Chemical & Environmental Engineering Department

2015-2016
Undergraduate Handbook

WELCOME

Welcome to the Chemical & Environmental Engineering Department at The University of Toledo. We are very pleased and excited that you have chosen to pursue your education with us.

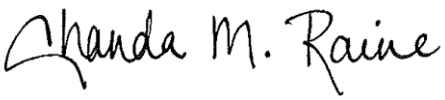
The transition to college can often be a very difficult one. We look forward to assisting you and making your transition as easy as possible. It is very beneficial to take part in student organizations and activities while attending the University. Communicating with your professors and networking on-campus also will allow you to have a successful college career.

This handbook contains important and useful information for you. Please read it carefully and use it as a reference guide. You will find helpful tips, program and course information, important phone numbers and valuable planning tools to assist you along the way.

Please feel free to call (419-530-8096), email (chanda.raine@utoledo.edu), or stop by my office (NI 3050) should you have any questions. Office hours are Monday-Friday 8:30am-5:00pm or by appointment.

We wish you the very best of luck in your college career at The University of Toledo!

Sincerely,



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Chemical & Environmental Engineering
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*** All information listed in this handbook is current at the time of printing.**

IMPORTANT PHONE NUMBERS

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Dr. Dong-Shik Kim
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Associate Director, Career Development Center (Co-op Office)
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Admissions	(419) 530-8888
Bookstore	(419) 530-2516
Campus Police	(419) 530-2600 (emergency); 419-530-2601 (non-emergency)
Learning Enhancement Center	(419) 530-2176
Library	(419) 530-2324
Parking Services	(419) 530-4100
Residence Life	(419) 530-2941
Rocket Card Services	(419) 530-5842
Rocket Solution Central	(419) 530-8700 *(Includes Treasurer's Office, Financial Aid, & Registrar)*
Student Disability Services	(419) 530-4981
Student Medical Center	(419) 530-3451
Student Recreation Center	(419) 530-3700
Testing Center	(419) 530-2011
Writing Center	(419) 530-2176

WHAT DO CHEMICAL ENGINEERS DO?

It would take too long to list all the products that are impacted by chemical engineers, but knowing what industries employ them may help you comprehend the scope of their work.

Chemical engineers work in manufacturing, pharmaceuticals, healthcare, design and construction, pulp and paper, petrochemicals, food processing, specialty chemicals, microelectronics, electronic and advanced materials, polymers, business services, biotechnology, and environmental health and safety industries, among others.

Within these industries, chemical engineers rely on their knowledge of mathematics and science—particularly chemistry— to overcome technical problems safely and economically. And, of course, they draw upon and apply their engineering knowledge to solve any technical challenges they encounter. Don't make the mistake of thinking that chemical engineers only “make things,” though. Their expertise is also applied in the areas of law, education, publishing, finance, and medicine, as well as in many other fields that require technical training.

Specifically, chemical engineers improve food processing techniques, and methods of producing fertilizers, to increase the quantity and quality of available food.

They also construct the synthetic fibers that make our clothes more comfortable and water resistant; they develop methods to mass-produce drugs, making them more affordable; and they create safer, more efficient methods of refining petroleum products, making energy and chemical sources more productive and cost effective.

Chemical engineers also develop solutions to environmental problems, such as pollution control and remediation.

And yes, they process chemicals, which are used to make or improve just about everything you see around you.

Chemical engineers face many of the same challenges that other professionals face, and they meet these challenges by applying their technical knowledge, communication and teamwork skills; the most up-to-date practices available; and hard work. Benefits include financial reward, recognition within industry and society, and the gratification that comes from working with the processes of nature to meet the needs of society.

*This information and other information regarding the field of Chemical Engineering can be found at: http://www.aiche.org

DID YOU KNOW?

(Famous Chemical Engineers!)

Dolph Lundgren (*Rocky IV*) and Frank Capra (Director: *It's a Wonderful Life*)

> Both earned chemical engineering degrees from the University of Sydney and Stanford University, respectively.

Kevin Brown

> Major league pitcher. He received his B.S. in Chemical Engineering from Georgia Tech. He won the World Series with the Marlins in 1997, then became one of the highest paid pitchers with the Dodgers (via the Padres).

Cindy Crawford

> Supermodel, not an engineer. She was valedictorian in her high school and had a Chemical Engineering scholarship at Northwestern University. She spent a semester there before leaving for New York and a modeling career.

Roberto C. Goizueta

> Former chairman and chief executive of Coca-Cola. He received his chemical engineering degree from Yale.

Bob Gore

> The inventor of Gore-Tex -- the lightweight, waterproof, breathable polytetrafluoroethylene (PTFE) fabric. He was a Chemical Engineering major at the University of Delaware when he came up with the idea of using Teflon to insulate electrical wires back in 1957. His dad started a business based on this idea. Bob then discovered Gore-Tex in 1969 when he was trying to make better cable insulation. The lore was that he was trying to heat rods of the stuff to see if they would stretch, and after days of gently tugging on the heated rods only to have them break, a frustrated Gore violently yanked one. To his surprise, the PTFE suddenly stretched. Soon Gore blended PTFE into fabric, and Ma and Pa Gore field tested a Gore-Tex tent in Wyoming's Wind River Range. Hail ripped the tent to shreds, soaking the couple. "But the fabric," insisted Mom, "was a success." Gore-Tex finally debuted as a product in 1976.

Andrew Grove

> One of the founders of Intel. He received his B.S. in Chemical Engineering from City College of New York (1960), and his PhD in Chemical Engineering from Berkeley (1963).

Bill Koch

Industrialist. B.S., M.S., and Ph.D. Chemical Engineering from MIT and part of the Koch industries family. He bankrolled and won the 1992 America's Cup in the boat *America,* and sponsored a women's team in 1995. It started out as an all-female team. He then put in a male tactician when they started losing, and people dubbed his boat Mighty Mary as Mostly Mary.

Arthur D. Little

Consultant and co-founder, with William Walker, of "Arthur D. Little, Inc.," a major consulting firm. He coined the term "unit operations" in 1915.

Alex Lowe

One of the world's best climbers. He had a Chemical Engineering scholarship at Montana State University in Bozeman. He spent two years there. He later received a degree in Applied Math. Lowe was killed in an avalanche on Tibet's Shishipagma on October 5, 1999.

Kevin Olmstead

World-record game show payoff winner -- $2,180,000 from "Who Wants to be a Millionaire?" in 2001. After acquiring B.S. and M.S. chemical engineering degrees from Case Western Reserve University and MIT, he earned a Ph.D. in environmental engineering from the University of Michigan.

Linus Pauling

Chemist who won two Nobel prizes -- one in Chemistry and one in Peace. He was a Chemical Engineering undergraduate at Oregon State University when it was still the Oregon Agricultural College. Then he got his Ph.D. in Chemistry at Caltech.

Cynthia Trudell

The President of Brunswick Corporation's Sea Ray Group, the nation's biggest maker of recreational boats. She was formerly (1999-2001) the Chairwoman and President of Saturn Corporation. She was the first woman to head a major U.S. automaker. She began her career as a chemical process engineer for Ford Motor Corporation.

John (Jack) F. Welch, Jr.

Former Chairman & CEO, General Electric Co. (The eighth Chairman and CEO in the Company's history.) He received his B.S. in Chemical Engineering from the University of Massachusetts (1957) and M.S. and Ph.D. in Chemical Engineering from the University of Illinois.

*This information and other information regarding the field of Chemical Engineering can be found at http://www.aiche.org.

INDUSTRY PROFILE

Chemical engineers are employed in many industries, representing a diverse range of products, employers, and services.

Chemical Process Industries (CPI) - The CPI's focus is on the development, extraction, isolation, combination, and use of chemicals and chemical by-products. Specialty areas include:

- Agricultural Chemicals
- Catalysts
- Specialty Chemicals
- Industrial Gases
- Paints, Varnishes, Lacquers, Pigments, and Inks
- Petrochemicals
- Petroleum Products
- Plastics, Synthetic Resins, and Composites
- Polymers
- Pulp and Paper
- Rubber and Rubber Products
- Soaps, Detergents, Perfumes, Fats, Oils, and Cosmetics
- Synthetic Fibers, Textiles, and Films

Chemical engineers in the CPI design and operate the processes and systems to combine, transport, separate, handle, recycle, and store chemicals and their by-products.

Biotechnology -The biotechnology industry uses living cells and materials produced by cells, and biological techniques developed through research, to create products for use in other industries. Work in the field of biotechnology has produced antibiotics, insulin, interferon, artificial organs, recombinant DNA, techniques for waste reduction and recycling, and hybrid plants that are insect resistant. Chemical engineers in the biotechnology industry develop and design the processes to grow, handle, and harvest living organisms and their by-products.

Design & Construction - The design and construction industry works with all other industry sectors to design and build the facilities, specify the machinery, and design and troubleshoot processes that will allow companies to operate safe and efficient plants. Chemical engineers in the design & construction industry are involved with process design and project management, and work closely with other engineering disciplines.

Electronics - Chemical engineers in the electronics industry are involved with material development and production, and process control equipment design. Knowing how process equipment in a chemical plant, for example, is supposed to function gives the chemical engineer an advantage in designing control equipment to monitor each process. Chemical engineers are also involved in the manufacturing of microchips and intricate circuitry, using their training to develop the materials and processes that allow such circuits to be properly assembled. Chemical engineers' contributions to the field include producing components that better dissipate heat, and operate faster.

Environmental, Safety & Health - In almost every industry, chemical engineers are involved in areas that concern the environment, waste minimization, and personal health and safety. With every process that involves the use and manipulation of raw materials, some by-products are produced. The chemical engineer is employed to minimize the production of by-products, if they are of no use, or find an appropriate

use for them. Chemical engineers help minimize waste through process monitoring and control, and by designing new processes that are more efficient. This category also includes those chemical engineers who are involved in waste treatment and disposal, and process safety and loss prevention. Process safety involves how people safely work with and handle certain materials.

Food & Beverages - The food and beverage industry includes the handling, processing, preparation, packaging, and preservation of food and beverages. Chemical engineers in the food and beverages industry formulate new products to meet consumer demand, change ingredients for better flavor, change handling processes for more consistent texture, and freeze dry products or design aseptic packaging to ensure a longer shelf life.

Fuels - Those industries that fall under the category of fuels include petroleum and petroleum products production, and refining, as well as nuclear and synthetic fuels. Typically known for their work in refineries, chemical engineers are also involved in developing alternative energy sources. Chemical engineers in the fuels industries work on production processes, environmental monitoring, research and development, and process safety.

Advanced Materials - Industries in the category of advanced materials use chemical engineers to help develop materials with different properties such as weight, strength, heat transfer, reflectivity, and purity. Industries that employ chemical engineers for these purposes include:

- Aerospace
- Automotive
- Glass
- Ceramics
- Electronics
- Refractories
- Metals
- Metallurgical Products
- Minerals Processing
- Photographic Products

Other - Chemical engineers are not limited to those industries that produce products made by combining, refining, or processing chemicals. The technical training that chemical engineers receive also makes them well suited for work in the following areas:

- Business
- Finance
- Insurance
- Law
- Publications
- Education
- Government

This information and other information regarding the field of Chemical Engineering can be found at: http://www.aiche.org

JOB DESCRIPTIONS

The specific responsibilities of chemical engineers, though varying among industries and even within the same company, can be categorized in general terms. Titles such as "process design engineer" and "project engineer" will describe positions in most industries, whatever the type of work, process, equipment, and product that is involved.

Process Design Engineer: Designs manufacturing facilities and the equipment and material used inside. Process design engineers work with teams of engineers to develop new or improved processes to meet a company's production needs.

Environmental Engineer: Develops techniques to reduce and recover usable materials from waste created during manufacture of a product. Designs waste storage and treatment facilities, as well as pollution control strategies for plant operations. Environmental engineers may be responsible for monitoring all systems in a facility for compliance with government environmental regulations.

Plant Process Engineer: Provides technical support to staff and troubleshoots processes in a production facility to keep a plant running efficiently. Plant process engineers work closely with equipment operators to get feedback on the operations of each process and determine how to avoid shut-downs. They may also be involved with some design work for improvement projects.

Process Safety Engineer: Designs and maintains plants and processes that are safer for workers and communities. Process safety engineers may conduct safety analyses of new and existing equipment, and train employees on how to safely operate a new piece of equipment.

Project Engineer: Oversees the design and construction of specific processes in a facility. After construction, they may assist in equipment testing, operator training, and plant start-up. Project engineers may be responsible for the design, and start-up, of a specific process in a facility.

Consultant: Works for many different customers and brings specialized knowledge to individual projects. Consultants in a construction company may work with teams of engineers to design and construct an expansion project for a pharmaceutical company.

Product Engineer: Follows the production cycle of a particular product to ensure that it is being produced according to specification. Product engineers may work with marketing and R&D to ensure that a product will meet the needs of customers, then see the product through production. They may work on new products or special variations of existing products.

Manufacturing Production Engineer: Responsible for the day-to-day operation of a specific manufacturing process. Manufacturing production engineers work directly with operators to ensure that a particular product is made according to specifications

Research & Development Engineer: Seeks out new and more efficient ways of using and producing existing products. Explores and develops new processes and products and determines their usefulness and applicability. Chemical engineers working in research and development may work with chemists and other engineers to develop a new process or new product that will better meet customer needs.

Project Manager: Oversees the overall design and construction of a facility, and then manages ongoing operations. Project managers may manage a group of project engineers during the design and construction of a new facility.

Attorney: Specializes in intellectual property law, patent law, technology transfer, environmental compliance, and safety issues. Patent attorneys obtain patents for clients and monitor the marketplace for possible patent infringements.

Biomedical Specialist: Works alongside physicians to develop systems that track critical chemical processes in the body. Biomedical specialists may be involved in the design of artificial organs, such as hearts and lungs.

Computer Applications & Technology Engineer: Designs instrumentation and programs systems monitor and control certain processes. Automation engineers may design systems to monitor a series of processes in a chemical, petroleum or biotechnology facility

Technical Manager: Responsible for the engineering staff and programs at a facility. Manages people, research programs, and daily operations of the engineering functions. Technical managers may oversee the R&D program and work with plant managers to plan and implement the funding programs and expansion necessary to develop a new product

Business Coordinator: Develops budgets and capital projections for a facility or process. Business coordinators work closely with production and design team members to ascertain the exact needs of a new process, then plans the capital needs necessary to implement the program.

Quality Control Engineer: Monitors the manufacture of a product to ensure that it meets specifications. Also, tests materials to determine how they perform over time. Quality control engineers may bring samples of a product in from a field test, or from a normal application, and test them to determine how specific properties, such as strength, color, and weatherability, change over time.

Regulatory Affairs Engineer: Researches, develops, and monitors policies and procedures that companies must follow to ensure the proper handling of chemicals and chemical components. Chemical engineers in regulatory affairs may be government employees, who study the environmental impact of a new chemical, then recommend appropriate guidelines for the chemical's use.

Technical Services Engineer: Works with customers, usually on-site, to solve production problems caused by a specific process or machine. Chemical engineers working in technical services may represent the manufacturer of a specific machine to determine why it is not performing as designed. They often must understand the other steps in the production process to determine if there is a breakdown in another area

Sales and Marketing Engineer: Assists customers in solving production and process problems by providing products and services to meet their specific needs. Chemical engineers in sales use their technical knowledge to sell chemicals, equipment, and other products, and provide follow-up services and training where needed

* This information and additional information pertaining to careers in Chemical Engineering can be found at http://www.aiche.org/spins/careers/.

The Chemical Engineering Program:

- Faculty
- Catalog Information
- Curriculum Flowsheets
- Humanities, Social Science, Multicultural Requirements
- Co-op Work Experience
- Minors

THE CHEMICAL & ENVIRONMENTAL ENGINEERING DEPARTMENT

Chemical Engineering Office Locations:

NITSCHKE HALL (3rd floor)

Room 3048	CHEE Department Office
Room 3046	Dr. Glenn Lipscomb, Chair
Room 3051	Dr. Dong-Shik Kim, Undergraduate Director
Room 3050	Chanda Raine, Associate Director of Department Student Services

All Chemical Engineering Department doors (faculty/staff) are teal colored & located at the south end of the building next to the staircase.

