LAWRENCE TECHNOLOGICAL UNIVERSITY
UNDERGRADUATE CATALOG
2017-18

Announcement of General Information and Courses in the Colleges of

Architecture and Design
Arts and Sciences
Engineering
Management

For the Academic Year 2017–18

CONTENTS

VISIT THE CAMPUS

Lawrence Technological University welcomes prospective students, family members, employers, and others to visit. While on campus, prospective students are encouraged to discuss their educational plans with admissions staff and to meet current Lawrence Tech students, professors, or deans. Call the Office of Admissions at 800.225.5588 to arrange an appointment or to request additional information. The Office of Admissions is open (except holidays) Monday – Thursday, 8 a.m. – 7:30 p.m., and Friday, 8 a.m. – 4:30 p.m. If you plan to visit during the summer, please contact the Office of Admissions for summer hours.

ABOUT THIS UNDERGRADUATE CATALOG

This *Undergraduate Catalog* is a compendium of opportunities available at Lawrence Technological University. It includes information on academic programs, requirements for admission and graduation, rules, regulations, and expectations. Failure to read this *Undergraduate Catalog* does not excuse students from the requirements and regulations described herein. While every effort is made to provide accurate and current information, the University reserves the right to change rules, policies, fees, curricula, courses, and other programs described to reflect faculty or administrative action. This *Undergraduate Catalog* is accurate as of the publication date. Course descriptions are available online through BannerWeb at my.ltu.edu. For information about graduate programs, refer to Lawrence Tech's *Graduate Catalog*.

STUDENT IMAGES

Lawrence Technological University reserves the right to use images of student work and of students on campus, or at any of its offsite locations, for the purpose of promoting the University. Students not wishing to be photographed should notify the registrar in writing when they register each semester.

Academic Calendar

FALL 2017 SEMESTER

April 10 – August 20	Registration open – no late fees apply
August 20	Last day to register for traditional semester courses without a late fee
August 21	Traditional semester courses begin; add/drop period begins; LATE REGISTRATION FEE applies
August 27	Last day to add/register for a class on BannerWeb
August 28 – September 1	All adds and registrations require Instructor and Department Chair approval on paper registration form
September 1	Last day to drop traditional semester courses with refund (no refund for classes dropped after September 1)
September 2	Withdrawal period begins for traditional courses; LATE TRANSACTION FEE applies for each course added
September 2 – 4	Labor Day break (no classes in session)
September 5	Classes resume after Labor Day break
September 19	Faculty Assessment Day – all day and evening courses are cancelled
November 17	Last day to withdraw from traditional semester courses
November 21	Last day of classes before Thanksgiving break
November 27	Classes resume after Thanksgiving break
December 8	Last day of traditional semester classes before Final Exams
December 11 – 14	Traditional semester Final Exams
December 14	Fall 2017 semester ends
December 20	Grades due for traditional semester courses

SPRING 2018 SEMESTER

November 13 –January 7	Registration open – no late fees apply
January 7	Last day to register for traditional semester without a late fee
January 8	Traditional semester courses begin; add/drop period begins; LATE REGISTRATION FEE applies
January 15	Last day to add/register for a class on BannerWeb
January 15	Campus closed for Martin Luther King Day
January 15 – 19	All adds and registrations require Instructor and Department Chair approval on paper registration form
January 19	Last day to drop traditional semester courses with refund (no refund for classes dropped after January 19)

January 20	Withdrawal period begins for traditional courses; LATE TRANSACTION FEE applies for each course added
March 2	Last day of classes before mid-semester break
March 3 - March 11	Mid-semester break
March 12	Classes resume after mid-semester break
April 6	Last day to withdraw from traditional semester courses
April 30	Last day of traditional semester classes before Final Exams
May 1 – 4	Traditional semester Final Exams
May 4	Spring 2018 semester ends
May 5	Commencement
May 9	Grades due for traditional semester courses

SUMMER 2018 SEMESTER

April 9 – May 13	Registration open – no late fees apply
May 13	Last day to register for traditional semester courses without a late fee
May 14	Traditional semester courses begin; add/drop period begins; LATE REGISTRATION FEE applies
May 18	Last day to add/register for a class on BannerWeb
May 19 – May 25	All adds and registrations require Instructor and Department Chair approval on paper registration form
May 20	Last day to drop traditional semester with refund (no refund for classes dropped after May 20)
May 21	Withdrawal period begins for traditional courses; LATE TRANSACTION FEE applies for each course added
May 25	Last day of classes before Memorial Day
May 29	Classes resume after Memorial Day break
July 4	Campus closed for Independence Day break (no classes in session)
July 5	Classes resume after Independence Day break
July 6	Last day to withdraw from traditional semester
July 20	Summer 2018 semester ends
July 25	Grades due for traditional semester courses

The University reserves the right to make adjustments to the academic calendar as necessary.

Please note that for courses that start or end at times other than indicated or are of a different length, DIFFERENT dropping, adding and refund dates apply. It is the student's responsibility to be aware of these dates. Final grades for Open Learning courses are due from the instructor on the Wednesday of the following week after the class ends. Dates for Open Learning courses are available at Open Learning schedules or by calling the Enrollment Services Office at 248.204.2280.

IT scheduled downtime for upgrades and maintenance:

Weekend of September 22, 2017
Holiday Break: December 23, 2017 – January 1, 2018
Week of March 5, 2018 (Spring Break)
Weekend of May 18, 2018
Weekend of July 27, 2018

Possible Is Everything

Leading-edge, technology-infused academic programs. Dynamic campus life. NAIA, varsity, junior varsity, club, and intramural athletics. Proven career placement. Lawrence Technological University is for students who believe everything is possible and that possible is everything. An independent, accredited university founded in 1932, Lawrence Tech offers more than 100 academic programs at the associate, bachelor's, master's, and doctoral degree levels. The University is composed of Colleges of Architecture and Design, Arts and Sciences, Engineering, and Management. Approximately 4,500 students are enrolled in full-time, part-time, day, evening, weekend, online, credit, and non-credit programs.

Lawrence Tech combines the benefits of a close, caring, small-college atmosphere with the academic depth and scope of a larger university. Lawrence Tech takes a personal approach to education, and the University attracts students who generally have made some big plans for themselves. They're highly motivated students with a tremendous will to succeed, to excel, and to seek out the best in whatever they do.

Lawrence Tech has a reputation for excellence. Most students claim that the University's programs are rigorous and challenging – programs that unapologetically demand commitment. At the same time, as a result of their educational preparation, Lawrence Tech graduates report (in numbers well above national norms) that they arrive in the workplace feeling prepared and ready to do their jobs.

Independent studies also confirm that Lawrence Tech students rapidly achieve placement success. The Brookings Institution ranks LTU fifth among U.S. colleges and universities for boosting graduates' earning potential. Payscale reports that salaries of LTU bachelor's graduates are among the top 10 percent of all U.S. universities. Lawrence Tech provides a rigorous, high-quality education – an education that clearly pays off. Equally important, 88 percent of students are employed or registered for graduate school at commencement, above the national average.

The heritage and educational philosophy of the University is summed up in just three words in the University motto, adopted shortly after Lawrence Tech was founded in 1932 – "theory and practice." It means that Lawrence Tech seeks to explain not only why something should work, but also how it works in real situations and applications. Many LTU faculty have years of successful industrial and professional experience in addition to their academic credentials. They've learned what succeeds in the "real" world, and they'll try to make sure that students do, too.

The University also maintains close partnerships with the industries and professions that its students and graduates serve in order to provide students with the skills employers need. Lawrence Tech's proximity to some of the world's leading industrial, technological, business, and scientific enterprises also gives students the opportunity to participate in co-ops, internships, part-time jobs, and networking opportunities. For example, 61 of the top 100 automotive suppliers to North America are headquartered in Michigan, and 1,250 foreign firms from 40 countries operate in the Detroit region.

Lawrence Tech students are strongly encouraged to interact with the professional world throughout their academic program. A number of professional societies are active on campus and help students network with men and women already working in specific fields. Many of the academic programs also require participation in professional projects that seek to solve real problems facing practicing architects, engineers, managers, scientists, and others. The projects expose students to a host of real-

world challenges, and Lawrence Tech students regularly earn top awards in competitions that pit them against students from other colleges and universities.

MISSION, VALUES, VISION, AND CAUSE

Lawrence Technological University was founded as an independent nonprofit institution of higher learning. On a regular basis, the University community – including trustees, administrators, staff, faculty, students, and alumni – meets to review, establish, and achieve the ambitious goals set forth in the Strategic Plan, to reflect upon hopes for the future, and to elucidate the purposes for which Lawrence Tech operates and serves. The latest edition of Lawrence Tech's Strategic Plan can be viewed at www.ltu.edu/strategicplan.

Part of this planning process is to review and direct the evolution of the mission, values, vision, and cause statements that guide Lawrence Tech's progress. These statements are:

Mission

To develop innovative and agile leaders through a student-centric learning environment and applied research embracing theory and practice.

Values

Character and Integrity
Theory and Practice
Teamwork and Trust
Student-focused and Caring

Vision

To be recognized for transformative STEM and Design education that develops leaders with an entrepreneurial mindset and global perspective.

Cause

The intellectual development and transformation of our students into critical thinkers, leaders, and lifelong learners.

ACCREDITATION AND MEMBERSHIPS

Lawrence Technological University is accredited by the Higher Learning Commission (HLC) (www.hlcommission.org, 312.263.0456). The HLC accreditation report is on file in the University's library and is available for public review by patrons. Various graduate and undergraduate degrees are additionally accredited through appropriate national professional agencies:

Architecture: NAAB
Chemistry: American Chemical Society
Engineering: ABET
Game art, graphic design, industrial design, interaction design, interior design, and transportation design: NASAD
Interior architecture and design: CIDA
Management: ACBSP, IACBE

Lawrence Tech's institutional memberships include:

Advanced Acceptance Program
American Association of Collegiate Registrars and Admissions Officers
American Association of University Administrators
American Library Association
American Society for Engineering Education
Association of College Administration Professionals
Association of College Admissions Counselors (national, Michigan, and Ohio)
Association of College and University Housing Officers
Association of Collegiate Business Schools and Programs (ACBSP)
Association of Collegiate Schools of Architecture
Association of Fundraising Professionals
Association of Independent Technological Universities (AITU)
Association of International Educators (NAFSA)
Association of the United States Army
Association of Title IX Coordinators (ATIXA)
Association to Advance Collegiate Schools of Business (AACSB)
Automation Alley
Building the Engine of Community Development in Detroit (BECDD)
College Board
Council for Advancement and Support of Education
Council for Higher Education Accreditation
Council of Interior Design Accreditation
Detroit Athletic Club
Detroit Economic Club
Detroit Regional Chamber of Commerce
Detroit Zoological Society
Digital Manufacturing and Design Innovation Institute
Educational Teleconsortium of Michigan
EDUCAUSE
Engineering Society of Detroit
Higher Learning Commission
International Assembly for Collegiate Business Education (IACBE)
Leave a Legacy Southeast Michigan
MI-AHEAD
MichBio
Michigan Academy of Science, Arts and Letters
Michigan Association for Foreign Student Affairs
Michigan Association of Collegiate Registrars and Admissions Officers
Michigan Campus Compact
Michigan Community College Virtual Learning Collaborative
Michigan Economic Developers Association
Michigan Independent Colleges and Universities (MICU)
Michigan Israel Business Bridge
Michigan Student Financial Aid Administrators
Michigan Venture Capital Association
Midwest Association of Student Financial Aid Administrators
National Academic Advising Association
National Architectural Accreditation Board
National Association of Colleges and Employers

National Association of Independent Colleges and Universities
National Association of Intercollegiate Athletics
National Association of Schools of Art and Design
National Association of Student Financial Aid Administrators
National Defense Industry Association
National Financial Aid Association
Oakland Country Workforce Development Board
Partnership for Philanthropic Planning
Planned Giving Roundtable of Southeast Michigan
The Sloan Consortium
Southfield Arts Commission
Southfield City Centre
Southfield SmartZone
TiE - Detroit (The Indus Entrepreneurs Organization)

Lawrence Tech is also a member of nearly all chambers of commerce in the surrounding counties of Oakland, Wayne, and Macomb, including Southfield and Greater Detroit, and the U.S. Chamber of Commerce.

Faculty and staff are additionally members of a wide variety of local, state, and national professional organizations appropriate to their disciplines. Professional organizations with active student chapters at Lawrence Tech are listed in the Services for Students section of this *Catalog*.

DAY, EVENING, WEEKEND, AND ONLINE CONVENIENCE

Lawrence Tech's programs are designed for traditional students as well as for working professionals. The great majority of the University's bachelor's degree classes are offered in day and evening schedules that complement each other. Lawrence Tech is one of only a few universities to offer a complete selection of bachelor's and graduate degree programs in the evening. No stranger to providing the convenience of evening classes, Lawrence Tech pioneered some of the nation's first such programs in 1932.

A number of courses are offered online. Others are delivered in hybrid mode, meaning that some class sessions are held in the classroom while others are held online.

Undergraduate and graduate classes are usually offered on a semester calendar – two semesters of 16 weeks each. The fall semester begins in late August and ends in mid-December. The spring semester begins in January and ends in mid-May. There is also a summer session that offers students the opportunity to accelerate and continue academic progress or make up deficiencies. Certain programs may also be offered on special schedules that accelerate class meetings over shorter periods. Consult the registrar about these opportunities.

CLASSES AND FACULTY

Lawrence Tech's moderate size encourages close interaction among students, faculty, and staff. Classes are generally small, especially for upperclassmen, and individual initiative is stressed.

Lawrence Tech has more than 400 full- and part-time faculty members. Exemplifying the University motto of "theory and practice," in addition to academic experience, many also bring a wealth of personal real-world research, business, or industrial experience to the classroom or laboratory. In

addition to courses taught by Lawrence Tech's full-time professional faculty, it isn't unusual for students in appropriate disciplines to take classes taught by adjunct faculty who are successful corporate executives, practicing accountants, managers, entrepreneurs, engineers, architects, attorneys, and scientists. Such exposure is deliberate on the part of the University and seeks to help students develop an awareness of the most current real-world problem-solving applications of their academic studies.

Lawrence Tech students find that their professors are normally easily accessible and that they are eager to discuss individual questions, academic progress, or concerns outside of class. The University has a tradition of an "open door" policy with faculty, department chairs, deans, the president, and other administrative staff.

DIRECT STUDENT INTERACTION

The successful Lawrence Tech student generally arrives on campus with a full measure of ability, initiative, motivation, and self-reliance. These students appreciate the institutional position that the University exists for, and interacts with, the student – not relatives, spouses, or friends wishing to represent them. The fact that Lawrence Tech students are of a maturity that requires no such representation helps ensure that they are prepared for responsible full- or part-time employment during their academic career and, following graduation, for professional employment or continued study.

AFTER GRADUATION

About 80 percent of Lawrence Tech's more than 35,000 degree-holding alumni reside in Michigan and the Midwest, but alumni also live all over the world. Lawrence Tech's Alumni Association is the international forum for active graduates. The association's website, www.ltu.edu/alumni, provides access to everything from lifetime email accounts and events calendars to job search assistance. The association holds meetings and sponsors a variety of activities and services for members in southeastern Michigan and formal and informal chapters elsewhere in Michigan and other states, including Arizona, California, Florida, and Georgia. Several chapters based on academic interest are also active. The Office of Alumni Relations coordinates alumni activities and serves as a campus liaison for alumni worldwide.

Your Campus and Community

Lawrence Technological University's 107-acre campus is located at the center of the nation's #1 region for engineering, technology, and architecture in the Oakland County city of Southfield, a suburban community of more than 70,000 people.

