High School GPA of **3.8** or **Higher**
ACT/SAT Composite of **30/1340** or **Higher**
Math ACT/SAT of **32/720** or **Higher**

Engineering Achievement Scholarship
High School GPA of **3.6** or **Higher**
ACT/SAT Composite between **26/1180** and **30/1340**
Math ACT/SAT between **29/650** and **32/720**

FINANCIAL AID
Financial aid options include grants, loans, and part-time employment. In order to be considered eligible for any form of financial aid, including scholarships, you must complete the Free Application for Federal Student Aid (FAFSA).

FINANCIALAID.WVU.EDU

TUITION RECIPROCITY
Do you live in one of these states? If so, you may be eligible to pay in-state tuition at WVU as you pursue a degree in engineering.

APPLY HERE
APPLY.WVU.EDU

MOSHEMUM
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MOSHEMUM
ACADEMIC SUPPORT
Our academic support program will provide you with the guidance and support you need to succeed in your first year of college and beyond.

THE ENGINEERING LEARNING CENTER
In the Engineering Learning Center, you will have access to:
- A large central study area
- Group study rooms
- Free, experienced tutors in math, science, and engineering
- Scheduled study sessions for upcoming exams
- Freshman Engineering advisors

ACADEMIC SUPPORT OUTSIDE THE ENGINEERING LEARNING CENTER INCLUDES:
- Private tutors
- Academic Resource Centers across WVU’s campuses
- Residence hall-based study programs
- Your academic advisor

ADVISING
Throughout your college career, your engineering advisor will help you plan your course schedules, lend an ear when you need to talk, and help resolve any problems you might have. Tools such as WVU’s online degree audit system, DegreeWorks, will also help you track your progress toward a timely graduation.

EXPERIENTIAL LEARNING
You will have a variety of ways to gain hands-on experience that will help you have a better understanding of the world around you and become an engaged citizen, scholar, and leader. Some avenues to explore are:
- Co-ops and internships
- Study abroad opportunities
- Civic engagement
- Undergraduate research

FINDING A JOB
It’s all about finding a career, and our Office of Corporate Relations and Career Assistance does more than just talk about it! We’ll put you in touch with companies looking to hire you for internships, co-ops, and full-time positions.

Throughout the year, you will have the opportunity to take advantage of:
- Fall and spring career fairs, which draw hundreds of employers
- Continuous broadcast of job postings through MountaineerTRAK
- Resume review and interviewing skills classes for engineers
- Staff designated to specifically help you find co-ops, internships, and full-time employment

Many of our graduates have landed careers at companies like Bayer, Cisco, the FBI, DuPont, Ford, Hershey, Honda, IBM, Intel, Lockheed Martin, Microsoft, Motorola, Google, Apple, Amazon, NASA, Oracle, Peabody Energy, PPG Industries, Texas Instruments, Westinghouse Electric, and many more.

Upon completion of your undergraduate coursework, you can continue to hone your skills and develop new ones by continuing your education beyond your bachelor’s degree:
- MS or PhD in engineering/computer science
- Law school
- Medical school
One of the most rewarding things I do as a faculty member in the Statler College is sharing my interest in robotics with our students. Over the past several years, I have had the privilege of leading multidisciplinary teams of students in a number of international competitions sponsored by NASA. Their work has helped established WVU as having one of the top robotics programs in the country. I also enjoy sharing this work with the many middle and high school students who are considering careers in engineering.
“My research interests are at the interface of water resource engineering and human health. I am developing tools that use satellites to predict water-borne disease outbreaks, such as cholera, West Nile virus, and dengue fever, by tracking changes in climate, rising sea levels, and global warming. Ultimately, it is my hope that my research will save lives as well as reduce the economic burden caused by these types of water-related disasters and associated diseases. My research group actively recruits undergraduates to be a part of its team and engages them in an adaptive learning process on how their engineering knowledge can play a part in the betterment of society. One of my students was recently awarded a fellowship from NASA to map, monitor, and predict outbreaks of West Nile virus in the state of West Virginia.”
Infrastructure is the backbone of our society. Engineers plan and build the cities and towns in which we live, work, and play; design and construct transportation systems that allow us to navigate our hometowns, visit other cities, or circumnavigate the globe; develop and optimize communication networks that keep us connected to our friends, family, and information resources; and improve manufacturing and retail systems, making our lives better and easier.