Student Lounge

The chemical engineering student lounge is located in Nitschke Hall, Room 1069 (first floor, next to the computer labs). The lounge is a great place to do homework, meet fellow chemical engineering students, or just relax between classes. There are tables and chairs, a dry-erase board, bulletin board, refrigerator, microwave, and lockers. Entry into the lounge is accessed via a pass code. The pass code will be given in Fall semester in CHEE 1000 class.

Bulletin Boards & Facebook

There are two chemical engineering bulletin boards outside of the Chemical Engineering office (NI 3048). These boards feature faculty research publications/articles, photos, student information, and articles featuring students in the program.

The department has a Facebook page that was created to update faculty, staff, current students, prospective students, alumni, and friends of the program about the current events taking place in the department. Be sure to "like" The University of Toledo Chemical & Environmental Engineering Department's page to receive departmental updates.

Student Organizations

Student organizations are a wonderful way to become more involved in your profession. Active participation in these societies is a great way to make friends, become more involved in the College of Engineering, network and make contacts with engineers in the industry and learn more about your profession as a whole. As an added bonus, your involvement looks terrific on your resume!

We encourage you to become involved and actively participate in at least one organization.

American Institute of Chemical Engineers (AIChE)

The American Institute of Chemical Engineers is the national professional society in Chemical Engineering. UT has a very active student chapter open to all engineering students. Activities include one hour biweekly meetings, guest speakers from the industry, plant tours, and other various campus events that allow students and department faculty to interact outside of the classroom.

The chapter also sends as many students as possible to the National Conference, where they can meet and talk with students from other chapters and chemical engineers from all over the country. It's highly recommended that students become involved in AIChE. Participation and membership can last throughout one's lifetime and career.

Other Engineering Societies

The College of Engineering also has several student societies open to all engineering students regardless of major. These include: The National Society of Black Engineers (NSBE), The Society of Women Engineers (SWE), Engineers Without Borders and The University of Toledo's Engineering Council (UTEC). Information regarding these societies can be found at: http://www.eng.utoledo.edu/ and by clicking on "Student Organizations" in the left column. Information about professional and Honor societies can be found on this site as well.

Three social engineering societies exist also within the College of Engineering: Phi Sigma Rho, an engineering sorority (female), Triangle is an engineering fraternity (male), and Theta Tau is the co-ed professional engineering fraternity. Further information can be obtained from organizational bulletin boards, or during Rush periods in the beginning of the year.

Honor Societies

Juniors in the top 1/5 of their class and the top 1/8 of the senior class are invited to join Tau Beta Pi, the College of Engineering Honorary Society. The society's motto is honor and integrity in engineering. Initiations are held once in fall semester, and once in spring semester. Eligible candidates will receive notices in the mail.

Omega Chi Epsilon, is the Chemical Engineering Honor Society. Those juniors that have a cumulative grade point average of at least 3.25 or are in the upper ¼ of their class with a minimum of 3.0 GPA; as well as seniors with at least a 3.0 GPA are eligible for election. Eligible candidates will receive a notice in the mail.

FACULTY

DR. G. GLENN LIPSCOMB
Professor & Chairman of the Department
Phone: 530-8088
E-mail: **glenn.lipscomb@utoledo.edu**

Research Interests:

1. Hydrogen purification with membrane processes
   Environmental, economic, and political pressures have spurred renewed interest in alternative energy sources, and the hydrogen economy is considered to be one of the leading candidates. In collaboration with other faculty in the Department, we are developing processes that can produce hydrogen at the required purity from renewable resources. Our specific contribution is the use of membrane gas separation processes to purify the hydrogen stream.

2. Improved fermentation processes for ethanol production
   Ethanol is used widely as replacement for gasoline. Fermentation of corn and other biomass offers a renewable source of this fuel. We are developing improved fermentation processes that integrate membrane separation technology with the bioreactor to improve reactor efficiency and reduce the cost of subsequent ethanol purification.

3. Membrane processes for water treatment and re-use
   Water is a scarce commodity in many parts of the world due to population growth and pollution. This scarcity has placed increased demands on water purification technology and led to the rapid growth of membrane processes from electrodialysis to reverse osmosis. We are developing novel membrane materials and processes to reduce water treatment costs and provide water in remote, undeveloped areas.

4. Internet-delivered laboratories
   Historically, students have had to perform laboratory experiments in-person, in a central laboratory location. The emergence of the Internet has dramatically changed this. Students can now perform live experiments anywhere, anytime with only an Internet connection and a web browser. We have developed such an Internet-delivered laboratory illustrating hemodialysis and are evaluating the educational effectiveness of this experiment in Internet-delivered and hands-on modes. We will develop additional experiments and continue our evaluation of their educational value.

DR. MARIA COLEMAN

Professor
Phone: 530-8091
E-mail: **maria.coleman6@utoledo.edu**

Research Interests:

My research interests lie in the following three broad interrelated areas:

Polymeric materials for membrane based separations with emphasis on ionic liquid based polymers for targeted solubility based selectivity, multifunctional network polymers, and surface modification of polymeric membranes. Membranes and systems of interest include gas separations at harsh conditions, pervaporation, membrane distillation, and water purification. Funding from National Science Foundation and Ohio Coal Development Office.

Mulitfunctional polymer nanocomposites with focus on application driven approach to component selection, composite design and synthesis. Efforts in our group have focused primarily on design of interfacial region between nanofillers and polymer matrix including modification of nanofiller surface with covalently bound monomers, polymers and block copolymers. In addition, the impact on the thermal-mechanical and conducting properties of nanofiller type, loading and processing method are being investigated. Funding from Department of Army.

Sustainable materials synthesis and processing with focus on alternative feedstock for monomers or nanofillers, energy reduction and solvent reduction. Key aspects include consideration of desired properties, processibility using traditional methods, economics and environmental sustainability. Specific interest of our group is in the following areas: (i) separation requirements for material synthesis and processing, (ii) alternatives nanofillers from renewable feedstocks and (iii) detailed structure-property analysis for biobased polymer nanocomposites.

DR. ISABEL ESCOBAR
Professor/Interim Assistant Dean of Research Development & Outreach
Phone: 530-8267
E-mail: **Isabel.escobar@utoledo.edu**
Personal Website: **http://www.eng.utoledo.edu/~iescobar/**

Research Interests:

My research interests lie in the use of membrane filtration as a drinking water treatment process. Specifically, I do research to improve the efficiency (as measured by permeability, selectivity and fouling control) of membrane filtration through process improvements and post-synthesis surface modifications.

DR. DONG-SHIK KIM
Undergraduate Director & Associate Professor
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E-mail: dong.kim@utoledo.edu

Research Interests:

- In situ bioremediation: Use of microbial metabolism and metabolic byproducts for degradation of toxic chemicals, metals and radionuclides, and mitigation of propagation of these contaminants.
- Biological filtration: Improving the efficacy of biological water treatment systems for reducing humic acids and toxic heavy metals.
- Recombinant DNA technique for biofilm formation mechanisms: The recombinant DNA fused with the reporter gene is used to investigate the biofilm formation mechanism at a molecular level. The

mechanism study has been performed as a part of the new project to develop a novel material that prevents biofilm formation.

- Metabolic pathway control: Nano-scale investigation of metabolic pathways in fermentation reactions in order to selectively increase the reaction yield of a target byproduct.

- Biopolymer property control: Studying biopolymer gelation mechanisms and kinetics to determine more efficient methods for establishing a stable biologically active zone in in situ bioremediation and biological filtration, and to control biofilms in industrial and medical systems.

DR. YAKOV LAPITSKY
Assistant Professor
Phone: 530-8254
E-mail: yakov.lapitsky@utoledo.edu
Personal Website: **http://www.eng.utoledo.edu/~ylapitsk/**

Research Interests:
Current research interests focus on the design, characterization and application of biopolymer-based soft materials. These include the self-assembly of bioderived surfactant/polyelectrolyte mixtures, stimulus-responsive micro- and nanoparticles and gels, and drug delivery.

Recent advances in chemical product design, medicine and nanotechnology have ushered in a new age of "smart" materials that respond to external stimuli such as changes in pH, ionic strength or temperature, and mechanical or electromagnetic perturbations. Bioderived polyelectrolytes (e.g., cellulose derivatives, chitosan and alginate) are commonly used as sustainable building blocks for these materials and find countless applications in foods, cosmetic product formulations, controlled release, biomaterials, medical imaging, sensors, fuel cells and water treatment. Despite their broad use, however, many applications of these materials are limited by the lack in understanding of their physicochemical properties and the design variables that control them.

To this end, the goals of our research are to:

1. advance the mechanistic understanding of the molecular, colloidal and macroscopic properties of biopolyelectrolyte-based materials and

2. to apply this understanding towards furthering their use in areas such as pharmaceutics, MEMS and consumer product formulations.

Specifically, we are currently investigating: sustainable materials from bioderived surfactant-polyelectrolyte mixtures, biopolyelectrolyte-based pharmaceutical colloids, and directed assembly of "smart" polyelectrolyte complex microstructures and microdevices.

DR. STEVEN LEBLANC
Professor & Associate Dean of Academic Affairs
Phone: 530-8264
E-mail: **steven.leblanc@utoledo.edu**

Research Interests:

Investigations of environmental applications of chemical engineering. Systems currently being investigated include flue gas cleanup using membrane absorbers, solid phase buffers for acid gas cleanup, and photocatalytic membrane reactors for air and water treatment. Additional interests lie in the area of the use of multimedia applications for improving chemical engineering education. The focus here is on the development of an interactive web site for engineering education.

DR. CONSTANCE SCHALL
Professor & Graduate Director
Phone: 530-8097
E-mail: **constance.schall@utoledo.edu**

Research Interests:

Current research is focused in the area of separations, particularly crystallization and precipitation processes and biofuels production.

In the area of bioseparations, we are focusing on protein crystallization with application to single crystal growth for structure determination and industrial crystallization for protein purification. Projects include impurity partitioning and defect formation, fundamental studies of nucleation kinetics, and optimization of cryogenic cooling of protein crystals.

In the biofuels area, we are developing a pretreatment method for lignocellulose using the unique solvation properties of ionic liquids. This is a collaborative project with Sasidhar Varanasi (Chemical Engineering Dept., UT) and Jared Anderson (Chemistry Dept, UT). Cellulose, a polymer of glucose, is the most abundant renewable resource in the world. However, its potential as a source of raw materials is limited by the strong hydrogen bonding network in its highly crystalline natural form. Disruption of this structure allows effective chemical modification or hydrolysis of cellulose into its glucose subunits. Ionic liquids (ILs) are non-derivitizing solvents of cellulose that efficiently disrupt its structure without production of fermentation inhibitors. In our process, cellulose is pretreated with an IL forming an easily modified amorphous structure. The amorphous cellulose substrate treated with IL can be enzymatically hydrolyzed into its glucose subunits at rates almost ***two orders of magnitude greater*** than untreated cellulose.

DR. YOUNGWOO SEO *(Primary appointment in Civil Engineering)*
Assistant Professor
Phone: 530-8131
E-mail: **youngwoo.seo@utoledo.edu**

Research Interests:

- Molecular scale analysis of bioadhesion and biofilm formation.
- Biofouling and its control in water and wastewater systems.
- Biodegradation and bioremediation of recalcitrant and toxic contaminants.

- Development and application of environmental sensors (microsensors / nanosensors) to monitor physical / chemical activities in microenvironment.
- Sorption process for physical removal of heavy metals and organic compounds
- Membrane Processes for Water and Wastewater Treatment

DR. SASIDHAR VARANASI
Professor
Phone: 530-8093
E-mail: sasidhar.varanasi@utoledo.edu

Research Interests:

Our current research activities are mainly in three areas: (1) using ionic liquids (ILs) as “green solvents”; (2) biocatalysis; and (3) colloids and surface phenomena. In the first area, we are interested in the use of ILs (i) for pretreatment of biomass to achieve enhanced enzymatic saccharification for fuel and chemical production, and (ii) as extracting solvents for bioproducts. In the area of biocatalysis, we are using immobilized enzyme catalysis and fermentations involving native and genetically engineered microorganisms (GMOs). In the third area, we are applying the principles of colloidal and surface phenomena in separation processes. Our applications include protein crystal nucleation kinetics and membrane separation processes (facilitated transport & active transport).

DR. SRIDHAR VIAMAJALA
Assistant Professor
Phone: 530-8094
E-mail: sridhar.viamajala@utoledo.edu
Research Interests:

My research interests fall in two broad areas:

(1) Algal biofuels and issues related to:

- Quantifying phototrophic growth and lipid-accumulation kinetics as they are influenced by simultaneous interactions between light (quality and irradiance), carbon dioxide concentrations, pH, temperature and nutrients;
- strategies for economical downstream conversion of algal lipids to biodiesel (fatty acid alkyl esters); and,
- influence of nutrient (C, N and P) speciation on algal growth and lipid content.

(2) Lignocellulose-derived biofuels and issues related to:

- enzymatic digestion at high solid concentrations; and,
- carbonic acid pretreatment.

Department of Chemical and Environmental Engineering

G. Glenn Lipscomb, chair

Degrees Offered

The department of chemical and environmental engineering offers an ABET-accredited program leading to the bachelor of science degree in chemical engineering (B.S.Ch.E.).

Chemical engineers apply the principles of chemistry, physics and mathematics to create high-value products from lower value raw materials. The curriculum provides a thorough grounding in basic and advanced chemistry, mathematics through differential equations, and engineering physics. These courses are a firm foundation for engineering courses that include thermodynamics, fluid mechanics, heat and mass transfer, separations, reactor design, process control and design. Additional courses in economics, communication skills, humanities, social sciences and various engineering electives broaden the curriculum and are capped by comprehensive chemical engineering design experiences.

The educational objectives of the chemical engineering program are that graduates will:

- Be employed as a chemical engineer or in another related technical field or successfully complete graduate or professional studies;
- Demonstrate effective problem-solving skills that will enable them to be successful professionals;
- Be able to function effectively in a professional environment.

Chemical engineering graduates are in demand in many new and challenging fields. Chemical engineers are well suited to solve problems in many areas, including environmental engineering, polymers and materials engineering, renewable energy production, nuclear power, petrochemicals, fertilizers, new food sources, pharmaceuticals, improved refining and chemical processes, computer simulation, mathematical modeling, and bioengineering. Many students go on to graduate work in engineering, law, business and medicine. More information is available on the department Web site at *www.che.utoledo.edu*.

Degree Requirements

Students should follow and complete the degree requirements as displayed in the Chemical and Environmental Engineering Program Plan A or B charts.

Free Electives

Three hours of free electives are required. Free electives are any courses at the University that broaden students' backgrounds in an area of interest. Courses that are considered remedial for engineering students may not be used to satisfy this requirement. For questions about this requirement, contact an academic adviser.

Engineering Electives

Twelve hours of engineering electives are required. Students must take CIVE 1150 Engineering Mechanics: Statics or EECS 2340 Electric Circuits for Non-Majors, and one elective (three hours) from the chemical and environmental engineering department. An additional six hours may be chosen from engineering courses offered in the College of Engineering. Recommended courses

include CIVE 3610 Water Supply and Treatment, CIVE 3620 Air Pollution Engineering I, MIME 2600 Engineering Economics, MIME 4000 Engineering Statistics I, or any 4000-level chemical engineering elective course. Students should see the departmental Web page at *www.che.utoledo.edu* for a list of current courses and should consult their advisers before selecting engineering electives.

Advanced Chemistry and Science Electives

A minimum of five or six hours of advanced chemistry electives and a minimum of three hours of advanced science electives are required. Students may choose 3000/4000-level courses from the following departments: chemistry, physics, biology, and earth, ecological and environmental sciences. Students should select courses from recommended science sequences such as:

Biochemistry:	(CHEM 3510/3520 Biochemistry I and II); BIOL 2170/2180 Fundamentals of Life Science II/Lab)
Environmental:	(CHEM 3510/3610 Biochemistry I and Inorganic Chemistry I; EEES 4450 Hazardous Waste Management)
Physical:	(CHEM 3740/3860 Physical Chemistry II and Advanced Lab I; CHEM 4980 Material Science I/II)
Analytical:	(CHEM 3310/3360/3860/4300 Analytical Chemistry, Analytical Chemistry Lab I, and Instrumental Analysis)

Additional courses that may be used to fulfill the advanced science requirement include:

EEES 3050/3060 Ecology & Ecology Lab, PHYS 3070 Quantum Physics for Engineers, CHEE 4800 Polymer Science and Engineering

Students should meet with the academic adviser to develop a course sequence that is tailored to the individual academic goals of their programs.