Lawrence Tech's location is one of the University's greatest assets, providing many nearby opportunities for students to network with practicing professionals, participate in career-related organizations, and find internships, co-ops, and full- and part-time employment during college and after graduation. Southeastern Michigan is a hub of American business and industry. It is a manufacturing and corporate center, the site of some of the world's outstanding technological accomplishments, and a focal point for cultural activities and recreation. With nearly $54 billion in goods exported from the area, the Metro Detroit region ranks fourth nationally in total exports.

Within a 15-mile radius of campus are world headquarters for many of the nation's leading research, industrial, and manufacturing firms. And while the area's economy is substantially more diverse than in the days when the region was dubbed the world's auto capital, fully one third of all U.S. auto production still takes place within 70 miles of the campus – in some of the planet's most sophisticated, highly automated, and innovatively managed work environments.

Lawrence Tech is part of the Oakland County/Automation Alley SmartZone, one of the state's foremost concentrations of and magnets for high-tech business and enterprise.

Oakland County is one of the wealthiest counties in the nation and ranks 12th nationally in per capita income and 13th nationally in total exports, with businesses producing $14.5 billion in merchandise exports. The county is a leading center of international commercial activity and home to 1,040 firms from 40 countries. More than one-third of Michigan's research and development facilities are located in the county, and 64 of the global 100 automotive original equipment manufacturers have operations in the county. In addition, Oakland County has one of the leading high tech workforces anywhere in the nation. Job creation and diversification are transforming Oakland County's economy from manufacturing-based to knowledge-based through Oakland County's Emerging Sectors initiative. Since inception, the initiative has generated $3.2 billion in private investment and has created and retained more than 57,000 jobs.

Nearby recreational opportunities abound – more than 1,400 lakes, five ski areas, nearly 30 public fishing sites, and more golf holes per capita than any other place in the country. Major entertainment facilities within a half-hour's drive include the DTE Energy and Meadow Brook outdoor music theaters, Little Caesars Arena (home of the Detroit Red Wings and Detroit Pistons), the Palace of Auburn Hills, Ford Field (home of the NFL Detroit Lions), and Comerica Park (home of the MLB Detroit Tigers). Additional attractions include the Cranbrook Museums, the Detroit Zoo, the Detroit Institute of Arts, Detroit Historical Museum, Motown Museum, The Henry Ford, Charles H. Wright Museum of African American History, and more.

UNIVERSITY BUILDINGS

The **Gregor S. and Elizabeth B. Affleck House**, designed by Frank Lloyd Wright and completed in 1941, was given to LTU in 1978 by the late Afflecks' children, Mary Ann Lutomski and Gregor P. Affleck. The home is located in the nearby city of Bloomfield Hills. It is considered an outstanding example of Wright's Usonian work. The Affleck House is managed by the College of Architecture and Design.

The **Applied Research Center** houses labs and offices for the Blue Devil Motorsports student teams (Formula SAE, Formula Hybrid, Baja SAE, Supermileage SAE, and SAE Aero Design); the transportation design program's clay modeling studio; a wind tunnel; and the Johnson Controls Vehicle Engineering Systems Laboratory, which features a unique 4 x 4 chassis dynamometer.

The **Architecture Building**, completed in 1962, houses classrooms, studios, and faculty offices for the College of Architecture and Design. A 325-seat auditorium is also located here, as well as a gallery for changing exhibits.

The **Art and Design Center** houses College of Architecture and Design studios and computer labs.

The **Wayne H. Buell Management Building**, completed in 1982, is a 115,000-square-foot structure dedicated to the memory of Lawrence Tech's third president. It houses the College of Management, library, dining commons (Real Food on Campus, [RFoC]), and bookstore. The Offices of the President, Provost, University Advancement, and Marketing and Public Affairs are also here. A fully enclosed two-story atrium hosts a variety of special events and offers a pleasant spot for students to eat, study, or visit with friends. The atrium also features an ATM, Einstein Bros. Bagels, and a Provisions on Demand (P.O.D.) express outlet.

The **Business Services Building** houses the Department of Finance and Administration, Business Services, Human Resources, LTU Online, and e-Learning Services.

Connected to the Engineering Building is the **Center for Innovative Materials Research** (CIMR), a state-of-the-art laboratory for the research, development, and testing of carbon-fiber composites and other advanced materials, such as ceramics and polymers for defense, homeland security, automotive, and infrastructure applications. Dedicated in 2008, CIMR was made possible by an $11 million cooperative research agreement with the Army Research Lab and the U.S. Army Tank-Automotive Research, Development and Engineering Center – an unprecedented federal partnership with a private Michigan university.

The **Detroit Center for Design + Technology** (DCDT) on Woodward Avenue in downtown Detroit is home to a number of the College of Architecture and Design's academic, research, outreach, and community programs.

Edward Donley Residence Hall (formerly Housing North), opened in 2002 and provides modern, fully furnished air-conditioned apartment-style units and accommodates more than 200 students. The Edward Donley Residence Hall was dedicated in 2016 in honor of alumnus and dedicated LTU supporter Ed Donley, BME'43, HD'76, HD'87. See the Housing section of this *Catalog* for additional information.

Lawrence Tech's **Engineering Building** was the first building on the Southfield campus when it opened in 1955. Expanded in 1987, the building contains classrooms, laboratories, and offices for the College of Engineering.

The **Enterprise Center** office complex was acquired by the University in 2015 and will ultimately accommodate offices for academic programs, business accelerator space, the Southfield SmartZone, and Southfield Michigan Works!

The **General Services Building** houses the offices of the University architect, athletic coaches, Campus Safety, and Mail Services.

The **Professional Development Center**, built in 1959 and substantially upgraded in 1996, houses the offices and facilities for non-degree professional training and business acceleration.

The **Quadrangle** at the center of campus features crisscrossing paths, granite benches, Champion trees, a grassy bioswale that filters rainwater, and Ockham's Wedge, a sculpture by world-renowned artist Beverly Pepper. The Quad also caps a field of 120 geothermal wells that heat and cool the Taubman Center, which has no gas hookup.

The **Lloyd E. Reuss Residence Hall**, opened in 2015, accommodates 150 freshman students. The two-story building features five living areas with 16 double-occupancy units. Each area has its own lounge with kitchenette space. Amenities include a central laundry on both floors, a multi-purpose room, game room, and two conference-type spaces. See the Housing section of this *Catalog* for additional information.

The **Don Ridler Field House**, built in 1987, memorializes Don Ridler, the beloved coach and athletic director who led Lawrence Tech basketball teams of the 1940s and 1950s to national prominence and includes a 1,500-seat gymnasium, exercise track, weight and conditioning room, saunas, racquetball courts, and locker facilities.

The **Science Building**, opened in 1967, has been extensively renovated and equipped with upgraded computer, lab, and multimedia equipment. It contains classrooms, laboratories, and faculty offices for the College of Arts and Sciences – including the Departments of Natural Sciences; Mathematics and Computer Science; and Humanities, Social Sciences, and Communication. The 303-seat Mary E. Marburger Science and Engineering Auditorium is located at the south end of the building.

South Residence Hall (formerly South Housing) opened in 1977 and provides fully furnished air-conditioned apartment-style units for nearly 400 students. See the Housing section of this *Catalog* for additional information.

Lawrence Tech's **A. Alfred Taubman Student Services Center,** named for a former student and one of the University's most generous benefactors, is a 42,000-square-foot facility at the center of campus that provides convenient one-stop access to the Offices of Admissions, Financial Aid, the Registrar, Cashier, Dean of Students, Career Services, International Programs, Student Activities, Clinical Counseling, University Housing, Laptop Help Desk, Academic Achievement Center, and more. The building, which was completed in 2006, is also Leadership in Energy and Environmental Design (LEED) Silver-certified. It functions as a living laboratory of energy-efficient technologies, including a soaring atrium and vegetated "green" roof.

The **A. Alfred Taubman Engineering, Architecture, and Life Sciences Complex, Home of the Marburger STEM Center** opened in the fall of 2016 with new facilities for LTU's robotics program, science labs, and biomedical engineering labs, as well as space for multidisciplinary student collaboration. It, too, has many sustainable features. The building connects the **Science** and **Engineering** buildings.

Lawrence Tech's **University Technology and Learning Center**, opened in 2001, is an 87,000-square-foot building housing a variety of technology labs, as well as architecture and design studios. It also houses the University Gallery, Maibach Inter-Faith Lounge, Lear Auditorium, Denso Interactive Center, and Media Services Studio. The building connects to the **Architecture** and **Engineering** buildings.

Athletic fields are used for football, soccer, lacrosse, and flag football games.

Services for Students

ZAVEN MARGOSIAN ACADEMIC ACHIEVEMENT CENTER (AAC)

Mission

The AAC supports Lawrence Tech's mission by providing academic assistance to the University's students. We strive to educate, empower, and inspire students to become independent and successful lifelong learners. It is located in the A. Alfred Taubman Student Services Center in room C201.

Services Offered

Student Success Program (Mapworks) is a student degree persistence and success program. First-year and sophomore students and student-athletes receive additional academic and skills support to help them succeed academically and strengthen their connection to the University. Students complete a survey early in the semester and receive frequent academic updates throughout the academic year. Those having difficulties are invited to work with an AAC staff member to develop a plan for improvement.

Tutoring is available for architecture and design, chemistry, biology, computer science, engineering, ESL conversation, mathematics, physics, and writing-intensive courses. Tutors include LTU faculty members and exemplary students who have successfully completed the courses they tutor. Students may walk into the AAC or schedule an appointment to work with a tutor any weekday during regularly scheduled hours or meet with a tutor online. Visit www.ltu.edu/aac/tutoring.asp to view the tutor schedule.

Academic Success Workshops are offered every semester. The workshops are designed to aid students in their pursuit of academic excellence. The workshops are designed to help students improve skills such as effective listening and note-taking, goal setting, effective reading of textbooks and literature, research, and time/stress management.

Pre-Courses are free workshops offered before the fall semester starts. Pre-courses introduce students to the material that will be covered in specific classes while refreshing them on material they learned in the past and need to review. Visit www.ltu.edu/aac/precourses.asp to view the schedule and register online.

The Writing Center helps LTU students become better writers. Writers at any stage in the writing process can work one-on-one with peer and faculty tutors in a constructive process that will empower them to write well. Workshops are also offered each semester.

Supplemental Instruction (SI) is offered in select natural science courses. It is a peer-led program designed to allow students to interact as they learn. Students participating in the SI sessions discuss important concepts and develop strategies for learning the subject.

Study Tables is a program designed to help student-athletes and student organization members succeed in their courses. Time slots in the AAC are provided to the student-athletes and student organization members for study. The AAC staff monitors the program.

Testing Services (proctored testing) is offered for students who are unable to complete exams/quizzes during regularly scheduled class time. To use this service, students must contact the AAC at least 24 hours in advance to schedule an appointment. Visit www.ltu.edu/aac/exam-proctor.asp for additional information.

ACADEMIC COUNSELING AND TUTORIAL SERVICES

All new students, both freshmen and transfers, are expected to attend orientation sessions prior to or during their first semester on campus. During these sessions, student opportunities, responsibilities, and regulations are discussed, and registration is completed. A number of University counselors are available for academic advice, counseling, and registration assistance.

The Academic Achievement Center works with the Office of Disability Services to provide tutorial and testing services for students with disabilities. Contact the Office of Disability Services at 248.204.4100. Also see Disability Services.

ACTIVITIES AND ORGANIZATIONS

Whatever your particular interests or needs, you can find a campus activity or organization that will provide not just fun and friendships but also opportunities to hone your professional and leadership skills. Joining a campus club or organization can help you prepare for life after college or simply provide a great way to relax and recharge. As they look back on their college years, alumni often say that some of their most rewarding experiences came from their participation in co-curricular activities.

So take a look at the list that follows, choose one (or several) activities and become involved! And remember to let the Office of Marketing and Public Affairs know what your organization is doing. The staff there can help with publicity and regularly reports news of campus activities to the press, radio, and television.

Students interested in forming new organizations should contact the Office of Student Engagement or the Executive Board of Student Government for assistance. Student Government approval is necessary for official recognition and funding assistance. To be eligible to run for office in any campus organization, students must have a cumulative GPA of at least 2.3. They will be asked to withdraw from office at the end of any semester in which their semester GPA falls below 2.0.

Student Government

Lawrence Tech's Student Government is recognized by the University administration as the official representative for the entire student body. It offers the opportunity for students to better themselves and their University through involvement in campus activities. The Student Government provides an avenue for every student to express concerns, while endorsing Lawrence Tech organizations, clubs, and teams.

The Student Government is composed of three interacting branches working in cooperation with each other.

- Student Administration (president and executive vice president)
- Student Senate (senators and senate leader)
- Student Judiciary (parliamentarian and Judicial Review Committee)

The president and executive vice president are elected each spring. Students may join the Student Senate, even as freshmen, during a campus election in September. They may represent their college, area of residency, or student interest. Meetings are bi-weekly and legislative. Funding bills, resolutions, and other matters are discussed and implemented. There is compensation for all Student Government positions! If you have any questions or would like to run for a Senate seat, please contact stugov@ltu.edu.

Student Programming Board
Student Government also coordinates campus activities, which enhance and enrich the quality of student life at Lawrence Tech by addressing the needs and interests of its diverse student body. The board is also involved in planning University-wide events, such as Homecoming, Winterfest, and the Presidential Ball. To get involved, contact the Office of Student Engagement at 248.204.4100 or email stugov@ltu.edu.

Registered Student Organizations
American Chemical Society (ACS)*
American Institute of Architecture Students (AIAS)*
American Society of Biochemistry and Molecular Biology*
American Society of Civil Engineers (ASCE)*
American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)*
American Society of Mechanical Engineers (ASME)*
Anime Club
Arab American Association of Engineers and Architects (AAAEA)
Architectural Engineering Institute (AEI)*
Association of Indian Students
Biomedical Engineering Society (BMES)*
Blue Devil Broadcasting
Chinese Student Association
Club Track and Field Team
DECA
Fishing Club
Institute of Electrical and Electronics Engineers (IEEE), Southeastern Michigan Chapter*
International Society of Physics Students (ISPS)*
National Organization of Minority Architects (NOMAS)*
OUT! at LTU with Friends
Saudi Student Association
Society of Suicide Awareness and Prevention
Spanish Speaking Student Association
Student Athlete Advisory Committee
Swing Dancing
Theta Tau (Co-ed Professional Engineering Society)*
Veterans of America

* Professional Organization

Other
Chi Epsilon Honor Society
Lambda Iota Tau Honor Society

Tau Beta Pi Honor Society

Greek Life
Social fraternities and sororities are regulated on campus by three governing bodies which assist the individual Greek life organizations in maintaining standards, while also creating opportunities to collaborate and socialize. The Greek Council provides long-term support of Greek life on campus and coordinates and organizes "All Greek" events. The two other councils, the Interfraternity Council (IFC) and the Sorority Council, provide oversight specific to a particular type of Greek organization.

Greek life not only provides opportunities for students to perform civically and socially and to develop long-term relationships, as well as leadership and communication skills, but they also take academics just as seriously. The Order of Omega honor society is open exclusively to members of Greek life.

Interfraternity Council
Composed of the elected officers and representatives of the fraternities at Lawrence Tech, the IFC provides leadership for six fraternities and improves communication among the various fraternities on campus.

Sorority Council
Composed of representatives from each of the four sororities at LTU, the Sorority Council provides leadership and improves communication among the sororities on campus.

Greek Letter Organizations
Fraternities
Alpha Sigma Phi
Phi Beta Sigma
Phi Kappa Upsilon
Sigma Phi Epsilon
Sigma Pi

Sororities
Chi Omega Rho
Delta Phi Epsilon
Delta Tau Sigma
Kappa Beta Gamma

ATHLETICS AND INTRAMURALS
The following programs are administered by the Department of Student Recreation, Athletics, and Wellness, located in the Don Ridler Field House.

