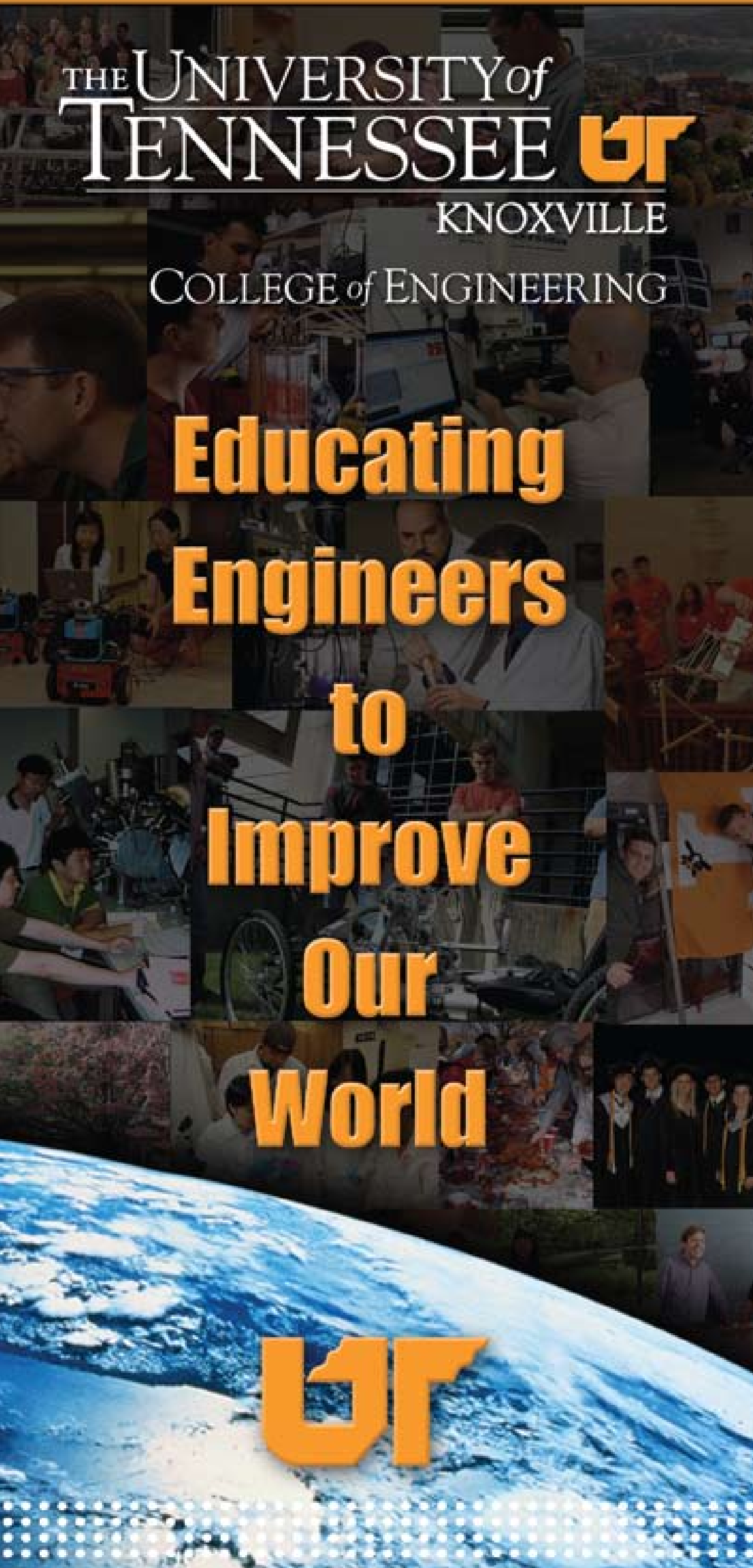
THE UNIVERSITY of TENNESSEE
KNOXVILLE

COLLEGE of ENGINEERING



Educating Engineers to Improve Our World

A Message from the Dean

To our prospective students: Welcome to the world of engineering at the University of Tennessee at Knoxville.

Many of you may wonder, “What exactly is engineering?” Engineering involves solving problems using science and math. Engineers are creators, designers, innovators and problem-solvers and help to provide a more technological advanced, cleaner and safer world.