Environmental Engineering Electives

Industrial needs require that all chemical engineers be aware of environmental issues when designing new chemical facilities or modifying existing ones. The environmental option allows chemical engineering students to apply engineering principles in the development of environmentally conscious chemical processes. Greater background in the sciences is provided in this program to allow the environmental specialist increased flexibility in understanding the environmental impact of current or proposed new practices. Specific examples of existing concepts are provided to demonstrate current practice. The trend toward pollution prevention is emphasized.

Upon completion of these electives, the environmental chemical engineer will be able to analyze chemical processes for their environmental impact, suggest modifications to processes to minimize the production of wastes, and develop treatment alternatives. The environmental chemical engineer provides an important bridge between the process engineer and the waste treatment specialist.

The goals of this sequence are achieved through careful choice of the electives, without additional hours beyond those normally required for graduation. The sequence of recommended electives is:

Advanced Chemistry Electives:

CHEM 3510 Biochemistry I, CHEM 3610 Inorganic Chemistry I

Advanced Science Electives:

EEES 3050 Ecology, EEES 3060 Ecology Laboratory, EEES 4450 Hazardous Waste Management, EEES 4410 Hydrogeology, EEES 4240 Soil Science

Engineering Electives:

CIVE 3610 Water Supply and Treatment, CIVE 3620 Air Pollution Engineering, CHEE 4980 Physical-Chemical Processes for Water Quality Control

Students should see an adviser for more information about this option.

Polymer Engineering Electives

Polymers and plastics are extremely important materials. The volume of plastics used annually exceeds that of steel and aluminum. Chemical engineers with expertise in polymers and plastics are in demand. Concepts with which chemical engineers specializing in this area need to be familiar include polymer synthesis and chemistry, polymer processing (mixing, extrusion, blow molding and injection molding), and polymer blends and composites. The polymer engineering sequence will enable students to apply their engineering skills to this important field and gather the necessary experience and expertise to work in the polymer industry after graduation.

Recommended polymer engineering electives include: CHEE 4800 Polymer Science & Engineering

For a complete list of courses in the polymer engineering sequence, students should see their adviser or consult the departmental Web page at *www.che.utoledo.edu*.

Chemical Engineering (CHEE) Course Descriptions

CHEE1000 Orientation and Computing for CHEE - 3hrs
Introduction to the UT campus, campus resources, the College of Engineering and the Department of Chemical and Environmental Engineering. Includes an introduction to engineering computing and programming and basic chemical engineering calculations.

CHEE1010 Professional Development – 1hr
Social protocol and ethics in industry. Resume writing and interview skills are presented in preparation for the Co-op experience. Review of resource materials for technical and non-technical individual learning. Oral and written presentation techniques are emphasized.

CHEE2010 Mass and Energy Balances - 3hrs
Introduction to the principles and techniques used in chemical engineering. Basic concepts of mathematics, physics, and chemistry are applied to solving problems involving stoichiometry, material balances, and energy balances. Prerequisite: CHEE 1000. Co-requisite: MATH1850, CHEM1230

CHEE2110 Process Fluid Mechanics - 3hrs
A comprehensive introduction to process fluid mechanics. Topics include: hydrostatics, characteristics of laminar and turbulent flow, mechanical energy balance, flow through packed beds and fluidization of solids, design of pumping systems and piping networks, and metering of fluids. Prerequisite: CHEE2010

CHEE2230 Chemical Engineering Thermodynamics I - 3hrs
The principles of thermodynamics and their application to chemical engineering. Topics include states and properties of matter, the first and second law of thermodynamics, solution to energy balance problems, and thermo-chemical effects. Prerequisite: CHEE2010

CHEE2330 Chemical Engineering Thermodynamics II - 3hrs
Topics include properties of fluid mixtures, phase equilibria, chemical equilibria, power generation, and refrigeration processes. Prerequisite: CHEE2230

CHEE2980 Special Topics in Chemical Engineering - 1hr-4hrs
Special topics of interest to chemical engineers - lower division

CHEE2990 Independent Studies in Chemical Engineering - 1hr-4hrs
Independent studies in chemical engineering - lower division

CHEE3030 Separation Processes - 3hrs
An introduction to equilibrium-based separation processes. Topics include distillation, extraction, leaching, drying and membrane separations. Preliminary equipment design calculations. Prerequisite: CHEE 2330

CHEE3110 Process Heat Transfer – 2 hrs
Fundamental equations of heat transfer. Fourier's law. Steady and unsteady thermal conduction. Heat transfer coefficients. Heat exchangers. Condensation and boiling. Forced and natural convection. Radiation, Kirchoff's law and view factors. Pre or co-requisite: CHEE2110 and Prerequisite: CHEE2230

CHEE3120 Mass Transfer - 3hrs
Mass transfer and its application in chemical engineering separations. Diffusivity, mass transfer coefficients and Fick's Law. Applications in continuous and stagewise processes, including absorption, extraction, and distillation. Prerequisites: CHEE2110, Pre or co-requisite: CHEE3030

CHEE3300 Reactor Engineering and Design - 3hrs
Fundamentals of chemical reaction engineering. Rate laws, kinetics, and mechanisms of homogeneous and heterogeneous reactions. Analysis of reaction rate data. Design of industrial reactors. Prerequisites: CHEE 2230

CHEE3400 Process Dynamics and Control - 3hrs
An introduction to the design of control systems for chemical engineering problems. Process stability and controller design and selection. Application of LaPlace transforms, frequency response techniques, and simulation software for open-loop and closed-loop analysis. Prerequisites: CHEE2110, CHEE3300, MATH2860

CHEE3940 Co-Op Work Experience - 1hr
Approved co-op work experience. Course may be repeated.

CHEE4100 Environmental Chemodynamics - 3hrs
A study of the transport and fate of chemicals in the environment. This course makes use of the principles of thermodynamics, material balances and transport concepts to concentrate on the mechanisms and rates of movement of chemicals in natural environments. Prerequisite: CHEE 3110, 3120, or permission of instructor

CHEE4150 Environmental Reaction Engineering - 3hrs
The study of chemical reaction engineering as applied to environmental systems. Process dynamics and engineering reactor design considerations for environmental applications are covered.

CHEE4160 Industrial Waste Treatment - 3hrs
Discussion of and solution to the environmental problems of the chemical industry, with emphasis on the minimization of inorganic wastes from process effluent streams. Equal periods of time will be devoted to minimization of water, air, and solid and hazardous wastes. Prerequisite: Junior standing

CHEE4180 Hazardous Material Spills - 3hrs
All aspects of oil and hazardous material spills. Causes of spills, safe responses to them, mitigation of spills, impact, cleanup, prevention, disposal of residues, transportation of chemicals. Air pollution problems from volatile chemicals. Safety laws. Prerequisites: CHEE3110, CHEE3120 or consent of instructor.

CHEE4270 Estimation of Physical Properties - 3hrs
Estimation of Physical Properties, especially thermodynamic properties of gases and liquids. Prerequisite: CHEE2330

CHEE4410 New Separations - 3hrs
Introduction to and analysis of separation techniques relevant to down-stream processing of bioreactor products. Topics include new extraction and adsorption methods, chromatography techniques, ultrafiltration, and electrokinetic methods such as electrophoresis and isoelectric focusing. Prerequisites: CHEE3030, CHEE3110, CHEE3120

CHEE4480 Membrane Science and Engineering - 3hrs
An introduction to formulating and solving engineering problems involving the use of both dense and porous membranes for gas separation, pervaporation, dialysis, filtration and reverse osmosis applications. Prerequisite: Senior standing

CHEE4500 Chemical and Environmental Engineering Laboratory I – 2 hrs
An experimental study of the design and performance of selected chemical engineering process equipment. Analysis of data and presentation techniques are emphasized. Prerequisites: CHEE2110, CHEE3030, CHEE3110

CHEE4510 Transport Phenomena - 3hrs
An introductory analysis of the equations of change governing the phenomena of momentum, heat and mass transfer in single and multicomponent systems from a continuum viewpoint. The analogies between the three phenomena will be stressed. The ability to obtain a realistic mathematical model of chemical engineering processes will be developed. Prerequisites: CHEE3110, CHEE3120, MATH2860

CHEE4520 Chemical Process Economics and Design – 3hrs
Chemical equipment and process design. Introduction to simulation and flow-sheeting techniques and software. Topics include plant safety and pollution prevention, market analysis, cost estimating, decision-making and cash flow analysis. Prerequisites: CHEE2110, CHEE2330, CHEE3030, CHEE3110

CHEE4540 Chemical Process Simulation and Design - 3hrs
Application of chemical engineering fundamentals and the use of process simulators in the synthesis of chemical processes. Use of cost factors and environmental considerations in process decisions. The solution of a comprehensive case study and the preparation and presentation of a formal report are required. Prerequisites: CHEE3120, CHEE3300, CHEE4520

CHEE4550 - Chemical and Environmental Engineering Laboratory II – 2hrs
An experimental study of the design and performance of chemical engineering process equipment, focusing on heat and mass transfer and process control. Design of experiments, analysis of data, and presentation techniques are emphasized. Prerequisites: CHEE3120, CHEE3300, CHEE4500 Co-requisite: CHEE3400

CHEE4600 Fractals in Engineering - 3hrs
The course will help students develop a working knowledge of the mathematical tools developed to describe seemingly random or chaotic behavior and the ability to apply these tools to problems of interest to engineers.

CHEE4800 Polymer Science and Engineering - 3hrs
Polymerization processes, characterization, structure and properties of polymers, processing and engineering applications of the major polymer types. Prerequisite: Junior or Senior standing

CHEE4820 Colloid and Surface Phenomena - 3hrs
Introduction to the physico-chemical principles and engineering of dispersions, emulsions and colloids relevant to chemical/biochemical, pharmaceutical, and environmental areas. Topics include surface tension, adsorption, charge effects at interfaces, colloid stability and emulsions. Prerequisite: MATH2860

CHEE4850 Properties of Polymer Systems - 3hrs
A quantitative treatment of the mechanical behavior of polymer systems emphasizing rubber elasticity, linear viscoelasticity, yield and failure, non-Newtonian flow of polymer melts, and viscometry. Application of stress-strain relationships to processing and design are considered. Prerequisite: CHEE 2110, 2330

CHEE4960 Senior Honors Thesis - 3hrs
Independent research under the guidance of a faculty member, requiring an oral report and a written thesis upon completion of work.

CHEE4980 Special Topics in Chemical Engineering - 1hr-4hrs
Special topics of interest to chemical engineers - upper division

CHEE4990 Independent Studies in Chemical Engineering - 1hr-4hrs
Independent studies in chemical engineering - upper division

Chemical Engineering Flowsheet
Co-op Plan A

FRESHMAN		SOPHOMORE			PRE-JUNIOR			JUNIOR			SENIOR	
Fall	Spring	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring
Gen'l Chem I CHEM1230 4hrs	Gen'l Chem II CHEM1240 4hrs	Org Chem I CHEM2410 3hrs	Co-op Experience CHEE 3940 0 hr	Org Chem II CHEM2420 3hrs	Co-op Experience CHEE 3940 0 hr	Adv Chem Elective 3 hrs	Co-op Experience CHEE 3940 0 hr	Adv Chem Elective 3hrs	Co-op Experience CHEE 3940 0 hr		Adv Sci Elective 3hrs	Deficiencies Minor Grad School
Gen'l Chem Lab I CHEM1280 1hrs	Gen'l Chem Lab II CHEM1290 1hrs	Org Chem Lab I CHEM2460 1hrs		Org Chem Lab II CHEM2470 1hrs		Separations CHEE3030 3hrs		Tech Writing ENGL2950 3 hrs		CIVE 1150 or EECS 2340 3hrs	CHEE Engineering Elective 3 hrs	
Calc I MATH1850 4hrs	Calc II MATH1860 4hrs	Calc III MATH2850 4hrs		Diff Eqns MATH2860 3hrs		Heat Transfer CHEE3110 2hrs		Engineering Elective 3hrs		ChE Design CHEE4520 3 hrs	Control CHEE3400 3hrs	
	Prof. Devel. CHEE1010 1hrs	Physics I PHYS2130 5hrs		Free Elective 3 hrs		ChE Fluid Mech CHEE2110 3hrs		Mass Transfer CHEE3120 3hrs		Engineering Elective 3hrs	ChE Design CHEE4540 3 hrs	
Orient'n for ChEE CHEE1000 3hrs	Mass & Energy CHEE2010 3hrs	ChEE Thermo I CHE2230 3hrs		ChEE Thermo II CHEE2330 3hrs		Physics II PHYS2140 5hrs		Reactor Design CHEE3300 3hrs		HUM/SS/MC Elective 3hrs	ChE Lab II CHEE4550 2 hrs	
English Comp ENGL1110 3 hrs	HUM/SS/MC (COMM1010- recommended) 3 hrs			HUM/SS/MC Elective 3hrs				ChE Lab I CHEE4500 2 hrs		HUM/SS/MC Elective 3hrs	HUM/SS/MC Elective 3hrs	
15 hours	16 hours	16 hours		16 hours		16 hours		17 hours		15 hours	17 hours	

Chemical Engineering Flowsheet
Co-op Plan B

FRESHMAN		SOPHOMORE			PRE-JUNIOR			JUNIOR			SENIOR	
Fall	Spring	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring
Gen'l Chem I CHEM1230 4hrs	Gen'l Chem II CHEM1240 4hrs	Org Chem I CHEM2410 3hrs	Org Chem II CHEM2420 3hrs	Co-op Experience CHEE 3940 0 hr	Adv Chem Elective 3 hrs	Co-op Experience CHEE 3940 0 hr	HUM/SS/MC Elective 3hrs	Co-op Experience CHEE 3940 0 hr	Adv Chem Elective 3hrs	Co-op Experience CHEE 3940 0 hr	Adv Sci Elective 3hrs	Deficiencies Minor Grad School
Gen'l Chem Lab I CHEM1280 1hrs	Gen'l Chem Lab II CHEM1290 1hrs	Org Chem Lab I CHEM2460 1hrs	Org Chem Lab II CHEM2470 1hrs		Physics II PHYS2140 5hrs		HUM/SS/MC Elective 3hrs		Tech Writing ENGL2950 3hrs		CHEE Engineering Elective 3 hrs	
Calc I MATH1850 4hrs	Calc II MATH1860 4hrs	Calc III MATH2850 4hrs	Heat Transfer CHEE3110 2hrs		Separations CHEE3030 3hrs		HUM/SS/MC Elective 3hrs		Engineering Elective 3hrs		Control CHEE3400 3hrs	
	Prof. Devel. CHEE1010 1hrs	Physics I PHYS2130 5hrs	ChEE Thermo II CHEE2330 3hrs		Mass Transfer CHEE3120 3hrs		Free Elective 3 hrs		ChE Lab I CHEE4500 2 hrs		ChE Design CHEE4540 3hrs	
Orient'n for ChEE CHEE1000 3hrs	Mass & Energy CHEE2010 3hrs	ChEE Thermo I CHE2230 3hrs	ChE Fluid Mech CHEE2110 3hrs		Reactor Design CHEE3300 3hrs		CIVE 1150 or EECS 2340 3hrs		Engineering Elective 3hrs		ChE Lab II CHEE4550 2 hrs	
English Comp ENGL1110 3hrs	HUM/SS/MC (COMM1010- recommended) 3 hrs		Diff Eqns MATH2860 3hrs						ChE Design CHEE4520 3 hrs		HUM/SS/MC Elective 3hrs	
15 hours	16 hours	16 hours	15 hours		17 hours		15 hours		17 hours		17 hours	

RECOMMENDED HUM/SS/MC ELECTIVES

Humanities/Fine Arts (2 courses/6 hours)