Varsity Athletic Programs The Lawrence Technological University Department of Student Recreation, Athletics, and Wellness is committed to providing a competitive, culturally diverse, and gender-equitable sports program that operates within the rules and regulations of the University and the National Association of Intercollegiate Athletics (NAIA). The department, along with its student-athletes, strives to uphold the five "Champions of Character" core values of respect, responsibility, integrity, servant leadership, and sportsmanship. The Blue Devils currently compete in:

Men's and Women's Basketball
Men's and Women's Bowling

Men's and Women's Cross Country
Men's and Women's Golf
Men's and Women's Lacrosse
Men's and Women's Soccer
Men's and Women's Tennis
Men's and Women's Volleyball
Men's Hockey (ACHA)
Baseball
Softball
Football

Club Sports Each club sport is a student-led organization composed primarily of students, faculty, and staff. Each club is formed, developed, governed, and administered by the student membership of that particular club, working with the LTU recreation staff. The key to the success of this program and each club is student leadership, interest, involvement, and participation. The recreation staff is available to students for consultation on concerns and ideas and for administrative assistance.

Intramural Sports Lawrence Tech offers a comprehensive intramural sports program free for all students and field house members. The intramural sports calendar can be found at www.imleagues.com/ltu. Intramural sports include, but are not limited to, basketball, flag football, table tennis, indoor soccer (futsal), dodgeball, golf, broomball, badminton, and racquetball. A current LTU ID is required for all student participants. All participants are required to sign up online at www.imleagues.com/ltu. Any questions about the Department of Student Recreation, Athletics, and Wellness should be directed to sturec@ltu.edu.

Fitness and Wellness The fitness and wellness program consists of Team Fitness, Bootcamp, and Yoga Core Fusion. Classes are free of charge to all students, faculty/staff, and members of the Don Ridler Field House. Each class is taught by exciting and energetic certified instructors. The schedule changes from semester to semester and alterations or additions will be posted on www.LTUAthletics.com.

For more information about any of these programs, visit www.LTUAthletics.com, email sturec@ltu.edu, or call 248.204.3850.

ATM (CASH)
There is an automated teller machine (ATM), hosted by Michigan First Credit Union, located in the atrium of the Buell Management Building, which is available any time the building is open. This unattended station allows withdrawals, deposits, or account transfers, using debit cards with Cirrus, Plus, Pulse, Star, or Quest network logos or a Visa, MasterCard, Discover, or American Express credit card and a personal identification number. For local Michigan First Credit Union branches, call 800.664.3828.

BOOKSTORE
The bookstore is located in the Buell Management Building. Books, supplies, snacks, and Lawrence Tech apparel and gifts may be purchased. Textbooks may be purchased online at lawrence-tech.bncollege.com. Book rentals and eBooks are also available. Fall and spring semester hours are Monday through Thursday, 9 a.m. –7 p.m., and Friday, 9 a.m. –2 p.m. For other times, call 248.204.3030 or visit lawrence-tech.bncollege.com.

BUILDING HOURS

In general, campus facilities are open from 7 a.m. to 10 p.m. seven days a week, excluding holidays. Students may use the facilities 24 hours per day provided the dean of their college, a faculty member, or faculty advisor has approved and forwarded to the Department of Campus Safety an extended-access authorization via email. Faculty members and faculty advisors should check with the dean of their respective college regarding the policy on allowing extended access to the facilities of that college. The dean, faculty member, or advisor may forward extended-access authorizations via email to ltu_safety@ltu.edu. Please allow 24 hours advance notice for extended hours requests. Individuals found not in compliance with this policy may be subject to the University discipline system. Students using campus facilities, especially after hours, must carry their Lawrence Tech identification card with them and must present it if requested to do so by a Lawrence Tech Campus Safety officer.

CAMPUS DINING

Real Food on Campus (RFoC), located on the second floor of the Buell Management Building, is open during the fall and spring semesters and provides "all-you-care-to-eat" meal options that include staffed food stations – comfort food, deli, exhibition, grill, pizza and pasta, market (soups and salads) – and a bakery. Campus Dining also oversees the Einstein Bros. Bagels and a Provisions on Demand (P.O.D.) express outlet in the Buell Management Building atrium, which offers grab-and-go salads and sandwiches, snacks, and beverages.

Lawrence Tech offers residential and commuter meal plans and Blue Devil Dollars. Meal plans are used at the RFoC. Blue Devil Dollars work like a debit card and can be used at all Lawrence Tech dining locations. **Lawrence Tech requires all residential students to participate in a meal plan.**

As the exclusive food service vendor for the University, Aramark has the exclusive right to provide all food services, including catering and concessions, for all University purposes, including events offered by student organizations. Questions regarding this policy may be directed to the director of campus dining at 248.204.3203.

CAREER SERVICES

The Office of Career Services is more than a place where students can go to find a job when they graduate. The Office of Career Services provides a wide variety of services and programs that, beginning as soon as the freshman year, can help students develop their career plans and establish career goals by identifying their abilities, values, and interests and then targeting occupations that reflect those abilities, values, and interests.

Services include career advising, on-campus employment, cooperative education and internships, career workshops, resume critiques, mock interviews, career fairs, employer presentations, and on-campus interviews. Lawrence Tech's online career resource center, Handshake (ltu.joinhandshake.com) lists opportunities for students and alumni. Students can also follow employers' news feed, register for career fairs and expos, research employers, and much more on Handshake.

The Office of Career Services is located in room C404, A. Alfred Taubman Student Services Center, and is open daily from 8:30 a.m. to 4:30 p.m. Appointments can be made on your Handshake account or by calling 248.204.3140.

The office also posts student employment opportunities. Students may work on campus in the colleges, departments, and offices, such as Campus Dining; Student Recreation, Athletics, and Wellness; and the University Bookstore. Students may view available positions through Handshake (ltu.joinhandshake.com). Student assistants are a great asset to the University.

Need help writing a resume? Contact the office to meet with a Career Services staff member for assistance.

COMPUTER AND ONLINE LEARNING RESOURCES

The LTU Laptop Initiative has been transformed into an integral component of the LTuZone.™ In addition to providing access to industry-standard software and the hardware, the LTuZone™ includes onsite and remote technical support of its software and hardware, allowing students to focus on their learning.

A uniform suite of up-to-date industry-standard software applications with an industry value of at least $74,000 is installed on each laptop. Software applications specific to each college are included, ensuring that LTU students have all the software resources required for their declared majors.

Each fall semester, specially configured high-performing laptops, complete with software, are available to all undergraduate students (including direct-entry architecture and architectural engineering majors) after program conditions are met.

Undergraduate students may obtain a laptop upon registration, payment of a $500 security deposit, and acceptance of the terms and conditions of a laptop agreement. The term of the agreement is up to one year. Graduate students may also obtain a laptop for a charge of $95 per credit hour if laptops are still available at the end of the undergraduate laptop distribution period. Laptops are distributed at the beginning of every semester and each June to incoming freshmen during Orientation and Registration. Identical configuration laptops are also provided to Lawrence Tech faculty, providing seamless interaction between students and faculty in the classroom.

All students, faculty, and staff are provided an LTU email account with all the associated functions of Google Apps for education, including unlimited file storage using Google Drive. Wireless networking is available across the entire campus, making access possible anywhere in the academic cluster and the residence halls. Students may use several public printers across campus located in the Help Desk, the Engineering Building, the library, the Architecture Building, and each of the residence halls.

Computer and Network Use Policy

Access to modern information technology is essential to Lawrence Technological University's mission of providing the students, faculty, and staff of the University with educational services of the highest quality. The pursuit and achievement of the Lawrence Technological University mission of education, research, and public service requires that the privilege of the use of computing systems and software, internal and external data networks, as well as access to the internet, be safely available to all members of the University community. The preservation of that privilege for the full community requires that each faculty member, staff member, student, and other authorized user comply with institutional and external standards for appropriate use in order to protect both student and LTU information.

To assist and ensure such compliance, Lawrence Technological University established the Computer and Network Use Policy, which can be found at http://www.ltu.edu/ehelp/policies-and-procedures.asp. This policy should be read in conjunction with other University policies; it supplements, and does not supersede, these policies.

Printers
HotSpot printers are located in the library (pay at the desk), in the Architecture Resource Center (A131), and in the atrium of the Buell Management Building. Black-and-white prints are free. There is a charge for color printing.

The Architecture Computer Resource Center (ACRC) Print Desk provides printing, scanning, and computer-related services. Services such as color printing, large-format printing, and plotting, scanning, and report binding are available throughout the school year during operating hours. Specialized printers produce large-format CAD plots, as well as photo-quality prints and posters. After hours, 24/7 self-service black-and-white printing is available on the public printer near the Print Desk, as well as color laser printing and scanning on the HotSpot printer in the lobby adjacent to the Print Desk.

Public Printer Access
The following black-and-white printers are available to all Lawrence Tech faculty, staff, and students, and may be installed on laptops without special permissions:

Printer Name	**Location**
C203	Help Desk
E152	Engineering Building Lounge
M113A	Library
APTN1	Donley Residence Hall
APTS1	South Residence Hall
APTL1	Reuss Residence Hall
S202	Arts and Sciences Lounge
ACRC-Ricoh	Architecture Lounge
AADC-Ricoh	Art and Design Center

Note: In order to save paper and cut costs, print jobs will not print until they are released. The residence halls have an attendant who will release prints but self-release stations with instructions are located at the other locations.

Hot Spot Printing
Printing is available directly via email from a smartphone, laptop, or tablet to one of our convenient campus locations:

Architecture Computing Resource Center
Buell Management Building (atrium)
Architecture Resource Center (A131)
Library

Send an email to papercut@ltu.edu with the document you want to print attached. Then visit any of the four locations above. Use the release station to release/pay for your print.

- Black-and- white printing is free
- Color printing is $.50/page for 8.5″x11″; $1/page for 11″x17″
- Payment is available through PayPal or directly at the device by payment card

Help Desk
The Help Desk, located in the Taubman Student Services Center (C203), provides walk-in support to all students, faculty, and staff, including problem diagnosis; laptop distribution, return, and repair; wireless network configuration; password changes; email setup; and more. Laptop diagnosis and minor repairs are handled on the spot. Other repairs are made within 24 to 48 hours, and a loaner laptop is provided if needed. Computer and other device repair is limited to LTU-owned equipment.

Help Desk hours are Monday–Thursday, 8 a.m.–6:30 p.m., and Friday, 8 a.m.–4:30 p.m., during the fall and spring semesters. Telephone support is also provided during these hours at 248.204.2330. The Help Desk also provides after hours and weekend support via email at helpdesk@ltu.edu. Hours are reduced during breaks and the summer months. For more information about Help Desk services and the laptop program, visit www.ltu.edu/ehelp.

My.ltu.edu
Lawrence Tech's comprehensive e-learning and services portal, my.ltu.edu, offers an expanding variety of resources and conveniences. Among them is Blackboard, a comprehensive and flexible e-learning software platform that delivers the University's course management system, customized institution-wide portals, online communities, and an advanced architecture that provides for Web-based integration with the University's administrative systems.

The University's learning management system offers students the 24/7 access to professors and fellow students that is not available in the typical classroom environment. Professors post their syllabi online, as well as class lectures and assignments, for immediate retrieval anytime, anywhere. Other features available through Blackboard are discussion boards for posting questions to and receiving answers from other students and the professor in the class; Virtual Chat Room capabilities for asynchronous communication with the entire class; the ability to submit assignments to professors; Web conferencing; instant messaging; podcasting; and many others.

LTU Online
LTU Online delivers fully online versions of degree and certificate programs for working students. Today's global work environment may prevent students from taking on-campus classes. LTU Online is designed to help address these challenges and bring the quality of a Lawrence Tech education to students wherever their work or family takes them.

LTU Online offers core and elective courses in these programs:

Bachelor of Science in Business Administration

Master of Architecture
Master of Business Administration
Master of Civil Engineering
Master of Construction Engineering Management
Master of Engineering Management
Master of Science in Industrial Engineering
Master of Science in Information Technology

Graduate Certificate in Project Management

Other degree and certificate programs are under development; students should visit LTU Online (www.ltu.edu/ltuonline) for current information.

All LTU Online degree and certificate programs are academically equivalent to on-campus programs and are fully accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools.

COOPERATIVE EDUCATION

The Cooperative Education program, located in the Office of Career Services (C404), is a joint venture between the University, employers, and students. Work is related to students' major fields of study and provides a broad range of experience and training. Students who participate in a cooperative education assignment report a higher degree of satisfaction with their education and increase their overall employability.

Co-op students:

- gain work experience
- are paid for learning on the job
- learn career management skills
- receive academic credit
- enhance the number of opportunities available to them when they graduate, since employers favor students with co-op experience

To participate in the co-op program, students must have a minimum 2.25 GPA. In the normal course of a complete co-op education program, a student must be able to complete three semesters of work assignments before graduation. Each semester of co-op carries one academic credit, three of which may be applied toward an academic degree.

Many students choose to take advantage of co-op and internship opportunities. Although most positions are in southeastern Michigan, students have completed assignments in Ohio, Indiana, New Jersey, California, Florida, Germany, and Mexico.

DEAN OF STUDENTS

The Office of the Dean of Students, located in the A. Alfred Taubman Student Services Center (C405), serves as the central resource for activities that are coordinated through the Division of Student Affairs. The dean of students serves as the primary advocate for students and works to insure that students are offered a quality college experience. Staff members in the Division of Student Affairs provide services to help students successfully complete their academic studies and coordinate opportunities for fellowship, fun, and rewarding college experiences. The office offers personal, confidential, and nonbiased assistance in addressing any concerns a student may have regarding his or her rights or responsibilities as a member of the campus community. Services coordinated by the Office of the Dean of Students include:

Student Events and Activities

Annual social events to encourage students to interact with other students on campus are coordinated by the Office of the Dean of Students. Popular programs include the fall semester Welcome Back Picnic, New Student Convocation, movie nights, and "Pushing Honey Through"

certificates for supportive family members of graduating students. Students can also enjoy Homecoming in the fall and Winterfest in the winter months and a host of sporting events.

Student Code of Conduct Adjudication

Honesty, integrity, and caring are essential qualities of an educational institution, and a concern for values and ethics is important to the whole educational experience. The Student Code of Conduct outlines the rights and responsibilities and expected levels of conduct of students in the University community. Fundamental to the achievement of community among the members of the University is the recognition by all such members that each shares a responsibility to observe University regulations. This obligation, which is an extension of the citizen's responsibility to observe the law of the land, is an essential corollary to participation in the academic rights afforded to members of the University. A student voluntarily joins the Lawrence Technological University community and thereby assumes the obligation of abiding by the standards prescribed in the Student Code of Conduct. The University, through the Office of the Dean of Students, maintains the exclusive authority to impose sanctions for behaviors that violate the Student Code of Conduct. The Student Code of Conduct can be found at www.ltu.edu/student_affairs/student_conduct.asp.

Support Services

Students needing assistance with personal or academic challenges during their college career are welcome to contact staff in the Office of the Dean of Students, who can act as liaisons between students and faculty. Academic study skills development and strategies are provided by staff in the Academic Achievement Center.

DISABILITY SERVICES

The Office of the Dean of Students, 248.204.4100, coordinates Lawrence Tech's compliance with Sections 503 and 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. The University does not discriminate against students with disabilities in recruitment, admission, or treatment after admission. In addition, the University makes reasonable accommodations to permit students with disabilities to fulfill academic requirements and provides effective auxiliary aids to ensure that they are not excluded from programs because of their disabilities. Eligibility for accommodations is determined on an individual basis.

