TICKLE COLLEGE OF ENGINEERING

THE UNIVERSITY OF TENNESSEE, KNOXVILLE

Student Guidebook 2020–2021

The course offerings and requirements of the University of Tennessee are continually under examination and revision. This student guide presents the offerings and requirements in effect at the time of publication, but there is no guarantee that they will not be changed or revoked. Current information may be obtained from the following sources:

Admission Requirements: admissions.utk.edu.

Course Offerings and Degree Requirements: *See Undergraduate Catalog, catalog.utk.edu.

ABET: The university's engineering programs are fully accredited by the ABET Engineering Accreditation Program.

*Refer to the engineering and campus resources sections on pages 3 and 4 of this book for a more comprehensive list of resources and contact information at the University of Tennessee.

CREDITS: Tickle College of Engineering Communications Office

TICKLE COLLEGE OF ENGINEERING

The New Engineering Complex

Content

Contacts

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Engineering Honors	Kevin Kit, Director . . . . . 865-974-9810 / kkit@utk.edu 322 Perkins Hall
Engineering Professional Practice	Todd Reeves, Director . . . . . 865-974-5323 / coop@utk.edu 110 Perkins Hall
Engineering Diversity Programs	Travis Griffin, Fred D. Brown Jr. Director . . . . 865-974-0625 / travisg@utk.edu 301 Perkins Hall

Resources

Tutoring

Chemistry Help Sessions
513 Buehler Hall
865-974-3413

Student Disability Services
100 Dunford Hall
865-974-6087

Educational Advancement Program
Greve Hall Room 302
821 Volunteer Blvd.
865-974-7900

Engineering Fundamentals Help Sessions
108 Perkins Hall
865-974-9810

The Math Place (Math Tutoring)
Hodges Library North Commons
865-974-2461

Office of Multicultural Student Life
1800 Melrose Ave. Black Cultural Center
865-974-6861

Writing Center
212 Humanities & Social Sciences Building
865-974-2611

Student Success Center
Greve Hall Room 324
821 Volunteer Boulevard
865-974-6641
Find additional tutoring locations at studentsuccess.utk.edu

Additional Resources

Campus Information
865-974-1000

Center for Global Engagement / Study Abroad
1620 Melrose Avenue
865-974-3177

Computer and Laptop Help
The Commons
2nd Floor Hodges Library
865-974-9900 (OIT HelpDesk)

Engineering Diversity Programs
301 Perkins Hall
865-974-0625

Financial Aid and Scholarships
Hodges Library Ground Floor
865-974-1111

International House
1623 Melrose Avenue
865-974-4453

Office of National Scholarships and Fellowships
317 Greve Hall
865-974-3518

Office of Undergraduate Research
109 Melrose Hall,
1616 Melrose Avenue
865-974-8560

One Stop Shop
Financial Aid, Scholarships, Transcripts, Grades, General Questions
Hodges Library Ground Floor
865-974-1111

Parking Services
2121 Stephenson Drive
865-974-6031

Student Counseling Center
1800 Volunteer Boulevard
865-974-2196

Student Health Services Clinic
1800 Volunteer Boulevard
865-974-3135

Student Conduct and Community Standards
405 Student Services Building
865-974-3171

University Honors Program
130 Howard Baker Center
1640 Cumberland Avenue
865-974-7875

University Housing
2107 Andy Holt Avenue
865-974-2571

Veterans Resource Center
G020 Hodges Library
865-974-5420

VolCard (UT ID) Office
408 Student Services Building
865-974-3430

Contact information for individual colleges:

Agricultural Sciences & Natural Resources
125 Morgan Hall
Phone: 865-974-7303

Architecture & Design
103C Art & Architecture Building
Phone: 865-974-3232

Arts & Sciences
313 Ayres Hall
Phone: 865-974-4481

Business
342 Haslam Business Building
Phone: 865-974-5096

Communication & Information
202 Communications Building
Phone: 865-974-3603

Education, Health, & Human Sciences
332 Bailey Education Complex
Phone: 865-974-8194

Engineering
316A Perkins Hall
Phone: 865-974-4008

Nursing
203 Nursing Building
Phone: 865-974-7606

Social Work
303 Henson Hall
Phone: 865-974-3351

Academic Advising

The Tickle College of Engineering is committed to the belief that academic advising engages students by teaching them how to become members of the higher education community, to think critically about their role and responsibilities as engineers, and to prepare them to be educated members of a global community.

Prior to advanced registration, all students who have earned fewer than 30 hours at UT Knoxville or are on Academic Probation, or have not declared a major within a specific college (undecided, pre-major, interest, undeclared) or are flagged as Off Track by UTrack system are required to meet with an advisor during each main term of the academic year (i.e., during fall and spring). All other students are required to consult with an advisor for a substantial conference during a designated term each year. Students whose ID numbers end in an even digit are required to meet with an advisor during fall semester. Students whose ID numbers end in an odd digit are required to meet with an advisor during spring semester. However, Engineering students are encouraged to consult regularly with their major advisor during each semester of the academic year, especially if they plan to participate in internship or co-op positions that might affect class scheduling.

The Engineering Advising Office delivers academic advising on an appointment basis. To make an appointment, use the e-mail link sent to you to schedule using Navigate.

Advising appointments are normally offered on 30-45-minute individual intervals. Hours of operation are from 8:00 a.m. to 5:00 p.m. (Eastern), Monday through Friday.

Academic Standing

The University of Tennessee, Knoxville, expects all students who enter to make progress toward graduation. To graduate from UT Knoxville, a student must earn a minimum cumulative grade point average (GPA) of 2.0. The university reviews students' academic records at the end of each term to determine academic standing. The catalog contains additional requirements for specific programs.

Good Academic Standing

A student is in good academic standing when both the student's term and cumulative GPAs are 2.0 or higher or, if after two consecutive terms, the student's cumulative GPA is 2.0 or higher and at least one term GPA is also 2.0 or higher.

Academic Probation

A student will be placed on Academic Probation when (1) his/her cumulative GPA falls below the minimum acceptable level of 2.0 for one semester or (2) the semester GPA falls below the minimum acceptable level of 2.0 two consecutive terms of enrollment. During the semester that a student is placed on Academic Probation, and any other semesters in Academic Probation, a student must participate in a special directive advising program to help the student address concerns that are impacting his/her academic performance and to outline a plan for achieving academic success. While on Academic Probation, students must have met with an advisor prior to registering for all following terms, which includes summer term. This model of early intervention is designed to help students regroup and position themselves for academic success. Students on Academic Probation status during a term will automatically be dismissed at the end of that term if both:

- The cumulative GPA is below a 2.0, and
- The term GPA is below a 2.0

For first-time, first-year, and transfer students, the summer term prior to their first fall term will not be included in the dismissal decision.

A student will no longer be on Academic Probation when his or her cumulative grade point average is 2.0 or higher and the term grade point average is 2.0 or higher. This policy is in place in recognition of the University of Tennessee, Knoxville's minimum grade point average of 2.0 for graduation.

Engineering Advising

Collaborative and Integrated Advising Community Supporting Student Success

Professional Advisor — Assist students in the development of educational plans that are consistent with their aspirations, interests, and strengths; encourage students' holistic engagement (academically, socially, culturally, and professionally) with the college experience. Educate students about curricular requirements, academic standards/policies related to a chosen major. Guide students through career and professional development opportunities available. Assist students with course planning, academic forms, and technologies such as DARS, MyUTK, Grades First, and Handshake.

Faculty — Reinforce academic strategies to be successful in the major. Discuss faculty research in the major, preparation for graduate school interests, career opportunities in major field, collaborate with professional advisors on specific student issues. Discuss major specific course content, technical electives in the major, and concentrations and/or minors for the major.

Career Counselor — Guide students through self-exploration process that includes strengths, interests,

abilities, and challenges relating those to the world of work and goals in higher education. Assisting students in developing educational plans that are consistent with academic and career goals. Refer to campus resources that support career exploration, experience learning, and leadership opportunities. Guide students through developing resume and interview skills.

Transition Advisor — Advising and creating new academic plans for students no longer meeting major requirements and are required to change majors/colleges. Advising new prospective and transfer students who are not admitted to the college of their choice. Advising students and creating new academic plans with students who want to change colleges/majors but are unclear as to their new academic/career goals.

Success Center Coach — Teach and support academic success strategies such as time management, prioritization of involvements, test taking skills, campus tutoring opportunities.

How is College Life Different from High School?

Personal Freedom in High School	Personal Freedom in College
You may be able to join many clubs and activities while taking classes.	You must be selective in your participation choices to avoid overextending yourself.
Your time is usually structured by others.	You manage your own time.
Guiding principle: You will usually be told what your responsibilities are and corrected if your behavior is out of line.	Guiding Principle: You are old enough to take responsibility for what you do and don't do, as well as for the consequences of your decisions.
High School Classes	**College Classes**
You spend 6 hours each day—30 hours a week—in class.	You spend 12 to 16 hours each week in class.
The school year is 36 weeks long; some classes extend over both semesters and some do not.	The academic year is divided into 2 separate 15 week semesters plus a week for exams. Summer School is in 3 sessions; First and Second are 4 weeks each and Full is all summer.
You are provided with textbooks at little or no expense.	You need to budget substantial funds for textbooks.
You are not responsible for knowing what it takes to graduate.	Graduation requirements are complex and differ for different majors and sometimes different catalog years. You are expected to know those that apply to you. Learn to run your DARS report.
High School Teachers	**College Professors**
Teachers check your completed homework.	Professors may not always check completed homework, but they will assume you can perform the same tasks on tests.
Teachers remind you of your incomplete work.	Professors may not remind you of incomplete work.
Teachers approach you if they believe you need assistance.	Professors are open and helpful, but most expect you to initiate contact if you need assistance.
Teachers present material to help you understand the material in the textbook.	Professors may not follow textbooks. Instead to amplify the text, they may give illustrations, provide backgroud information, or discuss research about the topic you are studying. They may expect you to relate the classes to the textbook readings.
Teachers often write information on the board to be copied in your notes.	Professors may lecture nonstop, expecting you to identify the important points in your notes. When professors write on the board it may be to amplify the lecture, not to summarize it. Good note taking skills are a must.
Teachers often take the time to remind you of assignment and due dates.	Professors expect you to read, save, and consult the course syllabus. It spells out exactly what is expected of you, when assignments are due, and how you will be graded.

How is College Life Different from High School?

Studying in High School	Studying in College
You may study outside of class as little as 0 to 2 hours a week, and this may be mostly last minute test preparations.	You need to study at least 2 to 3 hours outside of class for each hour in class—every day.
You often need to read or hear presentations only once to learn all you need to learn about them.	You need to review class notes and text material regularly.
You are expected to read short assignments that are then discussed, and often re-taught, in class.	You are assigned substantial amounts of reading and problem solving which may not be directly addressed in class.
Guiding principle: You will usually be told in class what you need to learn from assigned readings.	Guiding Principle: It is up to you to read and understand the assigned materials; lecture and assignments proceed from the premise that you have already done so. You need to review class notes and text material regularly.

Tests in High School	Tests in College
Testing is frequent and covers small amounts of material.	Testing is usually infrequent and may be cumulative, covering large amounts of material. You, not the professor, need to organize the materials to prepare for the test. A course may only have 2 or 3 tests in a semester.
Time to finish tests may be abundant.	Testing in college requires you to budget your time and finish in time allowed.
Testing may ask for large amounts of memorization of material.	Testing in college will be applied knowledge to new problems and not memorization.
Teachers frequently conduct review sessions, pointing out the most important concepts.	Professors rarely offer review sessions, and when they do, they expect you to be an active participant, one who comes prepared with questions.

Grades in High School	Grades in College
Consistently, good homework grades may help raise your overall grade when test grades are low.	Grades on tests and major papers usually provide most of the course grade.
Extra credit projects are often available to help you raise your grade.	Extra credit projects are often NOT available in college classes.
Initial test grades, especially when they are low, may not have an adverse effect on your final grade.	Watch out for your first tests. These are usually wake up calls to let you know what is expected. Seek tutoring support early and often in classes where low test grades happen. Tests may count different percentages toward your total grade - read your syllabus.

Tutoring in high school	Tutoring in college
Students may only seek tutoring when failing.	Students seek tutoring from the beginning to help earn the best grades possible.
Tutoring is mainly with a teacher- one on one.	Tutoring in college may be with a professor or tutoring center staff or fellow student on campus. Often in small group or classroom setting.

Center for Financial Wellness

financialwellness.utk.edu

The Financial Wellness Center, located inside the One Stop Student Services Office, helps students improve money management skills through one-on-one appointments, presentations, and online resources. Broaden your money management knowledge and learn the most current and relevant information possible to make the best financial decisions to meet your goals. Explore your own financial information in greater detail by using these powerful tools and calculators to forecast and assess your financial standing.

Individual Appointments

Start developing the skills you need to succeed with money via one-on-one meetings with peer guides, who can provide information on:

- Financial goal setting
- Creating a spending plan
- Saving
- Credit cards and scores
- Student loan types
- Student loan repayment options
- Banking basics

What to Expect: You and your peer guide will discuss your current financial situation, your goals, and the best strategy for follow up. To get the most out of your visit, it may help to bring specific figures or statements. Please note that peer guides provide education, information, and strategies only. Students interested in financial planning and investments are encouraged to consult a financial professional.

Ready to Schedule Your Appointment?

1. Log in to MyUTK with your netID and password.
2. Under the Academic Support, select Grades First.
3. Then select Appointments for Advising or Other Academic Help.
4. Select Financial Wellness.
5. Select Financial Wellness again.
6. Select Location – Hodges Library.
7. Select Appointment Time.

Services also include:

CashCourse:

A website with comprehensive, noncommercial information to help inform your financial decisions

Net Price Calculator:

This calculator is intended to provide you with estimated financial aid and out-of-pocket costs based on the information you enter about yourself and your family.

Loan Calculator:

Many families use loans in addition to other funding sources to help finance educational expenses, but we recognize there is a lot to consider when using loans. Our team is committed to helping you identify the very best and most responsible financing plan to support your goals. These tools will help shed light on repaying your loans.

Scholarships, Student Organizations, Technology & Student Privacy

Tickle College of Engineering Undergraduate Scholarships

The Tickle College of Engineering annually awards an average of nearly $1,000,000 in scholarships to qualified undergraduate students. Students must be accepted into the University of Tennessee and the Tickle College of Engineering to apply for engineering scholarships. Students need not apply for specific scholarships as the Scholarship Committee will match qualified students with available awards. Please contact the One Stop Shop for the complete list of application requirements and deadlines, **Hodges Library Ground Floor, 865-974-1111, onestop.utk.edu/your-money.**

The returning/transfer student scholarship application is on MyUTK. **Application deadline is February 1.**

Scholarships are awarded each academic year in the spring for the upcoming fall semester. For more information contact the Academic and Student Affairs Office at 865-974-2454 or stop by 101 Perkins Hall.

Student Organizations and Honor Societies (tickle.utk.edu/student-organizations)

Student Organizations

- American Institute of Aeronautics and Astronautics
- American Institute of Chemical Engineers
- American Nuclear Society
- American Society of Agricultural and Biological Engineers
- American Society of Civil Engineers
- American Society of Mechanical Engineers
- Associated General Contractors of America
- Association of Computing Machinery
- Biomedical Engineering Society
- Tickle College of Engineering Ambassadors
- Engineering Mentor Program
- FIRST Alumni at UT Knoxville
- Hydrolunteers
- Institute of Electrical and Electronics Engineers
- Institute of Industrial & Systems Engineers
- Institute of Transportation Engineers
- Material Advantage
- National Society of Black Engineers
- Society of Automotive Engineers
- Society of Hispanic Professional Engineers
- Society of Women Engineers
- Systers: Women in EECS
- Theta Tau Professional Engineering Fraternity
- UTK Volunteers Without Borders
- Women in Industrial and Systems Engineering
- Women in Nuclear

Honor Societies

- Alpha Nu Sigma, Nuclear Engineering Honor Society
- Chi Epsilon, Civil Engineering Honor Society
- Eta Kapp Nu, Electrical Engineering Honor Society
- Pi Tau Sigma, National Mechanical Engineering Honor Society
- Tau Beta Pi, National Engineering Honor Society

Technology

tickle.utk.edu/ithelp/computers/

Laptops are required for all students, including incoming freshmen. VolTech, located within the Student Union on campus, sells Apple and PC computers, mobile devices, and accessories at reduced rates for students.
The website is **utvolshop.com/c-276-voltech.aspx**

FERPA STATEMENT

Family Education Rights and Privacy Act (FERPA)

The method with which the University of Tennessee governs the distribution of student information is based on the Family Educational Rights and Privacy Act of 1974 or FERPA. This Act, as amended, established the requirements governing the privacy of student educational records in regards to the release of those records and access to those records. This Act is also known as the Buckley Amendment.

The Act gives four basic rights to students:

- the right to review their education records;
- the right to seek to amend their education records;
- the right to limit disclosure of personally identifiable information (directory information);
- and the right to notify the Department of Education concerning an academic institution's failure to comply with FERPA regulations.

FERPA provides for confidentiality of student records; however, it also provides for basic identification of people at the University of Tennessee without the consent of the individual. Release of information to third parties includes directory information, such as contained in the campus directory, in the online web-based people directory and in sports brochures. Students are notified of their FERPA rights and the procedures for limiting disclosure of directory information in *Hilltopics*, at Orientation for new students, and on the website of the University Registrar, **registrar.tennessee.edu.**

Diversity Programs

Office of Diversity Programs

Travis Griffin, Program Director
301 Perkins Hall, Knoxville, TN 37996-2360
Telephone: 865-974-0625
tickle.utk.edu/diversity

Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP)

The Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) is a partnership between Tennessee State University, LeMoyne-Owen College, Middle Tennessee State University, University of Memphis, University of Tennessee and Vanderbilt University. The program's goal is to increase the number of under-represented minority students studying and graduating in Science, Technology, Engineering and Math (STEM).

The objectives to support the goal of the alliance are to:

- Recruit under-represented minority students to pursue science or engineering as a career;
- Improve the quality of the learning environment for under-represented minority science and engineering students at all schools; and
- Ensure that a large number of undergraduate students are prepared to enter graduate school.

Programs/Services

- TLSAMP Seminars
- Collaborative Learning
- Drop-In Center
- Graduate School Preparations
- Mentoring
- Undergraduate Summer Research
- Research Symposium
- Summer Bridge Program

Retention Efforts

- Financial Assistance
- Tutorial Programs/Services
- Strategies for Basic Skills Courses

National GEM Consortium

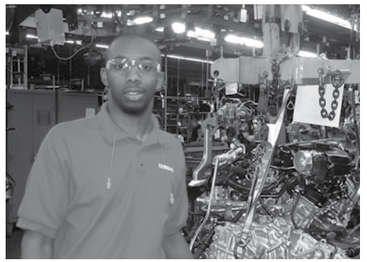
The college is committed to outreach and retention efforts to increase the number of female engineering students. Today, more than ever, women are discovering the exciting opportunities and unique challenges in the engineering field. At UT, we encourage the interest of young women in the science, techonology, engineering, and math (STEM) fields thorugh outreach, pre-college programs, and mentoring and support during their college careers.

The college is proud of the fact that the number of our female professors has increased to a total of 27, at present. The presence of accomplished women who serve as faculty memebers serves as inspiration for both students and for the junior female faculty who have recently joined the college.

Signature Programs/Services

- WomEngineers Welcome Dinner
- WomEngineers Day
- Mentoring Opportunities
- Student Organizations

Cooperative Education / Career Development



Engineering Professional Practice

Todd Reeves, Director
110 Perkins Hall, Knoxville TN 37996-2030
Telephone: 865-974-5323
coop.utk.edu

Cooperative Education (Co-op) Program
Students have the opportunity to gain real world experience in their engineering field of study by working multiple semesters (normally three) with the same employer before they graduate.

Typically a co-op student will alternate between semesters of work and school beginning in their sophomore year. The exact co-op rotation plan is created by the student in coordination with the Engineering Professional Practice office, their academic advisor, and the needs of their particular co-op employer. Making use of the summer semesters for work assignments or classes enable the co-op experience to have minimal impact on a student's planned graduation date.

Internship Program and Benefits
The internship program differs from co-op in that the students will only work one paid assignment with an employer, usually in the summer. While students can still gain valuable engineering experience in an internship, this shorter duration experience provides a subset of the total experience students obtain in the co-op program. Most employers recruit students for internship opportunities during a student's junior year. Most engineering internships occur during the summer before the senior year.

Co-op and Internship Program Requirements
To participate fully in the Engineering Professional Practice program, students should register with the office during their freshman year. They will then have an opportunity to go through an in-depth orientation and advisement process, learn the steps to a successful job search, and be prepared to participate in our Engineering Expo each fall and spring semester to seek co-op and internship opportunities.

Though the specific GPA requirements for each opportunity will vary depending on the needs of the employers, most employers require a GPA of 3.0 or above. Before students go on thier first assignment, they must complete 30 hours of course work and be in good academic standing.

TOOLS & SERVICES

CENTER FOR CAREER DEVELOPMENT

ASSESSMENTS
1 2
- Strong Interest Inventory
- TypeFocus

APPOINTMENTS
2 3 4
- Choosing a major/career
- Resumes and interviews
- Job and internship search
- Graduate/professional school planning

CLASSES
1 2 3
- Exploring Majors and Careers
- Career Strategies for the Arts/Sciences

IDENTITY-SPECIFIC RESOURCES
1 2 3 4
- Disability employment topics
- Diversity events
- Veterans Initiatives

CONNECTIONS
2 3
- Career Conversations panels
- Networking events
- VolTreks
- Career fairs

EXPERIENCE
2 3 4
- Internships
- Part-time jobs
- Service/Volunteer opportunities
- Research

You're here.
Where are you going?

FEATURED RESOURCES

CandidCareer.com
careershift — job hunting & career management solutions
GoinGlobal — Jobs here there everywhere
handshake
vault career intelligence
WHAT CAN I DO WITH THIS MAJOR?

CONTACT INFO

STUDENT UNION LEVEL 2 • 865-974-5435 • CAREER.UTK.EDU

ARE YOU CAREER READY?

COMPETENCY	DEFINITION	*What can I do?*
Critical Thinking/ Problem Solving	*Practice sound reasoning and analytical skills to make decisions and overcome problems*	1. Participate in undergraduate research programs within TCE and beyond 2. Reflect on the skills developed through engineering fundamental courses
Oral/Written Communications	*Articulate thoughts and ideas clearly to a variety of audiences and employ effective public speaking skills*	1. Present your research findings in class or at a conference 2. Join a student organization where you can hone your oral communication skills, such as the Speech and Debate Society or the TCE Engineering Ambassadors
Teamwork/ Collaboration	*Build collaborative relationships with coworkers and be able to work well in a team environment*	1. Work with a team of fellow students and compete in the Steel Bridge Competition 2. Participate in UT's EcoCAR 3 Team to gain hands-on experience working on a multidisciplinary collaboration
Digital Technology	*Leverage existing digital technologies ethically and efficiently to complete tasks; demonstrate effective adaptability to new technologies*	1. Use your LinkedIn Learning account to learn more about coding and various programming languages 2. Take courses that will expand your knowledge of how to use MATLAB
Leadership	*Utilize the strengths of others to achieve common goals; use interpersonal skills to develop and motivate others*	1. Join one of 30 or more engineering student organizations and seek a leadership role 2. Show initiative and provide leadership for group projects assigned in courses
Professionalism/ Work Ethic	*Exhibit effective work habits such as punctuality, working productively, personal accountability, integrity, and ethical behavior*	1. Participate in events sponsored by professional associations within TCE, e.g., Society of Women Engineers, the Engineering Mentor Program, or the National Society of Black Engineers 2. Intern or co-op with a company of interest to gain related experience and build professionalism
Career Management	*Identify skills, strengths, knowledge, experiences, and areas of growth related to career goals; navigate job options and pursue opportunities*	1. Meet with the Engineering Career Consultant to update your resume and create career goals 2. Attend the Engineering Expo or the STEM & Engineering Career Fair to network with companies and learn about opportunities
Global/ Intercultural Fluency	*Demonstrate openness, inclusiveness, sensitivity, and the ability to interact respectfully with all people; understand individuals' differences*	1. Participate in an Engineering Faculty-Directed Study Abroad Program such as trips to London, Milan or Hamburg 2. Go on a TCE Alternative Spring Break trip and participate in a local impact engineering project

Adapted from the NACE Career Readiness Competencies

Global Experiences

The University of Tennessee has embarked on an ambitious plan to help students gain the international and intercultural knowledge they need to succeed in today's world. Engineering, like all professions, is becoming very globally oriented. It is important for you to take advantage of opportunities while you are a student in order to be Ready for the World. Apply for your passport now—the world awaits!