Department	Course
Communications	Communications Principles & Practices (COMM 1010)
English	Reading in Fiction (ENGL 2710)
History	World History to 1500 (HIST 1060)
Music	Music Theory for Non-Major (MUS 2200) *History of Jazz (MUS 2220) – *Double dips with a US* *Cultures of Music of Non-Western Styles (MUS 2420) – *Double dips with a Non-Western*
Philosophy	Critical Thinking (PHIL 1020) Introduction to Philosophy (PHIL 2200)
Religious Studies	*World Religions (REL 1220) – *Double dips with a Non-Western*

Social Science (2 courses/6 hours)

Department	Course
Anthropology	Introduction to Anthropology (ANTH 1020) *Cultural Anthropology (ANTH 2800) – *Double dips with a Non-Western*
Economics	Introduction to Macroeconomics (ECON 1150) Introduction to Microeconomics (ECON 1200)
Geography	Human Geography (GEPL 1010) Environmental Geography (GEPL 1100)
Political Science	American National Government (PSC 1200)
Psychology	Principles of Psychology (PSY 1010)
Social Work	*Introduction to Social Welfare (SOCW 1030) – *Double dips with a US*
Sociology	Introduction to Sociology (SOC 1010) *Race, Class, and Gender (SOC 2640) – *Double dips with a US*

Multicultural Non-Western (1 course/3 hours)

Department	Course
Africana Studies	Introduction to the African Experience (AFST 1200)
Anthropology	*Cultural Anthropology (ANTH 2800) – *Double dips with a SS*
Honors	*Multicultural Lit: The Non-European World (HON 2030) – *Double dips with a HUM*
Music	*Cultures and Music of Non-Western Styles (MUS 2420) – *Double dips with a HUM*
Political Science	Current International Problems (PSC 1710)
Religious Studies	*World Religions (REL 1220) – *Double dips with a Humanities*

Multicultural US-Diversity (1 course/3 hours)

Department	Course
African Studies	Introduction to Africana Studies (AFST 1100)
Business	Managing Diversity in the Workplace (BMGT 2700) Cultural Communications in the Workplace (BMGT 2750)
Honors	Multicultural Lit: The N. American Experience (HON 2020) – *Double dips w/HUM*
Music	*History of Jazz (MUS 2220) – *Double dips with a HUM*
Sociology	*Race, Class, and Gender (SOC 2640) – *Double dips with a SS* Diversity in Contemporary Society (TSOC 2000)
Social Welfare	*Introduction to Social Welfare (SOCW 1030) – *Double dips with a SS*
Women's Studies	Introduction to Gender Studies: Gender, Sex, & Differences (WGST 2010)

The Humanities/Fine Arts, Social Science, Multi-Cultural requirement at the University of Toledo may be satisfied by taking six [6], or if chosen properly, five [5] courses. The requirement is: two courses in Humanities/Fine Arts [**in different departments**], two courses in Social Sciences [**in different departments**], one multicultural course in the Diversity of U. S. Culture, and one multicultural course in Non-Western Tradition. This requirement may be satisfied by completing only five courses instead of six if one course is a "double-dip" course denoted by an asterisk [*] before the course. This double-dip course may serve: 1. Both as a Humanities/Fine Arts and as a multicultural course [ex: REL 1220], or 2. Both as a Social Science and as a multicultural course [ex: SOC 2640]. If this option is chosen, engineering students must complete a minimum of 15 credit hours. **The above courses are all 3 credit hours**.

The University of Toledo College of Engineering

Humanities / Fine Arts - Social Sciences - Multicultural Requirements

The Humanities/Fine Arts, Social Science, Multi-Cultural requirement at the University of Toledo may be satisfied by taking six [6], or if chosen properly, five [5] courses. The requirement is: two courses in Humanities/Fine Arts [in different departments], two courses in Social Sciences [in different departments], one multicultural course in the Diversity of U. S. Culture, and one multicultural course in Non-Western Tradition. This requirement may be satisfied by completing only five courses instead of six if one course is a "double-dip" course denoted by an asterisk [*] before the course. This double-dip course may serve: 1. Both as a Humanities/Fine Arts and as a multicultural course [ex: HIST 1080], or 2. Both as a Social Science and as a multicultural course [ex: SOC 2640]. If this option is chosen, engineering students must complete a minimum of 15 credit hours. Equivalencies with quarter-system courses are found by dropping the last zero in most cases. The following courses are all 3 credit hours except where indicated in brackets, such as **[4]** or **[5]**.

- Humanities / Fine Arts -

Arabic
Elementary Arabic II (ARBC1120) [**4**]
Intermediate Arabic I (ARBC2140)
Intermediate Arabic II (ARBC2150)
Art
Crafts in Art (AED 3300)
Foundations Drawing I (ART 1080)
Foundations 2D/Color Theory (ART 2050)
Foundations 3D (ART 2060)
*Visual Construction of Gender (ART 3820/WGST 3020)
Art in History (ARTH 1500)
Aspects of Ancient Art (ARTH 2000)
History of Ren. & Baroque Art (ARTH 2040)
History of Modern Art (ARTH 2080)
Intro to Architecture (ARTH 2300)
Chinese
Elementary Chinese II (CHIN1120) [**4**]
Intermediate Chinese I (CHIN2140)
Intermediate Chinese II (CHIN2150)
Communication
Communication Princ & Prac (COMM 1010)
Mass Communication & Soc (COMM 2000)
Interpersonal Commun'n (COMM 3840) **[4]**
Dance
Introduction to the Dance (DANC1250)
Disability Studies
Issues in Disability Studies (DST 3050)
Film
Introduction to Film (FILM 1310)
French
Culture and Commerce (FREN 1080)
French Culture (FREN 1090)
Elementary French II (FREN 1120) **[4]**
Review of Elemen French (FREN 1500) **[4]**
Intermediate French I (FREN 2140)
Intermediate French II (FREN 2150)
German
Culture and Commerce (GERM 1080)
Intro to Modern German Culture (GERM 1090)
Elementary German II (GERM 1120) **[4]**
Review of Elem German (GERM 1500) **[4]**
Interm. German I (GERM 2140)
Interm. German II (GERM 2150)
History
Europe to 1600 (HIST 1010)
Europe from 1600 (HIST 1020)
World History to 1500 (HIST 1050)
World History since 1500 (HIST 1060)
*Contemporary World (HIST 1070)
*East Asia to 1800 (HIST 1080)
*East Asia from 1800 (HIST 1090)
*Latin American Civ. (HIST 1100)
*African Civil'ns (HIST 1110 / AFST 1110)
*Middle East Civ. (HIST 1120)
Intro to Historical Thinking (HIST 1130)
Main Themes in American History (HIST1200)
*Ancient Near East (HIST 2040/ CLC 2040)
Ancient Greece (HIST 2050/ CLC 2050)
Ancient Rome (HIST 2060/ CLC 2060)
Cultural History (HON2010)
Humanities (interdisciplinary)
Honors Readings Conf. I (HON1010)
Honors Readings Conf. II (HON1020)
Classical Humanities (HUM 1010 / CLC1010)
Framing Cultures, Bldg. Comm. (HUM 1200)
World Humanities Traditions I (HUM 2010)
World Humanities Traditions II (HUM 2020)
Telling Stories, Valuing Lives (HUM 2220) **[5]**
*Educ. And the Construction of Societies (TSOC 3540)
Japanese
*Culture and Commerce (JAPN 1080)
*Intro toJapanese Culture (JAPN 1090)
Elementary Japanese II (JAPN 1120) **[4]**
Interm. Japanese I (JAPN 2140)
Interm. Japanese II (JAPN 2150)
Latin
Elementary Latin II (LAT 1120) **[4]**
Intermediate Latin I (LAT 2140)
Intermediate Latin II (LAT 2150)
Literature
Reading Fiction (ENGL 2710)
Reading Drama (ENGL 2720)
Reading Poetry (ENGL 2730)
British Literature: Readings & Analysis (ENGL 2740)
American Literature: Readings & Analysis (ENGL 2760)
Writing About Literature (ENGL 2800)
Critical Approaches to Literature (ENGL 3790)
*Multicultural Literatures: The North American Exp. (HON 2020)
*Multicultural Literatures: The Non-European World (HON 2030)
Music
Music Theory for Non-Majors (MUS 2200)
Introduction to Music (MUS 2210)
*History of Jazz (MUS 2220 / AFST 2220)
Inner Workings of Music (MUS 2230)
History of Rock and Roll (MUS 2240)
*Musical Diversity in the U. S. (MUS 2250)
*Cultures of Music of Non-Western Styles (MUS 2420)
Philosophy
Intro to Logic (PHIL 1010)
Critical Thinking (PHIL 1020)
Intro to Philosophy (PHIL 2200)
Contemporary Moral Problems (PHIL 2400)
*Zen: Philosophy of Existential Transformation (PHIL 3510)
Religion
*World Religions (REL 1220/ HUMA 1220)
Intro to Religion (REL 2200)
*Understanding Monotheistic Religion (REL 2300)
Ancient Scriptures of Palestine (REL 2310)
New Testament History & Ideas (REL 2330)
Russian
*Russian Culture and Commerce (RUS 1080)
*Intro to Russian Culture (RUS 1090)
Elementary Russian II (RUS 1120) **[4]**
Intermediate Russian I (RUS 2140)
Intermediate Russian II (RUS 2150)
Spanish
Culture and Commerce (SPAN 1080)
*Culture of Latin America (SPAN 1090)
Culture of Spain (SPAN 1100)
Elementary Spanish II (SPAN 1120) **[4]**
Review of Elem Spanish (SPAN 1500) **[4]**
Intermediate Spanish I (SPAN 2140)
Intermediate Spanish II (SPAN 2150)
Theater
Intro to Theater (THR 1100)

Revised: May 2005

- Social Sciences -

Anthropology
Intro to Anthropology (ANTH 1020)
Intro to Archaeology (ANTH 2020)
*Human Society Through Film (ANTH 2100)
World Pre-History (ANTH 2750)
*Cultural Anthropology (ANTH 2800 / LST 2800)
*African American Culture (ANTH2900/ SOC 2900)
Economics
Intro. to Economic Issues (ECON 1010)
Principles of Macroeconomics (ECON 1150)
Principles of Microeconomics (ECON 1200)
Geography
Human Geography (GEPL 1010)
Environmental Geography (GEPL 1100)
Fundamentals of Geography (GEPL2010)
Geography of the Great Lakes (GEPL3060)
Quantitative Methods & Mapping (GEPL3420) [**4**]
Geography Education Strategies (GEPL4040)
Political Science
Amer. National Government (PSC 1200)
Current Issues in U.S. Public Policy (PSC 1400)
Psychology
Principles of Psychology (PSY 1010)
Social Work
*Intro to Social Welfare (SOCW 1030)
Sociology
Intro. to Sociology (SOC 1010)
Social Problems (SOC 1750)
American Society (SOC 2100)
Communities (SOC 2410)
*Race, Class & Gender (SOC 2640 / LST 2640)
Sociology of Sport (SOC 2750)
*Women's Roles: A Global Perspective (SOSC 2400)

Summary of Requirements:

1. **Two courses in Humanities / Fine Arts in different departments [6 credits minimum].**
2. **Two courses in Social Sciences in different departments [6 credits minimum].**
3. **One course in Multicultural Studies [Diversity of U. S. Culture] [3 credits minimum].**
4. **One course in Multicultural Studies [Non-Western Tradition] [3 credits minimum].**

NOTE: The above requirements may be satisfied by taking five [5] courses if one is a "double-dip" course denoted by *. See text at the top of page.

NOTE: Students who have taken courses in the quarter system must have completed the equivalent of 15 semester credit hours for this requirement. Quarter system credit hours multiplied by 2/3 gives equivalent semester credit hours.

The University of Toledo College of Engineering
- Multicultural Studies -

- Multicultural Studies - Other Than U.S. (Non-Western)

(Select one course from the following)

Africana Studies
Introduction to the African Experience (AFST 1200)
Foundations of Culture in the African Diaspora (AFST 2200)
Anthropology
*Human Society Through Film (ANTH 2100)
*Cultural Anthropology (ANTH 2800 / LST 2800)
Food, Health, and Society (ANTH3300)
Peoples of the world: An Evolutionary Approach (ANTH 3850)
Peoples of Subsaharan Africa (ANTH 3940)
Biocultural Ecology (ANTH 4730)
Medical Anthropology (ANTH 4760)
Anthropology of Religion (ANTH 4820 / LST 4820)
Peasant Society (ANTH 4890)
Art
Asian Art (ARTH 2100)
Ethnographic Art (ARTH 2200)
Topics in Ethno Art (ARTH 3270)
African Art (ARTH 3300/AFST 3300)
Ancient Art of the Americas (ARTH 3350)
Economics
Comparative Econo. Systems (ENGL 3500)
English
World Literatures & Culture (ECON 3770)
World Cinemas & Culture (ECON 4730)
Film
Third Cinema (FILM3420)
Foreign Language & Literature
Intercultural Communications: Principles & Practice (FLAN 3440) **[4]**
French
Cross-Cultural Understanding (FREN 3400)
Geography
Cultural Geography (GEPL 2030)
Geography of Asia (GEPL 3120)
Geography of Africa (GEPL 3220 / AFST 3220)
Geography of Latin America (GEPL 3300)
Principles of Global Studies (GLST2000)
History
*The Contemporary World (HIST1070)
*East Asia to 1800 (HIST 1080)
*East Asia from 1800 (HIST 1090)
*Latin Amer. Civil'n (HIST 1100)
*African Civil'n (HIST 1110 / AFST 1110)
*Middle East Civil'n (HIST 1120)
*Ancient Near East (HIST 2040 / CLC 2040)
Medieval Russia (HIST 2640)
Modern Russia (HIST 2650)
Japan and WWII (HIST 2700)
Postwar Japan (HIST 2710)
History of Tokyo (HIST 2720)
The Chinese Revolution (HIST 2730)
Colonial Latin America (HIST 3200)
Latin American Republics (HIST 3210)
History of the Middle East from 600 to 1500 (HIST 3540)
History of the Middle East Since 1500 (HIST 3550)
Africa to 1800 (HIST 3630 / AFST 4570)
Africa Since 1800 (HIST 3640 / AFST 4580)
People and Politics in Mexico (HIST4470)
Culture & History of the People of Eastern Africa (HIST 4590 / AFST 4590)
Imperial Russia 1700-1917 (HIST 4660)
20th Century Russia (HIST 4680)
Modern Chinese History (HIST 4720)
Modern Japanese History (HIST 4740)
Europe & Asia: Expl. & Exchange, 1415-1800 (HIST 4750)
Colonialism & Imperialism in the 19-20th Centuries (HIST 4760)
Honors
*Multicultural Literatures: The Non-European World (HON 2030)
Japanese
*Japanese Culture and Commerce (JAPN 1080)
*Intro to Japanese Culture (JAPN 1090)
Marketing
Understanding Cultural Differences for Business (IBUS 3150)
Music
*Cultures and Music of Non-Western Styles (MUS 2420)
Philosophy
Eastern Thought (PHIL 3500)
*Zen: Philosophy of Existential Transformation (PHIL 3510)
Philosophy of Culture (PHIL 3550)
Buddhist Philosophy (PHIL 4500)
Political Science
Current International Problems (PSC 1710)
Politics in Africa (PSC 2660 / AFST 2660)
Governments of Asia (PSC 2680)
Government & Political Institutions of Africa (PSC 4660 / AFST 4680)
Government of China (PSC 4690)
Religion
*World Religions (REL 1220 / HUMA 1220)
*Understanding the Monotheistic Religions (REL 2300)
Islam (REL 3100)
Comparative Religion: Living Non-Western Religions (REL 3510)
Russian
*Russian Culture & Commerce (RUS 1080)
*Introduction to Russian Culture (RUS 1090)
Sociology
Development in Third World Nations (SOC 4800/AFST 4800)
Gender in Cross-Cultural Perspective (SOC 4810/WGST 4190)
*Women's Roles: A Global Perspective (SOSC 2500)
*Educ. And the Construction of Societies (TSOC 3540)
Spanish
*Culture of Latin America (SPAN 1090)
Women's Studies
Issues in Women's Studies (WGST 3010)
Women of South Asia: Cultures, Politics, and Migration (WGST3470)

*Students may satisfy one of the two multicultural requirements with at most one course that simultaneously fulfills a second area of the core.