Engineers play a role in the production and development of almost everything we use in our daily lives—from iPod-like music and video players to the chips that power our computers; from the microfibers that make up the fabric of a new jacket, to the materials used in space and air craft; from biomedical devices to miniature robots used in national security.

Engineers helped man land on the moon and assist in the explorations of our oceans. Engineers design and build bridges and roads and set up the transportation systems that make them work. They also develop new alternative fuels and vehicles and means of harnessing energy such as wind turbines and photovoltaic solar cells.

Engineering is not just about facts and numbers. Engineering is about using your intelligence, education, training and creativity to improve the quality of life for the people on our planet.

The University of Tennessee College of Engineering offers you an opportunity for a superior education in the engineering field. For more than 150 years, our college has provided the advanced engineering skills and training that place our graduates on the forefront of contemporary technological developments.

We appreciate your interest, and hope you will visit our campus in the near future.

Best regards,

Wayne T Davis

Wayne T. Davis
Dean of Engineering

Getting Started

If you are interested in becoming an engineer, you should understand that the profession includes a wide range of areas, from aerospace to nuclear engineering. In many cases, freshmen entering the engineering program at UT don't always know exactly what type of engineer they want to be and that's fine. You should, however, educate yourself on the different fields of study so you can be prepared when the time comes to declare a major.

The American Society of Engineering Education's website is a good place to start: ***http://egfi-k12.org/***

This page contains links to additional engineering sites that will provide you with more information about the profession.

Prospects for Success

Professional engineers are in great demand, both in the U.S. and internationally. Career opportunities for graduating students with B.S. degrees are excellent, and salaries for entry-level positions are very good.

If you would like more specific engineering career information, visit the UT Career Services web site: ***www.career.utk.edu***.

Well-known and respected corporations regard UT as a target university for hiring new engineers. Many of our graduates have risen to top positions in industry, government and academia. An engineering degree from UT offers an excellent foundation for a successful career.

Featured Alumnus

John Tickle, 1965 Industrial Engineering Graduate, President/ Owner of Strongwell Corporation

"I grew up in Bristol, the southeastern town that shares a border between Tennessee and Virginia near UT, and many of my family members went to that university. I always planned to go to UT-Knoxville to study engineering, and I'm glad that's where I ended up. As both a businessman and an engineer, I am a firm supporter of engineering education. The engineering degree gives you support, it makes you imaginative. I cannot think of a better program that will help you succeed in business.

I decided to support UT for several reasons. Education is critical to the U.S. in order for us to continue our role as leaders in the world. As a UT College of Engineering graduate, I want to help the university and the state of Tennessee become better places to live, learn and work."

John Tickle, Sr.
B.S., Industrial Engineering, 1965
Owner and President
Strongwell Corporation, Bristol, Tenn.
College of Engineering Campaign Committee Member
Donor, *The John Tickle Engineering Building*

Admission Requirements

The College of Engineering has established admissions criteria for new and transfer students. New student admission decisions are based on several performance criteria, including completion of core academic subjects, GPA scores on these subjects and standardized test (SAT or ACT) scores. If you need information about these tests, see your high school guidance counselor. Transfer students will be evaluated by performance in selected required courses. Engineering transfer admissions information is available at: ***www.engr.utk.edu/advising/transfer_students.html***

Potential engineering students are encouraged to take high school courses in physics, mathematics and chemistry. These will give you the background needed for first-year engineering courses.

Successful engineering students are usually proficient in mathematics; able to communicate well both orally and in writing; able to work effectively in groups; and disciplined enough to stay organized and focused on challenging study assignments.

You can apply online at the University of Tennessee website: ***www.admissions.utk.edu***

Visit Us:

Admissions Office for total campus tours:
http://admissions.utk.edu/undergraduate/visit/CVP.shtml

Engineering specific tours:
http://web.utk.edu/~coeamb/tours.php

Scholarships and Financial Aid

Three types of financial aid are generally offered: scholarships, loans and part-time employment. These can be offered individually or in combination according to the needs of the family and the student.

For specific questions regarding engineering scholarships, contact the College of Engineering Office of Academic and Student Affairs at (865) 974-2454.

For more details and information, visit the Office of Financial Aid and Scholarships website:
http://web.utk.edu/~finaid

Contact the Financial Aid office at ***(865) 974-3131***.