UT Programs Abroad Office (PAO)

The "PAO" provides students with information about their options for overseas study, research, work, volunteer projects, and travel. The PAO administers most of UTs international one-for-one student exchange programs, including ISEP. Attend an information session at the Programs Abroad Office (1620 Melrose Hall). Information sessions are held at 2:00 pm every Monday-Friday during the academic year. During the general information session, we discuss the programs available to you, what to look for in a program, how to use the resource center, using financial aid, transferring credits, programs requirements, and will answer your questions. If you are unable to attend an information session due to a conflict at 2:00 pm, please contact our office and we will be glad to schedule an appointment for you (865-974-3177 or **volsabroad@utk.edu**).

Contact:
Center for Global Engagement, Programs Abroad Office
1620 Melrose Avenue, Knoxville, TN 37996-3531
Phone: 865-974-3177
Fax: 865-974-2985
Email: volsabroad@utk.edu

Study Abroad for Engineering Students

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 or pre-arranged trips, where you would live and travel with a small group of UT students. Prior to applying for an Engineering Study Abroad Program, you should schedule an advising session with your Tickle College of Engineering advisor. You are eligible to apply for the Study Abroad Program after freshman year or after the first semester at UT, if you are a transfer student. Most programs require a minimum 2.5 to 2.75 GPA. For non-English language programs, it is required that you have minimum 4 semesters of equivalent of foreign language (faculty-led programs are exceptions).

UT Study Abroad programs include 5 types of programs: UT faculty-led, Exchange, Direct, Third Party, and Academic Internships.

Contact:
Kevin Kit, Director
Engineering Honors
322 Perkins Hall
Phone: 865-974-9874
Email: kkit@utk.edu
Web: **tickle.utk.edu/study-abroad**

Global Engineering Initiatives

The Tickle College of Engineering offers the opportunity for insight-abroad experiences for students for periods of a week to ten days, scheduled during school breaks. This enables the engineering major to have a short abroad experience without interrupting classes or delaying graduation.

The flagship program for this initiative is the Engineering Alternative Spring Break, an annual trip to a foreign location to participate in an engineering project of local impact. On trips during other times of the year, engineering students may participate in a field-relevant service project in a foreign location, see engineers at work outside of the United States, or observe engineering applications and methods employed abroad. This may happen through a visit to an engineering university, lectures on specific engineering challenges, tour of a plant or manufacturing facility, or observations of pertinent engineering developments in locations overseas. Students will also visit sites of cultural and historic significance.

Although these programs are not credit-bearing, they satisfy the Honors' "Global Experience" requirement and are a significant addition to a resume. A limited number of scholarships are offered to defray travel costs.

Contact:
Judith Mallory, International Coordinator
59 Perkins Hall
Phone: 865-974-9234
E-mail: jmallory@utk.edu
Web: **tickle.utk.edu/global/**

Grades

Grades, Credit Hours, Grade Point Average

The unit of credit is the semester credit hour. One semester credit hour represents an amount of instruction that reasonably approximates both 50 minutes per week of classroom-based direct instruction and a minimum of two hours per week of student work outside the classroom over a fall or spring semester. Normally, each semester credit hour represents an amount of instruction that is equivalent to 700 minutes of classroom-based direct instruction. The amount of time that is required to earn one semester credit hour in a laboratory, fieldwork, studio, or seminar-based course varies with the nature of the subject and the aims of the course; typically, a minimum of two or three hours of work in a laboratory, field, studio, or seminar-based setting is considered the equivalent of 50 minutes of classroom-based direct instruction. Semester credit hours earned in courses such as internships, research, theses, dissertation, etc. are based on outcome expectations established by the academic program.

Each course at the university carries a number of credit hours specified in the course description. At the completion of each course, a student will be assigned a grade reflecting the student's performance in the course. Passing grades carry a certain number of quality points per credit hour in the course. A student's grade point average is obtained by dividing the number of quality points the student has accumulated at UT Knoxville by the number of hours the student has attempted at UT Knoxville, not including hours for which grades of I, N, NC, NR, P, S, and W have been received.

Undergraduate Grades

Grade	Performance Level	Quality Points Per Grade
A	Superior	4.00
A-	Intermediate Grade	3.70
B+	Very Good	3.30
B	Good	3.00
B-	Intermediate Grade	2.70
C+	Fair	2.30
C	Satisfactory	2.00
C-	Unsatisfactory	1.70
D+	Unsatisfactory	1.30
D	Unsatisfactory	1.00
D-	Unsatisfactory	.70
F	Failure	0.00

First Year Composition

First year composition courses are offered on a system of A, A-, B+, B, B-, C+, C, I, N, W grading. All entering first year students, except international students, should enroll in a first year composition sequence during their first year unless they have been awarded equivalent credit through credit by examination or dual-enrollment or other transfer coursework.

International Students

Entering international students whose native language is not English are placed in English courses based on TOEFL scores. Advisors will assist students with English class placement.

ABC/N Grading System

ABC/N grading is an alternative to the standard A-F grading system. Courses offered only on the ABC/N grading system are identified in the course description. For a course offered on the ABC/N grading system:

- A student who earns a grade of A, A–, B+, B, B–, C+, or C will have that grade entered on the permanent record. These grades will be included in the calculation of both the student's cumulative grade point average and an in-state student's HOPE grade point average.
- A student who earns a grade of C–, D+, D, D–, or F will have that grade entered on the permanent record with the letter N as a prefix (for example, NF). In this case, hours earned in the course will be removed from the student's earned-hour total, but will be included in the student's attempted-hour total. Grades with the N prefix will not be included in the calculation of the student's cumulative grade point average, but will be included in the calculation of an in-state student's HOPE grade point average.

Transfer students are held to the same program requirements and policies as UT students. For students who transfer to UT coursework in a course with ABC/N grading, only courses for which a grade of C or higher was earned will be eligible to meet program requirements.

Changes in Registration

For full term fall and spring classes, undergraduate students may add classes through the seventh calendar day counted from the beginning of the term.

For single session fall and spring classes, undergraduate students may add classes through the sixth calendar day counted from the beginning of the session.

Because of the nature of some classes, permission of the department head may be required to add a course after the first day of the term or session. Students may also, as departmental policies permit, change class sections through the add deadline.

Students may drop classes, with no notation on the academic record, through the seventh calendar day of the term. From the eighth calendar day of the term until the 84th calendar day of the term, students may drop full term fall and spring classes and receive the notation of W (Withdrawn) on the academic record.

After the 84th calendar day of the term, students may not drop full term fall and spring classes. From the 85th day of the term to the last day of classes, a student may completely withdraw from a fall or spring term, subject to regulations listed in the catalog section Total Withdrawal from the University.

For single session fall and spring classes, students may drop classes, with no notation on the academic record, through the sixth calendar day of the session. From the seventh calendar day of the session until the 38th calendar day of the session, students may drop single session fall and spring classes and receive the notation of W (Withdrawn) on the academic record. After the 38th calendar day of the session, students may not drop single session fall and spring classes.

Grades

The following are additional regulations related to dropping individual full term fall and spring classes after the seventh calendar day of the term, or dropping individual single session fall and spring classes after the sixth calendar day of the session:

- Students are allowed six individual class drops during their academic career (until a first bachelor's degree is earned). If dropping a course results in a mandatory drop of another course or courses due to a mutual corequisite relationship, these drops together will be counted as only one of the four class drops.
- Former students holding a bachelor's degree from UT or any other regionally accredited institution of higher learning who return to pursue a second bachelor's degree are allowed six additional individual class drops.
- Students pursuing more than one major or degree simultaneously are not allowed additional drops beyond the six individual class drops.
- Total withdrawal from a term (dropping all courses) does not impact a student's six allowed individual class drops.
- The W grade is not computed in the grade point average.
- Classes may be dropped using MyUTK.

Failure to attend a course is not an official withdrawal and will result in the assignment of an F grade.

Grades that do not Influence Grade Point Average

The following grades carry no quality points and hours for which these grades are earned are not counted in computing a student's grade point average.

- NC (No Credit) indicates failure to complete a course satisfactorily when taken on an S/NC basis.
- S (Satisfactory) is assigned for C or better work when a course is taken on an S/NC grading basis.
- W (Withdrawal) is assigned in courses when a student has officially withdrawn from the university. W is also assigned in courses when a student withdraws from a course between the 11th and 84th calendar day of classes. Regulations concerning withdrawal from courses or from the university appear under Adds, Drops, and Withdrawals.

Satisfactory/No Credit Grading System

The purpose of this system is to encourage the student to venture beyond the limits of those courses in which the student usually does well and, motivated by intellectual curiosity, explore subject matter in which performance may be somewhat less outstanding than work in other subjects. To this end, Satisfactory/No Credit (S/NC) grading has been developed for undergraduate courses (100-, 200-, 300-, and 400-level courses).

- Neither grade is counted in a student's grade point average, but, like all other grades, is entered on the permanent record.
- S is given for C or better work on the traditional grading scale and NC is given for grades of C–, D+, D, D–, and F.
- The student only receives credit in the course if an S is received.
- A student may not repeat a course for S/NC if the student received a conventional grade (A, A–, B+, B, B–, C+, C, C–, D+, D, D–, and F).
- If the student elects non-conventional grading, grades of A, A–, B+, B, B–, C+, C will be recorded on the student's permanent academic record as S, and C–, D+, D, D– or F as NC.
- The grade of I for incomplete work will be recorded as an SI, which will not be computed in the average.
- A student is permitted to change the system of grading in a course through the add deadline.
- The changing of an S/NC grade to a conventional letter grade or vice versa is not permitted unless an error is determined by the Office of the University Registrar

Repeating Courses

General Repeat Policy

Students who are struggling with a class should talk with their advisor before deciding whether to withdraw from and/or plan to repeat a class.

- Courses may be repeated twice, for a total of three attempts per course.
- A grade of W does not count as one of the three attempts.
- Grades of C-, D+, D, D-, F, Incomplete, and NC are counted as one of the three attempts.
- No course may be repeated if a grade of C or better has already been earned.
- Each repeated course is counted only once in determining credit hours presented for graduation.
- With limited exceptions (see Grade Replacement Policy), all grades earned in repeated courses will count in calculating the GPA.
- Exceptions to the number of times a course may be repeated will be allowed only with prior written permission from the head of the department where the course is being offered and the student's college dean or designee.

Grade Replacement Policy for Three Lower Division (100-400 Level) Courses

- Students may replace up to three grades earned in undergraduate (100-400 level) courses by repeating the course. All other grades will be included in computing the cumulative grade point average.
- For in-state students, only one grade replacement can be used to raise the student's HOPE GPA.
- Grades in no more than thirteen hours of course work may be replaced under this policy.
- Grades of C or higher (or a grade of S for S/NC-graded courses) may not be replaced under this policy.
- If the same course is repeated more than once, the additional repeat(s) will count toward the total of three allowed grade replacements.
- Repeating a course in which an NC or a W grade has been earned does not count as one of the three grade replacements.
- In computing the cumulative grade point average, the highest grade earned in the course will be used.
- All grades for all courses completed remain on a student's academic history.
- Transfer course grades cannot be replaced (see Transfer Admission Policy).

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Career Information

What can I do with this engineering major?

Aerospace Engineering

mabe.utk.edu

What is Aerospace Engineering?

Aerospace engineering uses the basic sciences and mathematics to develop the foundation for the design, development, production, testing and applied research associated with aerospace vehicles. These vehicles include aircraft, spacecraft and missiles. Auxiliary and propulsion systems are also an integral part of this education. These include guidance, control, environmental, ramjet, rocket, turbojet, turbo-fan and piston engine/propeller systems.

The educational objectives of the aerospace engineering program are:

- Graduates will meet or exceed the expectations of employers of aerospace engineers, such as industry, government, academia or non-governmental organizations.
- Graduates will continue professional development by participating in structured professional activities and/or by obtaining professional registration or certification, post-graduate credits and/or advanced degrees.

Career Opportunities

The demand for air transportation is projected to increase many-fold early this century. Our renewed quest in space will accelerate as full realization is made of spin-off benefits to society. These endeavors will increase employment opportunities for aerospace engineers in the future. Graduates at UT are actively sought by industry and government aerospace organizations nationwide.

Major employers such as Boeing, Pratt and Whitney, NASA, General Electric, Honeywell, Lockheed-Martin, ATK and Arnold Engineering Development Center (which houses the largest wind tunnel test facilities in the world, located in Tullahoma, Tennessee) actively recruit our students.

Many of our BS students choose to continue their education at graduate school.

Biomedical Engineering

mabe.utk.edu

What is Biomedical Engineering?

Biomedical engineering is the application of engineering principles and methods to the solution of problems in the life sciences. This broad field spans applications at the molecular level (genetic engineering); at the cellular level (e.g., cell and tissue engineering); and in intact organisms, including humans in particular. Mature practice areas include the design of biomedical measurement systems (e.g., intensive care monitoring stations); orthopedic devices (e.g., artificial joints); and artificial organs (e.g., artificial kidneys). Currently, there is much attention being given to computational biosciences, advanced medical imaging systems and advanced artificial organs (e.g., heart-assist and total artificial heart blood pumps, artificial livers). Among the most exciting new areas of biomedical engineering research is the newly defined discipline of cell and tissue engineering, which involves the modification of living cells and tissues to meet specific clinical needs (e.g., artificial skin).

In their professional roles, biomedical engineers must be knowledgeable in both the life sciences and the engineering sciences. In many career roles, biomedical engineers serve an intermediary role in bridging the gap between classically trained engineers and medical practitioners. Basic life science preparation includes the study of cell biology and human anatomy and physiology. The engineering preparation includes basic mechanics, electrical and electronic circuits, materials science, fluid dynamics, and pre-medical school topics. Required mathematics include calculus, differential equations, matrix methods and statistics.

The educational objectives of the biomedical engineering program are:

- Graduates will meet or exceed the expectations of employers of biomedical engineers, such as industry, government, academia or non-governmental organizations.
- Graduates will continue professional development by participating in structured professional activities and/or by obtaining professional registration or certification, post-graduate credits and/or advanced degrees.

Career Opportunities

Biomedical engineers work in a variety of settings including the biomedical product manufacturing industry, biomedical research and development organizations, hospitals (as clinical engineers), for governmental agencies (e.g., FDA, NASA, DOD), and in biomedical product technical sales. Work in many of the more challenging technical areas (e.g., cell and tissue engineering) requires an advanced degree.

BME graduates can also structure their electives to fulfill pre-med requirements for those wishing to pursue medical school.

Career Information

What can I do with this engineering major?

Biosystems Engineering

bioengr.ag.utk.edu

What is Biosystems Engineering?

Today's tightly-focused engineering specialties would probably amaze the great engineers of the past. Many of them were successful precisely because they understood a diverse range of engineering concepts and could integrate that knowledge in new and startling ways.

Biosystems engineering is the most "integrative" engineering discipline available today. It combines elements from environmental, mechanical, civil, electrical and other engineering disciplines to produce the broadest possible engineering skill set. This engineering background is complemented with a focus on biologically-based systems–critical for solving problems involving people and the environment. Finally, biosystems engineering adds the peripheral skills needed to be successful in an engineering career–intensive design projects; computer and graphics training; presentation skills; engineering economics; and practical teamwork.

With this broad foundation, upper-level biosystems engineering students are uniquely positioned to focus on almost any area of engineering. Potential areas include biofuels; environmental systems; machine design and optimization; soil and water conservation; instrumentation and sensors; bio-reactors, food processing; waste treatment; or any of a host of other possibilities.

The BESS department's program objectives: Recent graduates are to:

- Be successful in securing employment in the profession or a position in graduate or professional school.
- Continue developing as professionals.
- Demonstrate success in their chosen career paths.

Career Opportunities

As a biosystems engineer, you can choose from an unusually diverse range of job opportunities. You will be well prepared to lead a team as a project engineer because of your broad engineering background. You could also choose to design products or processes in a variety of agricultural, manufacturing and service industries. You might consider working as a consultant, in product marketing, or for a management services firm. Government agencies and educational and research institutions also employ many biosystems engineers, or you may want to enhance your career by entering graduate or medical school. You will be particularly qualified to work at the interface of technology and living systems–whether in food and fiber production, environmental issues or in a biological context.

Chemical and Biomolecular Engineering

cbe.utk.edu

What is Chemical and Biomolecular Engineering?

Chemical and Biomolecular engineering deals with developing industrial processes and systems used to manufacture products that require chemicals. Chemical and Biomolecular engineers play a very important role in the production of items we use every day such as foods, medicines, fuels and clothing. Some examples of chemical engineering include developing improved food processing techniques, producing medicines more affordably in large quantities, finding more efficient ways to refine petroleum, and constructing fibers that make clothing more comfortable and resistant to stains.

As a chemical and biomolecular engineering student at UT, you will learn how to design processes and equipment for reacting chemicals that will improve the way many items critical to today's modern society are created. You will study the concepts of heat transfer, mass transfer, kinetics, and fluid flow to solve problems that may lead to the development of new medications, computing devices, fuels, plastics, and polymers vital to enhancing the quality of life around the globe.

The objectives of the chemical and biomolecular engineering degree program are:

- Graduates of the chemical engineering program will meet or exceed the expectations of employers of chemical engineers.
- Qualified graduates will pursue graduate or advanced professional study if desired.
- Graduates will continue their professional growth through lifelong learning.
- Graduates will pursue career progression toward positions of technical or managerial leadership.

Career Opportunities

As a graduate of the chemical and biomolecular engineering program, you will be able to pursue a career in many different areas such as pharmaceuticals, textiles, electronics, energy and biotechnology. Chemical and biomolecular engineers can be found anywhere, from large manufacturing plants to small medical research laboratories. Many of our students also choose to continue their education at graduate or medical school.

Civil and Environmental Engineering

cee.utk.edu

What is Civil and Environmental Engineering?

Civil and environmental engineers plan, design, construct, and operate infrastructure that is essential to economic vitality and our modern way of life. They enhance our quality of life and provide valuable service to communities by protecting the health and safety of the public and by preserving our environment.

The roots of the department of Civil and Environmental Engineering at the University of Tennessee date back to 1838, making it one of the first Civil Engineering programs established in the Southeast. The department offers six proficiency areas, each preparing students for impactful and exciting careers.

- **Environmental Engineers** protect human health by providing safe drinking water to communities; designing processes and facilities for environmentally sustainable waste disposal; protecting air quality through emissions control technologies; remediating contaminated sites; and quantifying and managing risks to human health and the environment caused by pollution.
- **Construction Engineering and Management** is the process of delivering engineering projects safely, on time, and on budget through management of financial, material, and human resources on the job site.
- **Geotechnical and Materials Engineers** evaluate site-specific geological conditions to recommend foundation systems and soil modifications to enable successful civil engineering projects. They work on projects involving buildings, bridges, pavement systems, roadways, pipelines, tunnels, dams, and landfills.
- **Structural Engineers** design structural systems for buildings, bridges and other structures using concrete, steel, wood, masonry, composites, and newly emerging materials. They ensure that infrastructure is reliant to natural disasters such as hurricanes and earthquakes.
- **Transportation Engineers** plan, design, and operate transportation systems that move people and goods through our society. Transportation engineers utilize policy, economics, and advanced technology to deliver transportation systems that are safe, economical, efficient, and sustainable.
- **Water Resource Engineers** evaluate the availability of water for urban, industrial, and agricultural activities; protect and restore rivers, streams, and aquatic ecosystems; control flooding; protect water quality in the environment; and manage the water cycle in urban environments through deployment of green infrastructure.

During your careers, our nation's aging infrastructure will be extensively upgraded using new materials, the latest technology, emerging construction techniques and innovative financing mechanisms. Autonomous vehicles will transform our transportation system and create opportunity to reshape our communities. As the need for surface parking decreases there will be opportunities to reintroduce nature into our urban areas, to better manage our water resources, and to grow our food closer to where we live. As a civil and environmental engineer, you will be at the center of this infrastructure revolution.

We will prepare you to enter this exciting field at the University of Tennessee, Knoxville. Our program features hands-on learning through laboratories, real-world project-based learning, flexibility to develop technical expertise in areas that interest you, development of your communication and professional skills and opportunities for co-ops and internships, undergraduate research, study abroad, and leadership development. You'll enter the work place ready to make an impact

Career Opportunities

Civil and environmental engineers are employed by engineering and construction firms, industry, all levels of government, utilities, academia, among others. Typical career paths provide opportunities to work outside, to oversee a project from start to finish, to contribute to landmark infrastructure projects, to work internationally, to grow in leadership responsibilities, and to collaborate with clients, stakeholders, and the public to improve our communities.

Civil engineers often own their own businesses or volunteer their skills in developing countries. More than anything, civil and environmental engineering is a great profession for people who want to make a difference.

Computer Engineering

www.eecs.utk.edu

What is Computer Engineering?

Computer engineering deals with the electronic hardware side of electrical engineering and the programming side of computer science. Often, a student can study electrical engineering to cultivate a background in computer engineering. However, with the increasing needs of both industry and technology that drive our future, computer engineering has now become a discipline by itself. Typically, a computer engineering curriculum provides a background in three broad areas—hardware, software, and hardware-software integration. Students will also have the opportunity to explore fundamental topics such as microprocessors, computer architecture, digital signal processing, operating systems, data communications, and other related material. In addition, the program includes core engineering subjects that are common to all engineering disciplines.

The program educational objectives of the computer engineering program include:

- Will apply the knowledge of the fundamentals of engineering, science and mathematics in the practice of electrical/computer engineering or in advanced professional studies; will identify, formulate and solve electrical/computer engineering problems.
- Will analyze and design complex devices and systems containing hardware and software components with consideration of economic, ethical, safety, environmental, and social issues; will be able to use modern engineering techniques, skills and tools.
- Will communicate effectively, function on multi-disciplinary teams, and engage in lifelong learning.

Career Opportunities

Computer hardware engineers are expected to have favorable job opportunities. Employment of computer hardware engineers is projected to increase faster than the average for all occupations, reflecting rapid employment growth in the computer and office equipment industry, which employs the greatest number of computer engineers. Consulting opportunities for computer hardware engineers should grow as businesses need help managing, upgrading and customizing increasingly complex systems. Growth in embedded systems, a technology that uses computers to control other devices such as appliances or cell phones, also will increase the demand for computer hardware engineers.

Computer Science

www.eecs.utk.edu

What is Computer Science?

At one pole is computer science, primarily concerned with theory, design, and implementation of software. It is a true engineering discipline, even though the product is as intangible as a computer program. At the other pole is computer engineering, primarily concerned with firmware (the microcode that controls processors) and hardware (the processors themselves, as well as entire computers).

It is not possible to draw a clear line between the two disciplines; many practitioners function to at least some extent as both computer engineers and computer scientists.

Computer Science is the study of software and hardware systems, and theory of computation. Students must be able to integrate material and concepts from these areas. So, for example, students use analysis of algorithms to select or design software to solve a problem on a computer with parallel architecture. Another example would be selecting or writing the software for a network router, combining optimization theory, graph algorithms, networking, knowledge of the hardware and professional software methods. The emphasis is on foundations and the ability to learn new developments in the field.

Career Opportunities

Career Opportunities in many fields exist for our graduates. Most generally, they are prepared to work in laboratories that develop software intensive products. These include, for example, automotive components, financial systems, consumer appliances (cell phones, personal computers), communication infrastructure devices (routers, switches), scientific research facilities (space stations, telescopes, reactors) and weapon systems.

Electrical Engineering

www.eecs.utk.edu

What is Electrical Engineering?

Electrical engineering deals with the application of the physical laws governing charged particles. From miniature integrated circuits that contain millions of microelectronic devices, to high-speed fiber-optic communication systems that span international boundaries, electrical engineering impacts every aspect of modern-day living. Electrical engineering is unique among the engineering disciplines because of its wide range of applications. Subject areas within electrical engineering are so diverse that it is not always apparent that there is an underlying connection. The range of subjects is not only broad but is also expanding.

The program educational objectives of the electrical engineering program include:

- Will apply the knowledge of the fundamentals of engineering, science and mathematics in the practice of electrical/computer engineering or in advanced professional studies; will identify, formulate and solve electrical/computer engineering problems.
- Will analyze and design complex devices and systems containing hardware and software components with consideration of economic, ethical, safety, environmental, and social issues; will be able to use modern engineering techniques, skills and tools.
- Will communicate effectively, function on multi-disciplinary teams, and engage in lifelong learning.

Career Opportunities

The growth trends for employment of electrical engineering graduates are expected to increase.

Projected job growth stems largely from increased demand for electrical and electronic goods, including advanced communications equipment, computer communications, biomedical instrumentation, defense-related electronic equipment, and consumer electronics products. The need for electronics manufacturers to invest heavily in research and development to remain competitive and gain a scientific edge will provide openings for graduates who have learned the latest technologies.

Industrial Engineering

ise.utk.edu

What is Industrial Engineering?