For additional information on eligibility for services, accommodations, and student responsibilities, visit www.ltu.edu/myltu/disability or contact the Office of Disability Services at 248.204.4100 or disability@ltu.edu to set up an appointment. Students who believe that the University may not be meeting these responsibilities or who believe that they have been otherwise discriminated against based upon their disability may contact the Section 504 officer in the Office of the Dean of Students, Lawrence Technological University, 21000 West Ten Mile Road, Southfield, MI 48075-1058.

DTE ENERGY ONE-STOP CENTER

Located on the third floor of the A. Alfred Taubman Student Services Center, the DTE Energy One-Stop Center assists students with records and registration, financial aid, and student accounting transactions. The center is open Monday and Tuesday, 8 a.m.–6:30 p.m., and Wednesday through Friday, 8 a.m.–4:30 p.m.

FAX SERVICE

Fax services (send only) are available at the bookstore, which is located in the Buell Management Building atrium. There is a small fee for this service.

FIELD HOUSE/RECREATION

The Don Ridler Field House includes a gymnasium, weight and conditioning room, running track (1/11th mile), two racquetball/wallyball courts, fitness room, spirit shop, and men's and women's locker rooms with showers and saunas. Fitness and wellness programs are available to all members.

Field House Hours

September–Mid-May

Monday	6:30 a.m.–midnight
Tuesday	8 a.m.–11 p.m.
Wednesday	6:30 a.m.–midnight
Thursday	8 a.m.–11 p.m.
Friday	6:30 a.m.–10 p.m.
Saturday	9 a.m.–5 p.m.
Sunday	Noon–10 p.m.

Mid-May–August

Monday	6:30 a.m.–10 p.m.
Tuesday	8 a.m.–10 p.m.
Wednesday	6:30 a.m.–10 p.m.
Thursday	8 a.m.–10 p.m.
Friday	6:30 a.m.–10 p.m.
Saturday	9 a.m.–l p.m.
Sunday	Closed

HOUSING

Housing at Lawrence Tech provides more than just a room in which to sleep and study. The living and learning environment that is fostered within University Housing supports students' academic, social, cultural, and personal growth. The University Housing staff is committed to assisting residents in all aspects of their collegiate experience by providing a safe and healthy environment in which to pursue their academic goals, promoting the ideals of community living by emphasizing personal responsibility and respect for others, creating opportunities for student involvement and personal development, and offering advice and information to residents.

The friendships that develop among University Housing residents is unequaled by any other living option. Residents who take advantage of this environment tend to improve both their academic performance and their satisfaction with their college experience. Each residence hall community offers opportunities for students to get involved in numerous activities and programs.

Lawrence Tech has three residence halls: Edward Donley Hall, South Hall, and Lloyd E. Reuss Hall. LTU's newest residence, Reuss Hall, is reserved for first-year residents. Reuss Hall features furnished community-style rooms that accommodate two students. The building has communal laundry and two bathroom facilities on each floor. Donley Hall and South Hall feature furnished one- and two-bedroom apartment-style suites that accommodate two to four students, depending on the size of the suite. Both buildings include private bathrooms and full kitchens. Washers, dryers, and

dishwashers are available in each suite in Donley Hall. Free laundry facilities are located within South Hall. All the residence halls provide air-conditioning, cable television, and wireless connectivity. Free parking close to each building is available for residents.

Anyone seeking on-campus housing should complete a Housing Application and Contract and pay the application fee. Applications are available online at www.ltu.edu/housing/apply. Students are encouraged to apply for housing as soon as they are admitted.

Applicants must be admitted to Lawrence Technological University in order to live in University Housing. Students may apply for University Housing before registering for classes but will not be allowed to take occupancy of their assigned room until they are registered. For the fall and spring semesters, undergraduate residents must maintain full-time status (12 credits) per semester or have a co-op or an internship to be eligible for housing. For more information, please contact the Office of University Housing at 248.204.3940.

Lawrence Technological University encourages all students with 59 credits or less, including international students, to reside in on-campus housing.

Renter's Insurance
See Student Insurance.

IDENTIFICATION CARD

Lawrence Tech's student identification card combines a photo with a proximity chip/magnetic strip/bar code and a cash debit option that allows students to load their card with Blue Devil Dollars, which can be spent at all Lawrence Tech dining locations. The ID card also serves as the student's library card and should be presented at the circulation desk when checking out books or using the Reserve Desk. Instructions for applying for a card are provided to new students during Orientation and Registration (O & R). There is a $10 replacement charge for lost ID cards. Replacement ID cards must be purchased at the DTE Energy One-Stop Center. If an ID card is damaged and needs to be replaced, the student must present it at the DTE Energy One-Stop Center to have the replacement charge waived.

INTERNATIONAL STUDENTS

The Lawrence Tech community places great value on the cultural and intellectual diversity that international students bring to the University. The Office of International Programs serves as the primary contact for international students and scholars on campus. This population includes undergraduate, graduate, and doctoral students and research scholars.

The office advises foreign nationals on status maintenance, government regulations, visa requirements, and work authorization, and provides a host of other resources. The office works to resolve student compliance issues with Homeland Security and United States Citizenship and Immigration Services (USCIS), as well as to process and update documentation. This includes updating and maintaining the Student and Exchange Visitor Information System (SEVIS) to comply with government reporting requirements, authorizing F-1 work authorization for Curricular Practical Training (CPT) and Optional Practical Training (OPT), STEM extensions, J-1 academic training, program extensions, and other SEVIS updates. The office also works to update faculty, staff, and students on government regulations and issues impacting international students studying in America.

The Office of International Programs provides a mandatory and comprehensive weeklong orientation, held the week before classes begin each semester, to support international students in acclimating to their new environment. Students also take placement exams and meet with their academic advisors during this time to register for classes.

The Office of International Programs designs and implements events that increase global and cultural awareness among all Lawrence Tech students. The office provides outreach programs and workshops on a myriad of topics, including employment, cultural transition, academic issues, campus resources, and programming.

The Office of International Programs is located in the A. Alfred Taubman Student Services Center in room C405 and can be reached at 248.204.4100 or by emailing international@ltu.edu. Normal office hours are Monday–Friday, 8 a.m.–4:30 p.m. and evenings by appointment.

LAPTOP SUPPORT HELP DESK

See Computer and Online Learning Resources.

LIBRARY

Lawrence Tech's library is conveniently located on the lower level of the Buell Management Building, one flight below the atrium. The room boasts an attractive indoor garden area for year-round greenery. The library houses a broad selection of books, periodicals, online databases, full-text electronic books and periodical articles, microforms, and other material that has been selected to enhance the curriculum areas of the University. Collection strengths include engineering, technology, architecture, and management. The library also maintains graduate theses and dissertations from all LTU graduate students. Among the library's unique resources are the 3,000-volume professional library of the late renowned architect Albert Kahn.

The professional librarians, on duty during all scheduled hours, are skilled in locating information both in the Lawrence Tech collection and at numerous other institutions. They also provide individualized and group instruction on how to use the library efficiently. Students have full access to the stacks for browsing and independent research and can always count on getting personalized reference assistance from a reference librarian.

While the library's catalog is available to the public on the Lawrence Tech website (www.ltu.edu/library), premium content, including databases and full-text material, tailored to serve the needs of Lawrence Tech curricula, is available online via password-protected links. Students can access this content using their Blackboard log-in information. In addition to print and database sources, more than 266,735 electronic books and more than 42,563 electronic journal titles are accessible from off-campus as well.

When an item is not available on campus or online, the library has negotiated agreements with several local academic and public libraries for direct borrowing privileges or, in some cases, for borrowing through a special arrangement. As an alternative, materials can be requested and shipped directly to Lawrence Tech from Michigan libraries via the MelCat service or from libraries across the nation through the use of interlibrary loan. It is recommended that students always make the Lawrence Tech library their first stop when beginning a research project.

Library Account
All students have a special library account that may be accessed through the "My Account" feature of the library's online catalog (http://ltu.worldcat.org). Once logged in, students may place requests directly from the catalog and review their account for items checked out, fines, etc. For questions about how to use this feature or for any other questions, contact the library at 248.204.3000 or refdesk@ltu.edu.

Loan Privileges
Lawrence Tech students may borrow most material from the library for three weeks. Certain special materials circulate for shorter periods. Reserve and reference materials must be used in the library. Students with fines or lost-item charges of $10 or more may not borrow library materials until the fines are cleared.

Renewals
Students may renew material as long as no one has requested the item. Students may renew books through their online library accounts or by calling the Circulation Desk at 248.204.3009. Books that are overdue may only be renewed by contacting the library.

Lost-Item Charge
This includes replacement value and a service charge. Patrons with lost-item charges or excessive overdue fines are not allowed to check out materials and an Academic Hold will be placed on their records.

Overdue Materials
There is a daily charge for overdue items; please see the library website for specific details. Email notices are sent three days before an item is due to remind users to return or renew the material.

Other Services
In addition to curriculum-based materials, the library also carries a large selection of DVDs, a browsing collection of popular books, and a small collection of graphic novels. The staff maintains a presence on Web 2.0 sites such as Facebook and Flickr, streaming information of interest for Lawrence Tech students

The library also hosts a public printer (M113a) and two scanners, along with black-and-white and color photocopiers, a microform scanner, and 12 student computer workstations.

The library participates in a network of librarians offering a 24/7 chat reference service called "Research Help Now!" During library hours, it is best to call or email the library (248.204.3000 or refdesk@ltu.edu) directly for assistance, but after hours, "Research Help Now!" is there whenever a librarian's help is needed.

LOCKERS
Lockers in the Architecture Building and the University Technology and Learning Center (UTLC) are assigned by the College of Architecture and Design, 248.204.2880.

LOST AND FOUND
The Department of Campus Safety (248.204.3945) is the clearinghouse for found articles. Campus Safety delivers all found Lawrence Tech laptop computers to the Laptop Help Desk (248.204.2330). For

other items, Campus Safety will attempt to contact their owners if they are both identifiable and members of the LTU community. Please note that items in lost and found are discarded after 30 days.

MOTOR VEHICLES AND PARKING

Vehicle Registration

Every member of the LTU community must register their vehicles and display an LTU Parking Permit to park on LTU's campus. This system was put in place to insure that students, staff, and faculty have adequate parking on campus and that the lots are used by authorized personnel only. Any member of the LTU community who parks an unregistered vehicle on LTU's campus may receive an LTU Violation Notice. There is no charge for the Parking Permit. To obtain a Parking Permit, visit the Department of Campus Safety's office, which is located in room G102 in the General Services Building. Make sure to bring the following information:

- A valid driver's license
- A valid vehicle registration
- Banner ID card

The Parking Permit must be displayed in the lower corner of the passenger side of the front windshield of the vehicle registered. Multiple vehicles may be registered, but each one requires a separate Parking Permit.

Campus Parking

There are several parking lots on campus for faculty, staff, and students, but there are rules and regulations to use them.

- All parking lots are lined and vehicles are to be parked within the designated spaces. There is no parking on the diagonal-lined areas in any parking lot.
- No parking is permitted on any campus drive.
- Authorized and assigned parking belongs to an LTU department and/or one individual.
- Vehicles parked illegally will be issued LTU Violation Notices. Chronic violations may result in towing.

ONLINE STUDENT SERVICES

Lawrence Tech offers convenient online student services. Students can register for courses, view their academic records and account balances, make tuition payments, and conduct financial aid transactions through BannerWeb from any location at any time.

Students may register online using their nine-digit student identification number and their PIN. Students are required to meet with their advisor prior to registering for classes. In order to be allowed to register, students must not owe a balance from previous semesters.

Students may also view and print an unofficial copy of their student transcript, provided they do not have a hold on their records (the result of owing the University money) that prohibits this function. See also Computer and Online Learning Resources.

OPEN DOOR POLICY

The president's door is always open to students. Usually after consultation with instructors, department chairs, college deans, the dean of students, the provost, or other responsible

administrative offices, students will find that any concerns will be satisfactorily addressed. If not, students may contact the president's executive assistant, who will prepare a briefing and arrange a convenient appointment between the student and the president.

POSTAL AND PACKAGE SERVICES

The Department of Mail Services is a subdivision of Lawrence Tech Campus Safety. Mail Services delivers and picks up incoming and outgoing campus mail and packages. Mail Services may be reached by telephone at 248.204.3718. At the residence halls, mail and packages are delivered to the Information Desks, where stamps may also be purchased. Mail Services is located in room G100 in the General Services Building and is open from 7 a.m. until 3 p.m. on weekdays. Mail Services is closed on weekends and holidays.

United Parcel Service (UPS) has an outbound package kiosk located outside the General Services Building on the southeast side of the building near the garage door.

RAFFLE OR CHARITABLE GAMING EVENT GUIDELINES

The Bureau of the State Lottery does not allow education subordinate organizations to raffle prizes more than $500. Therefore, there is no need to complete the Millionaire Party application to obtain a license. Any student organization requesting to host a gambling tournament or raffle must contact the Office of Student Engagement to receive guidance on completing a Charitable Gambling Application through the State of Michigan's Bureau of the State Lottery. The student organization must submit the application to the Bureau of the State Lottery with appropriate application fees, along with the organization's constitution, and a signed letter from the dean of students. It will take approximately four to six weeks for the Bureau of the State Lottery to approve any application. Visit www.michigan.gov/cg for more information.

RALLIES/MARCHES/PROTESTS

Student groups wanting to hold a rally, march, or protest should contact the Office of Student Engagement and make an appointment with a professional staff member to discuss the event. This person will tell the student group representative what things must be done in order to secure approval of the event. If the event includes any form of public-address equipment or amplified sound, the group will have to complete the necessary forms from Campus Facilities and Media Services and alert Campus Safety.

SAFETY AND SECURITY

A safety team patrols Lawrence Tech 24 hours a day. No metropolitan area is immune from criminal activity. All students should take an active role in assuring their personal safety. Students should immediately report a suspicious person, object, or activity to the Department of Campus Safety.

The Department of Campus Safety is open 24 hours a day and located in room G102 in the General Services Building. The office can also be reached by dialing 3945 from any campus phone or 248.204.3945 from any other phone. For emergencies, dial 911 from any campus phone to be connected to Campus Safety; otherwise, dial 911 from any other phone to contact the appropriate emergency service.

In full compliance with the Federal Crime Awareness and Campus Security Act of 1990 (also known as the Clery Act), as amended through July 1, 2003, and the Campus Sex Crimes Prevention Act of 2000, Lawrence Technological University makes security information available to LTU students, faculty, and

staff, applicants for admission, newly hired employees, and the general public. Statistics on campus crime may be examined at the Department of Campus Safety during business hours. Campus safety and security statistics for the prior academic year are available at www.ltu.edu/crime-reports.

Remember, "If you see something, say something."

SPIRIT ROCK
The Spirit Rock exists to provide students and student organizations the opportunity to express their spirit and pride in Lawrence Technological University. To maximize this opportunity, students are expected to respect the following regulations:

- With the exception of painting, the physical condition of the rock is not to be altered in any way that will change its shape, size, or orientation.
- The rock is not to be moved.
- Derogatory or profane words or messages on the rock are prohibited.
- There is no limit to the number of times the rock may be painted in total or by any one organization.

STUDENT ENGAGEMENT
The Office of Student Engagement (C404) provides programs and services for the entire University community. Student Engagement coordinates a variety of opportunities for students to become involved on campus and in the Southfield and Metro Detroit areas. The mission of Student Engagement is to encourage the intellectual, social, and civic development of students individually and through student groups.

This office seeks to advance Lawrence Tech's commitment to diversity in increasing the recruitment, retention, and graduation of all students, and particularly underrepresented groups (including minority/ethnic, women, and GLBT students), by developing strategies that engage students in the attainment of academic excellence and social success.

Student Engagement serves as a support and advocacy network through which students from underrepresented groups are provided effective assistance during their academic tenure. Programs include welcome receptions; cultural programs that provide forums to enhance the intellectual, social, and personal development of students; discussions and speakers who focus on relevant social, cultural, and academic issues; and the advising of multicultural student organizations.