- Multicultural Studies - Diversity of U. S. Culture

(Select one course from the following)

Art
Multi-Cultural Approaches for Art Appreciation (AED 3130)
*Visual Construction of Gender (ART 3820 / WGST 3020)
Africana Studies
Intro to Africana Studies (AFST 1100)
Foundations of Black Intellectual History (AFST 2100)
Anthropology
Indians of North America (ANTH 3920)
The Irish-American Experience (ANTH 4860)
Business
Managing Diversity in the Workplace (BMGT 2700)

Cultural Communications in the Workplace (BMGT2750)
Curriculum and Instruction
Multicultural Literature (CI 4360)
Disability Studies
Disability in the United States (DST 2020)
Economics
Economics of Gender (ECON 3050 / WGST 3650 / LST 3050)
Economic History of the African Amer. Comm. (ECON 3490 / AFST 3490)
English
Folklore (ENGL 3730 / AMST 3730)
Women and Literature (ENGL 3750 / WGST 3750)
Language in the African Amer. Community (ENGL 4140 / LING 4140 / AFST 4140)
African-Amer. Writers Before the 20th Century (ENGL 4650/AFST 4650)
African-Amer. Literature in the 20th Century (ENGL 4660/AFST 4660)
Native American Literature and Culture (ENGL 4690)
Geography
Geography of U.S. and Canada (GEPL 3050)
History
American Indian History (HIST 2340)
African-American History to 1865 (HIST 3250 / AFST 3250)
African-Amer. History from 1865 (HIST 3260 / AFST 3260)
Ethnic America (HIST 3310)
Indians in Eastern North America (HIST3320)
Western American Indians (HIST3330)
The Early Frontier (HIST 3350)
American Labor and Working-Class History I (HIST3480/LST 4440)
Women in American History (HIST3600/WGST4510)
Women in Early America (HIST 4210)
History of Native American Religious Movements (HIST 4310)
Far Western Frontier (HIST 4340)
Selected Topics in African-American History (HIST 4420 / AFST 4420)
Slavery in America (HIST 4430 / AFST 4430)
Honors
*Multicultural Literatures: The North American Experience (HON 2020)
Humanities
*African American Culture (HUMA 2100)
Music
*History of Jazz (MUS 2220 / AFST 2220)
*Musical Diversity in the United States (MUS 2250)
Philosophy
Feminism & Philosophy (PHIL 3540 / WGST 3550)
Political Science
Women in American Politics (PSC 2210 / WGST 2610)
Sociology
*Race, Class & Gender (SOC 2640 / LST 2640)
Racial and Ethnic Minorities in the U.S. (SOC 4660)
African Americans in the U.S. (SOC 4670 / AFST 4670)
Gender Roles (SOC 4820 / WGST 4140)
*Introduction to Social Welfare (SOCW 1030)
Diversity in Contemporary Society (TSOC 2000)
Women's Studies
Introduction to Gender Studies: Gender, Sex & Differences (WGST 2010)

CO-OP WORK EXPERIENCE

All new students in the College of Engineering are required to complete a minimum of three semesters (with the option of additional semesters) of co-operative education experience in order to earn their degree. Co-op is the integration of classroom and practical experience in an organized program.

Co-op experience has been shown to further enhance a student's full-time employment outlook. Many students continue to work with the company they co-oped with upon graduation. The hands-on experience integrates classroom theory with practical experience; it also provides the student with financial assistance to help offset the cost of their education.

It is very important that you get to know your Co-op Director, Andrea Joldrichsen, as she can be a great resource for information about companies you may be interested in working for. Keep in mind that many companies have strict GPA requirements, and prefer to hire co-op students who are active in collegiate activities.

Frequently Asked Questions

Does the Career Development Center guarantee placement?

No, we do not guarantee placement. Our staff will assist students in fine-tuning their resumes and developing strong interviewing skills and job search resources. We will refer their resumes to employers that are a match for their skills. However, the employers determine who they will interview and hire. Students are ultimately responsible for obtaining their own co-op position.

Which co-op plan am I on?

There are two co-op plans, Plan A and Plan B. Plan A begins the spring semester of the sophomore year and Plan B begins in the summer semester of the sophomore year. After your first co-op, you will alternate between a semester of coursework and a semester of co-op. You will be assigned to a co-op plan in March during Professional Development class. Students are randomly assigned to Plan A or B; there is no preferred plan. Students are also evenly dispersed between the two plans.

Important note: If you begin the math sequence in Trigonometry or College Algebra, you will automatically be assigned to Plan B.

**Student athletes and students in ROTC will follow a summers only plan; all co-ops will take place during the summer semesters with fall and spring semesters scheduled for coursework.

Do I retain my full-time student status when on co-op?

Yes. This is accomplished when students register for co-op (CHEE3940). In addition, UT e-mail accounts stay activated while students are co-oping.

What companies may I co-op with?

Please refer to the list of co-op companies on the next page. The companies listed have worked with UT in the past or are currently working with us. The Career Development Center is continually working to find new companies to partner with. It is possible to co-op with a company that the University does not currently work with. Please be sure to inform your Co-op Director, Andrea Joldrichsen, of your interest in working with a new company.

Please try to keep your options open. It is very difficult to find co-op placement in the local area (as Toledo is not a chemical engineering hub). There are terrific opportunities all over the state, across the country, and even internationally. Co-op is the time to try new areas of interest and expand your horizons!

If I accept a job, can I then change my mind and accept a more attractive job?

No, this is considered unprofessional behavior. If a student first accepts, then declines an offer in order to accept a second offer, the second job will not count towards co-op and the student will not be eligible to register for CHEE3940.

What is the co-op fee?

Students will be charged a $475 co-op fee which will be applied to the semester bill the student will co-op in. (For example: if a student registers for a summer co-op, the $475 fee will be applied to the summer bill). Payment is required at the time tuition is due. Upon completion of each co-op rotation, students and employers complete an online evaluation form. Once the Career Development Center receives the evaluations and deems the work experience as acceptable, students then receive a grade of "PS" (passing) on their transcript.

Do I have to pay the co-op fee when I complete a fourth or fifth co-op?

No, but students do need to register for CHEE3950:004 or CHEE3950:005. Students will need to see Chanda Raine to register for a 4th or 5th co-op as special permission is needed for these co-op rotations.

How is my financial aid allocated?

Students who receive UT recruitment/merit scholarships must notify the Scholarship Services Office of their co-op so that their scholarship can be shifted to a future term. Full details about co-op and financial aid, can be viewed at: http://www.utoledo.edu/financialaid/scholarships/pdfs/scholar_2013_2014/Engineering%20Coop.pdf.

If I get a co-op job in spring semester, will I be released from my residence hall contract?

Yes. If a student gets a job at the last minute, he or she will still be released from their contract.

If I have prior work experience, will the co-op requirement be waived?

No, however, if a student has or had an engineering-type job a mechanism exists to determine if that work experience will satisfy the co-op requirement. The job must still be pre-approved and the co-op fee must still be paid. See your Co-op Director, Andrea Joldrichsen, to have your case evaluated.

Can I change co-op companies after my first co-op rotation?

Yes. Students may change co-op employers after their first co-op assignment but not after the second and subsequent assignments. Students must complete at least two consecutive co-op assignments with the same employer. To change employers after their first co-op assignment, students must submit a written request to Andrea Joldrichsen during the first two weeks of the semester when they return for classes.

Will I get paid for my work experience?

Yes. Wages for co-op positions are set by the company. Remember, however, the primary reason for obtaining a cooperative education position is to gain valuable experience, training and skills directly related to your field of engineering study.

Below are the requirements for a co-op experience:

Summer Co-op: Minimum 480 work hours required (12 weeks at 40 hours per week)
Spring & Fall Co-ops: Minimum 640 work hours required (16 weeks at 40 hours per week)

Co-op evaluations:
Student completes a required on-line student evaluation at: http://www.eng.utoledo.edu/coop/
Employer completes an on-line employer evaluation at: http://www.eng.utoledo.edu/coop/

Submit evaluations no later than one week before grades are due (check academic calendar for date)

For more frequently asked questions, please see the Career Development Center website at: http://www.eng.utoledo.edu/coop/current_students/faq.html

MINORS

There are many Minors available in conjunction with the Bachelor of Science in Chemical Engineering degree. A minimum 2.0 GPA is required in the minor area. Students must complete a minimum of 21 hours for a minor; at least 9 of those hours must be completed at The University of Toledo. Further information regarding ALL minors and specific requirements can be found in the University catalog or at www.utoledo.edu. Below is a list of the more popular minors students choose in addition to their Chemical Engineering degrees:

Minor in Chemistry

All students automatically complete the Minor in Chemistry within the Chemical Engineering curriculum. No additional coursework is required. Students must declare the Minor in Chemistry by completing an application in the Student Services Office in University Hall, Room 3000. The Minor in Chemistry will appear on the transcript, but not on the diploma.

Minor in Business

Engineering students may earn a Minor in Business by earning a C or better in a total of six business courses (18 credit hours) and by satisfying an economics requirement (3 credit hours). The economics requirement for the minor can be fulfilled with the completion of MIME 2600 - Engineering Economics, which also counts as an engineering elective for the Chemical Engineering curriculum.

Minor in Foreign Language

A minimum of 21 - 22 hours is required for the minor in French, German, Japanese or Spanish. In the modern languages, all course work must be in the same language and at the 3000-level or higher. Some courses may also be used as Humanities electives. Interested students should contact the Foreign Languages Department for more details.

Minor in Mathematics

A minimum of 22 hours of mathematics (MATH) courses is required for a minor in Mathematics. The 22 hours must include: MATH 1860, 1890, 2850, and one of 3860, 3610 OR 4680. The remaining hours must be courses that are acceptable toward a major in Mathematics, and must be approved by an advisor in the Department of Mathematics. Interested students should contact the Mathematics Department for more details.

Minor in Music

A minimum of 22 hours is required for the minor in music; 25 hours is required for a minor in the Recording Arts. Students electing to pursue a minor in music must choose one of the following areas of concentration: Jazz, Instrumental, Vocal, Keyboard, Music Theory, Music History or Recording Arts. Interested students should contact the Music Department for more details.

Minor in Renewable Energy

A minimum of 21 hours is required for the renewable energy minor. The 21 hours must include: PHYS 3400, GEPL/EEES 2200, CHEM 3810, ECON 3240 or PSC 4340, a minimum of 3 hours of approved coops or internship in a renewable energy related area and 6 hours of other approved courses. Interested students should visit the Physics Department website for more details.

Minor in General Business

Engineering students may earn a Minor in General Business by earning a C or better in the six business courses (18 credit hours) listed below and by satisfying an economics requirement.

BUAD2040	FINANCIAL ACCOUNTING INFORMATION
BUAD2070*	APPLICATION OF STATISTICS IN BUSINESS DECISION MAKING
BUAD3010	PRINCIPLES OF MARKETING
BUAD3020	PRINCIPLES OF MANUFACTURING AND SERVICE SYSTEMS
BUAD3030	MANAGERIAL AND BEHAVIOR PROCESSES IN ORGANIZATIONS
BUAD3040	PRINCIPLES OF FINANCIAL MANAGEMENT

ECONOMICS REQUIREMENT:
The economics requirement may be satisfied with MIME2600 or ECON1150 & 1200

The economics requirement for the minor & BS/MBA program can be fulfilled with the completion of MIME2600. This course can also be used in fulfillment of an engineering elective requirement for the Bachelor of Science in Chemical Engineering degree. If you are considering pursuing an MBA at another institution (besides UT), it is recommended that you also complete ECON1150 & ECON1200.

SUBSTITUTIONS: Students not interested in a MBA may wish to make substitutions according to the rules listed in the College of Business. For example: IBUS3150 (a Multicultural elective) may be taken in place of any of the above courses except BUAD2040 if only completing the minor. In addition, IBUS3150 will simultaneously satisfy part of the University core requirement (Hum/SS/MC electives). If continuing on for an MBA, no substitutions should be made.

PREREQUISITES: Students must be sophomores to take the 2000-level business courses and juniors to take the 3000-level courses. Additionally, BUAD2040 must be taken before BUAD3040, and BUAD2070 prior to BUAD3020. The economics requirement must also be fulfilled prior to taking BUAD3010. The other prerequisites are waived for Engineering students.

*If you are considering obtaining a MBA degree, you will need to take BUAD2050 in place of BUAD2070. It is recommended however, that you complete both BUAD2050 *AND* BUAD2070 if pursuing an MBA degree.

Students interested in a Minor in General Business should consult Chanda Raine in the Chemical Engineering Department and an advisor in the College of Business & Innovation. A declaration of minor application form must be completed and turned into the College of Business in Savage Business Complex (Room 3130) prior to taking business courses.

Minor in Computer Science Engineering

The College of Engineering Department of Electrical Engineering and Computer Science (EECS) offers students the opportunity to obtain a Minor in Computer Science and Engineering (CSE). Students who successfully complete this minor will have a good working knowledge of software development and computer architecture. Elective courses can be selected to provide knowledge of database systems, computer graphics, artificial intelligence, operating systems and computer design.

The pre-requisites to pursue the CSE minor are the successful completion of MATH1850 (Calculus I) and MATH1860 (Calculus II). To obtain the CSE minor, the student must complete 26 credit hours of courses in the EECS department (6 required courses, 2 electives) with a GPA of 2.0 or better in theses courses.

To register for the CSE minor, students must contact the EECS Department in Nitschke Hall (Room 2008) or call 419-530-3853 prior to enrolling in any CSE minor courses.

Required Courses:

1. EECS1100 – Digital Logic Design – 4 hrs.
2. EECS1560 – Introduction to Object-Oriented Programming – 3 hrs.
3. EECS1570 – Linear Data Structures – 3 hrs.
4. EECS1580 – Nonlinear Data Structures – 3 hrs
5. EECS1590 – Discrete Structures – 3 hrs.
6. EECS2100 – Computer Organization & Assembly Language – 4 hrs

Select six credit hours from the following courses:

EECS2550 - Operating Systems & Systems Programming – 3 hrs.

EECS3100 - Microsystems Design – 4 hrs. (prereq EECS3400)

EECS3500 - Automata & Language Translation Systems – 3 hrs.

EECS3550 - Software Engineering – 3 hrs.

EECS4130 - Digital Design – 3 hrs.

EECS4500 - Programming Language Paradigms – 3 hrs.

EECS4510 - Translation Systems – 4 hrs. (prereq EECS3500)

EECS4530 - Computer Graphics I – 4 hrs.

EECS4560 - Data Base I – 3 hrs

EECS4580 - Survey of Artificial Intelligence – 4 hrs.

University Resources and Policies

Campus Resources

Campus Police

Transportation Center, Room 1302 — 419-530-2600 (Police/Medical/Fire)
http://www.utoledo.edu/depts/police/ — 419-530-2601 (Non-Emergency response)

Carlson Library *(Located between the Student Union & the Ottawa River)*

http://www.utoledo.edu/library/ — 419-530-2324

Hours: Vary by semester; please see the below link for updated hours or contact the library at 419-530-2298 for current hours.
http://www.utoledo.edu/library/info/hours.html

Center for International Studies (CISP)

http://www.utoledo.edu/cisp/index.html

Snyder Memorial, Room 1000 — 419-530-5268 or CISP@utoledo.edu

Services: CISP links students with programs, activities and opportunities for international travel, networking and learning, supporting both our international and traditional students. Become an active part of your global community with study abroad, as well as experiential learning and service projects that develop your world outlook and enhance your professional experience.

Commuter Student Services

http://www.utoledo.edu/studentaffairs/osi/commuter/index.html

Student Union, Room 3504 — 419-530-8521 or commuter@utoledo.edu

Services: Commuter Student Services (CSS) seeks to help UT commuter students become active in campus life leading to a truly enriching and rewarding college experience. We work to inspire, support, and equip our students with every possible resource for success.

Eberly Center for Women

http://www.utoledo.edu/centers/eberly/

Tucker Hall, Room 0168 — 419-530-8570

Services: Its purpose is to serve the women of the University and the larger Toledo communities by advocating for women's equity in education, work, and health.