Industrial engineers design, install, improve, and control complex systems that integrate people, materials, information, finances, technology, and facilities. These systems could be broad, such as hospitals, factories or international supply chains, or focused, such as an employee workstation or how a customer experiences a service. Industrial engineers are problem solvers who use their skills with math, science, and engineering to solve difficult, multi-faceted, often multi-disciplinary problems. The primary design focus on cost, time, quality, and flexibility distinguishes industrial engineering from other engineering disciplines. While other types of engineers design things, industrial engineers design the systems that enable those things to work effectively. The skills required for this field frequently lead to management and leadership positions.

Do you have the skills and interests of an industrial engineer? You may want to consider the following questions:

- Do you enjoy solving challenging problems with many working parts?
- Do you constantly think about how things could be improved?
- Do you like to have a plan?
- Are you strategic? Do you like to see the big picture?
- Do you enjoy taking the lead and guiding teams to the solution for a specific problem?
- Are you strongly motivated? Do you show initiative?
- Can you deliver a presentation to sell your point of view?

If you answered yes to any of these questions, you may have what it takes to be an industrial engineer!

Students in the program gain hands-on experience and forge beneficial relationships with industry, business, and agencies through co-ops, internships, research, study abroad opportunities, clubs, professional organizations, and coursework including topics such as work methods, lean techniques, and facilities design, plus completing a senior design project for a local partner. Students also have the opportunity to take advantage of the many labs in our department including the ideation lab (3-D printing, etching, simulation, etc.) and senior design lab.

The program prepares students to:

- Have successful professional careers that employ industrial and systems engineering concepts and principles
- Pursue life-long learning
- Achieve positions of leadership

Career Opportunities

Industrial engineers have a range of career fields available, with wide-ranging applications:

- Manufacturing
- Healthcare
- Transportation
- Construction
- Retailing
- Entertainment
- Public services
- Finance
- Logistics and Supply Chain

In all areas, there is increasing emphasis on improving quality and productivity. Industrial engineers work closely with top management to achieve these goals. Industrial engineers command very competitive salaries in a strong market that is expected to grow by 10-15% in the next decade. In spring 2016, 96% of graduates had post-graduation plans including full-time jobs, part-time jobs, and graduate education. The department provides one-on-one advising to support our students during the job search. We are committed to preparing our students for their career after graduation.

Materials Science & Engineering

mse.utk.edu

What is Materials Science and Engineering?

Materials Science and Engineering (MSE) is at the forefront of modern technological advances through the development and improvement of materials for applications in all engineering fields. It is one of the fastest growing engineering disciplines and is expected to remain a major contributor to progress in renewable energy, 3D printing, and next-generation electronics.

Materials engineers can be found working in all technological fields, usually as part of a multidisciplinary team. For this reason, materials engineers receive a broad engineering education that includes design, mechanics, chemistry, physics, mathematics and electronics. The processing and testing of materials are core subjects in the MSE curriculum that stresses “hands-on” learning though laboratory classes that introduce students to modern processing and characterization techniques.

Modern engineering materials are used in a broad spectrum of products, including automobiles, aircraft and spacecraft, jet and rocket engines, surgical implant devices, computers, cell phones, optical displays, textiles and sports equipment. The types of engineering materials include metals and alloys, polymers and plastics, ceramics, semiconductors, and composites.

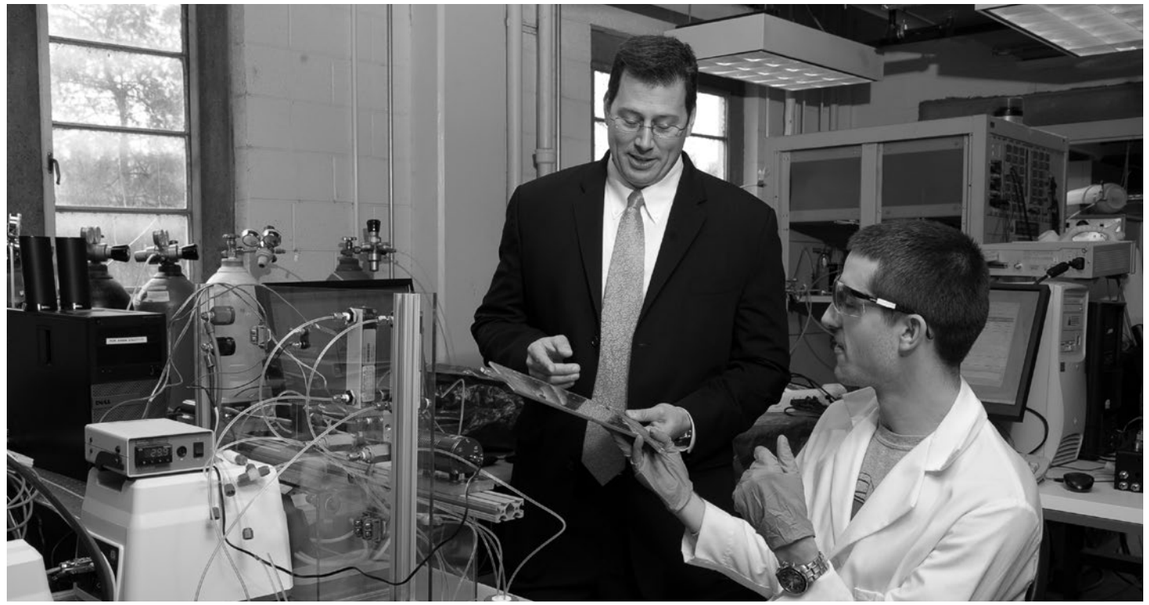
The educational objectives of the program for the degree of BS in Materials Science and Engineering are:

- to provide students with a knowledge of the fundamentals of appropriate physical and chemical sciences, mathematics and engineering sciences; and to demonstrate the applications of these principles to solve engineering problems with emphases on materials processing, structure, properties and performance. This knowledge base includes the development of analytical and experimental skills.
- to provide students with experiences in design and materials selection such that they can design components, systems or processes with consideration of economic, safety, environmental and social issues.
- to develop professional skills in such areas as written and oral communications, problem solving and working in diverse teams, that prepare graduates to practice materials engineering in contemporary and global environments.
- to provide students with a general education component that complements the technical content, encourages the appreciation of cultural and social values, exhibits the impact of engineering solutions on society, and enhances personal development.

The department has one of the lowest student-faculty ratios (about 6:1) in the college. This allows MSE students to receive a great deal of individual interaction with the faculty, especially in laboratory courses.

Career Opportunities

Graduates with a BS degree in materials science and engineering receive employment offers from a wide range of industries both in Tennessee and nationwide. MSE graduates can be found working in many different capacities, including basic and applied research, product and process development, manufacturing, quality control, material selection, and failure analysis. Additionally, materials science graduates are well-prepared to continue their education through graduate school.



Mechanical Engineering

mabe.utk.edu

What is Mechanical Engineering?

Mechanical engineering is the application of the laws of solid and fluid mechanics and the thermal sciences to the analysis, design and/or manufacturing of systems and products. Mechanical engineers play a key role in national, state and local economies by bringing their expertise to the development of power generation systems (such as steam turbines, jet engines, and internal combustion engines) that provide mechanical power to all segments of society. They also bring essential expertise to manufacturing processes (both traditional and emerging, advanced technologies), efficient production methods and automation vital to the well being of the national economy. Their expertise and involvement in the analysis, design and development of new products and materials for new devices and systems produce economic activity and provide employment opportunities which sustain high standards of living.

The mechanical engineering program at UT offers fundamental education in the engineering sciences and engineering design. The engineering science component educates students in the fundamental principles of engineering, while the engineering design component emphasizes design methodology, enhances creative skills, and develops student ability to solve open-ended problems of the type common to industry.

The undergraduate experience is broad-based and includes, in the first two years, general education in mathematics, sciences and preliminary design courses that are common with curricula in other engineering programs.

The discipline of a rigorous technical program along with education in the humanities and social sciences provides a good foundation for a rich and rewarding career in a dynamic marketplace.

The objectives of the mechanical engineering degree program are:

- Graduates will meet or exceed the expectations of employers of mechanical engineers, such as industry, government, academia or non-governmental organizations.
- Graduates will continue professional development by participating in structured professional activities and/or by obtaining professional registration or certification, post-graduate credits, and/or advanced degrees.

Career Opportunities

Because of the broad-based education received in mechanical engineering, mechanical engineers play a vital role in a wide variety of industries (e.g., aerospace, automotive, electronics, power utilities, chemical, petroleum, textile, manufacturing); federal agencies (e.g., NASA, DOE, DOD, FAA); and consulting firms and national laboratories (e.g., ORNL, Sandia). In these different sectors, mechanical engineers are involved in analysis and design of systems and products; manufacturing, automation and control of production and processes; heating, ventilation, and air conditioning systems; and research. Mechanical engineers are also found at every level of management.

Mechanical engineers have been and will continue to be in great demand in all of the areas listed above.

Nuclear Engineering

ne.utk.edu

What is Nuclear Engineering?

Nuclear engineering is the engineering discipline that focuses on the application of sub-atomic processes for the benefit of mankind and our environment. Radiological engineering is a special concentration within nuclear engineering that deals with the design and safe utilization of radiation in industry and medicine. Some examples of nuclear and radiological engineering are listed below:

- Production of electric power with essentially no air pollution
- Processes for the diagnosis and treatment of diseases such as cancer
- Activation analysis for identifying materials including environmental pollutants
- Radiography inspection of welds in bridges and boilers
- Food preservation and sterilization of medical supplies
- Radioisotope gauges for use in manufacturing processes
- Nuclear measurement techniques for oil well logging and airport security
- Radioactive tracer elements for use in medical research
- Generation of radioisotope power for deep space exploration

The educational objectives for the department are to:

- provide students with fundamental knowledge in mathematics, computer science, the basic sciences and the engineering sciences that are necessary to solve complex problems in nuclear and radiological engineering;
- provide students with a real-world design and analysis experience in nuclear and radiological engineering that includes environmental, societal, safety, and economic considerations;
- provide students with appropriate skills in oral and written communication, teamwork, laboratory work, problem solving, and the use of modern engineering tools that will prepare them to work productively in a contemporary and global environment;
- provide students with a diverse general education in the humanities, ethics, and social sciences to complement their technological education in order to understand and appreciate the importance of each in society and in personal development; and
- foster a genuine desire for life-long learning in students.

Career Opportunities

Nuclear engineering is a very broad and diverse engineering discipline, spanning from materials science and radiochemistry to nuclear security, space propulsion, and power systems. Nuclear engineering graduates find careers in a wide variety of fields, including the electric utility industry (e.g., Southern Nuclear Company, TVA, Duke Energy, Entergy), private industry (e.g., General Electric, Westinghouse, Honeywell, Emerson), and governmental laboratories (e.g., DOE's Oak Ridge National Laboratory and NASA's Johnson Space Flight Center).

Nuclear engineering graduates also work as health physicists and radiation safety officers at hospitals and other health-related facilities. The current job market for nuclear engineers is strong and diverse.

Engineering Majors

Aerospace

Aerospace Engineering Catalog 2020

Fall 16 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors only; 131 English as Second Language	
Spring 18 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**Math 200 (2) FA, SP**	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C higher Coreq- Math 142 or 148	**ME 202 (2) FA, SP, SU** Coreq- EF 152 or 158 and Math 142 or 148	**Gen Ed (3) FA, SP, SU** Social Science	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL
Fall 19 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**AE 201 (1) FA** Restricted to engineering majors.	**AE 210 (2) (OC)FA** AE or ME majors. Sophomore or Junior or Senior	**ME 231 (3) FA, SP, SU** Prereq- EF 152 or 158 AND ME 202 with C or better	**Physics 231 (3) FA, SP, SU** Prereq- Phys135 or EF 151 and 152 Coreq- Math 142 or 148	**Gen Ed (3) FA, SP, SU** Arts and Humanities	**Gen Ed (3) FA, SP SU** Cultures & Civilizations
Spring 17 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**EF 230 (2) FA, SP** Prereq- EF 105 or CS 102 Coreq- EF152/158	**ME 321 (3) FA, SP, SU** Prereq- ME 202 with C or better AND Math 142/148 with C or better	**Gen Ed (3) FA, SP, SU** Arts & Humanities	**Econ 201/207 (4)FA,SP,SU** Social Science		
Fall 16 hours	**ME 331 (3) FA, SP, SU** Coreq- Math 241 or 247	**AE 341 or 347 (3) FA, SP, SU** Prereq- ME 231 with C and Math 241 or 247 with C or better	**AE 370 or 377 (4) FA** Coreq- AE 341	**ECE 301 (3) FA, SP, M** Prereq- Math 231 or 237 with C or better	**ME 391 or 397 (3) FA, SP, SU** Prereq- Math 231 or 237; Math 241 or 247 and Math 200,251/257 and EF 230 ALL with grades of C or better		
Spring 15 hours	**AE 363 (3) SP** Prereq- ME 321	**ME 363 or 367 (3) FA, SP, SU** Prereq- ME 231 and Math 231 with grades of C or better	**AE 351 (3) SP** Prereq- AE 341/347 and ME 331	**ME 344 (3) FA, SP, SU** Prereq- ME 331 and 391 or 397 and AE 341 or 347	**AE 345 (3) FA, SP, SU** Prereq- ME 321 Coreq- AE 341/347 & ME 363/367 and ECE 301		
Fall 15 hours	**AE 422 (3) FA** Prereq- AE 351 and 370 or 377	**AE 425 (3) FA** Prereq- AE 351	**AE 424 (3) FA** Prereq- AE 351 Coreq- ME 344	**AE 450 (3) FA** Prereq- AE 351, AE 370/377, AE 363 Coreq- ME 344, AE/BME/ME majors	**Deptmental Elective (3)** Choose from approved courses		
Spring 15 hours	**AE 449 (3) SP (WC)** Prereq- AE 345, 351, and 425 English 102, 132, 290 or 298	**AE 460 (3) SP** Prereq- AE 422, 450, 425 AE, BME, ME majors only	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**Departmental Elective (3)** Choose from approved courses	**Departmental Elective (3)** Choose from approved courses		

Departmental Electives Choose from: Any 400 level AE course not otherwise required for the major, ME 315, 365, 366, 405, 451, 463, 466, 470, 472, 475 or 477, 476, 480.
Other courses require prior approval by the department.

Full Status Progression
A lower-division student may apply for progression to upper division after completing EF 152/158 CHEM 120 or 128 , MATH 231 , ME 202, ME 231 and ME 321 with a grade of C or better in each, and an overall GPA of at least 2.4. Students who have not satisfied the requirements for full status will be dropped from departmental class rolls in upper division courses.

Provisional Status Progression
Students who have completed EF 152/158, CHEM 120 or 128 , MATH 231 , ME 202, ME 231 and ME 321 with a grades of C or better and have an overall GPA between 2.0 and 2.4 may apply for provisional status. The granting of provisional status is based on the availability of space in departmental programs after full status students have been accommodated. Provisional status students are required to demonstrate their ability to perform satisfactorily in upper-division by attaining a minimum GPA of 2.0 in the first 12 hours of 300-level required engineering courses. Award of upper-division full status is dependent upon this performance. Students with an overall GPA less than 2.0 will not be admitted to upper-division. Students who have not progressed to upper-division will be dropped from departmental class rolls.

Transfer Students
Students transferring more that 26 hours from another institution are considered transfer students. Transfer students must meet the same criteria as non-transfer students, using transfer grades for acceptable substitutions. Transfer courses with grades below a C will not be accepted to fulfill any degree requirements.

Departmental Academic Standing
The faculty of the Department of Mechanical, Aerospace and Biomedical Engineering expect all students who enter to make progress toward graduation. To graduate from the department, a student must earn a minimum grade point average of 2.0 in all departmental courses counted toward the degree. Students not meeting the required departmental GPA may be dropped from their major.
In addition, the University Academic Good Standing Policies apply to all students.

AE Graduation Requirements
A minimum GPA of 2.0 in all departmental courses counted toward the degree taken at the University of Tennessee, Knoxville, is required for graduation. No more than two departmental courses in which a C- or lower is the highest grade earned may be counted toward graduation. This is in addition to the university's graduation requirements.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Biomedical

Biomedical Engineering Catalog 2020

Fall 16 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors only; 131 English as Second Language	
Spring 17 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**ME 202 (2) FA, SP, SU** Coreq- EF 152 or 158 and Math 142 or 148	**Chem 130 or 138 (4) FA, SP, SU** Prereq- Chem 120 or 128	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL	
Fall 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**Math 200 (2) FA, SP**	**Stats 251 (3) FA, SP, SU** Prereq- Math 142 or 148	**ME 231 (3) FA, SP, SU** Prereq- EF 152 or 158 and ME 202 with C or better	**Biology 160 or 168 (3) FA, SP, SU** Coreq- Chemistry 120 or 128	**EF 230 (2) FA, SP** Prereq- EF 105 or CS 102 Coreq- EF 152/158
Spring 16 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**Physics 231 (3) FA, SP,SU** Prereq- Phys 135/137 or EF 151 and 152 Coreq- Math 142 or 148	**ME 321 (3) FA, SP, SU** Prereq- ME 202 with C better and Math 142/148 with C better	**BME 205 (3) SP** Prereq-BIOL 160 or 168	**Gen Ed (3) FA, SP, SU** Social Science	
Fall 18 hours	**BME 363 or 367 (3) FA, SP, SU** Prereq- EF 230; Math 231/237 and ME 231 with grades of C or better	**BME 341 or 347 (3) FA** Prereqs-ME 231 with C or better and Math 241 or 247 with grade of C or better	**BME 474 (3) FA** Junior standing	**ECE 301 (3) FA, SP, M** Prereq- Math 231 or 237 with C or better	**Gen Ed (3) FA, SP, SU** Arts & Humanities	**PHIL 345 (3) (WC) FA** Prereq- English 102 or 132 or 290 or 298
Spring 18 hours	**BME 315 (3) SP** Prereq- EF 230 and BME 363/367 or ME 363/367	**BME 345 (3) FA, SP, SU** Prereq- ME 321 Coreq-BME 363/367; AE 341/347; ECE 301	**Technical or BME Elective (3)**	**Technical or BME Elective (3)**	**Gen Ed (3) FA, SP, SU** Arts and Humanities	**Gen Ed (3) FA, SP, SU** Oral Communication- choose from approved list in catalog
Fall 16 hours	**Technical or BME Elective (3)**	**Gen Ed (3) FA, SP, SU** Social Science	**BME 450 (3) FA** Coreqs-BME 430, 473/477 AE, BME, ME majors only	**BME 473 or 477 (3) FA** Prereq-Biology 160/168; BME 205 and ME 231	**BME 449 (4) (WC) FA** Prereq- BME 315, 345, and English 102, 132, 290, or 298	
Spring 15 hours	**Gen Ed (3) FA, SP, SU** Cultures & Civilizations	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**BME 460 (3) SP** Prereq- BME 450 AE, BME, ME majors only	**BME Elective (3) FA, SP, SU**	**Technical Elective (3) FA, SP, SU**	

Biomedical Engineering Elective- Restricted to any 300-500 biomedical engineering course not required for the degree or Chemistry 260 or 268 or 360 or 368.

Technical Elective- Must be preapproved based on selected Track. There are four (4) tracks: (1) Diagnostics, (2) Medical Devices Design, (3)Therapeutics, and (4) Pre-Med. The technical and BME elective courses for each Track are:
(1) Diagnostics Track: BME 480, BME 494; Math 300/307, Math 323 and ECE 472; ECE 315, ECE 316 and ECE 415; ECE 202 and ECE 335; Math 405; BIOL 159, BCMB 415 and BCMB 416.
(2) Medical Device Design Track: BME 494; ECE 202 and ECE 335; ME 405; ME 451; MSE 201/207 and ME 366; ME 366 and ME 469; ME 366and ME 470; ME 457; ME 331; BIOL 159, BCMB 415 and BCMB 416.
(3)Therapeutics Track: BME 494; BME 409; BME 405; BME 486; NE 433 and NE 490; CHEM 260/268; CHEM 360/368; CHEM 369; BCMB 401 and CHEM 260/360; BCMB 461; MICR 330; BIOL 159, BCMB 415 and BCMB 416.
(4) Pre-Med Track: BME 494; BIOL 150/158; BIOL 159; CHEM 260/268; CHEM 360/368; CHEM 369; BIOL 240; BCMB 401 and CHEM 260/360.

Full Status Progression
A lower-division student may apply for progression to upper division after completing EF 152/158, CHEM 120 or 128 , MATH 231 , ME 202, ME 231, and ME 321 with a grade of C or better in each, and an overall GPA of at least 2.4. Students who have not satisfied the requirements for full status will be dropped from departmental class rolls in upper division courses.

Provisional Status Progression
Students who have completed EF 152/158, CHEM 120 or 128 , MATH 231 , ME 202, ME 231 , and ME 321 with a grade of C or better and have an overall GPA between 2.0 and 2.4 may apply for provisional status. The granting of provisional status is based on the availability of space in departmental programs after full status students have been accommodated. Provisional status students are required to demonstrate their ability to perform satisfactorily in upper-division by attaining a minimum GPA of 2.0 in the first 12 hours of 300-level required engineering courses. Award of upper-division full status is dependent upon this performance. Students with an overall GPA less than 2.0 will not be admitted to upper-division. Students who have not progressed to upper-division will be dropped from departmental class rolls.

Transfer Students
Students transferring more that 26 hours from another institution are considered transfer students. Transfer students must meet the same criteria as non-transfer students, using transfer grades for acceptable substitutions. Transfer courses with grades below a C will not be accepted to fulfill any degree requirements.

Departmental Academic Standing
The faculty of the Department of Mechanical, Aerospace and Biomedical Engineering expect all students who enter to make progress toward graduation. To graduate from the department, a student must earn a minimum grade point average of 2.0 in all departmental courses counted toward the degree. Students not meeting the required departmental GPA may be dropped from their major.
In addition, the University Academic Good Standing Policies apply to all students.

BME Graduation Requirements
A minimum GPA of 2.0 in all departmental courses counted toward the degree taken at the University of Tennessee, Knoxville, is required for graduation. No more than two departmental courses in which a C- or lower is the highest grade earned may be counted toward graduation. This is in addition to the university's graduation requirements.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Biosystems

Biosystems Engineering Catalog 2020

Fall 16 hours	**Math 141 or 147 (4) FA,SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**Chem 121 & 123 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors 198 Chancellor Honors only; 131 ESL	
Spring 17 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**ME 202 (2) FA, SP, SU** Coreq- EF 152 or 158 and Math 142 or 148	**Gen Ed (3) FA, SP, SU** Cultures & Civilizations	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** see catalog for prereqs	**BSE 104 (1) SP** Coreq- EF 151 or 158
Fall 17 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**ME 231 (3) FA, SP, SU** Prereq- EF 152 or 158 and ME202 with grades of C or better	**ME 331 (3) FA, SP, SU** Coreq- Math 241 or 247	**BSE 201 (1) FA**	**BSE 221 (3) FA** Prereq- Chem 122 &123 or 128 Coreq- EF 152 or 158	**BSE 231 (3) FA** Prereq- Chem 122 & 123 or 128 and Math 132 or 141 or 147
Spring 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**Biology 160 or 168 (3) FA, SP, SU** Coreq- Chemistry 120 or 128	**ESS 210 (4) FA, SP, SU**	**ME 321 (3) FA, SP, SU** Prereq- ME 202 with C or better and Math 142/148 with C better	**BSE 321 (3) SP** Prereq- BSE 221	
Fall 17 hours	**Philosophy 244 (3) FA, SP** Arts & Humanities	**AE 341/347 or CE 391 (3) FA, SP,SU** Prereq- ME 231 with C or better and Math 241 or 247	**ECE 301 (3) FA, SP, M** Prereq- Math 231 with C or better	**Stats 251 (3) FA, SP, SU or IE 200 (3) FA, SP** Prereq- Math 142 or 148	**English 360 (3) (WC) FA, SP** Prereq- English 102 or 118 Minimum level- junior	**Math 200 (2) FA, SP**
Spring 16 hours	**BSE 411 or 417 (3) SP** Prereq- ME 231 and 321 with grades of C or better	**BSE 416/418 or CE 495/498 (3) SP** Prereq- AE 341/347 with C Prereq- CE 391 for CE choices	**BSE 431 or 437 (3) SP** Prereq- BSE 321 with grade of C or better	**BSE 451 or 457 (4) SP** Prereq- ECE 301 with grade of C or better	***Technical Elective (3) FA, SP, SU**	
Fall 15 hours	**Econ 201/207 (4) FA, SP, SU or Arec 201 (4) SP** Social Science	***Technical Elective (3) FA, SP, SU**	**BSE 400 (2) FA** Prereq- Three of BSE 411/417, 416/418 or CE 495,498,431,451 Coreq- BSE 404 and 444	**BSE 444 (3) FA** Prereq- Three of BSE 411/417, 416/418 or CE 495,498,431,451 Coreq- BSE 400 and 404	**BSE 404 (3) (OC) FA** Prereq- Three of BSE 411/417, 416/418, or CE 495,498, 431/437, 451/457 Coreq- BSE 400 and 444	
Spring 15 hours	**Gen Ed (3) FA, SP, SU** Social Science	**Gen Ed (3) FA, SP, SU** Arts & Humanities	**BSE 402 (6) SP** Prereq- BSE 400 and 404 and 444	**Gen Ed (3) FA, SP, SU** Cultures & Civilizations		

***Technical Electives-** Note that some electives have required prerequisities. See individual course descriptions for specific information. BSE 525, 543; CBE 481; CSAS 345, 355, 414, 424, 432, 434, 452, 462, 474; CE 381, 430, 485; CHEM 260 or 268, 360 or 368; ENVE 511, 512,513, 515, 516, 525, 526, 527, 530, 532, 533, 544, 558, 561, 574; ESS 334, 434, 442, 444, 454; Geog 411; Geol 485; IE 304; Math 300, 403, 411, 431; ME 363 or 367, 366, 391 or 397, 405, 451, 466.