Study Abroad
The Office of Student Engagement works with academic departments and outside schools and services to host a Study Abroad Program. Students are given the opportunity to live abroad and complete portions of their education, while receiving credit. Or students can choose to visit another country for a short time to connect with the native people through service initiatives.

Programs and Services
Among the many programs and services provided and/or supported by Student Engagement are:

"Blue" the Mascot
Day Trips
Discovery Days

Homecoming Week
International Festival Week
Lawrence Tech Dance Team
Miss Lawrence Tech
Partnerships with the City of Southfield
Programming that promotes community
Student Government
Student-led projects
Student Organizations
Welcome Week
Winterfest Week

Tech Transit
Tech Transit serves students by providing transportation service to hot spots around Lawrence Tech's campus and the city of Southfield. For more information, visit the Tech Transit website at www.ltu.edu/transit.

STUDENT AFFAIRS

The Division of Student Affairs coordinates efforts, programs, and services that support the development of a vibrant learning community on campus. The division's purpose is to support students, staff, and faculty in achieving the mission of Lawrence Tech by creating communities that foster and support student learning and development.

Offices included in the division are the Office of the Dean of Students; Academic Achievement Center; Campus Dining; Career Services; Clinical Counseling Services; Disability Services; First-Year Programs; International Programs; Student Engagement; Student Recreation, Athletics, and Wellness; University Housing; and the campus switchboard. The Office of the Dean of Students serves as the central resource for activities coordinated by the Division of Student Affairs. Events, programs, and services provided through these offices are designed to enhance student involvement and student leadership development.

STUDENT COMMUNICATIONS/EMAIL

Lawrence Tech's official method of communication with students is through the use of University email. All students are issued a free ltu.edu email account. They are expected to check their Lawrence Tech email accounts frequently and regularly for notices related to enrollment and financial matters, including important deadlines and dates.

Students' email account IDs are composed of the first letter of their first name and the first eight letters of their last name followed by a number if there are duplicates. Email can be accessed off campus at webmail.ltu.edu. For assistance, contact the Help Desk at 248.204.2330.

Students should note that when using Blackboard, their Lawrence Tech email address is loaded to their courses as their default email address. This means that when posting notices on discussion boards, etc., within Blackboard, students' Lawrence Tech email accounts are visible to others within the class. Students can change their default email address within Blackboard to route their Blackboard email to another account.

Blackboard also functions as a major communications and safety hub of the University, with student groups, professional organizations, and administrative offices having their own organizations within Blackboard.

STUDENT INSURANCE
Students needing health insurance can go to the official site of the Affordable Care Act (www.healthcare.gov). International students should go to the Office of International Programs where there are several different choices for health insurance.

Lawrence Technological University advises all students living in the residence halls to obtain personal property insurance (renter's insurance). Many students may have their personal property covered under their parents' homeowner's insurance policy; check with the insurance provider to determine applicable coverage. Personal property insurance for those students not covered by their parents' homeowner's policy or for students seeking additional coverage is available through National Student Services, Inc. For additional information, visit www.nssi.com.

STUDENT LOUNGES
Student lounges are located in the fireplace area of the Engineering Buildingand in the lobbies of the Science Building and UTLC. The atrium of the Buell Management Building provides a spacious area for socializing and an Einstein Bros. Bagels and P.O.D. (Provisions on Demand), which are hosted by Campus Dining. The Commuter Student Lounge is in S202 of the Science Building.

STUDENT RECORDS
Lawrence Tech students may view their academic transcripts, account information, and other student-related information through BannerWeb at my.ltu.edu. Student records are located in a secure area that requires the student's Banner identification number (excluding the initials) and PIN to access the information.

VETERANS
Questions regarding GI Bill benefits, Michigan National Guard educational benefits, or any funding related to veterans should be directed to the Veterans Education Hotline at 888.442.4551. Veterans may also contact the U.S. Department of Veterans Affairs (www.benefits.va.gov/gibill) with questions concerning program eligibility. Veterans Affairs provides a wide range of benefits to veterans.

The monthly allowance for Lawrence Tech veterans is based on the veteran's number of credit hours, number of dependents, and enrollment in a qualified program according to Veterans Affairs guidelines. All veterans receiving GI benefits are expected to maintain Satisfactory Academic Progress (see www.ltu.edu/financial_aid/sap_policy for details).

Veterans Affairs regulations permit only a two-semester probation period unless there are mitigating circumstances as determined by Veterans Affairs. The University will inform Veterans Affairs and the student when the student does not meet academic standards of progress and is no longer eligible for benefits.

Retrospective

"All the worthwhile and precious things in life are only obtained through continuous and exacting effort, and their worth is in direct proportion to the effort put forth for their attainment."

Russell E. Lawrence
1889–1934

It was a firm belief in the future that motivated Russell E. Lawrence to found a university in 1932 – in the midst of the economic chaos of the Great Depression. While less farsighted individuals made predictions of gloom, Russell Lawrence and his brother, E. George Lawrence (who led Lawrence Tech from 1934 to 1964), turned a dream of preparing students for leadership in the new technical era into reality.

For 85 years, Lawrence Tech has continued to prosper and accelerate its growth, hone its educational philosophy of theory and practice, build important community and professional alliances, and forge partnerships with the firms, organizations, and industries who hire Lawrence Tech alumni.

Wayne H. Buell, who served as president from 1964 to 1977 and as chair of the board and chief executive officer until 1981, worked to build a firm foundation for the University's early emergence as a technological leader. He first advanced the notion that Lawrence Tech was a private college serving a public purpose.

Lawrence Tech's first residence hall, the Buell Management Building, the Don Ridler Field House, a major addition to the engineering facilities, the return of graduate programs, and the massive growth of computer facilities marked the presidency of Richard E. Marburger, who served as president, 1977 – 93, and also as chair of the Board of Trustees and chief executive officer, 1981–93.

Charles M. Chambers became president in 1993 and served as chancellor in 2006. During his presidency, he oversaw significant enhancement of the University's international reputation as a distinguished center of technological education and research. A Strategic Plan and Campus Master Plan were adopted to guide the University. Other achievements include: construction of the University Technology and Learning Center, the Edward Donley Residence Hall (formerly North Housing), the A. Alfred Taubman Student Services Center, and the Center for Innovative Materials Research; a redeveloped campus quadrangle; establishment of a Faculty Senate; conversion of the computer system to a client server model with full Internet2 connectivity and online library access; creation of Michigan's first completely wireless laptop campus; and expanded bookstore, dining, and student activity facilities.

Lewis N. Walker was named interim president in February 2006, became president in July 2006, and chancellor in July 2012. He had previously served as provost, the University's chief academic officer, and executive vice president. Under Walker, Lawrence Tech aggressively expanded programs in emerging economic sectors such as robotics, defense, and sustainability, including "fast track" certificate programs to help professionals retool themselves for new careers. He was committed to developing the leadership skills of Lawrence Tech's students and worked with faculty to add a leadership component to the curricula of all undergraduate programs. He forged partnerships with universities worldwide that brought international students to campus and provided further

opportunities for Lawrence Tech students to study abroad. He also oversaw the reinvigoration of student life and return of varsity sports to campus.

Virinder K. Moudgil, Lawrence Tech's seventh president, assumed office in July 2012. He has had a long career as a professor and university administrator and was an active researcher in the molecular mechanisms of steroid hormone action and the hormonal regulation of breast cancer. At LTU Moudgil has presided over the construction of the A. Alfred Taubman Engineering, Architecture, and Life Sciences Complex and the Lloyd E. Reuss Residence Hall. He also launched the Global Village program to help all LTU students learn more about other cultures and the interconnectedness of the world economy.

Lawrence Tech was founded on the principle that every person should have the opportunity for a college education. From the beginning, there were no restrictions on entering students relating to race, sex, color, creed, or national or ethnic origin – only the requirement that students qualify for admission and have the desire to succeed. Working students could earn a baccalaureate degree by attending evening programs, day programs, or a combination of the two – a feature unique in 1932 and still remarkable today.

The school was originally called Lawrence Institute of Technology. Its present name, Lawrence Technological University, was approved on January 1, 1989, by the State of Michigan, and more clearly describes Lawrence Tech's undergraduate and graduate mission.

Lawrence Tech was founded as a college of engineering with only a few hundred students and a handful of faculty. Today it offers more than 100 programs in four colleges, with a total enrollment of approximately 4,500 students, and employs more than 400 full- and part-time faculty. In terms of enrollment, Lawrence Tech is among Michigan's largest independent colleges.

In 1950, associate programs were added to Lawrence Tech's baccalaureate offerings. In 1952 the College of Management was re-established, having its origins in an earlier industrial engineering curriculum. Master's degree programs in management were launched in 1989. The College of Architecture and Design evolved in 1962 from the former architectural engineering department and in 1993 launched a Master of Architecture program. The College of Arts and Sciences was established in 1967. Master's degree programs in engineering were begun in 1990 and in Arts and Sciences in 1997. Doctoral programs were launched in 2002.

Concurrently, there has been an enormous expansion and improvement of facilities. The University's first campus was located in Highland Park, in a building leased from Henry Ford adjacent to the huge manufacturing facility where he built the Model T and perfected the moving assembly line. As enrollment grew, the University acquired acreage in Southfield and in 1955 opened its first building on what had been a General Mills research farm. The campus has since expanded to more than 107 acres and 17 major buildings, as well as the Frank Lloyd Wright-designed Affleck House in Bloomfield Hills, which was donated to the University in 1978, and the Detroit Center for Design + Technology in Midtown Detroit

In 1977, Lawrence Tech shed its "commuter" classification by opening the nine-story South Residence Hall (formerly South Housing). The 1980s and 1990s were distinguished by the opening of the Wayne H. Buell Management Building and the Don Ridler Field House, numerous improvements to existing buildings, and a substantial increase in state-of-the-art laboratory and computer equipment. The University Technology and Learning Center opened in 2001, Edward Donley Residence Hall (formerly

North Housing) in 2002, and the A. Alfred Taubman Student Services Center and the Center for Innovative Materials Research in 2006. The University's third student residence, the Lloyd E. Reuss Residence Hall, opened in 2015 as a first-year student community. The Taubman Engineering, Architecture, and Life Sciences Complex, Home of the Marburger STEM Center, which connects the Science and Engineering Buildings, opened in fall 2016.

In 2011 competitive athletics returned to campus with the University's entry into the National Association of Intercollegiate Athletics.

The University also offers programs at learning centers in southeastern and northern Michigan, as well as international programs in Asia, Europe, Mexico, and the Middle East.

Admission to the University

The University has a selective admissions process – the objective of which is to identify men and women who have the highest potential for advancement in their chosen field of study. While the applicant's academic record is a reliable measure for the prediction of academic success, the admissions decision is more complex than admitting students on the basis of a numerical formula. With this intent, Lawrence Tech considers, in addition to the applicant's previous academic record, factors that demonstrate an aptitude for successful study.

For the admissions requirements for Lawrence Tech's graduate degree programs, see the *Graduate Catalog*.

FRESHMAN ADMISSION REQUIREMENTS

To begin the admission process, apply online at www.ltu.edu/apply. In order to be considered for admission to Lawrence Tech as freshmen, students must submit the following:

1. Completed Application for Undergraduate Admission
2. Application Fee (non-refundable)
3. Official high school or GED transcripts
   Students still attending high school when accepted to Lawrence Tech must make arrangements to have the final official copy of their transcripts sent to LTU's Office of Admissions upon graduation.
4. An official copy of either American College Test (ACT) or Standard Achievement Test (SAT) scores. Send the scores to Lawrence Tech, school code 2020.
5. Essay
6. Portfolio (Transportation Design, Interior Design, Interaction Design, Industrial Design, Graphic Design, and Game Art majors only)

Note that students who submit examination scores for Advanced Placement (AP) coursework or International Baccalaureate (IB) higher-level coursework can have this coursework reviewed for university credit at Lawrence Tech.

PLACEMENT EXAMINATIONS

All entering freshmen must take placement examinations appropriate for their majors. Examination topics include biology, chemistry, English, mathematics, and physics.

Transfer students are required to take placement exams in areas in which they do not have transfer credit. Placement exams are taken prior to attending the Orientation and Registration program. Upon acceptance into the University, students will be sent information concerning any required placement exams. For further information about the exams, contact the Office of Admissions, 248.204.3160.

PREREQUISITES

(Basic Studies)

High school graduates and transfer students who meet admissions requirements but lack adequate proficiency in courses basic to their chosen degree may be admitted subject to the satisfactory completion of appropriate Basic Studies courses. College-level courses in intermediate algebra/geometry, college algebra, trigonometry, chemistry, physics, biology, computer applications, and English are available for this purpose. These courses do not provide credit toward most degree

programs offered at Lawrence Tech. A student's enrollment in certain courses is restricted until Basic Studies courses have been satisfactorily completed.

TRANSFER STUDENT ADMISSION REQUIREMENTS
In order to be considered for admission to Lawrence Tech, transfer students must submit the following:

1. Completed Application for Undergraduate Admission
2. Application Fee (non-refundable)
3. Official transcripts from each previously attended institution, including high school
4. Essay
5. Portfolio (Transportation Design, Interior Design, Interaction Design, Industrial Design, Graphic Design, and Game Art majors only)
6. If transferring into the Architecture program, students are required to submit a portfolio to receive transfer credit for design courses.

Lawrence Tech has partnered with Michigan community colleges to create transfer guides and articulation agreements for students to follow before they transfer to LTU. The transfer guides show how credit will transfer on a course-by-course level, whereas the articulation agreements show how credit will be transferred on a program-to-program level. All LTU transfer guides and articulation agreements can be viewed at www.ltu.edu/futurestudents/transfer.

Transfer students pursuing a baccalaureate degree are expected to complete a minimum of 60 hours of junior- and senior-level coursework, a minimum of 30 hours of which must be taken at Lawrence Tech.

Undergraduate Transfer Credit Procedure
The University will accept courses with a grade of 2.0 or better from regionally accredited community colleges and four-year colleges and institutions, as well as others approved by Lawrence Tech. To receive credit for the Core Curriculum, students will be expected to demonstrate competencies in the following categories:

a) communications beyond basic English composition
b) knowledge of the humanities
c) knowledge of the social sciences
d) mathematics
e) science, including a laboratory science

If the total number of semester hours for approved courses in each category of competency is less than the total required by Lawrence Tech, the student will be required to take additional Core Curriculum courses at Lawrence Tech to fulfill the requirement.

All Lawrence Tech students, including those certified to have met Core Curriculum requirements elsewhere, must complete an upper-division course in language and literature or social science as part of their bachelor's degree program. In those cases where a Core Curriculum course is required as a prerequisite for courses in the major, the prerequisite must be completed even if the Core Curriculum requirement is otherwise met. The accreditation specifications of a particular professional degree may require students to complete additional depth and breadth coursework in the Core Curriculum.

Transfer students will have their official transcripts evaluated and receive a credit evaluation prior to their enrollment. The credit evaluation lists all courses required for a specific degree program in accordance with guidelines provided by the pertinent college for the student's major and the College of Arts and Sciences for the Core Curriculum component. All courses listed are required unless transfer credit has been granted or the student has been excused. If excused from a course, the student will receive an "EX," which will appear in the Credit Hours Transferred column of his or her Program Sheet, and the student must complete the same number of credit hours in another course acceptable to his or her academic advisor.

For courses in progress at the time of acceptance, students must request that official transcripts be sent to the Lawrence Tech Office of Admissions upon their completion.

Additional Transfer Credit
All transfer credits are subject to review by the department chair or dean of the pertinent college. Questions concerning credit evaluations must be resolved by the Office of Admissions within the first semester of enrollment. Any appeal for additional credit must be submitted to the registrar for review by the Credit Review Committee.