International Student & Scholar Services

http://www.utoledo.edu/cisp/international/About_OISS.html

Snyder Memorial, Room 1000 419-530-5268
Hours: Monday-Friday 8:15-5:00pm

Services: Provides assistance and services to international students at The University of Toledo. Serves as a resource to students regarding orientation, visa requirements, on-campus and off-campus housing, banking, and international student health insurance.

Multicultural Student Center

http://www.utoledo.edu/studentaffairs/omss/

Student Union, Room 2500 419-530-2261

Services: The mission of the Office of Excellence and Multicultural Student Success is to create a campus environment for students of various cultures and diverse backgrounds that is conducive to learning by providing programs and services that meet their needs. Through its programs and services, the Office of Multicultural Student Success strives to enhance the recruitment and retention efforts of the Division of Student Affairs and explore the indigenous roots of African American, Asian American, Latino American, Native American, and LGBTQA, students. While it is the mission of the Office of Multicultural Student Success to specifically address the needs of these students, programs and services are intended for the benefit of all the University community in an effort to foster understanding, acceptance, and cross cultural communication.

Office of Student Involvement

http://www.utoledo.edu/studentaffairs/osi/

Student Union, Room 3504 419-530-4944

Service: The Office of Student Involvement seeks to build community and is committed to providing students with opportunities for involvement that will enhance and complement their UT experience.

Parking Services

http://parkingservices.utoledo.edu/

Transportation Center, Room 1400 419-530-4100
Hours: Monday-Friday 8:15-5:00pm

Service: Obtain parking permits, appeal a parking ticket or replace lost or stolen permits

Residence Life

http://www.utoledo.edu/studentaffairs/reslife/index/

Ottawa West, Room 1014 419-530-2941 or reslife@utoledo.edu
Hours: Monday-Friday 8:15-5:00pm

Services: The mission of the Office of Residence Life is to foster academic and social success for our students by providing a safe and healthy community, excellent housing facilities, education, a culture of respect and the formation of lifelong relationships.

Rocket Card (ID)

http://www.utoledo.edu/rocketcard/

Student Union, Room 1550 419-530-5842 or rocketcard@utoledo.edu
Hours: Monday-Friday 8:15-5:00pm

Services: The Rocket Card is the official University of Toledo Identification Card. The Rocket Card is multifaceted in its uses; it provides students and employees safe, quick access to campus services as well as having a debit card feature. The debit card features allows the university to apply your financial aid to your Rocket Card and for you or your family to add additional funds on-line.

Rocket Jobs

http://www.utoledo.edu/success/celcs/rocketjobs/index.html

Services: Rocket Jobs is an online interactive database where you can find jobs on and off campus.

Rocket Solution Central

www.utoledo.edu/rsc

Rocket Hall, Room 1200 419-530-8700 or rocketsolutioncentral@utoledo.edu

Hours of Operation:
Monday, Thursday, Friday: 8:15am-5:00pm
Tuesday, Wednesday: 8:15am-6:00pm

Services: RSC is an integrated service area incorporating the business functions of the *Treasurer's Office, Financial Aid,* and *Registrar* facilitating service to UT students.

Student Disability Services

http://www.utoledo.edu/offices/student-disability-services/index.html

Rocket Hall, Room 1820 419-530-4981
Hours: Monday-Friday 8:15-5:00pm

Services: The Office of Accessibility is an office at The University of Toledo that provides support services and accommodations for individuals with disabilities. We coordinate services for individuals with all kinds of disabilities, including students with learning disabilities.

Student Health Services/Medical Center

http://www.utoledo.edu/healthservices/student/

Student Medical Center — 419-530-3451 (Appointments & General Information)
419-530-3471 (myUT Pharmacy)
419-530-3474 (Student Health Insurance)

Location: Southwest side of Main campus, between the Law School & Rocket Hall directly across from Academic House & International House.

Student Clinic Hours:

Monday - Thursday 8:15 am - 9:00 pm; Friday 9:00am – 5:00pm

*(**Evening hours from 5-9pm will not be available during academic breaks or Summer semester)*

Services available: primary care, urgent care services; gynecology, counseling and psychiatric services; laboratory testing/pharmacy services; health education programs; sexual assault education and prevention services; binge drinking programs and services; free/anonymous HIV/AIDS testing; allergy injections and other immunizations; student health services.

Student Legal Services

http://www.utoledo.edu/studentaffairs/studentlegalservices/

Rocket Hall, Room 1610 — 419-530-7230 or studentlegal@utoledo.edu

Services: Student Legal Services is a general practice law firm. We provide licensed attorneys to UT students to advise and/or represent them in their personal legal matters.

Student Recreation Center

http://www.utoledo.edu/studentaffairs/rec/ — 419-530-3700 or UTRecCenter@utoledo.edu

Services: Provides engaging, student-centered recreational and health promotion programs and services to enhance the well-being of the University of Toledo community.

Fees: Full use if enrolled for 12 GFB (general fee bearing) credit hours or more; 1-11 GFB hours have limited use of 15 visits per semester. If more visits are desired, the student must "buy up" at $7.81 per credit hour away from 12. Individuals completing thesis, dissertation, co-op, non-UT internships, or students who took a semester off are eligible to purchase a membership as a student with written UT documentation of status.

University Counseling Center Services

http://www.utoledo.edu/studentaffairs/counseling/index.html

Rocket Hall, Room 1810 419-530-2426

Services Available: The Counseling Center staff provides counseling (individual and group), mental health and wellness programming, and crisis intervention services to help students cope with the demands of college and to facilitate the development of life adjustment strategies. We provide services in accordance with the codes of ethics of the helping professions and standards of the American Psychological Association, American Counseling Association and the International Association of Counseling Services, Inc. as well as to the rules and regulations of the State of Ohio. Group counseling sessions include: anger management, eating disorders, LGBT support, grief and loss support group, and stress management. Services are FREE and CONFIDENTIAL for all UT students.

UT Testing Services

http://www.utoledo.edu/success/testingservices/MCtestcenter.html

Main Campus Testing Center:
Memorial Field House, Room 1080 419-530-2011

Make-up Testing Hours:		Placement Testing Hours:
Monday, Tuesday and Friday	8:30 am – 4:45 pm	9:00am – 4:00pm
Wednesday and Thursday	8:30 am – 7:45pm	9:00am – 7:00pm

(Tests must be completed by closing time)

Services: Make-up testing, placement testing, GRE, CLEP testing, distance learning exams, skills assessment testing.

UT Transit Services

http://www.utoledo.edu/facilities/transit/ 419-530-1026

Transit Services provides shuttles around campus, to UT's satellite campuses, Kenwood Apartments, and Franklin Park Mall.

Tutoring Services

CASE Center (McMaster Engineering Library)
http://www.utoledo.edu/library/eng/index.html

Palmer Hall, Room 2600 419-530-3948
Hours: Monday-Friday, 8am – 5pm

Staff: Engineering Graduate Students
Services: FREE Tutoring in math, physics, chemistry, and engineering courses; reserved reading room; study center; study rooms; computer lab; copy machine

Learning Enhancement Center
http://www.utoledo.edu/success/lec/

Carlson Library 419-530-2176
(Lower Level, Rathbun Cove – BO200)

Services: FREE tutoring in math, chemistry, physics, economics, foreign languages, etc. – no appointment is necessary.

The Writing Center
http://www.utoledo.edu/success/writingcenter/

Carlson Library, Room 1005 419-530-2176

Appointments are preferred, but some walk-in hours are available. Writing services provided to UT students are FREE of charge.

Services: Provides one-to-one assistance to all members of the UT academic community who want to discuss and improve their writing.

Quick Links

Chemical Engineering Home Page
www.che.utoledo.edu

Services: Curriculum, flowcharts, degree requirements, course descriptions

College of Engineering Home Page
www.eng.utoledo.edu/main.shtml

Services: Academic policies and procedures, information about student organizations, graduation and honors convocation.

Engineering Career Development Center (Co-op Office)
http://www.eng.utoledo.edu/coop/

Services: Co-op evaluations for student & employer, Career Expo information, sample resumes.

Transferology
http://www.transfer.org

Services: Online tool that assists students with program requirements, course equivalencies, and allows students to see how completed or future courses transfer to another college or university.

Campus Activities

Reasons to Get Involved:

- Assists in the transition to college/minimizes homesickness
- Have fun!
- Meet new people/make friends
- Increases your interaction with faculty/staff
- Develops your leadership skills
- Helps you learn to manage your time
- Develops your "people skills"
- Helps you learn to work as part of a team
- Strengthens your resume

Types of Activities:

- Intramural sports - softball, football, etc. (through Rec Center)
- College organizations (FYRE)
- Student government
- Special interest clubs – Wilderness Expeditions Club, Men's Soccer Club, etc.
- Academic oriented clubs/Honor Societies - AIChE, Golden Key
- Leadership organizations – UTEC, Blue Key
- Newspaper or radio station – WXUT, The Independent Collegian
- Tutoring (through Learning Enhancement Center, Writing Center, etc.)
- Greek fraternity/sorority – Pi Kappa Phi, Phi Sigma Ro
- Religious organizations – Campus Crusade for Christ (CUR)

How to Get Involved:

- Understand what you are looking for and why
- Be open-minded and participate – try something new
- Try to get appointed to a leadership position
- If there are no activities that meet your needs – start your own!

How to Locate Campus Activities:

- Student activities fairs (usually beginning of each year/term)
- UT website http://www.utoledo.edu/studentaffairs/osi/orglisting.html
- Office of Student Involvement, Student Union, Room 3504 ~ Phone: 419-530-4944
  Hours: Monday – Friday, 8:15am -5:00pm

Concerns:

- Don't overextend yourself at the expense of your education
- Never sign-up with the intention of only building your resume

College of Engineering Student Activities

First Year Rocket Engineers (FYRE): A College of Engineering organization open to freshmen of all engineering majors. Their purpose is to provide an opportunity for students to meet other incoming freshman and first year Rockets, to get involved in the College of Engineering, to encourage professional development, to promote school spirit, and to have fun. Contact Jon Pawlecki at jpawleck@eng.utoledo.edu for more information!

National Society of Black Engineers (NSBE): National organization designed to increase the number of culturally responsible Black Engineers, who excel academically, succeed professionally and positively impact the community.

- Informational and Motivational speakers
- Community service activities
- Leadership Conferences
- Http://www.eng.utoledo.edu/~sbe/

Phi Sigma Rho: A National sorority for women in engineering and engineering technology.

- Community service activities such as helping with the Cherry Street Mission
- UT Homecoming Parade Floats
- http://www.eng.utoledo.edu/~phirho/

Society of Women Engineers (SWE):
Dedicated to making known the need for women engineers and encouraging young women to consider an engineering education.

- Co-ed organization
- Tailgates at the football games
- Speakers and food at meetings
- Involved in the community and University, such as helping in the annual Halloween Walk.
- http://www.eng.utoledo.edu/~swe/

Tau Beta Pi: Oldest national honors engineering society in the country.

- Undergraduate students must be in the top 1/8th of the junior class or top 1/5th of the senior class to be scholastically eligible for membership
- Involved in community activities
- Football Tailgates
- http://www.eng.utoledo.edu/~taubpi/

Theta Tau: Co-ed Engineering fraternity mixing the studies of school with social needs.

- Ski trip & other social events
- Volunteer work
- Sponsor the Rube Goldberg Contest
- Gain great contacts for help in studying and school
- http://www.thetatauxb.com/

Triangle Fraternity: To develop balanced men in the fields of Engineering, Architecture, and Science by providing an environment that fosters personal growth and professional success.

- Social events
- Off campus fraternity house
- Meet people to help with your homework
- http://www.triangletoledo.org/

University of Toledo Engineer's Council (UTEC): Student organization involved in organization many events and activities that happen at the Engineering campus.

- Night in the Box & Spring R.E.C.E.S.S.
- Football Tailgating
- Publisher of the Blueprint
- http://www.utoledoec.org/
-

*See Chemical Engineering Department information sheet for information on CHEE student organizations
AIChE and Omega Chi Epsilon

Academic Policies/Procedures

You're in Control!

You, the student, are in charge of your own registration and scheduling of courses.

You are responsible for:

- registering early to get the courses you want
- attending all courses for which you have registered
- arranging payment plans
- dropping or withdrawing in a timely way to avoid being billed for classes you do not intend to take

Can I Add a Class or Register Late?

A student may add a course or register late within the first five calendar days of a new semester, excluding summer (which is prorated), without permission from the instructor as along as a seat is available. Students wishing to add a course between the 6th and 15th calendar days (inclusive) of a new term may do so with the instructor's permission as well as the Dean or designee from the student's College Office. This request can be made via the Course Request and Seminar Request Form. Note: Forms submitted after the 15th day are considered void and will not be accepted. The process below will be required.

After the 15th day, students wishing to add a course may petition to do so with the Request for Non-Funded Late Registration form. This will require signatures from the instructor of the course, the Dean or designee from the student's College Office, as well as approval from the appropriate Provost.

A late registration fee is assessed for initial registrations on or after the first day of the semester. For more information regarding late fee assessment please review the Treasurer's Office Finance Brochure.

Can I Drop a Course or Withdraw from a Course After the Term Starts?

Students who decide not to attend or stop attending any or all classes for which they have registered must drop or withdrawal from the course(s). Drops and withdrawals can be processed online through the myUT portal (provided there are no holds), and can also be processed at Rocket Solution Central (RSC) located in Rocket Hall, Room 1200. Failure to drop or withdrawal from a course for which a student has stopped attending may result in a grade of "F". Specific drop and withdrawal dates for a term are listed on the University's academic calendar and here, or by contacting Rocket Solution Central (RSC) 419.530.8700.

In the event that a student becomes critically ill or injured during the course of the semester, the student should contact the Registrar's Office for information on the Medical Drop/Withdrawal process.

WARNING:
Withdrawing from a course(s) will result in a grade of "W", which will appear on your official transcripts; a grade of "W" does not affect the grade point average. Once a withdrawal is processed, it cannot be rescinded. Based on the date of withdrawal, fees may or may not be adjusted. Since withdrawn courses reduce your enrolled hours, withdrawing from courses may have an adverse effect on financial aid benefits, scholarships, loan deferments, athletic eligibility, health insurance, veterans benefits, degree requirements, or other areas.

Waitlisting

Waitlisting is an option for students who encounter classes that are 'closed' but who still want to try to register if a seat opens again.

Students who attempt to register for a class that is full or 'closed' may put themselves on a waiting list. When an open seat becomes available, an email will be sent to the next student in the Waitlist queue via their student rocket email address. The student will have 24 hours from the delivery of the email to add the class. Waitlisting will be available to students until 10 p.m. on the evening prior to the start of the semester. All Holds and Registration Restrictions will still apply to be eligible to waitlist a class. (Note: Not all clasess have a Waitlist option).

Pass/No Credit Option

Engineering students have the option to take a maximum of two humanities/fine arts/social science/multicultural courses on a pass/no credit basis. Grades of C or above are considered to be passing grades; C- or below is considered to be failing (no credit granted). Courses that grant PS/NC credit do not affect the grade point average.

Pass/no credit grade forms are available in Chanda's office (Nitschke Hall Room 3050). The form must be returned to the Registrar's Office before the end of the 15th calendar day of the term. The signature of the Associate Dean of Undergraduate Studies is required. Once signed, the form cannot be rescinded.

The Grade of Incomplete (IN)

The grade of IN is assigned only in extraordinary cases when unexpected conditions prevent the student from completing the requirements of the course within the term of enrollment. The student must complete the required work before the end of the following semester in which the grade is received; otherwise the Office of the Registrar will convert the grade to a grade of F.

Grade Deletion Policy

Students may petition to have any grade deleted. The repeated course must be completed prior to the granting of the first bachelor's degree, and the grade deletion petition must be submitted no later than one semester after graduation. Before petitioning for a GPA recalculation, a student must have retaken the same course (or the renumbered substitute for that course) in the same department at The University of Toledo and earned a higher grade in the retaken course. No more than a total of 12 semester hours may be deleted from the student's transcript and a college may adopt a more stringent requirement. This policy applies only to the first recorded grade in a course that a student has repeated. If the original grade was given for academic dishonesty, it cannot be deleted from the GPA calculation. Credit for any repeated course will apply only once toward degree requirements. Grades for all attempts at the course will appear on the student's official transcript regardless of whether or not the grade has been deleted. All grades, including those for repeated courses, will be included in the determination of eligibility for honors, fellowships, or other distinctions accruing on the basis of GPA (Higher Ed GPA). Grade deletion forms are available in Chanda's office.