BSE Graduation requirements: a) achieve at least a 2.0 GPA in all BSE courses; b) only one BSE course with a grade of D+, or D may be used toward graduation; c) no BSE course with a grade of D-

Engineering Majors

Biosystems — Pre-professional

Biosystems Engineering Catalog 2020
Pre- Professional Concentration

Fall 16 hours	**Math 141 or 147 (4) FA,SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language	
Spring 17 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**ME 202 (2) FA, SP, SU** Coreq- EF 152 or 158 and Math 142 or 148	**Chem 130 or 138 (4) FA, SP, SU** Prereq- Chem 122 & 123 or 128	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** see catalog for prereqs	**BSE 104 (1) SP** Coreq- EF 151/158
Fall 17 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**ME 231 (3) FA, SP, SU** Prereq- EF 152 or 158 and ME 202 with grades of C or better	**ME 331 (3) FA, SP, SU** Coreq- Math 241 or 247	**BSE 201 (1) FA**	**BSE 221 (3) FA** Prereq- Chem 120 or 128 Coreq- EF 152 or 158	**BSE 231 (3) FA** Prereq- Chem 120 or 128 and Math 141 or 147
Spring 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**Biology 160 or 168 (3) FA, SP, SU** Coreq- Chemistry 120 or 128	**Chem 260 or 268 (3) FA, SP, SU** formerly Chem 350/358 Prereq- Chem 130 or 138	**Chem 269 (1) FA, SP, SU** Prereq- Chem 130 or 138 Coreq- Chem 260 or 268	**ME 321 (3) FA, SP, SU** Prereq- ME 202 with C or better and Math 142/148 with C better	**BSE 321 (3) SP** Prereq- BSE 221
Fall 17 hours	**Philosophy 244 (3) FA, SP** Arts & Humanities	**AE 341 or 347 (3) FA,SP,SU** Prereq- ME 231 with C or better and Math 241 or 247	**ECE 301 (3) FA, SP, M** Prereq- Math 231 with C or better	**Stats 251 (3) FA, SP, SU or IE 200 (3) FA, SP** Prereq- Math 142 or 148	**English 360 (3) (WC) FA, SP** Prereq- English 102 or 118 or 132 or 290 or 298 Minimum level- junior	**Math 200 (2) FA, SP**
Spring 14 hours	**BSE 411 or 417 (3) SP** Prereq- ME 231 and 321 with grades of C or better	**BSE 431 or 437 (3) SP** Prereq- BSE 321 with grade of C or better	**BSE 451 or 457 (4) SP** Prereq- ECE 301 with grade of C or better	**Chem 360 or 368 (3) FA, SP, SU** Prereq- Chem 260 or 268 formerly Chem 350/358	**Chem 359 (1) FA, SP, SU** Prereq- Chem 269 Coreq- Chem 360 or 368	
Fall 15 hours	**Econ 201 or 207 (4) FA, SP, SU or Arec 201 (4) SP** Social Science	**Gen Ed (3) FA, SP, SU** Cultures & Civilizations	**BSE 400 (2) FA** Prereq- Three of BSE 411/417, 431/437, 451/457 Coreq- BSE 404 and 444	**BSE 444 (3) FA** Prereq- Three of BSE 411/417, 416/418 or CE 495,498,431,451 Coreq- BSE 400 and 404	**BSE 404 (3) (OC) FA** Prereq- Three of BSE 411/417, 416/418, or CE 495,498, 431/437, 451/457 Coreq- BSE 400 and 444	
Spring 15 hours	**Gen Ed (3) FA, SP, SU** Social Science	**Gen Ed (3) FA, SP, SU** Arts & Humanities	**BSE 402 (6) SP** Prereq- BSE 400 & 404 & 444	**Gen Ed (3) FA, SP, SU** Cultures & Civilizations		

BSE Graduation requirements: a) achieve at least a 2.0 GPA in all BSE courses; b) only one BSE course with a grade of D+, or D may be used toward graduation; c) no BSE course with a grade of D- may be used for graduation; d) achieve at least a 2.0 GPA in the required math courses.

Students also have opportunities for an Honors Concentration. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Chemical & Biomolecular

Chemical and Biomolecular Engineering Catalog 2020

Fall 16 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language
Spring 15 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**Chem 130 or 138 (4) FA, SP, SU** Prereq- Chem 120 or 128	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL	
Fall 17 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**CBE 201 (4) FA, SU** Prereq- EF 152/158 & Chem 130/138 Coreq- Math 231	**CBE 235 (3) FA** Prereq- EF 152/158 & Chem 130/138 (Dept. Enforced) Bio 160 or 168	**Chem 210 (3) AND 219 (1) FA, SP** formerly Chem 310 and 319 Prereq- Chem 130 or 138	**Gen. Ed. (3) FA, SP, SU** Social Science
Spring 18 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**CBE 240 (4) SP** Prereq- EF 152/158 & Chem 130/138 Coreq- Math 241 or 247	**CBE 250 (4) SP, SU** Prereq- EF 152/158 & Chem 130/138 Coreq- Math 241 or 247	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**Gen Ed (3) FA, SP, SU** Social Science
Fall 17 hours	**Chemistry 260 or 268 (3) FA, SP, SU** formerly Chem 350 or 358 Prereq- Chemistry 130 or 138	**CBE 301 (4) FA** Prereq- CBE 201, 240, and 250 or consent of instructor	**CBE 350 (4) FA** Prereq- CBE 201, 240 and 250 Coreq- CBE 301	**Gen Ed (3) FA, SP, SU** Arts and Humanities	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations
Spring 15 hours	**CBE 320 (3) SP** Prereq- CBE 201, 240, and 250 Coreq- CBE 301 and 350	**CBE 340 (3) SP, SU** Prereq- CBE 201, 240 and 250	**CBE 360 (3) SP, SU** Prereq- CBE 201, 240 and 250 Coreq- Math 231	**Bio Option I **(3) FA, SP, SU**	**Tech. Elective (3) FA, SP, SU** Petition required in advance See note below***
Fall 16 hours	**CBE 445 (3) FA** Prereq- CBE 340 and 360	**CBE 480 (4) FA** Prereq- CBE 340 and 360 and Chem. 360 or 368; Coreq- CBE 445	**CBE 415 (WC) (3) FA** Prereq- CBE 340 and 360; English 102, 132, 290, or 298 Coreq- CBE 301 and 350; and CBE major	**Tech. Elective*** (3) FA, SP, SU** Petition required in advance	**Gen Ed (3) FA, SP, SU** Arts and Humanities
Spring 14 hours	**CBE 488 or 490 (3) SP (OC)** Prereq- CBE 445 and 480	**Chem Option I *(3) FA, SP, SU**	**Tech. Elective*** (3) FA, SP, SU** Petition required in advance	**Tech. Elective*** (2) FA, SP, SU** Petition required in advance	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations

*** Chem Option I:** Any 200 level or above BCMB courses; any 200-level or above CHEM courses; Environmental Engineering 554, 562; MSE 201/207; MSE 340/347, MSE 360/367; any 200-level or above MICR courses.
**** Biology Option I:** BCMB 230, BCMB 311, BCMB 321, BCMB 401, BCMB 402, BCMB 412, BCMB 415; BIOL 220/229, BIOL 240, BIOL 260/269, BIO 280; MICR 210, MICR 321, MICR 329.
******* One technical elective must be a chemical and biomolecular engineering course, with the exclusion of CBE 457. MSE 201 or 207 can be used as technical elective, if not used to satisfy Chem Option 1.

Progression to Upper Division
Progression of students in the Department of Chemical and Biomolecular Engineering to departmental courses numbered 310 and above is competitive and is based on capacity. Factors considered include overall grade point average, performance in selected lower-division courses, and evidence of satisfactory and orderly progress through the prescribed curriculum.

Upper-Division Status
A lower-division student must apply for progression to upper division status after completing CBE 201 , CBE 235 , CBE 240 , and CBE 250 with a grade of C - or better in each course and an overall GPA of 2.3 or better. Grades of C- or better in these four courses are required for graduation.

Provisional Status
Students who have completed CBE 201 , CBE 235 , CBE 240 , and CBE 250 with an overall GPA of at least 2.3 may apply for provisional status. Any student granted provisional status must retake the 200 level CBE course or courses in which a grade less than C- was earned and achieve a C- or better to be admitted to full upper-division status. Grades of C- or better in these four courses are required for graduation. The granting of provisional upper-division status is based on availability of space in the departmental programs after upper-division status students have been accommodated. Provisional students are required to demonstrate the ability to perform satisfactorily in upper-division courses by completing a total of seven departmental courses with a grade of C or better in each course (including the four required for upper-division status). Permission to continue with upper-division classes depends on this minimum level of performance.
Any student with an overall GPA below 2.1 will not be admitted to upper-division chemical and biomolecular engineering courses. Students who have not been admitted to upper-division or provisional status will be dropped from upper-division departmental classes.

Students also have opportunities for an Honors Concentration. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Biomolecular Concentration

Chemical and Biomolecular Engineering Catalog 2020
Biomolecular Concentration

Fall 16 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language
Spring 15 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**Chem 130 or 138 (4) FA, SP, SU** Prereq- Chem 120 or 128	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL	
Fall 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**CBE 201 (4) FA, SU** Prereq- EF 152/158 & Chem 130/138 Coreq- Math 231	**CBE 235 (3) FA** Prereq- EF 152/158 & Chem 130/138 (Dept. Enforced) Co-req Bio 160 or 168	**Biology 160 or 168 (3) FA, SP, SU** Coreq- Chemistry 120 or 128	**Gen Ed (3) FA, SP, SU** Social Science
Spring 18 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**CBE 240 (4) SP** Prereq- EF 152/158 & Chem 130/138 Coreq- Math 241 or 247	**CBE 250 (4) SP, SU** Prereq- EF 152/158 & Chem 130/138 Coreq- Math 241 or 247	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**Gen. Ed. (3) FA, SP, SU** Social Science
Fall 15 hours	**Chemistry 260 or 268 (3) FA, SP, SU** formerly Chem 350 or 358 Prereq- Chemistry 130 or 138	**Chemistry 269 (1) FA, SP, SU** Prereq- Chemistry 130 or 138 Coreq- Chemistry 260 or 268	**CBE 301 (4) FA** Prereq- CBE 201, 240, and 250 or consent of instructor	**CBE 350 (4) FA** Prereq- CBE 201, 240 and 250 Coreq- CBE 301	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities
Spring 16 hours	**CBE 320 (3) SP** Prereq- CBE 201, 240, and 250 Coreq- CBE 301 and 350	**CBE 340 (3) SP, SU** Prereq- CBE 201, 240 and 250	**CBE 360 (3) SP, SU** Prereq- CBE 201, 240 and 250 Coreq- Math 231	**Biology 240 (4) FA, SP, SU** Prereq- BIOL 160 or 168 and Coreq-Chemistry 130 or 138	**Chem 360 or 368 (3) FA, SP, SU** Prereq- Chem 260 or 268 formerly 350 or 358
Fall 17 hours	**CBE 445 (3) FA** Prereq- CBE 340 and 360	**CBE 480 (4) FA** Prereq- CBE 340 and 360 and Chemistry 260 or 268 Coreq- CBE 445	**BCMB 401 or 412 (4) FA, SP** 401 Prereq- Chem 260 or 268; 401 Coreq- Chem 360 or 368 412 Prereq- Bio 240	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations	**CBE 415 (WC) (3) FA** Prereq- CBE 340 and 360; English 102, 132, 290, or 298 Coreq- CBE 301 and 350 Restriction- CBE majors
Spring 15 hours	**CBE 488 or 490 (3) SP (OC)** Prereq- CBE 445 and 480	**CBE 475 (3) SP**	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities	**Bio Option I* (3) FA,SP,SU** choose from list below

***Bio Option 1:** BCMB 230, 311, 321, 402, 415; Biology 220- 229, 260- 269, 280; Chemical & Biomolecular Engineering 455; Microbiology 210, 321, 329

Progression to Upper Division
Progression of students in the Department of Chemical and Biomolecular Engineering to departmental courses numbered 310 and above is competitive and is based on capacity. Factors considered include overall grade point average, performance in selected lower-division courses, and evidence of satisfactory and orderly progress through the prescribed curriculum.

Upper-Division Status
A lower-division student must apply for progression to upper division status after completing CBE 201 , CBE 235 , CBE 240 , and CBE 250 with a grade of C - or better in each course and an overall GPA of 2.3 or better. Grades of C- or better in these four courses are required for graduation.

Provisional Status
Students who have completed CBE 201 , CBE 235 , CBE 240 , and CBE 250 with an overall GPA of at least 2.3 may apply for provisional status. Any student granted provisional status must retake the 200 level CBE course or courses in which a grade less than C- was earned and achieve a C- or better to be admitted to full upper-division status. Grades of C- or better in these four courses are required for graduation. The granting of provisional upper-division status is based on availability of space in the departmental programs after upper-division status students have been accommodated. Provisional students are required to demonstrate the ability to perform satisfactorily in upper-division courses by completing a total of seven departmental courses with a grade of C or better in each course (including the four required for upper-division status). Permission to continue with upper-division classes depends on this minimum level of performance.
Any student with an overall GPA below 2.1 will not be admitted to upper-division chemical and biomolecular engineering courses. Students who have not been admitted to upper-division or provisional status will be dropped from upper-division departmental classes.

Students also have opportunities for an Honors Concentration. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Civil

Civil Engineering Catalog 2020

Fall 16 hours	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language	
Spring 15 hours	**Chem 130 or 138 (4) FA, SP, SU** Prereq- Chem 120 or 128	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL		
Fall 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**STATS 251 (3) FA, SP, SU** Prereq- Math 142 or 148	**ECON 201 or 207 (4) FA, SP, SU** Social Science	**ME 202 (2) FA, SP, SU** Coreq- EF 152 or 158 and Math 142 or 148	**CE 210 (4) FA, SP** Minimum student level — sophomore	
Spring 16-17 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**CE 391 (3) FA, SP** Prereq- EF 152 or 158 Coreq- CE 262 or ME 202 and Math 231/237	**CE 262 (4) FA, SP, SU** Prereq- ME 202	**Science Elective *(3-4) FA, SP, SU** Choose one from approved list*	**CE 205 (OC & WC) (2) FA, SP** Prereq- EF 151 or 157; English 102, 132, 290, or 298 Minimum student level — sophomore; Civil majors	
Fall 16 hours	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**CE 381 (3) FA, SP, SU** Prereq- CE 391 and Chemistry 130 or 138	**CE 331 (3) FA, SP** Prereq- CE 262 Coreq- CE 310	**CE 371 (3) FA, SP** Prereq- CE 262	**CE 355 (3) FA, SP** Prereq- EF 152 or 158 Recommended background CE 210	**CE 310 (1) FA, SP** Prereq- CE 205 and 262
Spring 16 hours	**Gen Ed (3) FA, SP, SU** Arts and Humanities	**EF 230 (2) FA, SP** Prereq- EF 105 or CS 102 Co-req- EF 152/158	**CE 340 (3) FA, SP** Coreq- CE 300, Civil and Nuclear major Minimum student level- Junior	**CE 321 (3) FA, SP** Prereq- CE 262	**CE 300 (3) FA, SP** Restriction- Sophomore standing or above in Civil	**CE 305 (2) FA, SP** Prereq- CE 205
Fall 16 hours	**Gen Ed (3) FA, SP, SU** Social Science	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**CE 399S (1) FA, SP** Minimum student level- Senior Must be taken term prior to CE 400	**CE 401 (2) FA, SP** Minimum student level- Senior Civil majors	**CE Concen. Elective **(3) FA, SP**	**CE Concen. Lab **(1) FA, SP**	**Technical Elective ***(3) FA, SP, SU**
Spring 16 hours	**Gen Ed (3) FA, SP, SU** Arts and Humanities	**CE Concen. Elective **(3) FA, SP**	**CE Concen. Lab **(1) FA, SP**	**CEE 400 (3) FA, SP** Prereq- CE 399S	**Technical Elective ***(3) FA, SP, SU**	**Technical Elective ***(3) FA, SP, SU**	

***Science Elective-** Students select from Biology 101, 102, 150 or 158, 160 or 168; Geography 131; Geology 101, 103, 107; Environ.Engineering 513; Environ. Soil Science 462.
****CE Concentration Electives/Labs- Students must select 2 of the following concentration sequences:** environmental (CE 481 or 487 and CE 482), geotechnical (CE 430 or 437 and CE 432), structural (CE 461 or 467 and CE 463), transportation (CE 455 or 458 and CE 456), water resources (CE 494 or 497 and CE 496), construction (CE 441 or 448 and CE 432 or CE 463).

*****Technical Electives**

All areas	Acctg. 200/207, EF 333, Physics 231, Physics 232, Math 251, ME 231, ME 331, ECE 201, COSC 102, Chem 210, Chem 260/268
Construction	CE 581, CE 582, CE 583, CE 584
Environmental	CE 485, CE 495, Chem 210, Chem 260/268, Chem 330, Envr 511, Envr 513, Geog 411
Geotechnical	CE 531, CE 535; Geology 310, 330, 340, 370, and 471
Materials	CE 521, CE 522, CE 525
Structures	CE 462, CE 472, CE 474, CE 576
Transportation	CE 551, CE 552, Geog 411
Water Resources	CE 485, CE 495, ENVE 515, ENVE 516, ENVE 526, ENVE 533, Geog 411

Please be advised that this list is not exhaustive and additional courses may be considered and approved as technical electives by departmental petition. For example, students may take any Civil or ENVE 500 level course and additional Civil concentration electives beyond the two (2) required as technical electives. Additional upper level engineering, math, and science classes may also be considered. Please contact the Civil Engineering Advisor if you would like to request approval for a course.

Civil Graduation Requirements
Students are required to maintain a cumulative grade point of at least 2.0 in all civil engineering and environmental engineering courses taken at the University of Tennessee, Knoxville, used to satisfy the graduation requirements.
No more than four credit hours of civil and environmental engineering courses in which a C- or lower is the highest grade earned may be counted toward graduation. Students must earn a grade of C or better in all courses within their two selected concentrations. Students are strongly recommended to meet with their faculty advisor every semester.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Computer Engineering

Department of Electrical Engineering and Computer Science
Computer Engineering Catalog 2020

Fall 15 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**CS 102 (4) FA, SP, SU*** Coreq- Math 132 or 141 or 147 Recommended background CS 101	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language		
Spring 15 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147 grade of C or better	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**CS 130 (4) FA, SP, SU** Prereq- CS 102 with C or better	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL		
Fall 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148 grade of C or better	**ECE 201 (3) FA, SP** Prereq- EF 152/158 and Math 142/148 grades C or better	**CS 140 (4) FA, SP** Prereq- CS 130 with grade of C or better	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**ECE 255 (3) FA, SP** Prereq- CS 130 with grade of C or better	
Spring 17 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148 grade of C or better	**ECE 202 (3) FA,SP, SU** Prereq- ECE 201 with grade of C or better	**Math 251 or 257 (3) FA, SP, SU** Prereq- Math 142 or 148 grade of C or better	**ECE 256 (3) FA, SP** Prereq-ECE 255 with grade of C or better	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	
Fall 17 hours	**ECE 351 or 357 (3) FA, SP** Prereq-ECE 255 with grade of C or better	**ECE 335 (3) FA, SP** Prereq- ECE 202 with grade of C or better	**CS 302 or 307 (4) FA, SP** Prereq- CS 140 with grade of C or better	**ECE 313 or 317 (3) FA, SP** Prereq- Math 142 or 148 with grade of C or better	**ECE 395 (1) FA, SP** Prereq- ECE 202 with grade of C or better	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations
Spring 16 hours	**ECE 315 (3) FA, SP** Prereq- ECE 202 with grade of C or better	**CS 311 or 317 (3) FA, SP** Prereq- CS 140 and Math 142 or 148 with grades of C or better	**CS 360 or 367 (4) FA, SP** Prereq- CS 130 and 302 or 307 with grades of C or better	**ECE 356 or 358 (3) FA, SP** Prereq-256 or 336 or COSC 360/367; C or better	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities	
Fall 17 hours	**ECE 401 (2) FA** Prereq- ECE 315 or 351 or 357 with grades of C or better	**Core Elective (3) FA, SP****	**Senior Elective (3) FA, SP*****	**Senior Elective (3) FA, SP**	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities	**Gen. Ed. (3) FA, SP, SU** Social Science
Spring 15 hours	**ECE 402 (OC and WC) (3) SP** Prereq- ECE 401; ENGL 102, 132, 290,298 with grades of C or better	**Core Elective (3) FA, SP, SU ****	**Senior Elective (3) FA, SP, SU *****	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations	**Gen. Ed. (3) FA, SP, SU** Social Science	

*Beginning students who have had high school computer science and/or who have had significant programming experience (e.g. summer institute study, special research projects, home laboratory) are invited to apply during the summer to the head of the EECS department for permission to take a proficiency exam for COSC 102. The EECS department also gives credit in COSC 102 to students who receive a score of 5 on the computer science AP Exam.

** Core electives, you must choose 2 courses from within the following list: COSC 340, COSC 361, COSC 366, ECE 433, ECE 453, ECE 455. Other courses not currently listed may count as core electives only with departmental approval.
500 level courses are mentioned as suggestions to students admitted into the Five Year BA/MS program. Up to 2 (two) COSC 5XX or ECE 5XX courses may count as core and/or senior electives.

***Senior Electives, you choose 9 credit hours of computer engineering senior electives with your advisor's consent. Acceptable senior electives are ECE 4XX and COSC 4XX courses that are not otherwise required.
500 level courses are mentioned as suggestions to students admitted into the Five Year BA/MS program. Up to 2 (two) COSC 5XX or ECE 5XX courses may count as core and/or senior electives.

Progression
The department requires at least a C in every computer engineering, computer science, electrical engineering, and mathematics course used for the undergraduate degrees. ECE 201 requires a C or better in EF 152/158 and Math 142/148.

Progression of departmental undergraduate students to the upper-division programs of the department is competitive and is based on the space available in the department. Factors considered in the decision include overall grade point average, grades earned in courses required in the lower division curricula of the department and College of Engineering, and seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges.

Students who take ECE 300 (ECE 201-202) will be evaluated during the semester they are registered for it. Transfer students for whom ECE 300 (ECE 201-202) transfer credit is given may take 9 semester hours in departmental courses before progression evaluation. All students, whether or not they transfer in, who are not accepted into the upper-division program of the department will be put in either a temporary probationary status or a non-progressed status and will not be permitted to register for any upper division courses within the department.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Computer Science

Department of Electrical Engineering and Computer Science
Computer Science Catalog 2020

Fall 15 hours	**CS 102 (4) FA, SP, SU*** Coreq- Math 132 or 141 or 147 Recommended background CS 101	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language	
Spring 15 hours	**CS 130 (4) FA, SP, SU** Prereq- CS 102 with C or better	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147 with grade of C or better	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL	
Fall 13-14 hours	**CS 140 (4) FA, SP** Prereq- CS 130 with grade of C or better	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations	**Math 251 or 257 (3) FA, SP, SU** Prereq- Math 142 or 148 with grade of C or better	**Biology 101 or 150/158 (3-4) FA,SP** **Chemistry 100 or 120 or 128 (4) FA, SP, SU** **or Physics 231 (3) FA, SP, SU**	
Spring 16 hours	**CS 302 or 307 (4) FA, SP** Prereq- CS 140 with grade of C or better	**CS 311 or 317 (3) FA, SP** Prereq- CS 140 and Math 142 or 148 C or better	**ECE 313 or 317 (3) FA, SP** Prereq - Math 142 or 148 with grade of C or better	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities	**Gen. Ed. (3) FA, SP, SU** Social Science
Fall 16 hours	**CS 360 or 367 (4) FA, SP** Prereq- CS 130 and 302 or 307 with grades of C or better	**CS 312 (3) FA, SP** Prereq- CS 311 or 317 with grade of C or better	**CS 340 (3) FA, SP** Prereq- CS 302 or 307 with grade of C or better	**CS Upper Division Elective** (3) FA, SP, SU**	**General Elective (3) FA, SP, SU** Any course on the transcript not already used in the DARS audit.
Spring 16 hours	**CS 361 (3) FA, SP** Prereq- CS 360 or 367 with C or better	**CS 365 (3) FA, SP** Prereq- CS 302 or 307 with grade of C or better	**CS 366 (3) FA, SP** Prereq- CS 360 or 367 with grade of C or better	**CS 395 (1) FA, SP** Prereq- CS 302 or 307 with grade of C or better	**CS Upper Division Elective** (3) FA,SP,SU**	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations
Fall 14 hours	**CS 401 (2) FA** Prereq- CS 360 or 367 with grade of C or better	**CS Upper Division Elective **(3) FA, SP, SU**	**CS Upper Division Elective **(3) FA, SP, SU**	**English 355 or 360 (WC) (3) FA, SP, SU** Prereq- ENGL 102 or 118 For ENGL 360- Minimum student level junior	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities
Spring 15 hours	**CS 402 (3) (OC & WC) SP** Prereq- CS 401; English 102, 132, 290 or 298 with grades of C or better	**CS Upper Division Elective **(3) FA, SP, SU**	**CS Upper Division Elective **(3) FA, SP, SU**	**Gen. Ed. (3) FA, SP, SU** Social Science	**General Elective (3) FA, SP, SU** Any course on the transcript not already used in the DARS audit.