**Hometown:** Crawford, West Virginia  
**Major:** civil engineering  
**Activities:** American Society of Civil Engineers; Society of Women Engineers; Student Support Services/TRiO; WVU Honors Program  
**Honors:** 2013 Goldwater Scholar; first place, Hardy Cross Oratory Presentation at ASCE Virginia’s Conference; third place, MARR Technical Paper ASCE Virginia’s Conference; Samuel Fletcher Tapman ASCE Student Chapter Scholarship recipient; Summer Undergraduate Research Fellowship participant; McNair Scholar; NASA Space Grant Scholar

“In my hometown, there are less than 1,000 people. The first time I had the opportunity to see a larger city, I was amazed by the engineering that had gone into traffic control. When I was offered the opportunity to become an undergraduate research assistant and participate in improving the quality of life in America by decreasing the congestion that affects populated areas, I knew I wanted to participate. Now my research focuses on uncertainty in travel time such as accidents, bottlenecks, and other unexpected traffic conditions.”
engineers entertain
Working collaboratively with artists and designers, engineers lend a hand in creating every form of entertainment imaginable. Imagination combined with technical skills allow engineers to create sets and special effects for blockbuster movies, design theme parks and roller coasters, and build music venues with outstanding acoustics. Whether they’re developing next-generation consoles and video games, smartphones and mobile apps, or e-readers and e-books, engineers are involved from concept to completion.

“I am currently balancing a full-time racing schedule along with studying to become a mechanical and aerospace engineer. Every race team in NASCAR has many engineers involved in their success. The technology I’m learning about and the teamwork skills I’m building as a young engineer are proving to be vital in the racing industry. I hope to use this knowledge as an advantage over other drivers and teams.”

Travis Braden

Hometown: Wheeling, West Virginia
Majors: mechanical and aerospace engineering
Activities: American Society of Mechanical Engineers; full-time, late-model race car driver
Honors: Promise Scholar; Mountaineer Scholar
Medical advances that lengthen and improve our quality of life are made each and every day. Working in cooperation with medical professionals, engineers develop artificial organs, prosthetic devices, tools for diagnosing illnesses, and pharmaceutical therapies. Engineers also work to enhance the quality of care that we receive by systems and processes that boost efficiency and productivity within healthcare facilities. In addition, engineers find ways to protect us from environmental contaminants, such as industrial waste and waterborne diseases.

“I am a young South African girl from the dusty streets of a township called New Brighton. I grew up experiencing the devastating impact of infectious diseases such as HIV, AIDS, and tuberculosis. As a result, I developed a passion for learning about ways to combat and treat these diseases. It is fulfilling to be a part of research where the results directly translate into saving lives and the overall improvement of quality of life.”

Maputi Botlhole
Hometown: Port Elizabeth, South Africa
Major: biometric systems
Activities: vice president, African Student Association; Statler College Ambassador
Internships: Novartis Institutes for Biomedical Research; National Institutes of Health; iTEACH
checklist

- Learn more about engineering at WVU
- Schedule a visit
- Apply to WVU
- Attend orientation
- Join a club
- Study abroad
- Conduct research
- Participate in an internship/co-op
- Graduate
- Get a job/apply for graduate school

Ryan Sigler
or Cate Schlobohm
Enrollment Coordinators
304.293.0398
statler-info@mail.wvu.edu
statler.wvu.edu/visit

WVU websites
apply.wvu.edu
admissions.wvu.edu/request-info
financialaid.wvu.edu
tuition.wvu.edu

facebook.com/wvucemr
twitter.com/wvustatler
youtube.com/wvucemr
wvustatler.tumblr.com
What WVU engineers do...

- **962** the number of engineering students earning honors on the President’s or Dean’s list in the 2012-2013 academic year.
- **30+** the number of engineering organizations and clubs in which students can participate.
- **120+** the number of companies that attended our engineering-specific career fair.
- **12** the number of degree programs accredited by ABET in our seven academic departments.
- **$60,000-$69,000** the salary range for engineering graduates in 2012-2013.
- **55** the number of hours per week that the Engineering Learning Center is open to help our freshman class.