Probation

A student whose cumulative GPA is less than 2.0 will be placed on probation. A student may remain in school as long as they continue to earn a GPA greater than 2.0 in each term. The student will remain on probation as long as the cumulative GPA is below 2.0. A student is removed from probation when the cumulative GPA is above 2.0. A student earning a 1.5 GPA or less in any semester, regardless of overall GPA, will be placed on probation. Students on probation should only enroll in 12-13 hours in their next semester of school.

Suspension

A student on probation whose cumulative and current semester GPA falls below 2.0 will be subject to suspension from the college. Consideration of a student's petition for reinstatement will be given only after one semester from the date of suspension. Any course taken during the period of suspension will not be credited toward degree requirements.

Readmission

Readmission will only be by written petition to the Associate Dean of Undergraduate Studies. The Associate Dean along with the department will make readmission decisions.The petition must be typewritten and must be received at least one month prior to the start of the semester the student desires to return.

Dismissal

If readmission from a suspension is granted, a semester average greater than 2.0 must be earned each term until the cumulative GPA is above 2.0 or the student will be subject to dismissal from the college. Further consideration of a student's petition for reinstatement will be given only after one year from the date of dismissal. Any courses taken during the period of dismissal will not be credit toward degree requirements.

Class Rank

Freshman	0-29.9 hours	Junior	60-89.9 hours
Sophomore	30-59.9 hours	Senior	90+ hours

Dean's List

Each semester, **full-time** undergraduate students (12 or more hours graded A through F) earning a 3.5 or above GPA are selected for recognition by being named to the Dean's List. This designation appears on the transcript. Due to mandatory co-op, students in engineering are eligible during the summer term.

President's List

Full-time undergraduate students (12 or more hours, graded A through F) earning a 4.0 GPA are selected for recognition by being named to the President's List. This designation appears on the transcript. Due to the co-op program, students in the College of Engineering will be eligible for the President's List during the summer term.

Graduating with Honors

Students graduate with scholastic distinction on the basis of the higher education (overall) grade point averages. The higher education GPA includes all coursework taken at all institutions of higher education, including grades that are deleted through the grade deletion process at UT and transfer credit from other institutions. These averages and the citation they merit on the student's degree are as follows:

Cum Laude	3.3 cumulative GPA and above
Magna Cum Laude	3.6 cumulative GPA and above
Summa Cum Laude	3.9 cumulative GPA and above

Students must have taken 80% of their course work on the regular grading system, minus any credits earned in courses where the student has no choice in receiving a P/NC grade, to qualify for honors. UT requires a minimum of 30 semester hours of standard letter-graded courses from UT in order to qualify for graduation with honors.

The University of Toledo Policy on Academic Dishonesty

Academic dishonesty will not be tolerated. Among the aims of education is the acquisition of knowledge and development of the skills necessary for success as an educator or in another profession. Activities inconsistent with these aims will not be permitted. Students are responsible for knowing what constitutes academic dishonesty. If students are uncertain, for example, about what constitutes plagiarism or cheating they should seek the instructor's advice.

Examples of academic dishonest include, but are not limited to:

1. Plagiarizing or representing the words, ideas or information of another person as one's own and not offering proper documentation.

2. Giving or receiving, prior to an examination, any unauthorized information concerning the content of that examination.

3. Referring to or displaying any unauthorized materials inside or outside of the examination room during the course of an examination.

4. Communicating during an examination in any manner with any unauthorized person concerning the examination or any part of it.

5. Giving or receiving substantive aid during the course of an examination.

6. Commencing an examination before the stipulated time or continuing to work on an examination after the announced conclusion of the examination period.

7. Taking, converting, concealing, defacing, damaging or destroying any property related to the preparation or completion of assignments, research or examination.

8. Submitting the same written work to fulfill the requirements for more than one course.

While academic integrity is particularly the responsibility of the student, the faculty members also have a responsibility. Assignments and tests should be constructed and proctored so as to discourage academic dishonesty. Faculty members are expected to inform their students explicitly as to what materials and procedures are authorized for use in the preparation of assignments or in examinations (e.g., the use of calculator, computer, 'ponies', text materials, etc.). Should cases of academic dishonesty be found among students, the instructor may chose to counsel the student, or the following sanctions may be imposed:

1. The student may be assigned an F for the work in question.

2. The student may be assigned an F for the course. In this case the instructor should inform the dean and the student of this action. The dean will make certain that the student receives the F grade and is not permitted to withdraw from the course.

3. The student may be placed on probation or suspended for some definite period of time, dismissed, or expelled by the dean if either the seriousness of the offense or a record of repeated offenses warrants it. A notation that such a sanction has been imposed will be made part of the student's permanent record. It is expected that the dean will consult with the instructor and the student making such a judgment, and that the dean will notify the student of the sanction imposed and of the appeals procedure.

A student found to be academically dishonest by a faculty member may appeal according to procedures approved by the respective colleges. The procedures for making a final appeal to the Student Grievance Committee may be found in The University of Toledo catalog.

The College of Engineering Policy on Academic Dishonesty
[Adopted December 1979]

Academic dishonesty is unacceptable conduct for engineering students, both as students of The University of Toledo and as candidates for careers in the engineering profession. Penalties commensurate with the offense shall be imposed on students found guilty of academic dishonesty.

Academic dishonesty includes improper access to evaluation material or records, submission of material which is not the student's work, and conduct which interferes with the work or evaluation of other students. Instances of academic dishonesty range from inappropriate collaboration on homework (which may have relatively little effect on the course grade) to copying on examinations or similar dishonesty (which may have a direct and significant effect on the course grade). All such instances, however, are infractions of the standards of academic integrity expected of engineering students. Faculty members are to discourage academic dishonesty by: 1) emphasizing the University's and his/her own rules and expectations for student work, 2) reducing the possibility of academic dishonesty by methods of student work evaluation, and 3) initiating penalties for violation of these standards.

The basis for this policy is found in both University documents and standards of the engineering profession. Instead of providing a detailed listing of possible offenses and their penalties, indications of the ranges of action considered appropriate for three violations of varying seriousness are given. This approach leaves latitude to the University persons involved to act on the basis of the specific conditions of each case while still providing a framework for reasonable consistency of action.

1. Violations relating to homework, laboratory reports or similar work generally done outside of class may be treated with warnings and/or F's (or zeros) on the work. Because of varying practices in this area, the instructor should inform the class in advances of his/her requirements on such work. Such instances may be handled by the instructor.

2. Copying on test and examinations may receive penalties ranging from an F (or zero) on that paper to an F in the course. In such cases, the instructor should discuss the instance with the student's department chairman, to gain an independent review of the proof of dishonesty and to determine if there have been other violations by that student. After consultation, if this is the first offense, the instructor takes appropriate grade action.

3. Repeated violations or more flagrant acts (such as stealing information from the instructor's office or destroying another's paper) may receive an F in the course or suspension or dismissal (the latter options requiring action by the Dean's Office). In these cases, the instructor should refer to his/her department chair who will consult with the Dean's Office.

The following principles should be observed. The student should be informed of the charge and be given an opportunity to respond before the penalty is imposed. Penalties, consistent with the offense, are intended to be used to discourage dishonest behavior among engineering students and to encourage honest behavior in the future by the offender. The formality of the procedure increases with the severity of the penalty. The student's right of privacy of information should not be violated by the handling of the cases of academic dishonesty.

Steps to Achieving Academic Success

- ✓ Setting goals
- ✓ Time Management
- ✓ Study Skills
- ✓ Overcoming Test Anxiety
- ✓ Healthy Living

10 Pitfalls to Academic Success

- ❖ Lack of goals
- ❖ Lack of priorities
  - Not going to class
  - Not completing assignments
  - Not being prepared for class, quizzes, and exams
- ❖ Lack of good time management skills
  - Procrastination
  - Laziness
  - Too busy – involved in too many activities
  - Distractions – video games, social media
- ❖ Poor study skills
- ❖ Test anxiety
- ❖ Lack of proper diet
- ❖ Lack of rest/sleep
- ❖ Lack of exercise
- ❖ Not seeking help/giving up
- ❖ Waiting until it is too late!!

Goals

Goal = aim or objective that you wish to accomplish
Goals provide direction and structure to your life.

Developing/Accomplishing Goals

- Prioritize your activities – how best to utilize your time
- Avoid negative goals – set goals you wish to accomplish
- Be specific
- Be realistic – do not establish impossible goals
- Develop measurable goals – will be better able to judge your success
- Challenge yourself – to motivate yourself to do better
- Establish a time frame
- Create reminders – will keep you focused
- Positive Reinforcement – will keep you on track

Academic Goal

Correct: Earning a 3.6 GPA this semester
Incorrect: Achieve good grades – this is neither measurable nor specific

Evaluating Goals

Monitor the progress towards obtaining your goals.

Goals can be adjusted - Rather than giving up on your goal, adjust your goal so that you can still accomplish it.

Evaluate goals that you have accomplished – benchmarking – were your goals to easy to accomplish? Keep this in mind when establishing new goals.

Five Key Steps to Establishing Goals

1. Establish a goal – be specific and realistic; challenge yourself
2. Create an action plan – multiple ways to accomplish a goal
3. Break goal into easier, bite-sized goals
4. Set a target date – develop a timeline; prioritize your goals
5. Identify your motivators – why do you want to achieve the goal?; Focus on the results

Reward yourself when goal is accomplished!

TIME MANAGEMENT

"The majority of college success is due to motivation and time management."

- Carry a planner to keep track of when assignments are due & exams will occur
- Do not take on more than you can handle
- Make use of daylight hours & hours in between classes which increases efficiency
- Study before a class that requires discussion or pop quizzes – will keep material fresh in your mind
- Study after lecture classes – retention is enhanced; fill in gaps in your notes & review info just learned
- Study at the same time every day – set aside certain study hours each day which will form study habits
- Use your planner to plan out study schedules
- Study in the same place which will aid with concentration
- Plan enough time to study – adjust according to the need of each class
- Space study periods – take a break between subjects being studied; *DO NOT CRAM!!*
- Prioritize activities – study time, extracurricular activities, social time, etc.
- Study during your prime time – study hardest subject when you will be most alert
- Allow for flexibility in your schedule
- Analyze your use of time – keeping a log will let you see when time is being wasted
- Make a "to do" list – write it on mirror or message board daily as a constant visual reminder

Studying

When you study and where you study are as important as what you study!

1. Read the syllabus - understand how the professor grades and how the exams, quizzes, and homework are structured.
2. Go to every class
3. Get to know your instructor – attend office hours, ask questions, seek feedback from quizzes/tests
4. Attend review sessions (usually receive hints/suggestions)
5. Know where the resource centers are on campus – FREE tutoring
6. Rule of thumb – study two hours for every hour of class lecture
7. Study difficult and boring courses first (takes more energy & focus)
8. Studying for long periods of time can actually be counterproductive.
    a. Schedule shorter study sessions throughout the day to avoid becoming bored.
    b. Incorporate breaks if you study in long blocks of time.
9. Review quizzes, homework, and old exams
10. Create sample problems/test questions – rehearsal of information
11. Set goals for what you want to accomplish during that study session
12. Understand your body – study when you are most alert
13. Go to bed at a set time every night – establish regular sleep patterns
14. Study in a location with good lighting and temperature control
15. Create a comfortable study area, but not TOO comfortable
16. Keep your study area free of distractions such as the TV, phone, or stereo.
17. Keep your study materials clear and organized – review/rewrite right after lecture
18. Study in groups
    a. Lets you gauge your understanding of the material
    b. Helps clarify areas you do not understand
    c. Encourages the sharing of views and perspectives
    d. Share study strategies, quiz one another, share notes/quizzes

Common Study Problems

1. Delaying studying because you believe there will be a sufficient amount of time to study later in the week, month or class term
2. Believing there is way too much material to study and that there is not enough time to study all of it
3. Wasting time by studying improperly
4. Not spending enough time studying
5. Studying in a poor location
6. Falling asleep while studying
7. Believing that because the class is boring or unimportant, studying the materials is a waste of time
8. Believing that by studying for an exam right before you take the exam the information will be recalled easily

Test Anxiety

Test anxiety is an uneasiness or apprehension experienced before, during, or after an exam because of concern, worry, or fear. Most students experience some level of anxiety during an exam. However, when anxiety begins to affect exam performance it has become a problem.

What causes test anxiety?

- Lack of preparation
  - Cramming the night before
  - Poor time management
  - Failure to organize text information
  - Poor study habits
- Worrying about:
  - Past performance on exams
  - How friends and other peers are doing
  - The negative consequences of failure

Physical signs of anxiety

- Perspiration
- Sweaty palms
- Headache
- Upset stomach
- Rapid heart beat
- Tense muscles

Effects of Test Anxiety

- Nervousness
  - Difficulty reading and understanding the questions
  - Difficulty organizing your thoughts
  - Difficulty retrieving key works/concepts
  - Doing poorly on an exam even though you know the material
- Mental blocking
  - Going blank on questions
  - Remembering the correct answers after the exam is over

How to Reduce Test Anxiety

- Study and know the material well enough so that you can recall it
- Learn and practice good time management and avoid procrastination/laziness
- Build confidence by studying throughout the semester and avoid cramming
- Concentrate on the material you are studying by generating questions from your textbooks and notes; focusing on key words, concepts, and examples; making charts and outlines
- Use relaxation techniques – you're in control!
- Don't think about fear; stay relevant

BEFORE the test:

- Attend all of your classes, find out what you're expected to know and when the exams are scheduled
- Keep up with your work & homework to avoid cramming
- Become more efficient in your study habits
- Have a study schedule that makes use of wasted time
- Study in a location where you can concentrate and give it your full attention
- Make flashcards & review them
- Learn how to take good notes & review them periodically
- Make outlines and summary sheets
- Ask yourself "What is the important information?"
- Study in groups with motivated peers
- Take advantage of tutoring facilities
- Be prepared! Review your summary sheets, homework, old tests, etc.
- Exercise program
- Get a good night's sleep the night before an exam
- Approach the exam with confidence – STOP critical/negative statements
    - *How to be self confident*:
        - Self talk! Encourage yourself – try writing your negative thoughts and then disputing each one with a positive statement.
        - Visualize yourself doing well and reaching your goals.
        - Don't overplay the importance of the grade – it is NOT a reflection of your self-worth nor does it predict your future success! Remind yourself that a test is only a test
        - Aim for an A level of understanding.
        - Try not to compare yourself with others.
        - Become an expert in learning what is going well and what you can do to improve.
        - Reward yourself after studying.
        - Practice relaxing so that it becomes a learned response.
        - Aim for a state of relaxed concentration.
- Don't go to the exam with an empty stomach – avoid caffeine & sugar!
- Arrive early – bring all the materials you need
- Be comfortable but alert – pick a good spot and make sure you have enough room to work
- Allow yourself plenty of time
- Relax before the exam
- Don't try to do a last minute review
- Don't talk about the test to other students just before it – anxiety is contagious! Avoid anxious classmates who are talking about the exam

DURING the test:

- Read the directions carefully to avoid careless mistakes
- Budget your test time
- Start with the easiest questions first
- Focus your attention on the test. Don't waste time worrying about the consequences of not doing well, or wondering what others are doing
- Change positions to help you relax
- If you go blank, skip the question and go on
- Don't panic – practice your relaxation techniques – close your eyes, take three deep breaths and then get back to the task
- If allowed, get a drink or go to the bathroom
- Essay tests:
    - Organize your thoughts in a brief outline. Start with a short summary or topical sentence and make your points – don't ramble. Look for key words such as compare, contrast, describe, identify.
- Objective tests (T/F, MC, Fill-in):
    - Think of your own answer before looking at the choices provided. Eliminate clearly wrong answers and make an educated guess. After you have answered those you know, return to those you checked. If your time is running out, concentrate on those questions you know well and/or have the most weight. Use all the time allowed for reviewing your answers, completing ideas.
- Review your test to make sure that you have answered all questions, not mis-marked or made some other mistake
- Proofread your writing for spelling/grammar/decimal point errors
- Do NOT second-guess yourself – your first hunch is more likely to be correct!