*Beginning students who have had high school computer science and/or who have had significant programming experience (e.g. summer institute study, special research projects, home laboratory) are invited to apply during the summer to the head of the EECS department for permission to take a proficiency exam for COSC 102. The EECS department also gives credit in COSC 102 to students who receive a score of 5 on the computer science AP Exam.

The following list shows an acceptable set of electives that may be taken to statisfy the upper division electives for the CS major. The electives have been grouped into 7 suggested tracks. The tracks group related electives that a student may wish to take in order to achieve a level of expertise in the indicated area. However, it is not mandatory to take any track and students are free to mix and match courses from different tracks to fit their specific interests:
Theory: CS 440, 482; **Systems:** CS 452, 462, ECE 453, 462, 463**; Software:** CS 453, 461, 465; **Hardware:** ECE 256, 356, 455; **Scientific Computing:** CS 370/ 377, 471, 472, Math 231/237 or 241/247; **Artificial Intelligence:** CS 420 or 427, 421, 425, ECE 471 **Cybersecurity:** CS 425, 434/534, 445/545, 522, 466/566, 469/569, 483/583, ECE 459/559, 462, 469/569, 471/571
Computer Science 493 and 494 may be taken to satisfy the upper division electives. Up to two (2) Computer Science 5xx or Electrical Computer Engineering 5xx courses may count as upper division electives.

Progression

The department requires at least a C in every computer engineering, computer science, electrical engineering, and mathematics course used for the undergraduate degrees.

Progression of departmental undergraduate students to the upper-division programs of the department is competitive and is based on the space available in the department. Factors considered in the decision include overall grade point average, grades earned in courses required in the lower division curricula of the department and College of Engineering, and seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Electrical Engineering

Department of Electrical Engineering and Computer Science
Electrical Engineering Catalog 2020

Fall 15 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**CS 102 (4) FA, SP, SU** Coreq- Math 132 or 141 or 147 Recommended background CS 101	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language		
Spring 15 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147 with grade of C or better	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**CS 130 (4) FA, SP, SU** Prereq- CS 102 with C or better	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL		
Fall 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148 with grade of C or better	**ECE 255 (3) FA, SP** Prereq- CS 130 with grade of C or better	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**ECE 201 (3) FA, SP** Prereq- EF 152/158 and Math 142/148 with C or better Coreq- Math 231/237	
Spring 17 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148 with grade of C or better	**Math 251 or 257 (3) FA, SP, SU** Prereq- Math 142 or 148 with grade of C or better	**Physics 232 (4) FA, SP** Prereq- Physics 231 Coreq- Math 241 or 247	**ECE 313 or 317 (3) FA, SP** Prereq- Math 142 or 148 with grade of C or higher	**ECE 202 (3) FA,SP, SU** Prereq- ECE 201 with grade of C or better	
Fall 16 hours	**ECE 315 (3) FA, SP** Prereq- ECE 202 with grade of C or better	**ECE 325 (3) FA, SP** Prereq- ECE 202 with grade of C or better	**ECE 335 (3) FA, SP** Prereq- ECE 202 with grade of C or better	**ECE 341 or 347 (3) FA, SP** Prereq- ECE 202, Math 241 or 247 and Physics 232; C or better grades	**ECE 395 (1) FA, SP** Prereq- ECE 202 with grades of C or better	**Gen. Ed. (3) FA, SP, SU** Social Science
Spring 15 hours	**ECE 316 (3) FA, SP** Prereq- ECE 315 with grade of C or better	**ECE 336 (3) FA, SP** Prereq- ECE 335 with C or better Coreq- ECE 315 with C or better	**ECE 342 (3) FA, SP** Prereq- ECE 313 or 317 and 315 with grades of C or better	**Gen. Ed. (3) FA, SP, SU** Social Science	**Gen. Ed. (3) FA, SP, SU** Arts & Humanities	
Fall 17 hours	**ECE Sr. Elective *(3) FA, SP, SU** Senior Elective	**ECE Sr. Elective *(3) FA, SP, SU** Senior Elective	**ECE Sr. Elective*(3) FA, SP, SU** Senior Elective	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities	**ECE 401 (2) FA** Prereq- ECE 315 or 351 with C or better	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations
Spring 15 hours	**ECE Sr. Elective *(3) FA, SP, SU** Senior Elective	**Tech. Elective**(3) FA, SP, SU** Petition required in advance	**Tech. Elective **(3) FA, SP, SU** Petition required in advance	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations	**ECE 402 (OC and WC) (3) SP** Prereq- ECE 401 and ENGL 102, 132, 290 or 298 with C or better	

***Acceptable Senior Electrical and Computer Engineering courses:** Choose 12 credit hours of ECE senior electives with Advisor's consent. Up to 2 COSC 5XX or ECE 5XX courses may count as upper division electives. Acceptable ECE senior electives are ECE 4XX courses that are not otherwise required for the degree.
****Technical Electives:** Chem 130/138; **COSC** 140, 311, 370/377; ECE 351, 356/358; EF 203, 303, Industrial 405, 457; Materials Science 201/207, 410, 460; Math 300/307; Mechanical Engineering 231, 321, 331, 363/367; Nuclear Engineering 342/347 Physics 250.

Progression

The department requires at least a C in every computer engineering, computer science, electrical engineering, and mathematics course used for the undergraduate degrees. ECE 201 requires a C or better in EF 152/158 and Math 142/148.

Progression of departmental undergraduate students to the upper-division programs of the department is competitive and is based on the space available in the department. Factors considered in the decision include overall grade point average, grades earned in courses required in the lower division curricula of the department and College of Engineering, and seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges.

Students who take ECE 300 (now ECE 201-202) will be evaluated during the semester they are registered for it. Transfer students for whom ECE 300 (now ECE 201-202) transfer credit is given may take 9 semester hours in departmental courses before progression evaluation. All students, whether or not they transfer in, who are not accepted into the upper-division program of the department will be put in either a temporary probationary status or a non-progressed status and will not be permitted to register for any upper division courses within the department.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Power & Energy Systems Concentration

Department of Electrical Engineering and Computer Science
Electrical- Power & Energy Systems Concentration Catalog 2020

Fall 15 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math 28 ACT or MathSAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**CS 102 (4) FA, SP, SU** Coreq- Math 132 or 141 or 147 Recommended background CS 101	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language		
Spring 15 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147 with a grade of C or better	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**CS 130 (4) FA, SP, SU** Prereq- CS 102 with C or better	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL		
Fall 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148 with a grade of C or better	**ECE 255 (3) FA, SP** Prereq- CS 130 with a grade of C or better	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151&152 Coreq- Math 142 or 148	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**ECE 201 (3) FA, SP** Prereq- EF 152/158 and Math 142/148 with C or better Coreq- Math 231/237 with C or better	
Spring 17 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148 with grade of C or better	**Math 251 or 257 (3) FA, SP, SU** Prereq- Math 142 or 148 with grade of C or better	**Physics 232 (4) FA, SP** Prereq- Physics 231 Coreq- Math 241 or 247	**ECE 313 or 317 (3) FA, SP** Prereq- Math 142 or 148 with a grade of C or better	**ECE 202 (3) FA,SP, SU** Prereq- ECE 201 with a grade of C or better	
Fall 16 hours	**ECE 315 (3) FA, SP** Prereq- ECE 202 with grade of C or better	**ECE 325 (3) FA, SP** Prereq- ECE 202 with a grade of C or better	**ECE 335 (3) FA, SP** Prereq- ECE 202 with a grade of C or better	**ECE 341 or 347 (3) FA, SP** Prereq- ECE 202, Math 241 or 247 and Physics 232; C or better	**ECE 395 (1) FA, SP** Prereq- ECE 202 with a grade of C or better	**Gen. Ed. (3) FA, SP, SU** Social Science
Spring 15 hours	**ECE 316 (3) FA, SP** Prereq- ECE 315 with grade of C or better	**ECE 336 (3) FA, SP** Prereq- ECE 335 with C or better Coreq- ECE 315 with C or better	**ECE 342 (3) FA, SP** Prereq- ECE 313 or 317 and 315 with grades of C or better	**Gen. Ed. (3) FA, SP, SU** Social Science	**Gen. Ed. (3) FA, SP, SU** Arts & Humanities	
Fall 17 hours	**ECE Sr. Elective (3) FA, SP** Senior Elective	**ECE Sr. Elective (3) FA, SP** Senior Elective	**Power Elective(3) FA, SP**	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities	**ECE 401 (2) FA** Prereq- ECE 315 or 351; C or better	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations
Spring 16 hours	**Economic, Entrepeneurship Innovation Elective (3) FA, SP**	**Tech. Elective(3) FA, SP**	**Power Elective(3) FA, SP**	**Gen. Ed. (3) FA, SP, SU** Cultures and Civilizations	**ECE 402 (OC and WC) (3) SP** Prereq- ECE 401; ENGL 102, 132, 290 or 298 with grade of C or better	**ECE 496 (1) SP** Prereq- ECE 325 with grade of C or better

Senior ECE electives: Choose 6 credit hours of ECE senior elective with Advisor's consent. Up to 2 COSC 5XX or ECE 5XX courses may count as upper division electives. Acceptable senior electives are ECE 4XX courses that are not otherwise required for the degree.
Power & Engergy System Electives: ECE 415, ECE 421, ECE 422, ECE 481, ECE 482, ECE 521, ECE 522, ECE 523, ECE 525.
Technical Electives: COSC 140, COSC 311 or MATH 300 or 307, COSC 370; CHEM 130/138; ECE 351; EF 203, 303; IE 405; MSE 201/207, MSE 410, 460; ME 231, ME 321, ME 331; NE 342 or NE 347, Physics 250.
Economic, Entrepreneurship, and Innovation Elective: Choose from IE 405, IE 457 (or ME 457), IE 518, IE 557 (or ME 519) MGT 552, or MGT 560.

Progression
The department requires at least a C in every computer engineering, computer science, electrical engineering, and mathematics course used for the undergraduate degrees. ECE 201 requires a C or better in EF 152/158 and Math 142/148.

Progression of departmental undergraduate students to the upper-division programs of the department is competitive and is based on the space available in the department. Factors considered in the decision include overall grade point average, grades earned in courses required in the lower division curricula of the department and College of Engineering, and seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges.

Students who take ECE 300 (now ECE 201-202) will be evaluated during the semester they are registered for it. Transfer students for whom ECE 300 (now ECE 201-202) transfer credit is given may take 9 semester hours in departmental courses before progression evaluation. All students, whether or not they transfer in, who are not accepted into the upper-division program of the department will be put in either a temporary probationary status or a non-progressed status and will not be permitted to register for any upper division courses within the department.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Industrial

Industrial Engineering Catalog 2020

Fall 15 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**Gen Ed (3) FA, SP, SU** Social Science	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language	
Spring 18 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**CS 102 (4) FA, SP** Coreq- Math 132 or 141 or 147	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL	
Fall 18 hours	**IE 250 (1) FA** Industrial majors only Minimum level-sophomore	**IE 200 (3) FA, SP** Prereq- Math 142 or 148	**IE 201 (3) FA, SP** Prereq- Sophomore in Industrial	**IE 202 (3) FA, SP** Prereq- EF 152 or 157 Coreq-IE 200 or Stats 251	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**ECON 201 or 207 (4) FA, SP, SU** Social Science
Spring 15 hours	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**Math 200 (2) FA, SP** Cannot receive credit if previous C or better in Math 251 or 257	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**IE 405 (3) FA, SP, SU** Prereq- Engineering or Biosystems major	
Fall 16 hours	**IE 350 (WC) (1) FA** Prereq-ENGL 102, 132, 290, or 298 Minimum level - Junior; IE majors	**IE 301 (3) FA** Prereq- Math 200 or 251 and Math 241/247	**IE 304 (3) FA** Minimum student level — junior	**IE 340 (3) FA** Prereq- IE 200	**IE 401 or 407 (3) FA** Prereq- IE 202 Coreq- IE 405	**IE 402 (3) FA** Prereq- IE 202
Spring 15 hours	**Engineering Science Elective***** 3 hours	**IE 300 (3) SP, SU** Prereq- IE 200 or Stats 251	**IE 310 or 317 (3) SP** Prereq- IE 200 or Stats 251	**IE 406 or 408 (3) SP** Prereq- IE 200 or Stats 251 Coreq- IE 310 or 317	**IE 427 (3) SP, SU** Coreq- IE 406 or 408	
Fall 15 hours	**IE 450 (1) FA** Industrial majors only Minimum level- senior	**IE 404 (2) FA, SP** Coreq- IE 401, 405, and 427	**Engineering Science Elective***** 3 hours	***Technical Elective (3) FA, SP** Petition required in advance	****Industrial Elective (3) FA,SP** Petition required in advance	**Gen Ed (3) FA, SP, SU** Arts and Humanities
Spring 17 hours	**IE 422 (2) (OC and WC) FA, SP** Prereq: IE 404; English 102 or 132 or English 290 or 298	***Technical Elective (3) FA, SP** Petition required in advance	****Industrial Elective (3) FA, SP** Petition required in advance	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**Gen Ed (3) FA, SP, SU** Arts & Humanities	**IE 421 or 428 (3) SP** Minimum level- Junior Industrial majors only.

***Technical Electives chosen from** AE 341 or 347 ; BUAD 410 *; DSGN 430; ECE 255, ECE 302, ECE 463; ECON 311 *, ECON 312 *, ECON 313, ECON 322*, ECON 331, ECON 333, ECON 351*; ENT 350, ENT 415, ENT 420, ENT 425, ENT 451, ENT 460, ENT 492; FINC 300,FINC 425*, FINC 455*; IE 423 , IE 430, IE 451, IE 457, IE 483 , IE 484 ; INSC 310 , INSC 451 *, MARK 300 *; MGT 300; MSE 302 , MSE 340 or 347 , MSE 360 or 367 , MSE 390 or 397 , MSE 405 ; ME 321 , ME 363 or 367 , ME 365 , ME 366 ,ME 405 ; NE 342 or 347; RCS 411; 3 credit hours of EF 333.
Some courses may require a prerequisite or corequisite that is not part of the IE program.

****Industrial Electives chosen from** IE 423, IE 430, IE 451, IE 457, IE 483, IE 484, IE 493, IE 494, IE 495. The same course may not be used to count for both Technical Elective and Industrial Elective.

*****Engineering Science Electives** chosen from ECE 301; MSE 201 or 207; ME 202 AND (EF 130 or EF 230); ME 331; ME 231.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Materials Science

Materials Science and Engineering Catalog 2020

Fall 16 hours	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language
Spring 17 hours	**MSE 110 or 117 (3) SP** Prereq-Chem 120 or 128	**MSE 120 or 127 (3) SP**	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL
Fall 15 hours	**MSE 201 or 207 (3) FA, SP, SU** Prereq- Chemistry 120 or 128	**MSE 210 (3) FA** Coreq- MSE 201	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**EF 230 (2) FA, SP** Prereq- EF 105 or CS 102 Coreq- EF 152/158
Spring 17 hours	**MSE 220 (3) SP**	**MSE 250 (4) SP** Prereq- Math 142/148, EF 230 Coreq-Math 231 and MSE 201	**MSE 260 (4) SP** Prereq- EF 152 /158, Math 241/ 247 MSE 201/207, Chem 130/138 or MSE 110	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**Gen. Ed. (3) FA, SP, SU** Culture and Civilizations
Fall 15 hours	**MSE 300 (2) FA** Prereq- MSE 201/207 with grades of C or better and 210	**MSE 301 (3) FA** Prereq- Math 142/148 and 231; EF 230	**MSE 340 or 347 (4) FA** Prereq- MSE 201	**MSE 360 or 367 (4) FA** Prereq- MSE 201	**Math 200 (2) FA, SP** Cannot receive credit if previous C or better in Math 251 or 257
Spring 16 hours	**MSE 302 (3) SP** Prereq- MSE 201	**MSE 304 (WC) (3) SP** Prereq- MSE 250, 260, 300, 340, 360 and ENGL 102, 132, 290, or 298	**MSE 350 or 357 (3) SP** Prereq- MSE 201	**MSE 390 or 397 (4) SP** Prereq- MSE 201	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities
Fall 15 hours	****MSE 4XX (3) FA, SP, SU** see below	**MSE 480 (3) FA** Prereq- MSE 201; level junior	**Technical Elective* (3) FA, SP, SU** Petition required in advance	**Gen. Ed. (3) FA, SP, SU** Culture & Civilizations	**Gen. Ed. (3) FA, SP, SU** Social Science
Spring 15 hours	****MSE 4XX (3) FA, SP, SU** see below	**Technical Elective* (3) FA, SP, SU** Petition required in advance	**MSE 489 (OC) (3) SP** Prereq- MSE 304 with C or better, 340/347, 360 or 367, 390 or 397, and 480	**Gen. Ed. (3) FA, SP, SU** Social Science	**Gen. Ed. (3) FA, SP, SU** Arts and Humanities

***Technical electives:** BCMB 230 ; BIOL 150 or 158, BIOL 159, BIOL 160 or 168 ; BME 409 ; CHEM 260, CHEM 360; CBE 475 ; ECE 301; EF 333; ENGL 360; GEOL 310; MATH 475; PHYS 232; any MSE course not already required ; other 300 or 400 level science or engineering courses as approved by academic advisor and department head.

****MSE 4XX Electives-** Materials Science and Engineering electives: 408, 410 ,415, 421 , 425, 432, 450, 451, 455, 457, 460, 466, 474, 483, 484 , 485, 486, 494 , 495, 496R.

MSE Graduation Requirements

Graduation in materials science and engineering requires a minimum grade point average of 2.0 for all departmental courses taken at UT, Knoxville. No more than seven (7) credit hours of MSE courses in which a C- or lower is the highest grade earned may be counted toward graduation. Students are strongly encouraged to meet with their advisor every semester.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Mechanical

Mechanical Engineering Catalog 2020

Fall 16 hours	**Math 141 or 147 (4) FA,SP, SU** Prereq- Math ACT 28 or Math SAT 660	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors 131 English as Second Language	
Spring 16 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**ME 202 (2) FA, SP, SU** Coreq- EF 152 or 158 and Math 142 or 148	**Gen Ed (3) FA, SP, SU** Cultures & Civilizations	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL	
Fall 15 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**ME 231 (3) FA, SP, SU** Prereq- EF 152/158 and ME 202 with grades of C or better	**EF 230 (2) FA, SP** Prereq- EF 105 or CS 102 Coreq- EF 152/158	**ME 210 (2) (OC) FA, SP** AE, BME, or ME major. Sophomore, Junior or Senior standing	**Econ 201 or 207 (4) FA, SP, SU** Social Science	
Spring 18 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**Math 251 or 257 (3) FA, SP, SU** Prereq- Math 142 or 148	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**ME 321 (3) FA, SP, SU** Prereq- ME 202 with C or better and Math 142/148 with C or better	**MSE 201 or 207 (3) FA, SP, SU** Prereq- Chem 120 or 128	**Gen Ed (3) FA, SP, SU** Arts & Humanities
Fall 15 hours	**ME 331 (3) FA, SP, SU** Coreq- Math 241 or 247	**AE 341 or 347 (3) FA, SP, SU** Prereq- ME 231 with grade C or better and Math 241 or 247 with grade of C or better	**ME 366 (3) FA, SP** Prereq- ME 321 with C or better and MSE 201	**ECE 301 (3) FA, SP, M** Prereq- Math 231 or 237 with C or better	**ME 391 or 397 (3) FA, SP, SU** Prereq- EF 230; Math 251/257, and Math 241/247, and Math 231 with grade C or better in all prereq courses	
Spring 15 hours	**ME 466 (3) FA, SP** Prereq- ME 321 and MSE 201 Coreq- ME 366	**ME 363 or 367 (3) FA, SP, SU** Prereq- ME 231 and Math 231 with grades of C or better	**Dept. Elective (3) FA, SP, SU** 300 level or above AE/BME/ME not already required.	**ME 344 (3) FA, SP, SU** Prereq- ME 331 and 391/397 and AE 341/347	**ME 345 (3) FA, SP, SU** Prereq- ME 321 Coreq- AE 341/347; ME 363/367 & ECE 301	
Fall 18 hours	**ME 475 or 477 (3) FA, SP, SU** Prereq- ME 344	**Technical Elective (3) FA, SP, SU** Petition required in advance with advisor and dept. head.	**ME 365 (3) FA/SU or 463 (3) SP** ME 365 Prereq-ME 231 with grade of C or better ME 463 Prereq- ME 363	**Gen Ed (3) FA, SP SU** Cultures & Civilizations	**ME 450 (3) FA, SP** Prereq- ME 363 or 367 and 366 Coreq- ME 466 or 475	**Gen Ed (3) FA, SP, SU** Arts and Humanities
Spring 15 hours	**Gen Ed (3) FA, SP, SU** Social Science	**Dept. Elective (3) FA, SP** 300 level or above AE, BME, ME not already required.	**Dept. Elective (3) FA, SP** Any 300 level or above in AE, BME, or ME not already required.	**ME 460 (3) FA, SP** Prereq- ME 450	**ME 449 (3) (WC) FA, SP** Prereq- ME 321, 344 & 345/347 and English 102, 132, 290, or 298	

Full Status Progression

A lower-division student may apply for progression to upper division after completing EF 152/158, CHEM 120 or 128 , MATH 231 , ME 202, ME 231 and ME 321 with a grade of C or better in each, and an overall GPA of at least 2.4. Students who have not satisfied the requirements for full status will be dropped from departmental class rolls in upper division courses.

Provisional Status Progression

Students who have completed EF 152/158, Chem 120 or 128, Math 231, ME 202, ME 231, ME 321 with a grade of C or better and have an overall GPA between 2.0 and 2.4 may apply for provisional status. The granting of provisional status is based on the availability of space in departmental programs after full status students have been accommodated. Provisional status students are required to demonstrate their ability to perform satisfactorily in upper-division by attaining a minimum GPA of 2.0 in the first 12 hours of 300-level required engineering courses. Award of upper-division full status is dependent upon this performance. Students with an overall GPA less than 2.0 will not be admitted to upper-division. Students who have not progressed to upper-division will be dropped from departmental class rolls in upper division courses.

Transfer Students

Students transferring more that 26 hours from another institution are considered transfer students. Transfer students must meet the same criteria as non-transfer students, using transfer grades for acceptable substitutions. Transfer courses with grades below a C will not be accepted to fulfill any degree requirements.

Departmental Academic Standing

The faculty of the Department of Mechanical, Aerospace and Biomedical Engineering expect all students who enter to make progress toward graduation. To graduate from the department, a student must earn a minimum grade point average of 2.0 in all departmental courses counted toward the degree. Students not meeting the required departmental GPA may be dropped from their major. In addition, the University Academic Good Standing Policies apply to all students.