You will also find information about tuition costs and other fees on the Bursar's website:
http://web.utk.edu/~bursar

Corie Davis

Biomedical Engineering Major, Engineering Ambassador

"Coming into college I only had a vague idea of what I wanted to study for the next four years. I knew I was interested in science, but none of the majors I could find in the Arts and Sciences course catalog really appealed to me, and at the time studying engineering had never crossed my mind. Luckily fate stepped in and I happened to meet someone during move-in who told me about UT's biomedical engineering program. I thought it sounded perfect, so I set up a meeting with the Director of Engineering Advising and within a week was transferred into the college.

Deciding to major in engineering was the best decision I could have made for myself; it gave me a great group of like-minded friends to study with and is something that I really enjoy learning each semester. Having had such a good experience with the engineering departments I wanted other students to be aware of the opportunities that the college had to offer them, and so I became an Engineering Ambassador to help spread the word and recruit prospective students.

The University of Tennessee has been a great place to receive a top education, develop myself as an adult, and prepare for a career, as well as enjoy football games, compete in club sports, and make lasting friendships with all sorts of people. There is a fun and friendly atmosphere on campus and it is easy to get involved and feel as though you have always belonged here."

The Jerry E. Stoneking engage™ ENGINEERING FUNDAMENTALS PROGRAM

Freshman Engineering

The University of Tennessee is home to one of the nation's most innovative freshman engineering programs – the Jerry E. Stoneking Engage Engineering Fundamentals Program – a leading edge, success-oriented approach to first-year engineering education. Freshman students admitted to the College of Engineering are automatically enrolled in the Engage program.

The Engage curriculum is built around teaming students for project-oriented, hands-on activities. Topics covered during the Engage program include physics, computer skills, engineering design and problem solving.

Students are introduced to realistic, mind-engaging problems in the engineering design process, allowing them to experience the same decision-making process as practicing engineers.

The Engage program is housed in historic Estabrook Hall. The building includes classrooms with large open spaces for hands-on activities, a student project area, two computer classrooms, and one open computer lab. A freshman village atmosphere is encouraged, with faculty and graduate assistant offices, study areas and project labs located in Estabrook.

The Engage program provides the support to assist engineering students in their studies and projects during the crucial freshman year. ***www.engr.utk.edu/efd/***

Engage Living Community

The College of Engineering offers an optional housing program for freshmen known as the Engage Living Community. Here first-year engineering students live together in a common area of Morrill Hall. About 30% of incoming students choose to live in this community.

You can find more information on the residence halls at the UT Housing website: ***http://uthousing.utk.edu***

You may also want to check out information on meal plans and campus dining services online: ***www.utdining.com***

Computer requirements

Currently, there is no requirement that incoming freshmen own a computer. Numerous computer laboratories are available on campus, and they can be used for any required work during the freshman year.

Minimum specifications for desktop and laptop computers may be found on the college's website: ***www.engr.utk.edu/futurestudents/computers.html***

Dr. Yilu Liu

Governor's Chair, Electrical Power Systems

Professor of Electrical Engineering and Computer Science

"As an educator, my work is to help train a new generation of highly motivated students to achieve their full potential and to become leaders in their future roles as electrical engineers, managers and innovators.

By working closely with our undergraduate and graduate students, we help conceive, design, build and monitor the smart power grids of the future. We challenge students to think, to create and to learn how to work as a team and to gain hands-on experience.

The University of Tennessee is an excellent choice for an engineering education. In addition to the high academic standards and our international reputation in many engineering areas, we offer a unique opportunity to connect with industry and national labs at a very early stage.

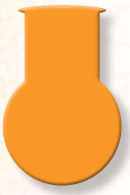
The college is dedicated to providing a rich experience for our students that will last a lifetime."