AFTER the test:

- Reward yourself! Take in a movie, go out to eat, or visit friends
- Don't go over the test questions with others. No matter how the test went, you can learn from the returned exam.
- When your test is returned to you – review it for future tests/finals

*If you are aware that you have a problem with test anxiety, be sure your teacher or instructor knows before any testing begins (and not the hour before!)
Talk to your advisor and/or the Counseling Center as soon as possible – don't wait until the end of a semester to seek help!

Healthy Living

Sleep, exercise, and diet are all interrelated and affect each other!

Diet

"Freshmen 15" – average amount of weight (15 lbs) a student will gain during their first year of college.

Causes: no regular exercise, lack of sleep, eating to cope with stress, eating at irregular intervals, eating whenever/whatever, consuming large quantities of food

Preventative tips: do not live on Mountain Dew and pizza!!!!!

- Try to eat at regular, set times – breakfast before class, lunch in the afternoon, dinner in -the 5-8pm range (do not eat too close to bedtime!)
- Try relaxation techniques or exercise or counseling to cope with stress
- Eat smaller, proportioned quantities
- Eat healthier foods – fruits/vegetables – less starch
- Exercise regularly or take walks on UT path several times per week (stay active!)

Exercise

It shouldn't feel like a chore that must be done, but rather something fun!

Suggestions for implementing exercise into your daily life as a college student:

- Get together with your FIG Group and play basketball, volleyball, or run at the Rec Center!
- Take advantage of the Student Rec Center (it's FREE as a student)
    - Intramurals
    - Aerobics, yoga, and other free classes
    - Club sports
- Walking, rollerblading, or biking to class rather than driving or taking the bus
    - UT Bike trail that runs through campus
- Find an exercise partner – motivate/encourage each other

Sleep

Normal amount of sleep a college student (18-24) requires is 7-8 hours per night.

Achieving the proper amount of sleep:

- Develop a regular sleep schedule – fluctuating your sleep time can cause problems in obtaining the proper amount of sleep needed
- Avoid "all-nighters" – staying up studying or cramming to prepare for an exam is not an effective study method. Depriving your body of sleep can cause you more problems.
- Relax before you go to sleep – reading, watching TV, listening to music
- Maintain a proper diet and exercise
- Avoid taking a shower before going to sleep as it tends to stimulate your body
- Avoid consuming caffeine or alcohol before going to sleep
- If you smoke, avoid smoking before going to bed as nicotine acts as a stimulant
- Avoid using sleeping medication which can cause dependency
- Create a relaxing atmosphere in your room (not too cold/hot – minimize noise/light)

TIPS TO REMEMBER BEFORE YOU REGISTER

1. You can register on the web (myUT Portal – Student tab) or in person at Rocket Solution Central located in Rocket Hall.

2. Make sure you memorize your Rocket ID #

3. Make sure you have obtained signatures if required (professor signatures are required if a course is closed; professor and college dean signatures are required after the online add date)

4. Be aware of PAYMENT DUE DATES!!

5. "R" in the day column of the course schedule represents Thursday.

6. Shaded course times specify evening or Saturday classes.

7. If you need a parking permit, you will need to register through myUT. The charge for the parking pass will be applied to your tuition bill.

8. You can opt to take off the Student Legal fee charge if you wish.

9. Anytime you register for 6 or more credit hours on-campus the university mandatory student health insurance premium is added to your bill. You can waive the mandatory student health insurance (waiver available online). This must be done BY or ON the last day of add/drop for each semester.

10. Refer to your flowcharts & course catalog book for prerequisites, hours, etc., prior to registering. Running your degree audit is a resourceful tool as it assists with what requirements need to be completed within the program.

11. Full-time status is a minimum of 12 credit hours. Flat rate tuition covers 12 -16 credit hours.

12. Do not register for more courses than you can handle (i.e. 20 hrs)

13. Make sure your schedule does not overlap anywhere when planning it.
    (Ex: two classes at the same time)

14. Know where your classes have been scheduled (which building, day, and time).

15. Plan enough time between classes to get from one side of campus to the other, as well as time for lunch, studying, etc.

16. If you have any questions at any time, please contact Chanda Raine at 419-530-8096 or chanda.raine@utoledo.edu. You can also stop by NI 3050 in person with your questions.

The University of Toledo

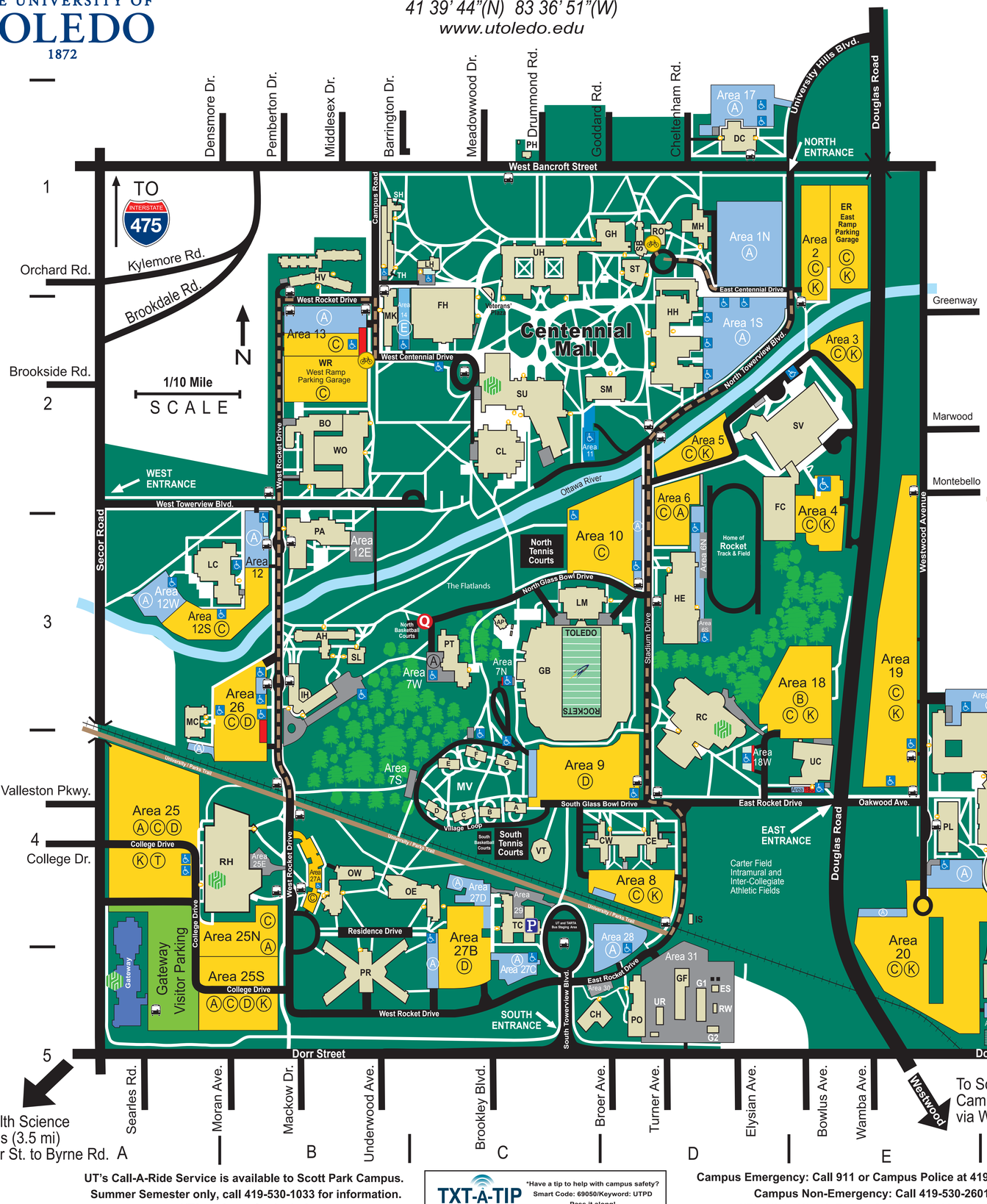
THE UNIVERSITY OF TOLEDO
1872

Welcome to Main Campus!

2801 West Bancroft Street, Toledo OH 43606

41 39' 44"(N) 83 36' 51"(W)

www.utoledo.edu



MAP KEY

- Visitor Parking Permits
- Student Parking (white lined spaces)
  - Ⓒ Commuters, Other Than First Year
  - Ⓓ Residents, Other Than First Year
  - Ⓕ First Year Residents (Area 21 at Scott Park Campus)
  - Ⓚ First Year Commuters
- Ⓑ Student Recreation Center Patrons: Area 18 Only
- Ⓣ Toledo Tech/Early Learning
- Faculty/Staff Parking (yellow lined spaces)
  - Ⓐ Faculty/Staff
  - Ⓔ Executive
- Handicapped Parking
- Pay Parking/Meters
- Gateway Parking (green lined spaces)
- Buildings
- Wooded Areas
- Shuttle Bus Stops
- Bicycle Corrals (Ritter & Wolfe)
- Huntington ATMs
- Accessible Building Entrances
- University/Parks Trail
- UT Bike Trail Connectors to Corrals
- Gateway
- Q The Q (Bar-B-Que Spot)
- Under Construction

** Faculty/Staff may park in student areas.*

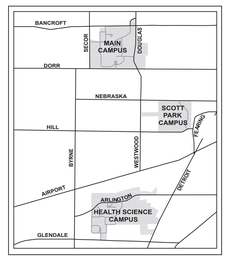
BUILDING DIRECTORY

AH	Academic House	B3
AP	Koester Alumni Pavilion	C3
BO	Bowman-Oddy Laboratories	B2
CE	Carter Hall East	D4
CH	Child Care Center	C5
CL	Carlson Library	C2
CW	Carter Hall West	D4
DC	Driscoll Alumni Center	D1
ER	East Ramp Parking Garage	E1
FC	Fetterman Training Center	D2
FH	Memorial Field House	C2
GB	Glass Bowl Stadium	C3
GF	Grounds and Fleet Services	D5
GH	Gillham Hall	D1
HE	Health Education Center	D3
HH	Health and Human Services	D2
HV	Honors Academic Village	B1
IH	Horton International House	B3
IS	Intramural Storage	D4
LC	Law Center	A3
LH	Libbey Hall	C1
LM	Larimer Athletic Complex	C3
MC	Main Campus Medical Center	A3
MH	McMaster Hall	D1
MK	MacKinnon Hall	B2
MV	James D. McComas Village	C4
NA	Nitschke Auditorium	F4
NE	North Engineering	F4
NI	Nitschke Hall	F4
NT	Nitschke Technology Commercialization Complex	F4
OE	Ottawa House East	B4
OW	Ottawa House West	B4
PA	Center for Performing Arts	B3
PH	Peterson House	C1
PL	Palmer Hall	E4
PO	Plant Operations	D5
PT	Parks Tower	C3
PR	Presidents Hall	B5
R1	Research & Tech. Complex 1	F5
RC	Student Recreation Center	D4
RH	Rocket Hall	B4
RO	Ritter Astrophysical Research Cntr	D1
SH	Scott Hall	B1
SL	Sullivan Hall	B3
SM	Snyder Memorial	D2
SB	Savage & Associates Business Complex	D1
ST	Stranahan Hall	D1
SU	Student Union	C2
SV	John F. Savage Arena	E2
TC	Transportation Center	C4
TH	Tucker Hall	B1
UC	University Computer Center	E4
UH	University Hall	C1
UR	University Recycling	D5
VT	Varsity 'T' Pavilion	C4
WO	Wolfe Hall	B2
WR	West Ramp Parking Garage	B2

FREQUENT CAMPUS DESTINATIONS

Ask Rocky/Information Booth	SU
Alumni Office	DC
Huntington ATMs	RC, RH, SU, Gateway
Athletic Ticket Office	SV
Campus Card/ID Center	SU
Center for International Studies and Programs	SM
Doermann Theatre	UH
Excellence and Multicultural Student Success	SU
Food Court	SU
Fraternities/Sororities	MV
Graduate Admissions	UH
Honors College	MK
Independent Collegian (Newspaper)	CL
Information Commons/Library	CL
Institutional Research	UH
Learning Enhancement Center	CL
Lost and Found	TC
Main Campus Medical Center/Pharmacy	MC
Military Service Center/Lounge	RH
Parking Enforcement (info/appeals)	TC
Parking Permits	TC
Police Department	TC
Residence Life/Campus Housing	OW
Ritter Planetarium	RO
ROTC	HE
Rocket Solution Central	RH
Student Disability Services	RH
Student Legal Services	RH
Student Recreation Center	RC
Student Support Services	SU
Toledo Excel	SU
University Bookstore at Gateway	A5
Upward Bound	SU
Urban Affairs Center	SM
UT Federal Credit Union	SU
WXUT-FM Student Radio	SU
Writing Center	CL

Map showing locations of UT's Main, Scott Park and Health Science Campuses



The University of Toledo
Facilities Information Systems
Updated: May 8, 2015
Comments: 419.530.1082

LIBBEY HALL STUDENT SERVICES
- Undergraduate Admission
- Direct from High School Students

ROCKET HALL STUDENT SERVICES
- Student Disability Services (1820)
- Adult, Transfer, and Military Admission (1300)
- Counseling Center (1810)
- Loans/Special Accounts (1850)
- Rocket Solution Central (1200)
  - Financial Aid/Scholarships
  - Registration
  - Student Account Information
  - Enrollment Verification
  - Grades/Transcripts
  - Graduation Information
- College of Adult & Lifelong Learning (1060)
  - C.A.L.L. Undergrad. Degree Programs
- Military Service Center (1350)

STUDENT UNION STUDENT SERVICES
- Rocket Wireless (1560)
- Rocket Card/ID (1550)

ADMINISTRATION DIRECTORY

Office of the President	UH 3500
Provost and Executive Vice President for Academic Affairs, Main Campus	UH 3340
Executive Director for UT Medical Center	MLB 221*
Sr. Vice President for the Student Experience	UH 3630
Vice President for Corporate Relations	R1 1102A
Vice President and Director of Athletics	SV 1110
Vice President for Enrollment Management and Online Education	LH 4007
Vice President for External Affairs	UH 3580
Vice President for Finance and Administraton	UH 3700
Vice President and General Counsel	UH 3620
Vice President for Government Relations	UH 3510
Vice President for Information Technology/CIO	UC 1000B
Vice President for Institutional Advancement	DC 1001
Vice President for Research	UH 2300
Assoc. Vice President for Human Resources & Talent Development	AS 1000**
Office of Board of Trustees	UH 3560

COLLEGE DIRECTORY OFFICE OF THE DEAN

College of Adult and Lifelong Learning	RH 1060
College of Business and Innovation	ST 5017
College of Communication and the Arts	SL 1200
Judith Herb College of Education	GH 3100
College of Engineering	NI 5012
College of Graduate Studies	UH 3190
College of Health Sciences	HH 3302
Jesup Scott Honors College	MK 2000
College of Languages, Literature and Social Sciences	UH 3160
College of Law	LC 2000
College of Medicine and Life Sciences	MLB 213*
College of Natural Sciences and Mathematics	WO 2246
College of Nursing	COB 4431*
College of Pharmacy and Pharmaceutical Sciences	HEB 145*
College of Social Justice and Human Service	HH 2630
YouCollege	RH 1830
Online Education	FH 3000

*Health Science Campus
**Scott Park Campus
***Center for the Visual Arts at the Toledo Museum of Art

UT's Call-A-Ride Service is available to Scott Park Campus.
Summer Semester only, call 419-530-1033 for information.
UT is a tobacco-free institution.

TXT-A-TIP
SMART CODE: 69050 • KEYWORD: UTPD
*Have a tip to help with campus safety?
Smart Code: 69050/Keyword: UTPD
Pass it along!

Campus Emergency: Call 911 or Campus Police at 419-530-2600.
Campus Non-Emergency: Call 419-530-2601.
UT's Night Watch Escort Service call 419-530-3024.