ME Graduation Requirements

A minimum GPA of 2.0 in all departmental courses counted toward the degree taken at the University of Tennessee, Knoxville, is required for graduation. No more than two departmental courses in which a C- or lower is the highest grade earned may be counted toward graduation. This is in addition to the university's graduation requirements.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Nuclear

Nuclear Engineering Catalog 2020

Fall 16 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or or Math SAT 660	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language	
Spring 15 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**Chem 132 & 133 or 138 (4) FA, SP, SU** Prereq- Chem 120 or 128	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL		
Fall 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**NE 200 (2) FA**	**ME 202 (2) FA, SP, SU** Coreq- EF 152 or 158 and Math 142 or 148	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**EF 230 (2) FA, SP** Prereq- EF 105 or CS 102 Coreq- EF 152/158	**ECON 201 or 207 (4) FA, SP, SU** Social Science
Spring 17 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**NE 233 (3) SP** Prereq-NE 200	**ME 331 (3) FA, SP, SU** Coreq- Math 241 or 247	**Physics 232 (4) FA, SP** Prereq- Physics 231 Coreq- Math 241 or 247	**NE 250 (3) SP** Prereq- NE 200, Math 231 or 237 Coreq- Math 241 or 247	
Fall 15 hours	**NE 342 or 347 (3) FA** Prereq- Math 241 or 247	**NE 362 or 367 (3) FA** Prereq- Math 231/237, 241/247, NE 250	**Physics 341 (3) FA** Prereq- Physics 232 or 250	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**Gen Ed (3) FA, SP, SU** Social Science	
Spring 16 hours	**NE 401 (WC) (4) SP** Prereq-English 102, 132, 290 or 298 and NE 233 and NE 250 Coreq- Math 241 or 247	**NE 351 or 357 (3) SP** Prereq- NE 200 and NE 250	**NE 340 (3) SP** Prereq- ME 202	**NE 470 (3) FA, SP** Prereq- NE 362 or 367	**Technical Elective *(3) FA, SP, SU** Petition required in advance	
Fall 16 hours	**NE 402 or 427 (WC) (4) FA, SU** Prereq- NE 401 and 470 English 102, 132, 290 or 298	**NE 360 (4) FA** Prereq- NE 342	**NE 471 (1) FA** Prereq-NE 470	**NE 400 (OC) (1) FA, SP** Minimum level Senior in Nuclear	**Technical Elective *(3) FA, SP, SU** Petition required in advance	**Gen Ed (3) FA, SP, SU** Arts and Humanities
Spring 15 hours	**NE 406 or 467 (3) SP** Prereq- NE 233 or 433 & Physic 232	**NE 472 (3) SP** Prereq- NE 471	**Technical Elective *(3) FA, SP, SU** Petition required in advance	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**Gen Ed (3) FA, SP, SU** Arts & Humanities	

***Technical Electives** are selected from upper division mathematics, chemistry, physics and engineering courses and must be pre-approved by the department advisor. Courses in Nuclear Engineering other than 500, 502 and 598 may also be used as technical electives.

Full Status Progression

A lower-division student may apply for progression to upper division after completing CHEM 120 or 128*, CHEM 130 or 138*, MATH 132/141/147*, MATH 142/148*, MATH 231/237, EF 151/157*, EF 152/158*, and PHYS 231*, with a grade of C or better in each, and an overall GPA of at least 2.5.

Provisional Status Progression

Students who have completed CHEM 120 or 128*, CHEM 130 or 138*, MATH 132/141/147*, MATH 142/148*, MATH 231/237, EF 151/157*, EF 152/158*, and PHYS 231* with a grade of C or better and have an overall GPA between 2.0 and 2.5 may apply for provisional status. The granting of provisional status is based on the availability of space in departmental programs after full status students have been accommodated. Provisional status students are required to demonstrate their ability to perform satisfactorily in upper-division by attaining a minimum GPA of 2.5 in the first 9 hours of 300-level required nuclear engineering courses. Award of upper-division full status is dependent upon this performance. Students who have not progressed to upper-division will be dropped from departmental courses.

Nuclear Graduation Requirements

Students are required to maintain a cumulative grade point average of at least 2.0 in all nuclear engineering courses taken at the Unversity of Tennessee, Knoxville used to satisfy the graduation requirement. No more than four (4) credit hours of required nuclear engineering courses in which a C- or lower is the highest grade earned may be counted toward graduation. This is in addition to the university's graduation requirements.
Students are strongly recommended to meet with their faculty advisor every semester.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Engineering Majors

Radiological Concentration

Nuclear Engineering Catalog 2020
Radiological Concentration

Fall 16 hours	**Math 141 or 147 (4) FA, SP, SU** Prereq- Math ACT 28 or Math SAT 660	**Chem 120 or 128 (4) FA, SP, SU** Prereq-Math 119; recommended background in Math 131	**EF 151 or 157 (4) FA, SP** Coreq- Math 132/141/147 or higher and EF 105 or CS 101 or CS 102	**EF 105 (1) FA, SP** Coreq- EF 151 or 157	**English 101/118 or 198 or 131 (3) FA, SP, SU** 101 Regular; 118 Honors; 198 Chancellor Honors Only; 131 English as Second Language	
Spring 15 hours	**Math 142 or 148 (4) FA, SP, SU** Prereq- Math 132 or 141 or 147	**Chem 130 or 138 (4) FA, SP, SU** Prereq- Chem 120 or 128	**EF 152 or 158 (4) FA, SP, SU** Prereq-EF 151/157 with C or higher Coreq- Math 142 or 148	**English 102 or 290 or 298 or 132 (3) FA, SP, SU** 102 Prereq 101 or 118; 290 Prereq AP 101 credit 298 Prereq Chancellor Honors only & 198; 132 Prereq 131 ESL		
Fall 16 hours	**Math 231 or 237 (3) FA, SP, SU** Prereq- Math 142 or 148	**NE 200 (2) FA**	**ME 202 (2) FA, SP, SU** Coreq- EF 152 or 158 and Math 142 or 148	**Physics 231 (3) FA, SP, SU** Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	**EF 230 (2) FA, SP** Prereq- EF 105 or CS 102 Coreq- EF 152/158	**ECON 201 or 207 (4) FA, SP, SU** Social Science
Spring 17 hours	**Math 241 or 247 (4) FA, SP, SU** Prereq- Math 142 or 148	**NE 233 (3) SP** Prereq-NE 200	**ME 331 (3) FA, SP, SU** Coreq- Math 241 or 247	**Physics 232 (4) FA, SP** Prereq- Physics 231 Coreq- Math 241 or 247	**NE 250 (3) SP** Prereq- NE 200, Math 231 or 237 Coreq- Math 241 or 247	
Fall 15 hours	**NE 342 or 347 (3) FA** Prereq- Math 241 or 247	**NE 362 or 367 (3) FA** Prereq- Math 231/237, 241/247, NE 250	**Physics 341 (3) FA** Prereq- Physics 232 or 250	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	**Gen Ed (3) FA, SP, SU** Social Science	
Spring 16 hours	**NE 401 WC (4) SP** Prereq-English 102, 132, 290 or 298 and NE 233 and NE 250 Coreq- Math 241or 247	**NE 351 or 357 (3) SP** Prereq- NE 200 and NE 250	**NE 470 (3) FA, SP** Prereq- NE 362 or 367	**Stats 251 (3) FA, SP, SU** Prereq- Math 142 or 148	**Technical Elective *(3) FA, SP, SU** Petition required in advance	
Fall 15 hours	**NE 400 (OC) (1) FA, SP** Minimum student level — senior	**NE 402 or 427 (WC) (4) FA, SU** Prereq- NE 401 and 470	**NE 490 (3) FA**	**NE 471 (1) FA** Prereq- NE 470	**Technical Elective *(3) FA, SP, SU** Petition required in advance	**Gen Ed (3) FA, SP, SU** Arts and Humanities
Spring 15 hours	**NE 406 or 467 (3) SP** Prereq- NE 233 or 433 & Physics 232	**NE 472 (3) SP** Prereq- NE 471	**Technical Elective *(3) FA, SP, SU** Petition required in advance	**Gen Ed (3) FA, SP, SU** Arts & Humanities	**Gen Ed (3) FA, SP, SU** Cultures and Civilizations	

***Technical Electives** are selected from upper division mathematics, chemistry, physics and engineering courses and must be pre-approved by the department. Courses in Nuclear Engineering other than 500, 502 or 598 may also be used as technical electives.

Full Status Progression

A lower-division student may apply for progression to upper division after completing CHEM 120 or 128*, CHEM 130 or 138*, MATH 132/141/147*, MATH 142/148*, MATH 231/237, EF 151/157*, EF 152/158*, and PHYS 231*, with a grade of C or better in each, and an overall GPA of at least 2.5.

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Nuclear Graduation Requirements

Students are required to maintain a cumulative grade point average of at least 2.0 in all nuclear engineering courses taken at the Unversity of Tennessee, Knoxville used to satisfy the graduation requirement. No more than four (4) credit hours of required nuclear engineering courses in which a C- or lower is the highest grade earned may be counted toward graduation. This is in addition to the university's graduation requirements.
Students are strongly recommended to meet with their faculty advisor every semester.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Undergraduate Minors

Herbert College of Agriculture
- Agricultural leadership
- Animal science
- Biosystems engineering technology
- Entomology and plant pathology
- Environmental and soil sciences
- Food and agricultural business
- Food science
- Forestry
- Honors food, agricultural, natural resource, and human sciences
- International agriculture and natural resources
- Natural resource and environmental economics
- Plant sciences
- Watershed
- Wildlife and fisheries science

College of Architecture and Design
- Architectural studies
- Design studies
- Industrial design
- Interior architecture studies

Haslam College of Business
- Business administration
- Entrepreneurship
- Social entrepreneurship

College of Communication and Information
- Communication studies
- Information sciences
- Journalism & electronic media

College of Education, Health, and Human Sciences
- American Sign Language
- Art education
- Child and family studies
- Elementary education
- English as a second language education
- Leadership studies
- Leadership studies (honors)
- Mathematics education (grades 6–8)
- Nutrition
- Public health
- Restaurant and food service management
- Retail and consumer sciences
- Retail technology
- Science education (grades 6–8)
- Secondary education
- Tourism and hospitality management
- VolsTeach mathematics or science
- World language education

Tickle College of Engineering
- Aerospace engineering
- Biomedical engineering
- Computer science *(not open to computer engineering)*
- Concepts of cybersecurity *(not for EECS majors)*
- Cybersecruity *(for EECS majors)*
- Datacenter technology & management *(for EECS, IE, and ME majors)*
- Engineering entrepreneurship
- Environmental engineering
- Honors engineering leadership
- Materials science & engineering
- Mechanical engineering
- Nuclear decommissioning and environmental management
- Nuclear safety
- Reliability & maintainability engineering

College of Arts and Sciences
- Africana studies
- Anthropology
- Arab studies
- Art history
- Art studio
- Asian studies
- Astronomy
- Biological sciences
- Chemistry
- Chinese
- Cinema studies
- Classical archaeology
- Classical civilization
- Classics (Greek or Latin)
- Climate Change
- Economics
- English
- English technical communication
- Environmental studies
- French and Francophone studies
- Geography (Information Science) or Urban Studies
- Geology
- German
- Global studies
- History
- Italian
- Japanese
- Judaic studies
- Latin American and Caribbean studies
- Linguistics
- Mathematics (honors)
- Medieval and Renaissance studies
- Middle East studies
- Music (applied, composition, culture & theory)
- Music Business
- Neuroscience
- Philosophy
- Physics
- Physics — five-year BS/MS
- Political science
- Portuguese
- Psychology
- Religious studies
- Religious studies—religion and nonprofit leadership
- Russian studies
- Russian literature in translation
- Spanish (Hispanic studies)
- Sociology (environmental issues and globalization)
- Statistics
- Sustainability
- Theatre
- VolsTeach math
- VolsTeach science
- Women, gender, and sexuality

Howard H. Baker Jr. Center for Public Policy
- Public policy analytics

Pre-Health Information

All Pre-Health Advising takes place in the **Arts & Sciences Advising Center, 313 Ayres Hall, 865-974-4481.** Advisors are available in Arts and Sciences Advising Services to assist pre-medical students as they plan their programs. When a student declares a major, he/she should obtain an advisor in the department of the declared major, but should continue to consult with the pre-medical advisors in Arts and Sciences Advising Services about the pre-medical program.

Students who are currently enrolled in another college, i.e., Engineering or Architecture, are required to take the following minimum courses for most medical schools:

- English 101-102
- Biology 150-160 or Honors 158-168, and Lab 159
- Chemistry 120-130 or Honors 128-138
- Chemistry 260-269 and 360-359 or Honors 268-269 and 368-359
- Physics 221-222 (Physics 231-232 for engineering students only)

The following courses are not required by medical schools, but their content is included on MCAT.

- Biology 240
- Biochemistry and Cellular and Molecular Biology 401
- Psychology 110, Sociology 120

Note that many of these courses have prerequisites and that the courses listed above constitute the minimal requirements for most medical schools. Pre-medical students are strongly urged to consult with a health professions advisor on a regular basis in 313 Ayres Hall. **Students will want to verify with the medical schools of interest for specific requirements beyond what is listed here.**

Selection Criteria at UT Health Science Center

1. Successful completion of the pre-medical requirements with grades of C or better earned in each course.
2. Letters of evaluation from three faculty members who have a good awareness of the student's ability.
3. Experience in/exposure to the health field.
4. Total academic performance, with attention given to course content and load, trends in performance, and general commitment to scholarship.
5. Satisfactory scores on the Medical College Admission Test (MCAT).
6. Personal interview with two members of the Committee on Admissions. (Competitively qualified applicants will be invited for interviews after their applications have been reviewed by the committee.)
7. Other criteria such as extracurricular activities; motivation and goals; research experience; the morals, character, and integrity of the individual; and any disciplinary or civil records that a person may have accrued.

Please note that high GPA and MCAT scores are not by themselves a sufficient basis for entrance into medical school. The Committee on Admissions takes a close look at the total experience of the applicant in making its final decisions. In addition, the Committee on Admissions reserves the right to require additional course work from any applicant. Correspondence course work must be approved prior to scheduling.

Pre-Professional File

During the junior year, pre-med students should attend a pre-professional file group meeting to learn about setting up the pre-professional file. Group meetings are scheduled weekly in Arts and Sciences Advising Services, 313 Ayres Hall. In the meeting, students are given information on pre-professional evaluations, AMCAS, and other aspects of the medical school application process. The most important aspect of the file is the letters of evaluation from faculty members who are familiar with the student's aptitude, ability, and personal characteristics. Two of the evaluations should come from faculty members teaching in science-based disciplines. Students should make every effort to become well acquainted with their professors prior to requesting the evaluations. Once the file has been started, students should maintain contact with the health professions assistant to periodically check on the file and to provide updated contact information. For the purposes of AMCAS, the file prepared in Arts & Sciences is considered a letter packet, and the primary contact for the packet is the chair of the health professions, Shanna Pendergrast.

Alpha Epsilon Delta

Alpha Epsilon Delta (AED) is a pre-health honor society that seeks to provide information and opportunities for students with an interest in the health professions. The Tennessee Beta Chapter of AED is active at The University of Tennessee. AED activities include information sessions on preparing to apply to professional schools, local speakers from the medical community, trips to Tennessee medical schools and health centers, and service activities. The schedule of meetings is available at **aedutk.wixsite.com/aed-utk**.

Requirements for membership include three terms of college (at least one at UTK), a cumulative GPA of 3.2, a science GPA of 3.2, and participation in AED sponsored events and meetings. Students interested in joining AED should apply for membership at the beginning of fall term. Applications are available in Arts and Sciences Advising Services, 313 Ayres Hall, and at the organizational Web site.

Any pre-health student, regardless of membership, may participate in the programs sponsored by AED. Pre-health students wishing to receive notification of pre-health activities and AED events should send an e-mail to **asadvising@utk.edu** to request to be added to the pre-health distribution list.

Distribution List

Pre-health students should contact Arts & Sciences Advising Services at **asadvising@utk.edu** at their earliest convenience to request to be added to the pre-health distribution list. Students on the distribution list are routinely updated about pre-health programming, announcements, and opportunities relevant to the health professions.

Cook Grand Challenge Honors Program

National Scholarships and Fellowships

The Office of National Scholarships and Fellowships (ONSF) exists to both inform and mentor students who wish to apply for nationally competitive scholarships and fellowships like the Truman, Rhodes, Marshall or Fulbright. We also assist outstanding undergraduates who wish to apply for Rotary Ambassadorial, Goldwater and Udall Scholarships.

ONSF will work with students to determine what fellowship would best fit their interests. Once students have decided to apply, we will assist them with the application process. To apply for most scholarships administered by our office, students need to begin the application process over a year before the scholarship period begins.

For more about each of the scholarships handled by the ONSF, visit at 317 Greve Hall or call 865-974-3518 to schedule an appointment. Visit online at **onsf.utk.edu.**

ORNL Summer Research and Internship

There exist numerous opportunities for undergraduates to supplement their academic learning with real world experience. The Chancellor's Office and Oak Ridge National Laboratory (ORNL) each sponsor summer internship programs designed to promote research and creative activity among undergraduate students. The Department of Energy (DOE) also sponsors summer and semester length opportunities.

The role of the faculty mentor is paramount in these programs as they will provide guidance in the choice of a project and in the practice of professional approaches and methods. Projects proposed may be a student's undergraduate thesis, a part of the faculty mentor's research program, another research project or an ongoing project begun previously. The key is that the student be involved in actual scholarly work independent of a classroom setting.

For more information visit the website at **www.ornl.gov.**

For more honors and research information, contact:

Kevin Kit
Engineering Honors Director
322 Perkins Hall
865-974-9784
kkit@utk.edu

Office of Undergraduate Research
Marisa Moazen
109 Melrose Hall
865-974-8560
ugresearch.utk.edu

Cook Grand Challenge Honors Program

Admission

Admission as a first year student to the Cook Grand Challenge Honors Program and Honors Concentrations by invitation, which is extended by the engineering dean's office to students meeting rigorous academic standards in their high school coursework.

Admission as a transfer student or after completing significant coursework at the University of Tennessee is by direct application at **honors.tickle.utk.edu/admission**.

Requirements

Coursework

- Four 100- or 200-level honors courses (14 hours minimum, at least two courses must be from Engineering Fundamentals, Physics, Math, Chemistry, or Biology, Statistics or MSE 207).
- Two upper-division honors courses (300 or 400 level) in your major (6 hours minimum)

GPA

Maintain a 3.4 cumulative GPA. (Some programs also require an average 3.4 GPA in all courses in your major. Refer to the Undergraduate Catalog for details.)

Breadth

An honors student is expected to broaden their undergraduate experience beyond a prescribed curriculum. Cook Grand Challenge Honors Program/Honors Concentration students must satisfy two of the five National Academy of Engineering (NAE) Grand Challenge Scholars requirements listed below. One of these must be at an Intermediate level and the other at an Introductory level.

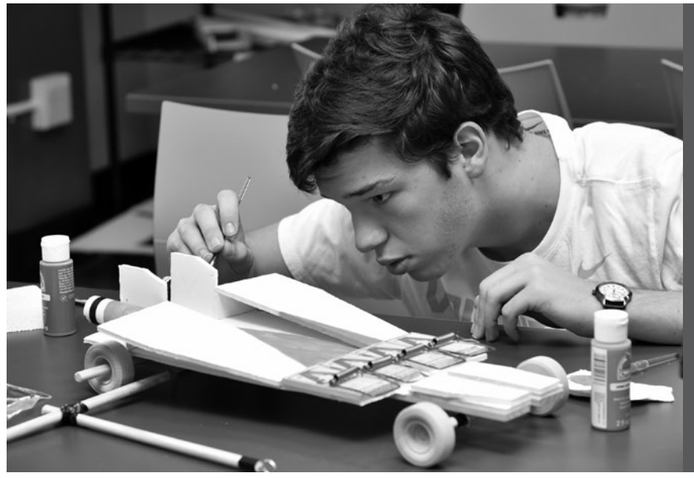
Additional Opportunity for Engineering Honors Students

The Grand Challenge Scholars Program is for students who wish to build a broad level of experience in all the NAE areas into their undergraduate program. It requires one extensive experience, two intermediate experiences, and two introductory experiences. A qualified research experience must be related to one of the 14 NAE Grand Challenges.

Cook Grand Challenge Honors Program

Breadth Requirement Experience Levels for Honors Concentration

	Extensive	Intermediate	Introductory
Research	Completion of a three-semester-long undergraduate research experience. Must result in a mentor-approved paper or poster which is presented at EUReCA, UT Honors Symposium, or other venue approved by the Honors director.	Completion of a two-semester-long undergraduate research experience. Must result in a mentor-approved paper or poster which is presented at EUReCA, UT Honors Symposium, or other venue approved by the Honors director.	Completion of a one-semester-long undergraduate research experience. Must result in a mentor-approved paper or poster which is presented at EUReCA, UT Honors Symposium, or other venue approved by the Honors director.
Interdisciplinary Work	Minimum of 9 hours from approved list (see Honors website)	Minimum of 6 hours from approved list (see Honors website)	Minimum of 3 hours from approved list (see Honors website)
Entrepreneurship	Minimum of 9 hours from Minor in Entrepreneurship (see Honors website)	Minimum of 6 hours from Minor in Entrepreneurship (see Honors website)	Minimum of 3 hours from Minor in Entrepreneurship (see Honors website)
Global Experience	Full semester abroad (study program of internship) or 6 hours coursework abroad and a foreign language minor	6 hours coursework abroad or 3 hours coursework and foreign language minor	One course abroad or a TCE non-credit global experience
Service Learning	An extensive experience in service learning would normally be designed by the student and approved by the Honors director to reflect individual student interests.	Minimum of 6 hours from TCE design course associated with the Smart Cities Initiative, other courses carrying UT service designation or at least 6 months providing technical service for a non-profit organization (See Honors website)	Minimum of 3 hours from TCE design course associated with the Smart Cities Initiative, other courses carrying UT service designation or at least 3 months providing technical service for a non-profit organization (See Honors website)



Honors website:
honors.tickle.utk.edu

Heath Integrated Business & Engineering Program

Heath Integrated Business & Engineering Program

Are you interested in learning how engineering interacts with business functions in industry? Do you want to be part of a program that blends business and engineering concepts? The Heath Integrated Business & Engineering Program (Heath IBEP) combines the knowledge and reputations of two of UT's outstanding academic colleges—the Haslam College of Business and the Tickle College of Engineering.

Interested Tickle students apply in the spring of the freshman year to start Heath IBEP with Haslam students in the fall of the sophomore year. These students take business, entrepreneurship, and special engineering courses together and learn how to be successful in each other's environment.

What you will learn:

- Effective problem solving skills for a variety of systems, emphasizing the impact on key organizational metrics
- Communication skills that will allow these new professionals to lead others on implementing effective solutions
- Big picture perspective generated from collaborative experiences, one-on-one mentoring opportunities with executives, and industry exposure

Program highlights:

Tickle students participating in IBEP will:
- Receive a Heath IBEP program scholarship package
- Attend distinguished alumni and leadership seminars
- Combine in-depth strategy and decision making processes
- Tour manufacturing facilities
- Apply learning with joint business and engineering real world and CAPSTONE projects
- Receive individual mentorship with executives

Admissions criteria:

An admissions committee, made up of members from both the Haslam College of Business and the Tickle College of Engineering, will evaluate students during the spring of their first-year.