Engineering Departments

Biosystems Engineering & Soil Science

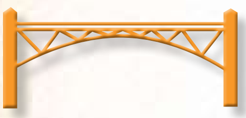
Graduates design and develop processes involving natural systems to enhance resource use and production of foods, biofuels and other biobased products while maximizing sustainability and minimizing environmental impact, all through application of a broad-based expertise in biology, chemistry, physics and engineering sciences.
http://bioengr.ag.utk.edu/

Chemical & Biomolecular Engineering



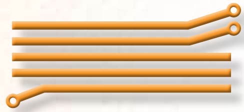
Chemical engineering encompasses the development, design, operation and management of plants and processes for economical, safe conversion of chemical raw materials to useful fuel products. Biomolecular engineering encompasses system biology, protein engineering, genetic engineering and medical applications. Chemical and biomolecular engineers normally work in fields such as pharmaceuticals, fuels production, semiconductors, chemicals, petroleum and environmental restoration.
www.engr.utk.edu/cbe

Civil & Environmental Engineering



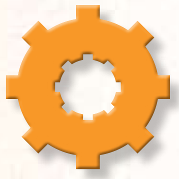
This field is concerned with designing the infrastructure of our society. This area includes construction, transportation, energy needs; dealing with climate change, pollution and other environmental problems; and the design and development of urban areas. Civil engineers are usually employed in the construction field as structural or geotechnical designers on buildings, bridges or transportation systems. Environmental engineers identify, evaluate and resolve concerns about the environment.
www.engr.utk.edu/civil

Electrical Engineering & Computer Science



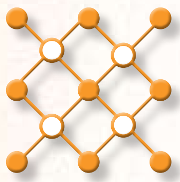
Electrical engineering concerns the application of the physical laws of electricity and magnetism to design devices and systems. This field impacts all aspects of modern life from miniature integrated circuits to large-scale power systems. Computer science and engineering explores issues of information and computation spanning both hardware and software. Graduates work in fields including artificial intelligence, biomedical devices, bioinformatics computer networks image and signal processing and robotics.
www.eecs.utk.edu

Industrial & Information Engineering



A discipline involving the design of integrated systems involving people, materials, information, equipment and energy in order to achieve the most efficient function possible while still taking human factors into consideration. Industrial and information engineers work in a wide variety of fields, including retail distribution, banking, health care delivery, corporate management and research groups.
www.engr.utk.edu/ie

Materials Science & Engineering



This discipline is primarily involved with the processing and testing of engineering materials (metals, ceramics, polymers, composites, semiconductors) and the relationships between processing, properties, and internal structure. Developments in materials science and engineering are on the cutting edge of modern technology, as new and improved materials are critical to the development of advanced products.

Materials science engineers are important in the development of many applications, including automobiles, aircraft and spacecraft, surgical implant devices, alternative energy technologies, computers, optical displays, textiles, and sports equipment. ***www.engr.utk.edu/mse/***

Mechanical, Aerospace & Biomedical Engineering

Mechanical Engineering – a broad area of engineering that focuses on either mechanical systems, things like automobiles, material handling equipment, and computer printers; or thermal-fluid systems such as power plants, heat exchangers, and air conditioners.

Aerospace Engineering – involves the design, testing and manufacturing of aerospace systems including aircraft, spacecraft and missiles.

Biomedical Engineering – connects engineering to medicine through the design, development and manufacturing of devices that enhance human diagnosis, treatment and general health. ***www.engr.utk.edu/mabe***

Nuclear Engineering

This area of study focuses on the application of subatomic processes for the benefit of both humanity and the environment. Traditional nuclear engineering includes nuclear system design and analysis, reactor safety, and other aspects of the nuclear fuel cycle. Radiological engineering involves the design and safe utilization of radiation for applications in industry and medicine. ***www.engr.utk.edu/nuclear***

Engineering Programs

The **Office of Professional Practice** (OPP) provides cooperative education and internship opportunities for students to supplement classroom theory with hands-on experience, helping them develop both professionally and intellectually. ***www.coop.utk.edu***

The **College of Engineering Honors Program** provides an opportunity for academically qualified students to experience a more challenging preparation for their chosen engineering discipline. The students in this program are selected from students enrolled in the Chancellor's or Haslam Honors program. Application for admission to the honors concentration for an engineering discipline should be submitted at the appropriate department. ***www.engr.utk.edu/academics/honors.html***

Engineering Study Abroad Programs allow you to stay one semester or shorter in an English speaking or foreign language based schools throughout the world. You can choose between individual trips through GE3 (Global Engineering Education Exchange) or pre-arranged trips, where you would live and travel with a small group of UT students. ***www.engr.utk.edu/outreach/***