ROTC/Military Transfer Credit
Credit earned in the Reserve Officers Training Corps and credit for military training may be applied toward degree work in several Lawrence Tech programs and will be considered according to the recommendations of the American Council on Education. Contact the Office of Admissions for additional information.

Other Forms of Additional Transfer Credit
High school students may earn credit by achieving satisfactory results on Advanced Placement examinations (AP) or International Baccalaureate (IB) higher-level (HL) exams.

Credit may also be obtained by taking subject examinations offered through the College Level Examination Program (CLEP). CLEP information is available through local libraries and the Office of Admissions.

GUEST STUDENT ADMISSION REQUIREMENTS
In order to take classes at Lawrence Tech, guest students must submit the following:

1. Completed Michigan Uniform Guest Application from the institution in which the student is enrolled that specifies the courses to be taken and includes the approval and official seal of the academic advisor and/or registrar.
2. Unofficial transcripts (high school transcripts or other college transcripts may be required if any required prerequisite was taken at an institution other than the one in which the student is currently enrolled).

Guest students are allowed to enroll in specific courses for which all prerequisites have been met. Lawrence Tech students have enrollment preference over guest students.

NON-DEGREE STUDENT ADMISSION REQUIREMENTS

Undergraduate students who elect to take courses but who do not wish to pursue a degree may enroll as non-degree-seeking students by submitting the following to the Office of Admissions:

1. Completed Application for Undergraduate Admission (This application is good for one semester. A student must reapply for each semester he or she wishes to be a non-degree student.)
2. Application Fee (non-refundable)
3. Unofficial copies of transcripts from institutions attended (high school transcripts may also be required)

Non-degree student status will be granted for two semesters only. A non-degree student who wishes to obtain regular admission to an undergraduate program must reapply and complete the Application for Undergraduate Admission and meet all regular admissions requirements. Non-degree students may not be dual enrolled as degree-seeking students.

Credit for courses taken while a non-degree student may be applied toward a degree if approval is obtained as part of the admissions process. When courses taken as a non-degree student are applied toward a degree, the cumulative GPA will be computed from all undergraduate courses taken at Lawrence Tech.

DUAL-ENROLLED HIGH SCHOOL STUDENTS

High school students who wish to take classes at Lawrence Tech before graduation must have approval from their high school principal and Lawrence Tech's Office of Admissions and submit the following:

1. Completed Application for Undergraduate Admission (This application is good for one semester. A student must reapply for each semester he or she wishes to be a non-degree student.)
2. Application Fee (non-refundable)
3. Official high school transcripts
4. Completed Lawrence Tech Application Supplement for High School Students (download at www.ltu.edu/futurestudents/freshman/hsdual.asp or request one from the Office of Admissions)

INTERNATIONAL STUDENT ADMISSION REQUIREMENTS

International students are encouraged to apply for admissions early. The following items must be submitted to the Office of Admissions at least 90 days before the desired semester of enrollment:

1. Completed Application for Undergraduate Admission
2. Personal essay
3. Application fee (non-refundable)
4. Official transcripts for high school and/or all other colleges attended
5. A course-by-course evaluation of your official transcripts from all other colleges attended from the World Education Services Inc. (www.wes.org)
6. Official English proficiency test scores (TOEFL or IELTS)
    a. Students with a minimum score of 550 on the paper-based TOEFL may enroll in all academic courses

b. Students with a minimum score of 500 may enroll in academic and ESL courses as a part of the ESL Institute's Bridge program
c. Students with a score lower than 500 will be considered for admission in LTU's ESL Institute

7. A document of financial support
8. Documentation of Support Verification Form
9. Sponsor letter
10. An international address, which is required in order for the University to issue an I-20
11. A visa transfer form if transferring from a school in the United States
12. A copy of your passport

ENGLISH AS A SECOND LANGUAGE (ESL)

Lawrence Tech's ESL Institute offers two programs for qualifying students. The ESL Institute's full-time program is designed for individuals seeking an intensive English language program. The four levels of the program are scheduled during Lawrence Tech's traditional semesters. The ESL Bridge program is designed for individuals who have a score of at least a 500 on the TOEFL. Qualifying students may enroll in both ESL and academic coursework through the ESL Bridge program.

TRANSFERS WITHIN THE UNIVERSITY/INTERRUPTION OF STUDIES

An interruption of studies occurs when a student does not attend classes for a full semester or more without special permission. Readmission is not automatic; the admission policies, curricula, and requirements of the academic programs at the time of readmission will apply.

Students who have interrupted their studies for more than three calendar years must submit a new Application for Undergraduate Admission to the Office of Admissions and will be subject to the curricula and requirements of the chosen program upon their return.

Students may register online via BannerWeb if they meet the following criteria (contact Enrollment Services/Office of the Registrar for assistance if needed):

1. Returning within three calendar years
2. Academically eligible to return
3. Returning to an undergraduate degree program
4. Have no holds preventing registration

Students must reapply through the Office of Admissions if they are:

1. Returning after more than three calendar years
2. Beginning a new degree program after graduation from Lawrence Tech
3. Academically ineligible to return (suspended, dismissed). In this case the student must also seek readmission from the Academic Standing Committee.

CHANGE OF MAJORS

Currently enrolled students desiring to change majors within their college (example: mechanical engineering to electrical engineering) do not need to reapply for admission. Students should contact the dean of their college and submit the appropriate change of curriculum form to Enrollment Services/Office of the Registrar.

RETURNING ALUMNI

Alumni seeking another degree must submit a completed Application for Undergraduate Admission to the Office of Admissions and must meet normal admission requirements. The application fee is waived.

ADMISSIONS ADVISING AND TOURS

The Office of Admissions is open year-round (except holidays). Admissions counselors are available on a walk-in basis on weekdays. Students are encouraged to contact the Office of Admissions with any questions. Students wishing to schedule a tour of campus should call 248.204.3160 or 800.225.5588 or visit www.upcoming.ltu.edu.

Tuition and Fees

Lawrence Technological University sets tuition rates with the one goal of providing students with the best possible learning experience. The emphasis is on quality. Concurrently, the University has a long tradition of prudent management that has allowed it to contain costs and provide students with extraordinary value for their tuition investment, but never at the expense of Lawrence Tech's primary emphasis.

Tuition at Lawrence Tech is used to cover many of the costs associated with a student's learning experience. Remaining expenses are funded through support from the University's alumni and friends, including gifts from individuals, corporations, and foundations.

Tuition and fees are normally established on an annual basis. However, the University reserves the right to make changes in these charges or to initiate or delete charges without notice. The schedule of current tuition and fees is published separately from this *Catalog* and is available at www.ltu.edu/registrars_office/tuition_fees.index.asp or from Lawrence Tech's Offices of Admissions, Business Services, or Enrollment Services/Office of the Registrar.

PAYMENT OF TUITION AND FEES

Tuition and fees are due in two installments each semester. If full payment cannot be made by the deadline, the following options are available:

1. Enroll in Tuition Management Systems, which provides for making monthly payments
2. Provide Billing Authorization Forms (Tuition Vouchers) when the student's employer is to be invoiced by the University
3. Apply for student financial aid. Consideration is granted on estimated eligibility and is subject to application timing and accuracy. Students are fully responsible for any charges that are not covered by financial aid

The options stated above are available only when all prior balances have been paid in full. Monthly late charges will be assessed on all accounts with past due balances. Transcripts, diplomas, and/or permission to register will not be issued if an outstanding balance appears on a student's account.

METHOD OF PAYMENT

Students can make payments on their accounts using any of the following methods:

1. Pay with cash, check, money order, or credit card at the DTE Energy One-Stop Center in the A. Alfred Taubman Student Services Center
2. Mail a check, money order, or appropriate credit card information
3. Phone (248.204.2280) or fax (248.204.2228) appropriate credit card information to the DTE Energy One-Stop Center
4. Use a credit card via BannerWeb at my.ltu.edu
5. Via the drop box located to the side of the entrance to the DTE Energy One-Stop Center

COSTS FOR WITHDRAWAL

Costs for withdrawal are established as stipulated by federal regulations. The date credit for withdrawal will be received can be obtained from Enrollment Services/Office of the Registrar.

A full tuition refund will be granted for all drops completed within the Drop/Add period. Official Drop/Add period dates for each semester are available at www.ltu.edu/registrars_office/calendar_final_exam.index.asp.

After the Drop/Add period, no refunds are provided. Registration fees, activity fees, graduation fees, and course fees are non-refundable and are not included in the withdrawal credit calculation. Balances remaining after the drop adjustments must be paid based upon the University policy for payment of tuition and fees. Credit balances will be refunded.

The semester begins on the first day of classes as listed in this *Catalog*, unless otherwise indicated.

The date of withdrawal is the date the student's drop form is validated by Enrollment Services/Office of the Registrar, the postmark date of the letter of withdrawal, or the date the student completes the withdrawal on BannerWeb at my.ltu.edu.

All students withdrawing from classes may have their financial aid eligibility adjusted or canceled for the semester and will be subject to Lawrence Tech's federal Return to Title IV and Satisfactory Academic Progress policies. For additional information, see the Financial Aid section in this *Catalog*.

STUDENT TUITION APPEAL PROCESS

Students who seek to drop classes after the tuition refund deadline and wish to receive a refund of any type or to have the late registration or the late transaction fee waived, should submit a Tuition and Fee Appeal Form to Enrollment Services/Office of the Registrar, along with a letter explaining the rationale for the request. All supporting documentation should be submitted at this time (e.g., documentation of a medical issue). The appeal will not be accepted or reviewed without all information in hand.

The DTE One-Stop Center will prepare a packet of information for the Appeals Committee that includes the student's current semester schedule, the tuition statement for the current semester, and a list of the student's courses and grades. The Appeals Committee (composed of representatives from various departments on campus) reviews each student request and makes a determination as to whether to grant an exception to University policy. The committee may also contact the student's instructor(s) to inquire about the student's attendance record and current grade in the course. The Office of the Registrar then sends a letter via email to the student with the decision.

Students should be aware that if an exception is made, the amount of their financial aid may be impacted and in some circumstances they may potentially owe the University money.

It is important to note that exceptions to University policy are made only in rare circumstances, such as a debilitating illness. Requests made because of difficult work schedules or class schedules may not be considered.

FINANCIAL AID

The Office of Financial Aid, as a division of Enrollment Services, can be contacted at the DTE Energy One-Stop Center (248.204.2280) in the A. Alfred Taubman Student Services Center. Approximately two-thirds of all students at Lawrence Tech receive some form of financial aid. Grants, scholarships, loans (types and amounts), and work-study eligibility vary by student, depending on need, merit or ability, and availability of funds.

The FAFSA must be completed annually; applications for aid commencing in the fall semester can be submitted no earlier than October 1 for the upcoming year. To maximize their chance of receiving financial aid, students are encouraged to complete the FAFSA by March 1.

For additional information on federal, state, and institutional aid programs and instructions on how to apply, visit the financial aid website at www.ltu.edu/financial_aid. Most initial awards are based on the assumption of full-time attendance (12 or more credit hours for undergraduate and six or more for graduate students). All awards will be adjusted for part-time attendance and disbursed proportionally, depending on whether a student attends three-quarter-time (nine, 10, or 11 credit hours for undergraduate, and five credit hours for graduate students) or half-time (six, seven, or eight credit hours for undergraduate, and three or four credit hours for graduate students). Most students are not eligible for financial aid if attending less than half-time (less than six credit hours for undergraduate, and less than three credit hours for graduate students).

All awards will be reviewed and revised, if necessary, following the Add/Drop period each semester. Students who withdraw from all classes for the semester are subject to a recalculation of their award eligibility. All students who have been awarded financial aid should consult the Office of Enrollment Services at the DTE Energy One-Stop Center (enrollmentservices@ltu.edu or 248.204.2280) before dropping or withdrawing from classes. Students will receive a revised award notice showing all adjustments in financial aid eligibility.

Financial aid disbursements will be posted to student accounts and finalized shortly after the Add/Drop period. Refundable balances of excess financial aid will be processed accordingly, based on the wishes of each student. Please contact the Office of Enrollment Services at the DTE Energy One-Stop Center to discuss refunding options.

All financial aid recipients are subject to Satisfactory Academic Progress policies as stated at www.ltu.edu/financial_aid/sap_policy.

Students who audit classes, are enrolled in certificate programs, are guest students, or special admits are not eligible to receive financial aid.

For a list of financial aid opportunities available, please contact the Office of Enrollment Services at the DTE Energy One-Stop Center (enrollmentservices@ltu.edu or 248.204.2280).

VETERANS

Questions regarding benefits under the GI Bill, Michigan National Guard educational benefits, or any funding related to veterans should be directed to Enrollment Services (enrollmentservices@ltu.edu or 248.204.2280). Veterans may also contact the U.S. Department of Veterans Affairs (www.benefits.va.gov/gibill) with questions concerning program eligibility. Veterans Affairs provides a wide range of benefits to veterans. New programs have made some reservists and active duty personnel eligible for benefits.

The monthly allowance for Lawrence Tech veterans is based on the number of credit hours, the number of dependents, and enrollment in a qualified program according to Veterans Affairs guidelines. All veterans receiving GI benefits are expected to maintain Satisfactory Academic Progress (see www.ltu.edu/financial_aid/sap_policy for details).

Veterans Affairs regulations permit only a two-semester probation period unless there are mitigating circumstances as determined by Veterans Affairs. The University will inform Veterans Affairs and the student when the student does not meet academic standards of progress and is no longer eligible for benefits.

Financial Aid

Financial assistance at Lawrence Tech is granted without regard to an applicant's race, sex, color, age, handicap, marital status, or national or ethnic origin. Both new and enrolled students interested in federal, state, and institutional financial aid programs are strongly encouraged to complete the Free Application for Federal Student Aid, otherwise known as FAFSA. The primary application piece required for federal, state, and institutional financial aid consideration, the FAFSA can be completed online at www.fafsa.ed.gov; it is also accessible at www.ltu.edu/financial_aid/federal_aid.

The FAFSA must be completed annually; applications for aid commencing in the fall semester can be submitted no earlier than October 1 for the upcoming year. To maximize their chance of receiving financial aid, students are encouraged to complete the FAFSA by March 1.

All financial aid applications will be processed, and eligibility will be established, based on the availability of funds. Also, some students are selected for a review process called Verification. Verification requires that students and parents provide tax transcripts and other important information prior to the review of their application. If students are selected for Verification, they will be notified by the school that they must provide the needed information. This information should be delivered or mailed to the DTE Energy One-Stop Center in the A. Alfred Taubman Student Services Center by April 1 for early consideration. All information provided after April 1 will be reviewed and processed but will be considered late.

Students must provide accurate and timely information and documentation to make the application review and awarding process as smooth as possible. Generally speaking, it can take between two and six weeks from the time the FAFSA is submitted to the time an award notice is prepared and sent.

New students at Lawrence Tech are notified of their financial aid awards beginning in November. Returning students are notified of their awards beginning in late March.

Lawrence Tech's Office of Financial Aid, a division of Enrollment Services, assists both new and enrolled students with financial planning and financial aid processing. There are many sources and types of financial aid, including various private, state, and federal programs, and the Office of Financial Aid can help students identify appropriate ways to meet their educational costs. Approximately two-thirds of the University's students receive some form of financial assistance, which totals more than $42 million annually – some $16 million in outright grants and scholarships and $26 million in low-interest loans. And, there are many students who benefit from federal and state work-study opportunities that allow them to earn a paycheck and gain valuable work experience.

Good students should not be dissuaded from pursuing a quality Lawrence Tech education because they assume it is beyond their means. Students should visit www.ltu.edu/financial_aid for up-to-date financial aid information and links to scholarship search websites. Students should contact the DTE Energy One-Stop Center at 248.204.2280 or enrollmentservices@ltu.edu if they have any questions regarding the financial aid application process or status.