Admissions considerations:

- Info sessions will be held during the fall and spring semesters
- No special math or science coursework is required

Learn more:

integrate.utk.edu
integrate@utk.edu

Advanced Placement

Subject	AP Score	Credit Given
American History	4 or 5	History 221–222
Biology	3	Biology 101
Biology	4	Biology 101–102
Biology	5	Biology 101–102 and 160
Calculus AB	3	Math 125
Calculus AB	4	Math 141
Calculus AB	5	Math 147
Calculus BC	3	Math 141
Calculus BC	4	Math 141-142
Calculus BC	5	Math 147-148
Chemistry	4 or 5	Chemistry 120-130
Chinese Language and Culture	4 or 5	Chinese 131-132
Computer Science Principles	4 or 5 5	Computer Science 100 Students admitted for Fall 2020–forward Students admitted prior to Fall 2020
Economics - Microeconomics	3, 4, or 5	Economics 211
Economics - Macroeconomics	3, 4, or 5	Economics 213
English Language & Composition	4 or 5	English 101
English Literature & Composition	4 or 5	*Students admitted fall 2016, credit for English 101 *Students admitted prior to fall 2016, credit for English 101–102
Environmental Science	3	Geology 201
Environmental Science	4 or 5	Geology 201–202
European History	4 or 5	History 242
French Language and Culture	3	French 211–212
French Language and Culture	4 or 5	French 212-333
German Language and Culture	4 or 5	German 311-312
German Language and Culture	3	German 211–212
Government and Politics - Comparitive Exam	2014 exams and prior, 3,4, or 5; 2015 and later, 4 or 5	Political Science 102
Government and Politics - US Exam	2014 exams and prior, 3,4, or 5; 2015 and later, 4 or 5	Political Science 101
Human Geography	4 or 5	Geography 121
Japanese Language and Culture	3 or 4	Japanese 251–252
Japanese Language and Culture	5	Japanese 351–352
Latin	3, 4, or 5	Classics 251–252
Music Theory – Aural Subscore	4	Music Theory 130
Music Theory – Aural Subscore	5	Music Theory 130, 140
Music Theory – Nonaural (written) Subscore	4	Music Theory 110
Music Theory – Nonaural (written) Subscore	5	Music Theory 110, 120
Physics I	4 or 5	Physics 221
Physics II	4 or 5	Physics 222
Physics C - E & M	5	Physics 136
Physics C - E & M	4	Physics 102 or 222 or 231
Physics C - Mechanics	5	Physics 135
Physics C - Mechanics	4	Physics 101 or 161 or 221
Psychology	3, 4, or 5	Psychology 110
Spanish Language or Literature	3	Spanish 211–212
Spanish Language or Literature	4 or 5	Spanish 212 and 311
Statistics	4 or 5	Statistics 201
World History: Modern	4 or 5	2020 exam–present, credit for History 262 2019 exam and prior, credit for History 261–262

International Baccalaureate

International Baccalaureate (IB) Exam Credit

Subject	IB Score	Credit Given
Biology (higher level)	5+	Biology 101-102
Business & Management (standard or higher)	5+	Management 201
Chemistry (higher level)	5+	Chemistry 120-130
Computer Science (higher level)	7	Computer Science 102
Economics (standard and higher level)	5+	Economics 211, 213
English (A1 exam)	5	English 101
English (A1 exam)	6+	English 101-102
English (A2 and B exam)	N/A	No credit
Environmental Systems and Societies (standard level)	4+	Geology 202
Film (higher level)	5+	Cinema Studies LD (3 credit hours)
French (standard level)	5+	French 212
French (higher level)	5+	French 212, 333
Geography (standard and higher level)	4+	Geography 121
German (standard level)	4	German 211-212
German (higher level)	4+	German 211-212 or German 311-312 or German 321-322
History (higher level)	4+	History LD-LD (3 credit hours)
Informational Technology in a Global Soicety	4+	Geography 111
Latin (standard level)	5+	Latin 251-252
Latin (higher level)	4+	Latin 251-252
Math (higher level)	4+	Mathematics 141-142 plus 4 hours LD Math Credit (3 credit hours)
Music (solo performance, music creating music group performance)	6+	Musicology 110
Philosophy (higher level)	4+	Philosophy 101
Physics (higher level 1)	4+	Physics 221
Physics (higher level 2)	4+	Physics 222
Physics DP (higher level)	4+	Physics 221–222
Psychology (standard or higher level)	4+	Psychology 110
Social and Cultural Anthropology	4+	Anthropology 130
Spanish (higher level)	4+	Spanish 211-212
Sports, Exercise & Health Science (higher level)	5+	Kinesiology LD (3 credit hours)
Theatre (higher level)	4+	Theatre 100 and Theatre LD (3 credit hours)
Visual Arts (higher level)	5+	Art LD (3 credit hours)
World Religions (standard level)	4+	Religious Studies LD (3 credit hours)

Placement Exams/Math

Freshman Math Placement

Based on ACT Math or SAT Math Placement Scores

Math ACT	Math SAT	Math Course
25 to 27	590 to 650	Math 131 Calculus 1A infused with Pre Calculus
28 to 31	660 to 710	Math 141 Calculus 1
32 or higher	720 or higher	Math 147 Honors Calculus I

Adjustments to Placement:

1. AP/IB/CLEP/Statewide Dual Credit Challenge Exam/Dual Enrollment credits in Math trump the ACT Math/SAT Math placements.
2. Take the online placement test through the UT Math Department website (www.math.utk.edu). There are two tests, Engineering students take the Level 4 (Math 141) test. The test may be repeated three times. Use the online remediation system to review and then (re)take the placement test. The system is adaptive to the math elements needed for success.

Engineering Math courses

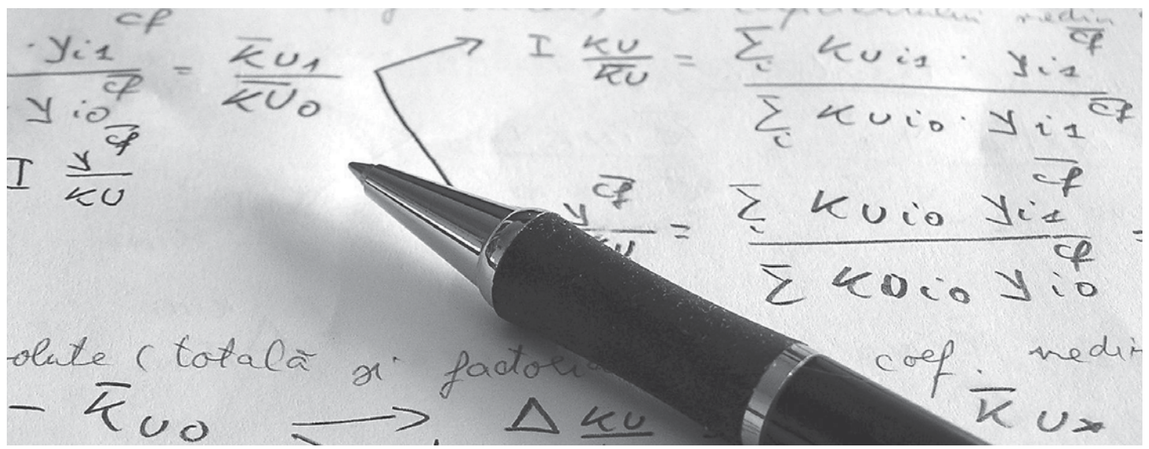
Engineering students must be taking either Math 132 or Math 141 (or higher) to be eligible for Engineering Fundamentals 151 or 157

Math Courses based on ACT Math 25 to 27 or Math SAT 590 to 650:

Math 131 Calculus 1A Infused with pre-calculus 3 credit hours	Math 132 Calculus 1B infused with pre-calculus 3 credit hours	Math 142/148 Cal II/Honors 4 credit hours	Math 241/247 Cal III/Honors 4 credit hours	Math 231/237 Diff. Eq./Honors 3 credit hours	Math 251/257 Matrix Algebra 1/ Honors 3 credit hours

Math Courses based on ACT Math 28 or higher/SAT Math 660 or higher:

Math 141/147 Cal I/Honors 4 credit hours	Math 142/148 Cal II/Honors 4 credit hours	Math 241/247 Cal III/Honors 4 credit hours	Math 231/237 Diff. Eq./Honors 3 credit hours	Math 251/257 Matrix/Honors 3 credit hours



Placement Exams/English & Foreign Language

First-Year Composition Placement

1. **Regular Sequence:** English 101 (Fall) + English 102 (Spring). Students may not take English 102 before passing English 101.
2. **Intensive Sequence:** English 101 with English 103, Writing Workshop I, [1-credit elective] (Fall) + English 102 with English 104, Writing Workshop II, [1-credit elective] (Spring).
3. **Honors Sequence:** English 118 (Fall) + 200-level English course or English 355 (Spring). Students placed into 118 by ACT or SAT scores—see below. Not for Chancellor's Honors Program students. (Note: students who get a passing grade of B- or below in English 118 must take English 102 in Spring).
4. **Chancellor's Honors Sequence:** English 198 (Fall) + English 298 (Spring). Limited to students in the Chancellor's Honors Program.
5. **AP Credit Sequence*:** Credit for 101 through AP score + Choice of either English 290 or English 102 (Fall or Spring).

   ***AP Credit:** A score of 4 or 5 on either the College Board Advanced Placement Test in Literature and Composition or the Language and Composition exam gives credit for English 101 only. Students must take English 290 or English 102 to complete the First-Year Composition requirement.

Note: CLEP credit is not accepted for the First-Year Composition requirement.

International Students/Non-Native English Speakers

ACT Scores	SAT Scores	Fall Placement
At or below 18 English & 18 Composite	Below 450 Verbal & 850 Composite	English 101 and English 103
English 19-28 & Composite 19-28	Verbal 450-680 & Composite 850-1280	English 101 (Strongly recommend English 103 for students who want or need additional help)
At or above 29 English & 29 Composite	Above 680 Verbal & 1280 Composite	English 118 (Offered only in Fall)

FOREIGN LANGUAGE – Not Required in Engineering

Students can take a foreign language assessment as part of the Pre-Orientation steps. The College of Engineering does not require the study of foreign language to earn a diploma. However, intermediate (200 level) foreign language sequence satisfies the University's General Education area of Cultures and Civilizations.

Students interested in earning intermediate foreign language credits in Chinese, French, German, Italian, Russian, Spanish, or others, contact:
Language Resource Center
Room 1–17 Alumni Memorial Building
865-974-0797
lrc@utk.edu

Students interested in earning intermediate foreign language credits in Latin (Classics) contact:
Department of Classics
1101 McClung Tower
865-974-5383
classics@utk.edu

Placement Exam

All students planning to enroll in a French, German, Latin, or Spanish course who have completed at least two years of this language in high school and have not yet taken a college course in the language must take a UT placement exam before enrolling. This rule does not apply to students who receive AP credit in the language. The score on the exam will determine placement in the appropriate course. Ordinarily, a student will not be allowed to enroll in a course at a level above that determined by his/her placement exam score.

Transition Course

Some students who have had two years of the same language in high school and receive a placement score below the level required for admittance into intermediate-level language courses may be placed in a 150 language course. These courses are designed to prepare students for enrollment in intermediate-level foreign language courses and count as elective credit. Students who receive credit for this course may not receive credit for any other 100-level course of the same language.

General Education Requirements

Arts and Humanities (2 courses)

Taking two courses from the list below satisfies this requirement

Approved Arts and Humanities (AH) Courses

Africana Studies
- 160: Art of Africa, Oceania and Pre-Columbian America
- 225: Introduction to African Literature
- 226: Introduction to Caribbean Literature
- 233: Major Black Writers

Arab
- 251: Whole New Worlds: Fantasy, Sci-fi, and Dystopia in the Middle East

Architecture
- 111: Architecture and the Built Environment
- 117: Honors–Architecture and the Built Environment
- 211: History and Theory of Architecture I
- 212: History and Theory of Architecture II
- 217: Honors–History and Theory of Architecture I
- 218 Honors–History and Theory of Architecture II

Art Design/Graphic
- 150: The Idea of Graphic Design

Art History
- 162: Art of Africa, Oceania and Pre-Columbian America
- 167: Honors–Art of Africa, Oceania and Pre-Columbian America
- 172: Western Art: Ancient–Medieval
- 173: Western Art: Renaissance–Contemporary
- 177: Honors–Western Art: Ancient–Medieval
- 178: Honors–Western Art: Renaissance–Contemporary
- 183: Asian Art
- 187: Honors–Asian Art

Cinema Studies
- 281: Introduction to Film Studies
- 323: German Film Survey

Classics
- 221: Early Greek Mythology
- 222: Classical Greek and Roman Mythology
- 232: Archeology and Art of Ancient Greece and Rome
- 253: Greek and Roman Literature in English Translation
- 254: Greek and Roman Epic in English Translation
- 255: Greek and Roman Drama in English Translation
- 256: Ancient World Reimagined

English
- 201: British Literature I Beowulf–Johnson
- 202: British Lit. II Wordsworth–Present
- 206: Introduction to Shakespeare
- 207: Honors British Literature I
- 208: Honors British Literature II
- 209: Introduction to Jane Austen
- 221: World Lit. I Ancient–Early Modern
- 222: World Literature II 18th Century–Present
- 225: Introduction to African Literature
- 226: Introduction to Caribbean Literature
- 231: American Lit. I Colonial Era–Civil War
- 232: American Lit. II-Civil War–Present
- 233: Major Black Writers
- 237: Honors–American Literature I-Colonial Era through the Civil War
- 238: Honors–American Literature II-Civil War to Present
- 247: Honors: Introduction to Poetry
- 248: Honors: Introduction to Drama
- 251: Introduction to Poetry
- 252: Introduction to Drama
- 253: Introduction to Fiction
- 254: Themes in Literature
- 258: Honors: Introduction to Fiction
- 281: Introduction to Film Studies
- 340: Science Fiction and Fantasy
- 389: Literature of the English Bible

German
- 323: German Film Survey
- 370: Witches: Myth, Reality, Representation

Graphic Design
- 150: The Idea of Design

Haslam Scholars Program
- 287: Knowledge

Middle East Studies
- 225: Introduction to Judaism, Christianity, Islam

Musicology
- 110: Intro to Music in Western Culture
- 115: Music in the United States
- 120: History of Rock
- 125: Jazz in American Culture
- 210: History of Western Music-Ancient to the Baroque
- 220: History of Western Music-Classical to the Present
- 290: Soundscapes-Exploring Music in a Changing World

Music Theory
- 305: Italian Musical Styles

Philosophy
- 101: Introduction to Philosophy
- 107: Honors–Introduction to Philosophy
- 200: Special Topics
- 244: Professional Responsibility
- 252: Contemporary Moral Problems

Religious Studies
- 202: Religion and Film
- 225: Introduction to Judaism, Christianity, Islam
- 227: Honors Introduction to Judaism, Christianity, Islam
- 280: Religions of Asia
- 321: New Testament and Christian Origins
- 389: Literature of the English Bible

Russian
- 221: Rebels, Dreamers and Fools—The Outcast in 19th Century Russian Literature
- 222: Heaven or Hell-Utopias and Dystopias in 20th Century Russian Lit.

Theatre
- 100: Introduction to Theatre
- 107: Honors: Introduction to Theatre

University Honors
- 257: Special Topics Arts and Humanities
  258: Special Topics Arts and Humanities

Social Sciences (2 courses)

This requirement is satisfied by taking two courses from the following list.

Approved Social Sciences (SS) Courses

Africana Studies
- 201: Introduction to African-American Studies
- 202: Introduction to African-American Studies

Agricultural and Resource Economics
- 201: Economics of the Global Food and Fiber System
- 270: Economic Perspectives on Natural Resource and Environmental Issues

Agriculture and Natural Resources
- 180: Global Dynamics: Food, Biodiversity and the Environment

Anthropology
- 120: Intro to Archaeology
- 127: Honors Intro to Archaeology
- 130: Cultural Anthropology
- 137: Honors Cultural Anthropology

Baker Center for Public Policy
- 101: Introduction to Public Policy

Child and Family Studies
- 210: Human Development
- 220: Marriage & Family—Roles & Relationships

Economics
- 201: Intro to Economics-A Survey Course
- 207: Honors Introductory Economics
- 211/213: Principles of Microeconomics/ Macroeconomics
- 217/218: Honors Principles of Micro-/ Macroeconomics

Educational Psychology
- 210: Psychoeducational Issues in Human Development

Geography
- 101: World Geography
- 111: Our Digital Earth
- 121: Human Geography: People and Places

Global Studies
- 250: Intro to Global Studies

Haslam Scholars Program
- 257: Power
- 268: Perspectives on Globalization

Interior Architecture
- 200: Human Environment Relations
- 207: Honors Human Environment Relations

Political Science
- 101: US Government and Politics
- 102: Introduction to Political Science
- 107: Honors US Government and Politics

Psychology
- 110: General Psychology
- 117: Honors General Psychology

Public Health
- 201: Introduction to Public Health

Religious Studies
- 232: Religions in Global Perspective
- 233: Religion and Society in North America

Social Work
- 250: Introduction to Social Welfare

Sociology
- 110: Social Problems and Social Justice
- 120: Introduction to Sociology
- 127: Honors Introduction to Sociology
- 225: Intro Critical Race & Ethnic Studies
- 232: Religions in Global Perspective
- 250: Introduction to Global Studies
- 260: Introduction to the Study of Environmental Issues
- 350: Criminology
- 353: Criminal Justice
- 360: Environment and Resources
- 453: Gender and Crime
- 455: Law and Society

University Honors
- 267: Special Topics in the Social Sciences
- 268: Special Topics in the Social Sciences

Women, Gender, and Sexuality
- 200: Introduction to Women, Gender, and Sexuality
- 453: Gender and Crime

General Education Requirements

Cultures and Civilizations (2 courses)

This requirement is satisfied by either
(1) taking two courses from the following list or
(2) taking a two-course sequence in a foreign language at the intermediate level
or
(3) taking a six-hour intensive foreign language course at the intermediate level.

Approved Cultures and Civilizations (CC) Courses

Africana Studies
- 235: Introduction to African Studies
- 236: Introdution to African Studies

Anthropology
- 120: Prehistoric Archaeology
- 127: Honors-Prehistoric Archaeology

Classics
- 201: Introduction to Classical Civilization

Cultural Studies in Education
- 200: Survey of International Education

Entomology and Plant Pathology
- 123: Chocolate: Bean to Bar

Environmental and Soil Sciences
- 120: Soils and Civilizations
- 220: Waters and Civilizations
- 227: Honors–Waters and Civilizations

Food Science
- 150: History and Culture of Food

Global Studies
- 250: Introduction to Global Studies

Haslam Scholars Program
- 368: Study Abroad: Edinburgh, Scotland

History
- HIEU 241: Development of Western Civilization
- HIEU 242: Development of Western Civilization
- HIEU 247: Honors Development of Western Civilization
- HIEU 248: Honors Development of Western Civilization
- HILA 255: Early Latin America and Caribbean Studies
- HILA 256: Modern Latin America and Caribbean Studies
- HIST 261: History of World Civilization
- HIST 262: HIstory of World Civilization
- HIST 267: Honors History of World Civilization
- HIST 268: Honors History of World Civilization

Latin America and Caribbean Studies
- 251: Early Latin American and Caribbean History
- 252: Modern Latin American and Caribbean History

Medieval and Renaissance Studies
- 201: Medieval Civilization I
- 202: Medieval Civilization II

Modern Foreign Languages and Literatures
- 200: Topics in International Literatures and Cultures

Plant Sciences
- 115: Plants That Changed the World
- 491: International Study: History and Culture of International Gardens and Landscapes

Religious Studies
- 101: World Religions in History
- 102: Comparison of World Religions

Retail & Consumer Sciences
- 225: Fashion and Culture

Sociology
- 250: Introduction to Global Studies

University Honors
- 277: Special Topics in Cultures and Civilizations
- 278: Special Topics in Cultures and Civilizations

Intermediate Foreign Language Courses

American Sign Language
- 211 and 212: Intermediate American Sign Language I and II

Arabic
- 221 and 222: Intermediate Arabic I and II

Asian Studies
- 261 and 262: Intermediate Persian I and II

Chinese
- 231 and 232: Intermediate Chinese I and II

Classics
- 251 and 252: Intermediate Latin I and II
- 261: Intermediate Greek: Grammar Review and Readings
- 264: Intermediate Greek: Epic Poetry

French
- 211 and 212: Intermediate French I and II
- 217 and 218: Honors Intermediate French I and II

German
- 211 and 212: Intermediate German I and II

Hebrew
- 241 and 242: Intermediate Modern Hebrew I and II

Italian
- 211 and 212: Intermediate Italian I and II

Japanese
- 251 and 252: Intermediate Japanese I and II

Persian
- 261 and 262 : Intermediate Persian I and II

Portuguese
- 211 and 212: Intermediate Portuguese

Religious Studies
- 221 and 222: Intermediate Biblical Hebrew I and II

Russian
- 201 and 202: Intermediate Russian

Spanish
- 211 and 212: Intermediate Spanish I and II
- 217 and 218: Honors Intermediate Spanish I and II

Intensive Intermediate Foreign Language Courses (6 credit hours)

French
- French 223

German
- German 223

Italian
- Italian 223

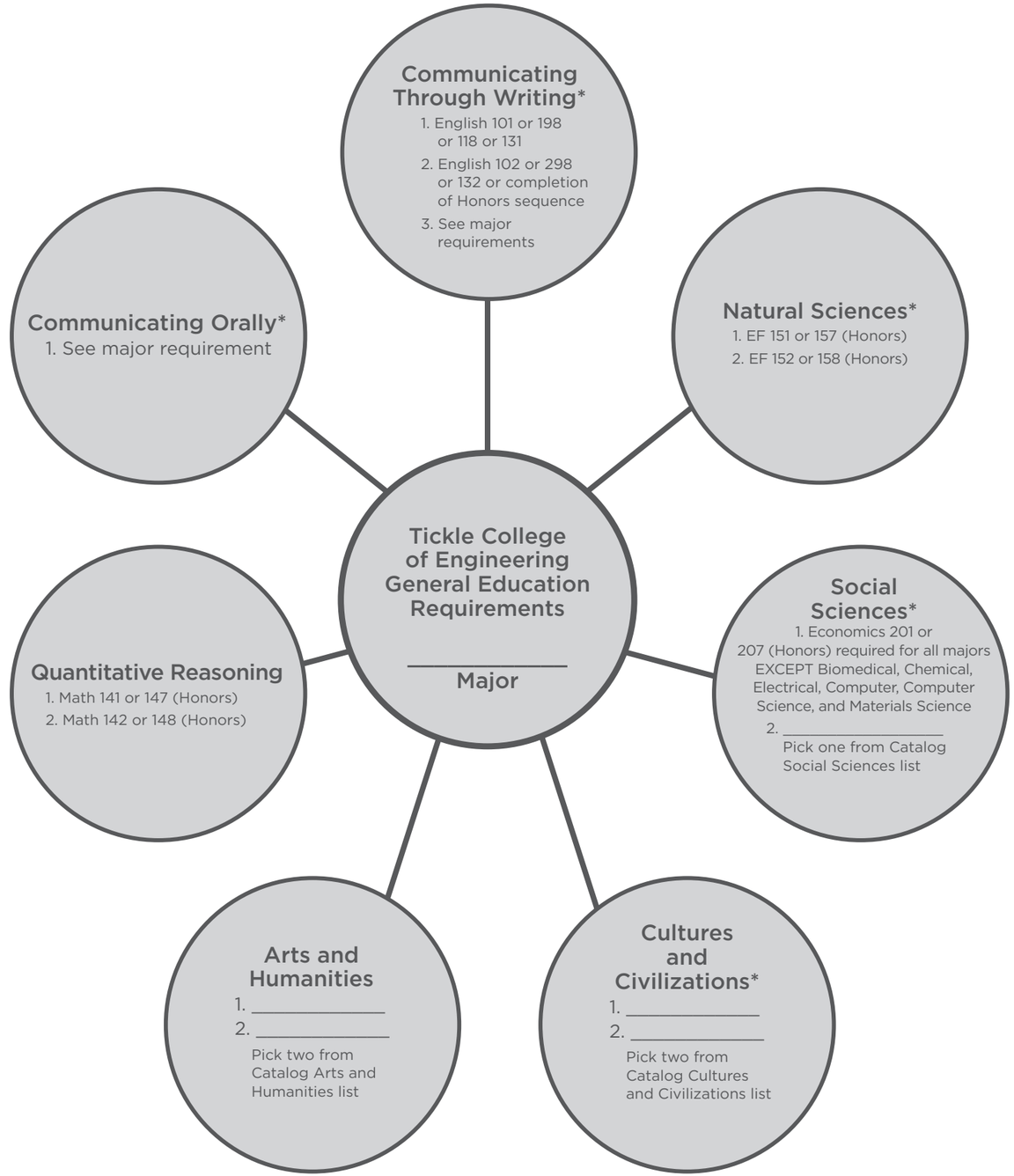
Portuguese
- Portuguese 223

Spanish
- Spanish 223

For a complete listing of all approved courses, please reference the extensive list online in the Undergraduate Catalog, ***catalog.utk.edu***.

$$\bar{v}_{B/G} = \bar{v}_{A/G} + \bar{v}_{B/A}$$
$$\bar{v}_{B/A} = \bar{v}_{B/G} - \bar{v}_{A/G}$$
$$\bar{v}_{B/A} = -\bar{v}_{A/B}$$

General Education Requirements in Engineering



General Education Requirements in Engineering

*General Education Requirements by Major

See catalog.utk.edu for the University of Tennessee General Education Requirements

Communication Through Writing:

Aerospace - AE 449
Biomedical - BME 449
Biosystems - English 360
Chemical - CBE 415
Civil - CE 205
Computer, Electrical - ECE 402
Computer Science - CS 402
Industrial - IE 350, 422
Materials Science - MSE 304 or 405
Mechanical - ME 449
Nuclear - NE 401, 402, 427

Cultures and Civilizations:

Students may satisfy Cultures and Civilizations in one of two ways: intermediate proficiency in a foreign language, demonstrated by credit for the 200-level sequence in the foreign language, OR two completed courses from the Cultures and Civilizations list from the catalog. The Tickle College of Engineering does NOT require foreign language, but students are welcome to use intermediate proficiency in foreign language to satisfy this requirement.

Communicating Orally:

Aerospace – AE 210
Biomedical – Choose from list in catalog.
Biosystems – BSE 404
Chemical – CBE 488 or 490
Civil – CE 205
Computer, Electrical – ECE 402
Computer Science – CS 402
Industrial – IE 422
Materials Science – MSE 489
Mechanical – ME 210
Nuclear – NE 400

Degree Audit Report System (DARS)

What it is, what it does, and how to use it:

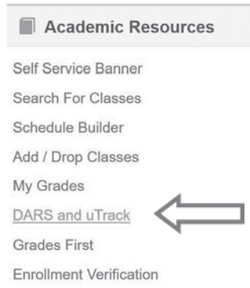
UT students have access to the Degree Audit Report System (DARS), which allows you to look at the credits you have on your academic history and see how they fit into the specific requirements of your major. While it defaults to your currently declared major, you can also use this system to look at any major or minor offered at UT to see how your courses would fit into those programs.