The Diversity Engineering Scholarship Program (DESP) is designed to attract, educate and graduate successful African American engineers. DESP scholars benefit from the financial support and employment experience offered by work assignments with UT's corporate partners. The program, administered by the OPP, is a major reason the college is consistently highly ranked for its minority graduation rates. ***www.engr.utk.edu/desp***

The Office of Engineering Diversity Programs (EDP) offers three free summer programs for rising middle school and high school underrepresented students. Each program is designed to prepare them for the challenges of an engineering education. Students get a taste of college life by spending one week living on the UT campus, attending classes and participating in field trips. The programs include the Middle School Introduction to Engineering (MITE) for rising 7th and 8th graders; Introduction of Sophomores to Engineering Principles (INSTEP) for rising 9th and 10th graders; and High School Introduction to Engineering Systems (HITES) for rising 11th and 12th graders.

EDP also provides mentoring and tutoring resources for underrepresented students while they are working on their degrees. ***www.engr.utk.edu/diversity***

The Tennessee Louis Stokes Alliance for Minority Participation Program is designed to increase the enrollment and graduate rates of ethnic minorities in engineering and science by providing a quality learning environment that prepares students for graduate study. Students have the opportunity to participate in a summer bridge program prior to the beginning of their first semester. ***www.engr.utk.edu/tlsamp***

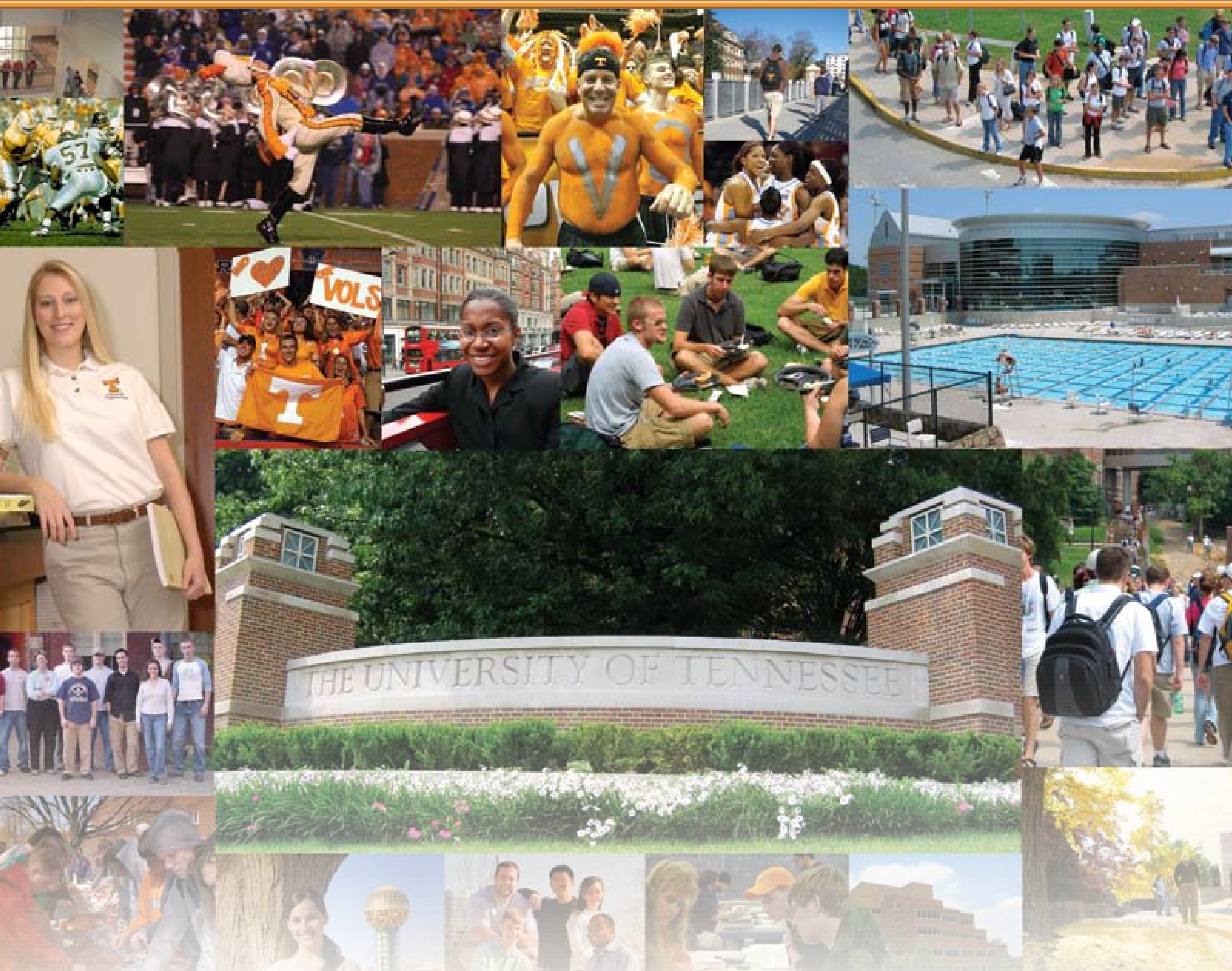
The Pipeline Engineering Diversity Program provides competitive graduate research assistantships. The program focuses on matching qualified minority students with research initiatives at UT and ORNL. ***www.engr.utk.edu/pipeline***