STATE TUITION GRANTS AND SCHOLARSHIPS FOR MICHIGAN RESIDENTS

Lawrence Tech students in need of financial aid have a special opportunity for assistance through the State of Michigan Tuition Grant program, which is exclusively for students attending independent Michigan colleges. Lawrence Tech students may receive outright grants of $100 to $1,512 toward tuition each year, depending upon their need and the availability of funds.

The state also has a scholarship program, the Michigan Competitive Scholarship, for students enrolled in public or private Michigan colleges. Michigan Competitive Scholarships are awarded on the basis of American College Test (ACT) scores and demonstrated financial need.

Requirements
To qualify for a Michigan Tuition Grant or a Michigan Competitive Scholarship, an applicant must be a U.S. citizen or an eligible non-resident; must have been a continuous Michigan resident since July 1 (of the previous year); and must be a student attending at least half-time (a minimum of six hours).

How to Apply
To apply, visit www.ltu.edu/financial_aid/grants and complete the Free Application for Federal Student Aid (FAFSA) at www.fafsa.ed.gov. Be sure to list Lawrence Tech as first school of choice on the FAFSA for priority consideration.

Deadlines
To receive maximum consideration for these state funds for the fall semester, students should complete the FAFSA by early spring. Currently, the deadline for Michigan Competitive Scholarship consideration is March 1 every year. Students are encouraged to file early in order to know their financial aid status well in advance of the fall semester. However, all late applications will be considered, depending on the availability of funds.

LAWRENCE TECH ACADEMIC SCHOLARSHIPS
Lawrence Tech prides itself on providing a large number of scholarships, ranging from partial to full tuition, to new students. All students who have been accepted for undergraduate study at Lawrence Tech are automatically eligible for scholarship review. The Office of Admissions determines eligibility for freshman students based on a combination of the student's high school GPA and ACT/SAT test scores. Lawrence Tech also provides scholarship opportunities for transfer students. In order for transfer students to be eligible, they must have a GPA of 3.0 or higher.

To assure that all students receive maximum consideration for all types of financial aid, completion of the financial aid application process (fafsa.ed.gov) is recommended.

Students will be notified in writing of their eligibility and the terms and condition of each scholarship. Most scholarships have a maximum eligibility period of four years, or eight semesters, and require full-time attendance. The Pre-eminent Scholarship awarded to transfer students has an eligibility period of two years or four semesters. All students are expected to meet the academic requirements of each scholarship received, and all scholarships are renewable. The Office of Financial Aid reviews each scholarship recipient's GPA and determines their continued eligibility. Lawrence Tech also offers a variety of one-semester scholarships that are only renewable by application.

For the most recent detailed listing of all Lawrence Tech scholarships, go to www.ltu.edu/financial_aid. No additional application is required to be considered for scholarships. To be eligible, students must be admitted to Lawrence Tech and have on file a completed admissions application that includes official transcripts.

It is recommended that freshman complete their admission applications before March 1 and transfer students before June 15. Scholarships will be awarded on a rolling basis; funding is limited, and awards will cease when funding has been depleted.

Wayne H. and Vita S. Buell Honor Scholarships
Through a bequest from Lawrence Tech's third president and his wife, a limited number of full-tuition scholarships with a book stipend are offered to outstanding students entering the University for the first time. Candidates must be in the top 5 percent of their high school graduating class. Scholarships are awarded each year on a competitive basis.

Lawrence Tech Scholarships
Lawrence Tech offers a limited number of $12,000 to $16,000 annual scholarships to first-time students who are high school graduates with a GPA of 3.5 or higher and an ACT test score of 26 or higher. Transfer students with exceptional transfer credit and a GPA of 3.8 or higher also may qualify.

University Honor Scholarships
Lawrence Tech annually awards more than 250 University Honor Scholarships for $10,000 per year to first-time students who qualify with a GPA of 3.3 or higher and an ACT composite of 25 or higher. The scholarship is given for eight semesters if the student maintains a 2.7 cumulative GPA or higher.

Transfer students are also eligible for University Honor Scholarships provided they transfer a minimum of 24 hours with a GPA of 3.6 or higher. The $10,000 per year scholarship is given for eight semesters if the student maintains full-time student status and a GPA of 2.7 or higher.

Lawrence Tech Trustee Scholarships
Lawrence Tech annually awards an unlimited number of $6,000 per year Trustee Scholarships to first-time students who have a GPA of 3.0 or higher and an ACT composite of 24 or higher. The scholarship is given for eight semesters if the student maintains a cumulative GPA of 2.7 or higher.

Transfer students are also eligible for Trustee Scholarships and must transfer a minimum of three hours with a GPA of 3.0 or higher to qualify. The award is $4,500 per year for full-time students and $1,500 per year for part-time students, and it is given for eight semesters if the student maintains an enrollment of at least 12 credit hours and a GPA of 2.7 or higher.

PRIVATE-DONOR SCHOLARSHIPS FOR CONTINUING UNDERGRADUATE STUDENTS
Through the generosity of friends and alumni of Lawrence Tech and the efforts of the Office of University Advancement, there are a growing number of donor-funded scholarships available to undergraduate students who demonstrate outstanding academic accomplishment at LTU. All continuing undergraduate students who have successfully completed at least 24 credit hours may apply for private-donor scholarships. The private-donor scholarship application is available online at www.ltu.edu/financial_aid from October 1 through February 1 for scholarship opportunities beginning the following fall. Recipients enrolled in baccalaureate programs must have sophomore, junior, or senior standing to qualify.

LOANS FOR STUDENTS
Federal Direct Stafford Loans
The Federal Direct Stafford Subsidized (undergrads only) and Unsubsidized Loan programs carry both annual and cumulative (lifetime) limits. Your SAR (Student Aid Report) lists your cumulative loans, but

it is important that you also keep records of all your loan transactions. You can also look up your loan history online at www.nslds.ed.gov.

It is very important to complete the FAFSA every year. All federal loans must be accepted and originated one month prior to the end of the semester or period of enrollment to allow adequate time for processing and disbursement of funds.

Federal Direct Subsidized Stafford Loan – Undergraduate students must demonstrate financial need to qualify for the Subsidized Stafford loan. The federal government pays the interest on a Subsidized Stafford loan while the student is attending college at least half-time. When students graduate, drop below half-time, or withdraw from their academic programs, they will receive a six-month grace period before repayment begins. Depending on when the student's loan was disbursed, the interest rate can be fixed or variable. Visit www.ltu.edu/financial_aid for further information.

Federal Direct Unsubsidized Stafford Loan – Students are responsible for the interest on an Unsubsidized Stafford loan while in college. Payment options can be viewed at www.studentaid.ed.gov. Students who do not demonstrate need may qualify for the Unsubsidized Stafford loan.

Stafford Maximums Per Year

Student Level and Dependency Status	Maximum Stafford (subsidized and unsubsidized)	Maximum Subsidized
Dependent freshman	$5,500	$3,500
Dependent sophomore	$6,500	$4,500
Dependent junior or senior	$7,500	$5,500
Independent freshman	$9,500	$3,500
Independent sophomore	$10,500	$4,500
Independent junior or senior	$12,500	$5,500
Graduate/professional	$20,500	0

Lifetime Limits

Student Level and Dependency Status	Maximum Stafford (subsidized and unsubsidized)	Maximum Subsidized
Dependent undergraduate	$31,000	$23,000
Independent undergraduate	$57,500	$23,000
Graduate/Professional	$138,500*	0

***The graduate debt limit includes loans received for undergraduate study.**

If students reach their lifetime loan limit, they cannot receive any more of that type of loan. If a student exceeds his or her limit, aid already disbursed will be returned to the lender by Lawrence Tech or may have to be repaid by the student. Students are encouraged to borrow only what they need for educational expenses and to keep track of their cumulative debt. Alternative lending may be an option if a student needs additional loan funding to continue his or her education.

Federal Direct PLUS Loans
There are two types of Federal PLUS loans. One is the PLUS Loan for parents, which allows parents of dependent students to borrow up to the cost of their college attendance minus estimated financial aid from other sources. The other is the PLUS Loan for graduate students, which allows graduate students to borrow up to the cost of their attendance minus other estimated financial aid. Both loan programs are subject to determinations of credit worthiness, and there are fixed and variable interest rates depending on when the loan was or is disbursed. Repayment typically begins 60 days after disbursement, but student borrowers can apply for a deferment. Visit www.studentaid.ed.gov for additional information.

Federal Perkins Loans
Under this federal program, students may borrow up to $4,000 each year up to a total of $20,000 for an undergraduate program. Students must show need for financial aid as determined by the results of the FAFSA. Repayment terms and conditions can be viewed at www.studentaid.ed.gov.

GRANTS FOR STUDENTS
Federal Supplementary Educational Opportunity Grants (FSEOG)
This federal program awards grants ranging from $100 to $4,000, depending on availability of funds, to students who demonstrate financial need. Students receiving Pell grants have first priority for FSEOG funds.

Federal Pell Grant
Maximum grant eligibility for each student is $5,920 annually and funds are available only for undergraduate students. The application for the Pell Grant is the Free Application for Federal Student Aid (FAFSA), which is used to determine the family contribution and need for the Pell Grant. The amount of Pell Grant funds students may receive over their lifetime is limited by federal law to be the equivalent of six years of maximum annual Pell Grant funding.

WORK-STUDY PROGRAMS
The Federal Work-Study Program is designed to help students pay for their education by providing opportunities for them to be employed and earn a paycheck during the semester. Students may work on campus in any capacity, such as in academic departments, administrative offices, libraries, or in landscaping and maintenance. A student must demonstrate financial need as determined by completion of the FAFSA to be eligible for the work-study programs. Contact the Office of Career Services at 248.204.3140 for a listing of available work-study positions.

For information on the Federal Work-Study program, visit www.studentaid.ed.gov.

JOB SEARCH SERVICE
The Office of Career Services maintains a database of available part-time and full-time jobs with businesses and industries seeking candidates from Lawrence Tech. Opportunities are posted on a regular basis.

COOPERATIVE EDUCATION

Students in the traditional co-op program (alternating every other semester between work and school) and receiving some form of financial aid or scholarship typically receive their financial aid awards once they return to campus on a full-time basis, depending on whether or not they are enrolled in other classes during the semester of co-op.

Students on the parallel program can potentially receive financial aid during their co-op provided they are attending at least half-time (six credit hours) each semester.

Students should speak with a financial aid counselor for further information regarding their scholarships, loans, or other financial aid while on co-op.

Informally and apart from the formal co-op program, many students in all disciplines work full- or part-time while attending classes. Lawrence Tech's day, evening, and online course offerings provide considerable flexibility to students who seek concurrent employment. While students may learn of particular job opportunities through such sources as the Office of Career Services, students are individually responsible for working out an acceptable attendance schedule with their employer.

ADDITIONAL FINANCIAL AID INFORMATION

Basis for Awards

Students with the greatest need, as determined by standard federal methodology (resulting from completion of the FAFSA), receive the highest consideration for need-based funding depending on the availability of funds and the timing of the application. Students meeting published application deadlines will have a greater chance of receiving preferred types of financial aid funds.

Basic Costs

Personal expenses for room, board, clothing, recreation, laundry, travel, books, and incidentals vary according to individual lifestyle. An estimate for the total cost of a student's education can be made by adding tuition and fees to these items. The Office of Financial Aid provides an estimated cost of attendance at www.ltu.edu/financial_aid/estimate.asp. This can be used to determine eligibility for need-based funding. Cost minus the Expected Family Contribution (EFC) is the basis for determining the need for financial aid. The EFC is calculated based on the information provided on the FAFSA each year.

Satisfactory Academic Progress

All students receiving financial aid are expected to maintain Satisfactory Academic Progress. Undergraduate students receiving any type of financial aid must maintain a GPA of at least 2.0 after completing the first two semesters or risk losing their financial aid eligibility for the next semester of attendance. The academic progress of financial aid recipients will be monitored a minimum of once each academic year. Students with questions regarding the intent and interpretation of this policy should contact the Office of Financial Aid.

Students are also expected to make normal progress toward graduation by completing at least 67 percent of all attempted credit hours. Students who withdraw from or drop one-third or more of the courses in which they have enrolled during the year will not meet the standards of academic progress for financial aid consideration.

In addition, students will not be eligible for aid once they have attempted 150 percent of the total number of credit hours required to complete their program of study. Students should consult their academic advisor to determine the appropriate course load to assure academic success and completion of their degree within the specified number of credit hours.

Contact the DTE Energy One-Stop Center or visit www.ltu.edu/financial_aid/sap_policy.asp for information regarding the appeal and renewal procedure when standards of progress are not met.

Defaulted Student Loans
Students who have defaulted on student loans, owe a refund on a grant, or owe college tuition will not be eligible for any financial aid until the obligation is fulfilled and monies are paid back to the University, the federal government, the state government, or the lender of interest.

Verification of Financial Statement and Other Application Information
Lawrence Tech reserves the right to request federal IRS income tax documentation from its students, along with a verification form for the entire family for the financial information provided. Students refusing to provide family income tax or other documentation information will be denied financial aid. For families who are not required to file a federal tax form, other types of verification will be required.

Financial Aid and Credit Hour Reduction
Financial aid may be reduced or canceled if a student takes less than 12 credit hours per semester. Award amounts for need-based financial aid are based on the number of credit hours attempted and a student's demonstrated financial need. Students planning to drop all or part of their classes should contact the DTE Energy One-Stop Center to discuss the effects on their financial aid awards for the semester.

Refunds of Excess Financial Aid
When financial aid and other payments exceed a student's charges, the student is entitled to a refund. Student Accounting will refund excess financial aid to the student, parent, or other payment source within 14 days of the posting of a credit balance. A check will be mailed to the current mailing address on file, or students can elect to have the check directly deposited.

Cancellation of Loan
Federal Stafford, Federal PLUS, and Federal Perkins loan borrowers have the right to cancel their loan disbursements within 14 days of the disbursement notice. Should students decide to cancel the disbursement of their federal loans, they should contact the DTE Energy One-Stop Center at enrollmentservices@ltu.edu in writing within the specified time period. By canceling the disbursement, students will be responsible for any unpaid tuition and fees, as well as repayment of loan funds already paid to them.

Enrollment Status
All initial awards are based on full-time status. Grant awards will be prorated for enrollment of less than full-time, and student loan eligibility will be reevaluated and may change due to changes in enrollment status. Students must be enrolled in an eligible degree program, and most funds require at least half-time (for undergraduate students, six or more credit hours, and for graduate students, three or more credit hours) enrollment status. Student awards are subject to change due to changes in enrollment status and/or funding levels at any time.

Adjustments to Aid
Within certain time limits, tuition adjustments may be made to the student's financial account. There are times, however, when students receive no tuition credit/refund for dropped courses. See the Tuition and Fees section of this *Catalog* or visit www.ltu.edu/registrars_office/tuition_fees.index.asp. It is the student's responsibility to know these dates and adhere to them.

Withdrawal from Lawrence Tech
Students may be billed for a portion or all of their incurred charges if they withdraw from the University. The bill calculated as a result of withdrawal will depend on the effective date of the withdrawal, the percentage and amount of institutional refund, and/or the last date of class attendance.

If a student receiving Title IV funds completely withdraws from classes through 60 percent of the term, the University is required to determine how much of the financial aid was earned up to the time of withdrawal (www.ltu.edu/financial_aid/financial_aid_IVfunds.asp). The University and/or the student must return unearned Title IV funds to the federal government. This situation could result in the student owing aid funds to the University, the government, or both.

Students should always check with the DTE Energy One-Stop Center prior to withdrawal for advice on the impact it will or could have on their financial aid.

Auditing Classes, Certificate Programs, and Guest Students
Students who audit classes, are enrolled in certificate programs, or are guest students **are not** eligible to receive financial aid.