It is important for you to be able to run and interpret your DARS report because this system is the one the registrar uses to check whether or not you have met all the specific requirements for your major in order to graduate. So, it is your responsibility to learn how to use the system. These pages will give you the basics on how to access the system and run your report.

To access DARS:

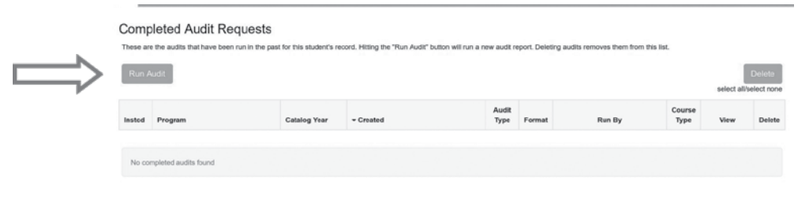
Step 1

Log into **my.utk.edu** and then click on the DARS and uTrack link under the Academic Resources heading



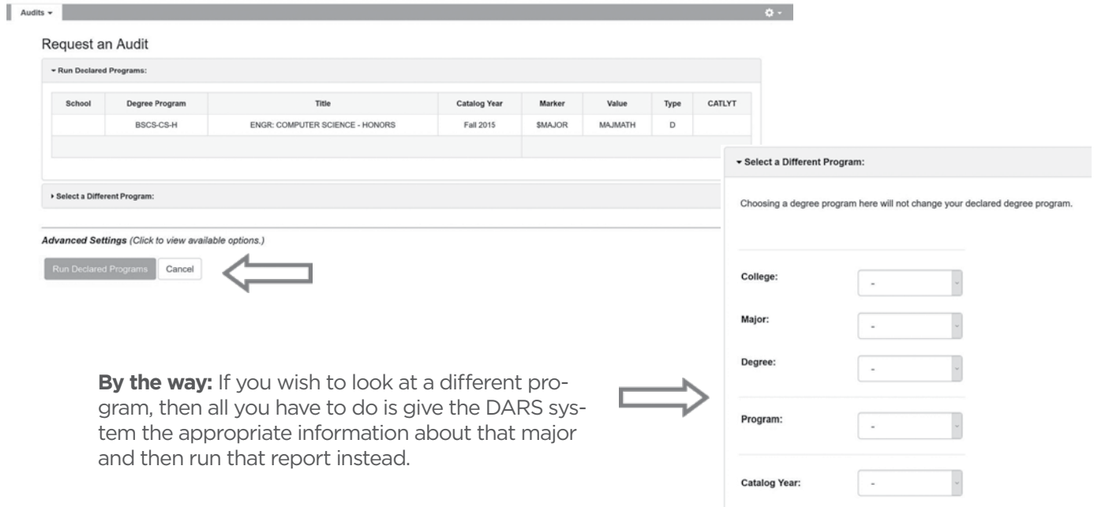
Step 2

Once in DARS, click on the "Run Audit" box to begin the process.



Step 3

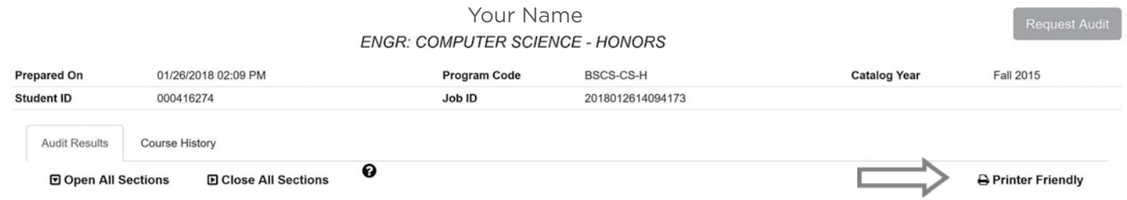
Your declared degree program, along with any second majors or minors you are also doing, will now appear on the list of audits you have requested. To run the report, you would just click on the button that says "Run Declared Programs."



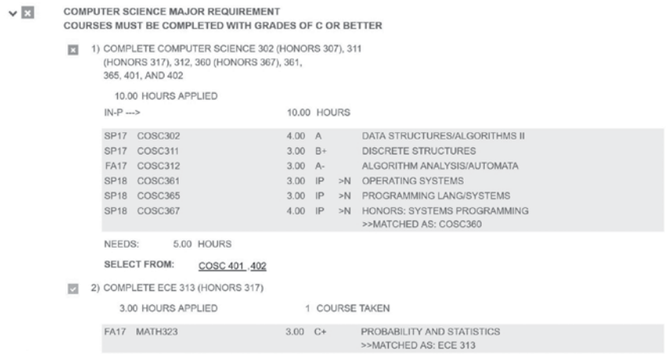
By the way: If you wish to look at a different program, then all you have to do is give the DARS system the appropriate information about that major and then run that report instead.

DARS

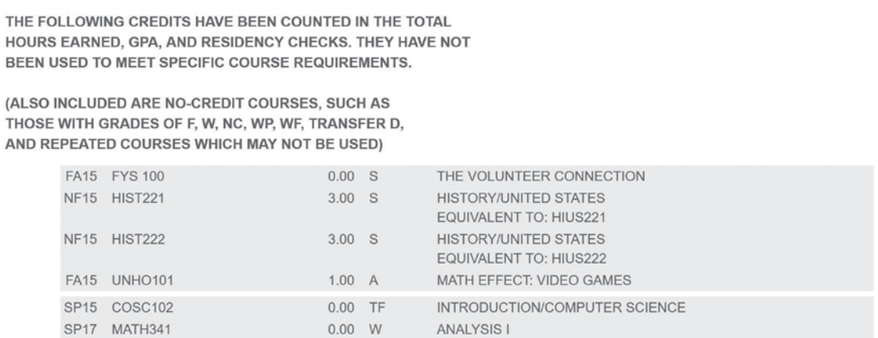
Step 4
Once you open your DARS report, you should click on the printer friendly icon, so that the full report opens up and you can see all the requirements under each tab of the report.



Step 5
As you scroll through the report, you will notice that the tabs have different colors. Tabs that are **GREEN** mean that that degree requirement is completed. Tabs that are **RED** show which requirements you have not yet met for your degree, and the DARS report shows which courses are still required to meet that particular requirement for your degree. Tabs that are **BLUE** show course requirements that you are finishing during the current semester.



Step 6
Finally, any course credits you have that do not fulfill requirements for your degree are listed at the bottom of the DARS report. Likewise, any course you withdrew from or did not pass is also listed at the bottom of the report.



If you still have questions, your academic advisor will also be able to help you learn how to interpret your DARS report so that you can understand what degree requirements you have completed and which ones you still need to finish.

If you have further questions, contact ENGINEERING ADVISING SERVICES in 316A Perkins Hall, 865-974-4408.

UTrack Information

Universal Tracking (UTracK)

Universal Tracking (UTracK) is an academic monitoring system designed to help students stay on track for timely graduation.

Policy
1. Students must declare a major or exploratory track at the time they are admitted to the university. Some majors have a competitive admissions process.
2. All students must transition out of exploratory tracks into a major track no later than the end of the fourth tracking semester at UT.
3. Students who are off track must develop an advisor-approved plan for getting back on track before they will be allowed to register for future tracking semesters.
4. Students who are off track for two consecutive semesters will be placed on hold and required to select a new major that is better aligned with their abilities.

Definitions

Exploratory Tracks
- **College-Level Exploratory—**Students who are deciding among one or more majors that are all offered by the same college follow an exploratory track for that college (e.g., Arts and Sciences Exploratory, Business Exploratory, etc.)
- **University Exploratory—**Students who have no clear idea of which major to pursue and/or those who are trying to decide among majors that are not in a single college follow the University Exploratory track.

Milestones—In order to remain on track for a major or exploratory area, students must complete minimum requirements for each tracking semester known as milestones. Milestones include successful completion of specified courses and/or attainment of a minimum GPA.

Tracking Semesters—Only fall and spring semesters are tracking semesters. Mini and summer semesters are not tracking semesters, they provide an opportunity for students to catch up on unmet milestones. Study abroad and co-op semesters are not tracking semesters. Students participating in study abroad and co-op are not required to complete milestones while they are away from campus.

Tracking Audit—Tracking audits will help students identify their milestone progress; audits are tied to a catalog year. Tracking audits will be used to notify students when they are off track.

Off Track for a Single Semester—Students who are off track at the end of a tracking semester must meet with an advisor as soon as possible but no later than the end of the next tracking semester to develop a plan for getting back on track. Students who do not have an advisor-approved plan for getting back on track will not be allowed to register for future tracking semesters.

Off Track for Two Consecutive Semesters—Students who are off track for two consecutive semesters will have a hold placed on their registration and must meet with a new advisor in one of the advising centers no later than the end of the "add" period of the next tracking term to select a new major that is better aligned with the student's abilities.

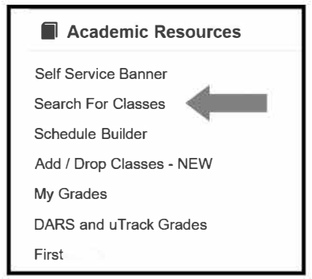
MyUTK

A QUICK REFERENCE FOR USING THE ONLINE REGISTRATION

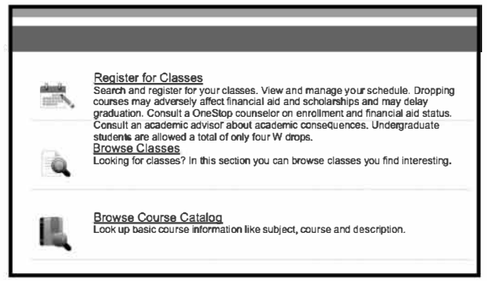
To begin registration, you need to log on to MyUTK (my.utk.edu), and then log in with your username, which is your NETID (not ID #), and your NETID password.

TO SEARCH FOR CLASSES and/or CREATE A SCHEDULE PLAN

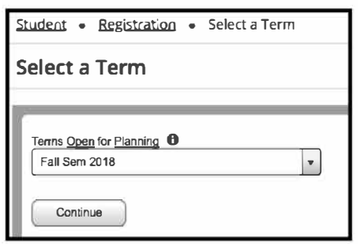
STEP 1—Log into **my.utk.edu** and then click on the **Search For Classes** link under the **Academic Resources** heading



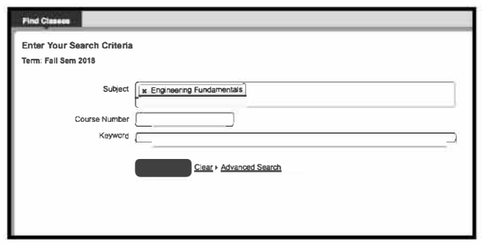
STEP 2—Once in the registration system, click on the **Browse Classes link** on the right side of the menu to begin the process of searching for classes



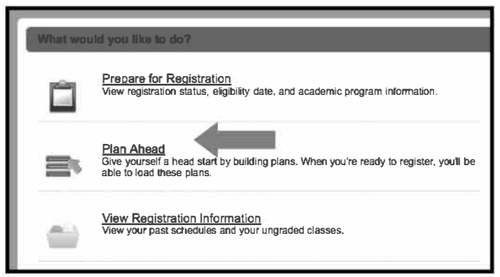
STEP 3—Each time you look for courses or attempt to register, you must make sure you are looking for classes in the correct semester with this menu.



STEP 4—Once you are in the correct semester, you can look up the classes by the department that teaches them. So, for example, if you want to take EF 151, you would look up **Engineering Fundamentals** as the subject.



If you wish to create a tentative plan for the whole semester, you can use the **Plan Ahead** *feature.*



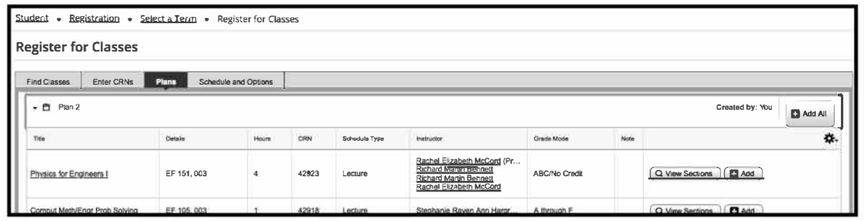
Under the **Plan Ahead** *feature, you can create up to 5 plans per semester. You can give these unique names so that you identify them later when you register.*

MyUTK

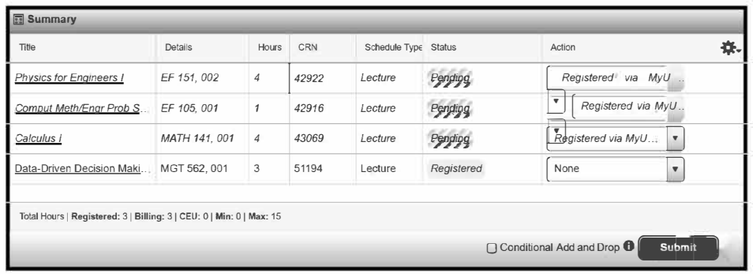
TO REGISTER FOR CLASSES

STEP 1—Log into the registration system and then click on the **Register for Classes** link to sign up for courses. It is important that you look up courses prior to registration because the Banner System enforces pre- and co-requisite requirements (see *Search for classes*). **You must register for all corequisite courses simultaneously.** You can either look the courses up individually, but we would encourage you to use the planning features in the search to make sure you have all the appropriate courses scheduled for your semester, especially if they have pre- and corequisite requirements.

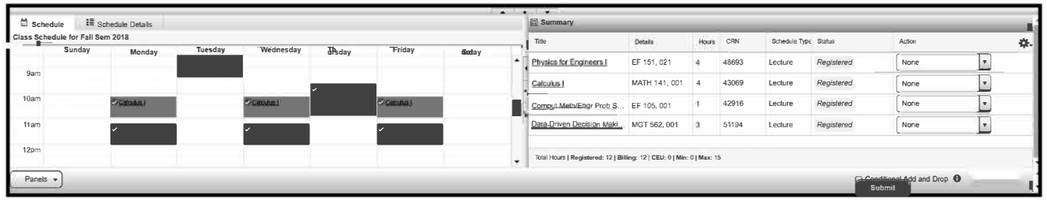
STEP 2—Once you have created a course plan, you can click on the tab that says **Plans** and add those classes to your schedule for the semester.



Once you have chosen the courses to be on your plan, you can submit those to you schedule for the semester (this dialog box will be in the bottom right of your screen).



After successful submission of your courses, the registration system will show you that you are registered in your courses (lower right dialog box). You can also see how the courses work together during the week with the calendar box on the lower left of the screen.



Keep in mind that any course you look for in the registration system has further information about it that you can find by clicking on the underlined title hyperlink of the class. Another dialog box will appear and allow you to find information on the professor, the text book, and any pre- or co-requisite information on the class.

Tentative Schedule Planner

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:50					
8:10-9:25					
9:05-9:55					
9:40-10:55					
10:10-11:00					
11:10-12:25					
11:15-12:05					
12:20-1:10					
12:40-1:55					
1:25-2:15					
2:10-3:25					
2:30-3:20					
3:35-4:25					
3:40-4:55					
4:40-5:30					
5:05-6:20					
5:45-6:30					

Academic Calendar

Fall Semester 2020

Classes Begin . . . . . Wednesday, August 19
Labor Day . . . . . Monday, September 7
1st Session Ends . . . . . Wednesday, October 7
Fall Break . . . . . Thursday–Friday, October 8–9
2nd Session Begins . . . . . Monday, October 12
No Class Day . . . . . Wednesday, November 25
Thanksgiving . . . . . Thursday-Friday, November 26–27
Classes End . . . . . Wednesday, December 2
Study Day . . . . . Thursday, December 3
Exams . . . . . Friday–Thursday, December 4, 7, 8, 9, 10
Graduate Hooding . . . . . Thursday, December 10
Commencement . . . . . Friday, December 11
Official Graduation Date . . . . . Saturday, December 12

Spring Semester 2021

Classes Begin . . . . . Wednesday, January 13
MLK Holiday . . . . . Monday, January 18
1st Session Ends . . . . . Wednesday, March 3
2nd Session Begins . . . . . Thursday, March 4
Spring Break . . . . . Monday–Friday, March 15–19
No Class Day . . . . . Thursday, April 1
Spring Recess . . . . . Friday, April 2
Classes End . . . . . Friday, April 30
Study Day . . . . . Monday, May 3
Exams . . . . . Tuesday–Monday, May 4, 5 ,6, 7, 10
Graduate Hooding . . . . . Thursday, May 13
College Commencement Ceremonies . . . . . Thursday–Saturday, May 13–15
Official Graduation Date . . . . . Saturday, May 15

Summer Term 2021

Please refer to the Summer 2021 academic calendar on the Office of the University Registrar website: **registrar.utk.edu/calendar/academic-calendars**

*There is no commencement ceremony in the summer. This date is the official graduation date that will appear on the transcript of graduating students. The Academic Calendar is available on the Web site of the Office of the University Registrar: **registrar.utk.edu/calendar/academic_calendars.**

Key Term Dates

Fall 2020 - Undergraduate

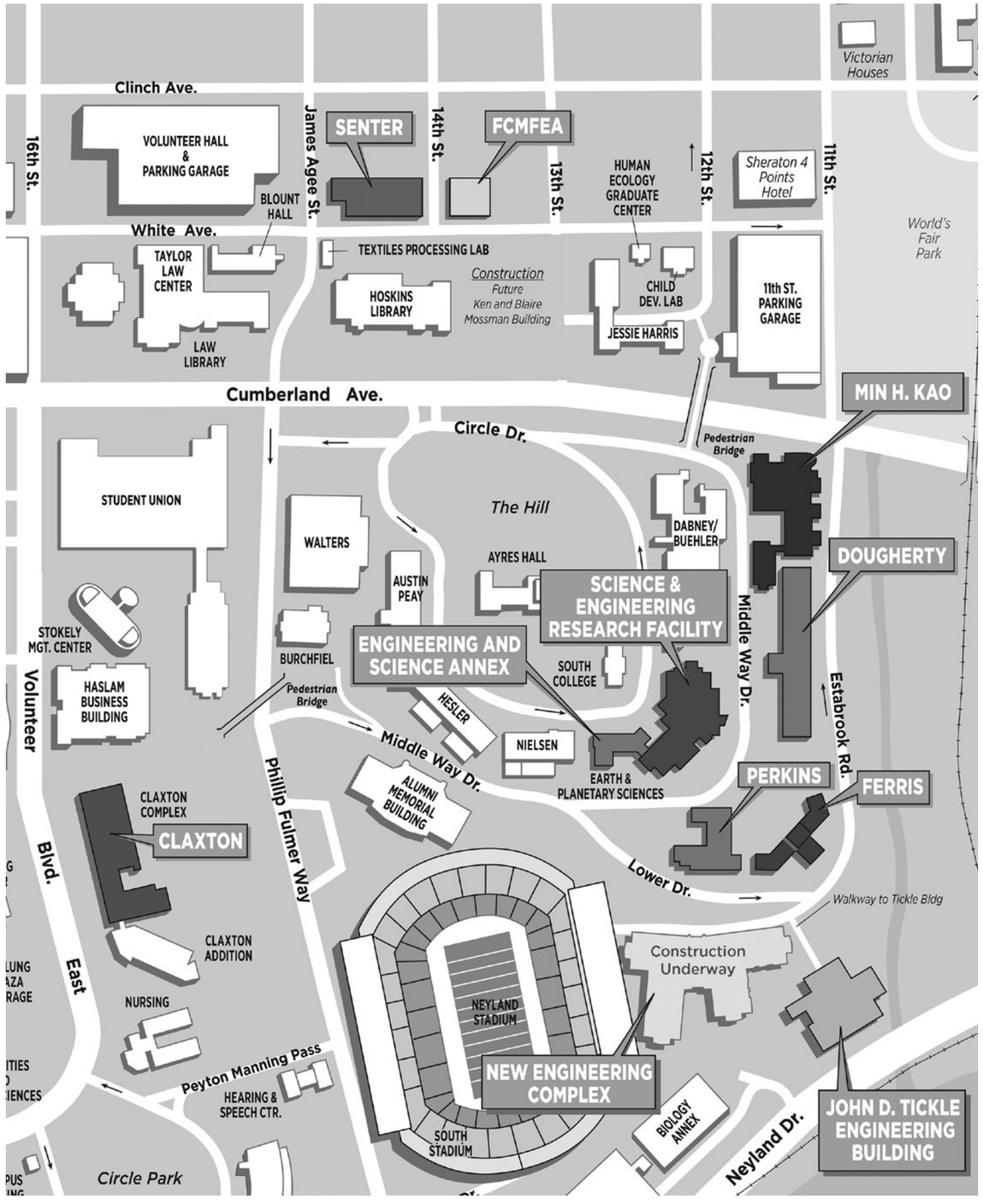
Priority Registration Begins . . . . . February 26, 2020
Fall 2020 Graduation Application Deadline / Admission to Candidacy Deadline for Graduate Students . . August 6, 2020
Classes Begin . . . . . August 19, 2020
Last Day to Add, Change Grading Options or Drop without a "W" — 1st Session Courses . . . . August TBD, 2020
Last Day to Final Register, Add, Change Grading Options or Drop without a "W"- Full Session Courses . . August TBD, 2020
Labor Day (No Classes) . . . . . September 7, 2020
Last Day to Adjust Hours for Financial Aid Awarding . . . . . September TBD, 2020
Last Day to Drop with a "W" - 1st Session Courses. . . . . September TBD, 2020
First Session Classes End . . . . . October 7, 2020
Fall Break (No Classes) . . . . . October 8–9, 2020
Second Session Classes Begin. . . . . October 12, 2020
Last Day to Add, Change Grading Options or Drop without "W" - 2nd Session Courses . . . . . October TBD, 2020
Last Day to Drop with a "W" - Full Term Courses . . . . . November TBD, 2020
Last Day to Drop with "W" - 2nd Session Courses . . . . . November TBD, 2020
No Class Day . . . . . November 25, 2020
Thanksgiving Holidays (No Classes). . . . . November 26–27, 2020
Total Withdrawal from the University Deadline . . . . . December TBD, 2020
Classes End (Full and Second Session) . . . . . December 2, 2020
Study Day . . . . . December 3, 2020
Exam Period . . . . . December 4, 7, 8, 9, 10, 2020
Commencement (Thompson Boling Assembly Center & Arena) . . . . . December 11, 2020
Official Graduation Date on Transcript . . . . . December 12, 2020

Financial Calendar for Fall Term 2020

Statement information available on MYUTK.UTK.EDU. . . . . Juy TBD, 2020
Priority Registration Payment/Deadline . . . . . August TBD, 2020
Late Registration/Late Fees Begin . . . . . August TBD, 2020
Late Registration Payment/Deadline . . . . . August TBD, 2020

* PAYMENT MUST BE RECEIVED BY THESE DEADLINES WHETHER OR NOT YOU HAVE RECEIVED a VolXpress STATEMENT. You may view your account on MyUTK.

Engineering Campus Map



Engineering Campus Office Locations by Building

Key for Engineering Buildings

Building	Room
Claxton	
Innovative Computing Laboratory	203
Dougherty Hall	
Department of Chemical & Biomolecular Engineering	419
Department Mechanical, Aerospace, and Biomedical Engineering	414
National Office, Tau Beta Pi Engineering Honor Society	508
Ferris Hall	
Department of Materials Science & Engineering	414
Center for Materials Processing	423
John D. Tickle Engineering Building	
Department of Civil & Environmental Engineering	325
Department of Industrial & Systems Engineering	525
Min H. Kao Electrical Engineering & Computer Science Building	
Department of Electrical Engineering & Computer Science	401
CURENT	555
Nuclear Engineering Building	
Department of Nuclear Engineering	306
Perkins Hall	
College of Engineering Administrative Offices	
Communications	114
Computer Assistance	112
Dean's Office	124
Development	118, 120
Finance & Administrative Affairs	219
Academic and Student Affairs	101
Engineering Advising Office	316A
Engineering Diversity Programs	301
Engineering Fundamentals Program	207
Engineering Professional Practice	110
Faculty Affairs	119
Tennessee Louis Stokes Alliance for Minority Participation	301
Science & Engineering Research Facility (SERF)	
Scintillation Materials Research Center	301
Senter Hall	
Ion Beam Materials Laboratory (IBML)	
FIbers and Composites Manufacturing Facility and Engineering Annex	
See individual directory listings	101
UT Conference Center	
Center for Transportation Research	309
Reliability and Maintainability Center	B067M
Cherokee Farm Innovation Campus	
Joint Institute for Advanced Materials (JIAM)	
Not Shown	
Biosystems Engineering & Soil Science — 2506 E.J. Chapman Drive, Knoxville, TN	
National Transportation Research Center — 2360 Cherohala Blvd., Knoxville, TN	
UT Space Institute — 411 B.H. Goethert Parkway, Tullahoma, TN	

Tickle College of Engineering Ambassadors

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