LaShawnda Coburn

Industrial Engineering Major, Co-op Participant

"I have had many memorable experiences during my college career; one of my most valuable and beneficial has been my co-op education experience with Shaw Industries. Going through the engineering program at Tennessee has built my character, enhanced my skills and my confidence in my abilities to excel as an engineer. There are many resources offered to assist students. One resource that I took advantage of was the Cooperative Engineering program offered by the Office of Professional Practice. Help is always available: resume critiques, interview workshops, free tutoring, and help with formulating degree plans. I also received help from my advisor on which company to work for; because with their help, I was given several offers from different companies on my quest for a co-op.

The work experience I gained in this program has given me a head start over other engineering students in my journey to land that dream job when I graduate. Without the help of the Office of Professional Practice, I would not have made it this far."



Life on Campus and Beyond

Engineering students lead a busy life! Lectures and labs require focus, time commitment and hard work. The amount of out-of-class study you need will depend on how much you are willing to work to achieve your academic goals. An engineering student who is a good time manager will be able to schedule social activities and other extracurricular involvement after classes and in the evenings.

UT is a national leader in collegiate sports and boasts a wide range of campus organizations with more than 300 social, sports, academic, religious and special interest clubs.

The university is located in a growing, progressive city with easy access to the beautiful Great Smoky Mountains National Park, scenic TVA lakes of the Tennessee River and many nearby national scenic recreation areas.

Kristin Qualls

2003 Civil & Environmental Engineering Graduate, Project Supervisor for the SmartFIX Transportation Project

The University of Tennessee, Knoxville is known for its “teams” and the College of Engineering is no exception. Working in a construction division, I can greatly appreciate the amount of teamwork required to deliver a project that exhibits solid workmanship in an efficient manner. Throughout my undergraduate coursework, I engaged in multiple projects in which teamwork furthered my ability to work with others in a professional and creative manner. The faculty not only taught engineering, they created an experience that allowed a smooth transition into the workforce.

The College of Engineering gave me an incredible foundation on which I have been able to build a rewarding career. The elite crew of faculty and staff was always eager to assist with any questions. The professors expected excellence but always offered a hand in helping students achieve success.

College life at UTK is the total package. The University is rooted in timeless traditions that evoke a sense of pride that even makes orange look like a primary color. Even after graduation, I still carry with me the experiences and traditions of the university. Screaming Rocky Top until I’m hoarse, a Saturday Vol-walk, or a quick lunch on “The Hill” – the University of Tennessee is the place to be.

Kristin L. Qualls, P.E.
B.S., Civil Engineering, 2003
Operations Specialist Supervisor
Tennessee Department of Transportation – Region 1
Construction Unit #1020

THE UNIVERSITY of TENNESSEE

KNOXVILLE

COLLEGE of ENGINEERING

If you are interested in a superior engineering education, contact the University of Tennessee College of Engineering or take a campus tour!

Call, write or e-mail the address below:

Office of Engineering Academic and Student Affairs
UT College of Engineering
101 Perkins Hall
Knoxville, TN 37996-2011
E-mail: ***coe@utk.edu***
Phone: (865) 974-2454
Web: ***www.engr.utk.edu***

For engineering campus tours, visit:
http://web.utk.edu/~coeamb/tours.php

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