Graduate Students
Graduation is the final step in seeking a degree. If you are considering taking courses after graduation and require financial aid assistance, you **must be admitted to a new degree program**. Federal aid is for degree-seeking students; certificate programs are not eligible for financial aid. Contact Enrollment Services (enrollmentservices@ltu.edu) for information about financial aid that may be available to you in a new degree program.

Academic Regulations

The policies and procedures described in this *Catalog* determine the academic status of undergraduate students enrolled in the University. Exceptions to these policies and procedures may be considered only upon a written request to the Office of the Provost or the designated/appropriate office. In the case of a lapse of future catalogs, the policies, procedures, and curricula in this *Catalog* will apply to all students. For policies pertaining to graduate programs, see Lawrence Tech's *Graduate Catalog*.

DEFINITION OF FULL-TIME STATUS

Classification as a full-time student is based upon the weekly academic load that the student carries. Undergraduates are considered full-time when registered for a minimum of 12 credit hours. Full-time status requirements are the same during the summer semester.

GROUPING OF STUDENTS BY CLASSES

Students in undergraduate programs are classified as follows:

	Semester hours completed
Freshman	0–29
Sophomore	30–59
Junior	60–89
Senior	90+

CREDIT HOUR

The University converted from a quarter credit system to a semester system, effective beginning in the fall of 1994. Work completed prior to August 1994 is recorded in standard quarter hours. Work completed after August 1994 is recorded in semester hours. Quarter hours can be converted to semester hours by multiplying the number of quarter hours by two-thirds.

GRADING SYSTEM

A record of grade points is kept in the student's permanent record and is used to determine his or her overall scholastic average. The following grades are computed in the GPA:

Grade	Points per Credit Hour
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0
WF	0.0 (failure due to non-attendance)

The grades D, D+, and D- are not used in graduate programs and select undergraduate programs.

The following grades are not computed in the GPA:

W	Withdrawal
X	Audit
CR	Credit
NC	No Credit
I	Incomplete
DG	Deferred Grade
NR	No Report
TR	Transfer Credit
IP	In Progress
ZZ	Transfer Courses in Progress
WN	No credit due to non-attendance

RECOMPUTATION OF GRADE POINT AVERAGE

Students may repeat a course to improve the grade earned in a prior attempt, and the course must be completed at Lawrence Tech. **Students should be aware that the most recent grade will be the grade of record whether or not it is the highest grade earned.**

Until a passing grade is achieved, all grades for earlier attempts in a course will appear on the transcript and will be computed into the GPA. Once a course has been passed, only the credit hours and grade for the latest attempt will be reflected in the GPA.

In order for the GPA to be recomputed, the latest attempt must be in the same course as the one originally shown on the transcript. Directed study or special topics courses may not be eligible for the repeat process as the topic of study may vary from one course to another.

Students who have been found in violation of the Academic Honor Code and receive an inclusive final grade of "F" for that course are not eligible for the repeat process.

The University does not guarantee that a course will be offered in the future. Therefore, students will not be eligible for recomputation of a course no longer offered by the University.

The recalculation of the GPA is an automated process within Enrollment Services/Office of the Registrar; the student is not required to submit any paperwork.

INCOMPLETE

A grade of "I" is given only under extraordinary circumstances for coursework that has been of satisfactory quality and, in the judgment of the instructor and the instructor's dean, adequate to justify a reasonable extension of time. It is assigned only in cases in which the student has completed satisfactorily the major portion of the course requirements. Students receiving an "I" may not attend the class during a succeeding semester. Instructors must change an "I" to a grade other than a "W" no later than one calendar year following the end of the semester. After one year, if course requirements are not met, the "I" will be converted to an "F."

GRADE CHANGES

The electronic entry of grades submitted by instructors at the end of each semester is the official record of grades. Grade changes, when necessary, are done by the instructor with the approval of the

department chair and dean. The registrar may determine that the provost's approval is also required in exceptional or unusual circumstances. Any disputes concerning grades must be resolved within one semester after the course was completed.

DISPUTE OF GRADES
Students who wish to dispute their grades have one semester to address the issue. The appropriate procedure for disputing grades, along with any other aspect of a course, is as follows: The student must first speak with the instructor of the course; if the resolution is not what the student hopes to achieve, the next course of action is to speak with the department chair. If the outcome from addressing the issue with the department chair is not what the student hopes to achieve, the student should then address the issue with the dean of the college. If the resolution is not what the student hopes to achieve, the last and **FINAL** course of action is to speak with the provost. The ruling of the provost is **FINAL** and not further disputable by the student.

AUDITING CLASSES
Anyone wishing to audit a course must submit an audit request/registration form. This form is available in Enrollment Services/Office of the Registrar. No credit is granted for courses that are audited. Starting with the first day of classes, a student may not change enrollment status from audit to credit or from credit to audit. Full tuition will be charged, and the tuition credit policy applies if the student withdraws.

WITHDRAWAL FROM CLASSES
Students who wish to drop or withdraw from a course or courses must do so online through BannerWeb. The date of the drop or withdrawal will be the date that the student completes the process on BannerWeb. To protect a student's right to privacy, drops and withdrawals may not be conducted by telephone or email.

Within certain time limits, full tuition adjustments may be made to the student's financial account. There are times when students receive no tuition credit/refund for dropped courses. Official Drop/Add dates for each semester are available online on BannerWeb at my.ltu.edu and at www.ltu.edu/registrars_office/calendar_final_exam.index.asp. It is the student's responsibility to know these dates and adhere to them.

It is important to note that exceptions to University policy are made only in rare circumstances, such as a debilitating illness. Requests made because of difficult work schedules or class schedules may not be considered.

Students studying at Lawrence Tech with an F-1 or J-1 visa cannot drop below full-time status without prior approval from the Office of International Programs.

GRADES FOR COURSES DROPPED
Students who drop a course during the first two weeks of classes during the fall or spring semester will receive a "Drop" on their Registration Form and no grade will appear on their transcript.

Students who withdraw from a course after the Add/Drop period and within the withdrawal period will receive a grade of "W."

The last day to withdraw from summer semesters and short courses within the regular fall and spring semester is adjusted for the shorter time period as follows:

Class Duration Period	Last Day/Week to Withdraw
up to one week	third day
up to two weeks	first week
up to three weeks	second week
up to four weeks	third week
up to five weeks	fourth week
up to six weeks	fifth week
up to seven weeks	sixth week
up to eight weeks	sixth week
up to nine weeks	seventh week
up to 10 weeks	eighth week
up to 11 weeks	ninth week
up to 12 weeks	10th week
up to 13 weeks	11th week
up to 14 weeks	12th week
up to 15 weeks	13th week

After the last date to withdraw for any semester, students will not be permitted to withdraw from the course and will receive a grade as determined by the instructor (not a "W").

Those students who do not attend courses or who miss a designated number of courses, and who do not withdraw from the courses on their own, will be issued the grade of "WF." This means failure due to non-attendance and will impact the student's financial aid award and loans.

All withdrawals or drops must be initiated by student action to assure that a "W" will appear on the master grade roster and subsequent transcripts. Faculty may not initiate withdrawal procedures nor may they submit a "W" on the electronic grade entry unless the student has withdrawn.

Drop and Withdrawal schedules for each semester may be obtained from Enrollment Services/Office of the Registrar and are available at www.ltu.edu/registrars_office.

SCHEDULE OF CLASSES

Programs for undergraduate students are outlined in this *Catalog*. Class schedules giving the particular days and the hours of the various classes are made available during registration for each semester online at www.ltu.edu and on BannerWeb at my.ltu.edu.

GRADE REPORTS

Grades are available online at the end of each semester through BannerWeb at my.ltu.edu. Students must make a request to Enrollment Services/Office of the Registrar to have their report cards mailed. It is the students' responsibility to seek their grades at the end of each semester.

CHANGE OF CLASS SCHEDULE

Beginning the first day of classes, students may change their schedule by adding or dropping courses online on BannerWeb at my.ltu.edu. Students are responsible for completing their own Drop/Add

procedure and retaining confirmation of the transaction. Classes must be added during the first week of classes.

All changes to students' schedules are effective on the date conducted on BannerWeb. Students are not permitted to attend courses without being officially registered.

ATTENDANCE
Class attendance records of students are kept by all members of the faculty. The consequences of absenteeism will be determined by the instructors and will reflect their policy and judgment with respect to the effect of attendance on the student's final grade.

NON-ATTENDANCE PROCESS
Those students who do not attend courses or who miss a designated number of courses, and who do not withdraw from the courses on their own, will be issued the grade of "WF." This means failure due to non-attendance and will impact the student's financial aid award and loans.

It is extremely important for students to attend their course(s). Failure to attend will result in a "WF" grade. A "WF" grade denotes failure due to non-attendance and acts as both a withdraw and a failing grade; non-attendance is indicated to us by the last date of attendance as reported by the instructor. Furthermore, if an instructor enters an "F" grade at the end of the term with a last date of attendance that indicates failure due to non-attendance, the "F" grade will be converted to a "WF" grade by the Office of the Registrar.

It is very important for instructors to notify Enrollment Services if a student stops attending or has never attended a class. For online courses, non-attendance is lack of participation in the online course (e.g., not submitting assignments, not contributing to the online discussions). Non-attendance can be reported any time after the Add/Drop period.

The non-attendance process is as follows:

- Instructor notifies Enrollment Services of non-attendance via email (enrollmentservices@ltu.edu), and includes the following student information: Banner ID, name of the student, course CRN and/or title, and the last date the student attended the course
- Enrollment Services contacts the student by email informing him/her that the office has been notified of their non-attendance
- The student has 10 days to respond by either withdrawing from the course (if it is still within the withdrawal period) or by resolving the issue with the instructor
- If the student does not take action, a "WF" or "WN" grade is issued. Both "WF" and "WN" grades indicate failure due to non-attendance. A "WN" grade is used for developmental and ESL courses; a "WF" grade is used for all other courses
- The last date of attendance as reported by the instructor is recorded as a requirement for the Office of Financial Aid

What Is a WF Grade?

- A WF grade indicates failure due to non-attendance

- It reduces the number of credit hours in which the student is enrolled (e.g., if a student is enrolled in 12 credit hours and receives a WF grade in a 3-credit course, the student's total enrolled credit hours becomes 9 credit hours)
- It is calculated in the GPA as an "F" grade (see the Recomputation of Grade Point Average policy for more information on retaking the course)

What Is a WN Grade?

- A WN grade indicates failure due to non-attendance in a developmental or ESL course
- It reduces the number of credit hours in which the student is enrolled (e.g., if a student is enrolled in 12 credit hours and receives a WF grade in a 3-credit course, the student's total enrolled credit hours becomes 9 credit hours)
- It does not count in the GPA

After the last date to withdraw for any semester, students will not be permitted to withdraw from the course and will receive a grade as determined by the instructor (not a "W").

All withdrawals or drops must be initiated by student action to assure that a "W" will appear on the master grade roster and subsequent transcripts. Faculty may not initiate withdrawal procedures nor may they submit a "W" on the electronic grade entry unless the student has withdrawn.

Drop and withdrawal schedules for each semester may be obtained from Enrollment Services/Office of the Registrar and are available at www.ltu.edu/registrars_office.

PREREQUISITES FOR COURSES

Students are responsible for successfully completing the prerequisite courses listed in this *Catalog* for all courses in which they are registered. In those exceptional circumstances where a prerequisite may be waived, the student must request an override from the department head or dean of the college offering the course. If a prerequisite is waived, it is for one semester only and does not exempt the student from taking the waived prerequisite in the future.

A student who is determined to have enrolled in a course without completing the required prerequisites or obtaining an authorized waiver may be required to withdraw at any time during the semester and will forfeit tuition and fees according to the normal University tuition credit policy.

MIDTERM STATUS

The University pays close attention to the academic progress of students through their coursework. An examination of students' records occurs during the midway point of the semester. Freshman and other students are encouraged to seek assistance early from the faculty members teaching their courses or to take advantage of the wide range of tutorial and other assistance available through the Office of the Dean of Students and the Academic Achievement Center.

ACADEMIC PROBATION

Failure to Make Academic Progress

Any student whose overall grade point average falls below 2.0 at the end of a semester will be placed on academic probation. Students on academic probation are required to have an advisor's approval to register or to add or drop any class.

Students may also be placed on academic probation for having a GPA lower than 2.0 in their major.

Academic Suspension and Dismissal
Any student whose cumulative GPA remains below 2.0 at the end of three consecutive semesters of their enrollment, or any student on academic probation who fails to meet the requirements of that probation, will be suspended from the University for a minimum of one calendar year. Veterans who do not meet the aforementioned requirements will lose their University certification for VA benefits. Architecture students are also subject to the continuation requirements described below.

Any student in the College of Architecture and Design (CoAD) whose cumulative, in-major GPA stays below a 2.0 for four consecutive semesters of enrollment will be suspended from the University for a minimum of one calendar year. In-major coursework includes all CoAD coursework required for the major.

At the end of the designated suspension period, undergraduate students who have been suspended from the University for academic reasons may submit a written petition for readmission to the chair of the Academic Standing Committee. This petition should be received six weeks before the first day of class for the semester in which the student wishes to return.

Students who have been suspended and subsequently readmitted who fail to meet the conditions of their readmission will be dismissed from the University. Students dismissed from the University under these circumstances may not be readmitted.

The University will not accept transfer credit for courses taken at another college or university during a period of one calendar year following suspension.

Excessive Repeating and Withdrawal
Students are expected to successfully complete all the courses in which they are registered and are encouraged to plan their schedules to avoid overloads and conflicts that would interfere with that objective. Any student who engages in excessive withdrawal from classes or who repeats a required course more than once is subject to academic review and may be placed on academic probation regardless of the overall GPA. Subsequent continuation of this behavior may result in suspension or dismissal. Students may register for the same course up to three times. After that point, the dean's signature is required to register. Circumstances demonstrably beyond the student's control may excuse them from this requirement, but poor scholarship will not.

Failure to Complete Lower Division General Education Requirements
Lower division (freshman and sophomore) General Education requirements are expected to be completed before entering the junior year (60 or more semester credits). Juniors who have not completed lower division General Education requirements must register for these courses each semester concurrently with upper-division (junior/senior) courses until the requirements are met.

Students who earn 90 semester credits without completion of lower division General Education requirements will be placed on academic probation regardless of GPA, and they will not be permitted to register for courses in their major until these requirements are met.

ACADEMIC STANDING COMMITTEE/READMISSION

Undergraduate students who have been suspended from the University because of poor scholarship may, after one calendar year, submit a written petition for readmission to the dean of students or the chair of the Academic Standing Committee. This petition should be received at least six weeks before the first day of class of the semester in which the student wishes to return.

Evidence of planning, curriculum load, and work activities are taken into consideration when reviewing petitions for readmission. Petitions should be well organized, typed, and should include the student's current address, phone number, student number, curriculum, and reasons why the student had previous academic difficulty and why the student now feels he or she can be successful if readmitted.

The petition may include a letter from an employer attesting to competent work and maturity. An official transcript of courses taken at another institution must be submitted at the time the student applies for readmission. However, credit is not allowed for any work taken at another institution for the period of one calendar year following suspension. Once readmitted, a student is required to abide by the graduation requirements outlined in the *Undergraduate Catalog* at the time of readmission. A student's requirements for graduation may be subject to reevaluation.

ENROLLMENT AT OTHER INSTITUTIONS

Students are expected to complete all courses for a Lawrence Tech degree at the University once they have been admitted. Transfer credit is generally not given for courses taken at other institutions after enrollment at Lawrence Tech, unless those courses cannot be completed at the University.

Students enrolled at Lawrence Tech may not take courses at other institutions after admission to Lawrence Tech and expect those credits to transfer without the prior written permission of the Credit Review Committee. Any courses taken in violation of this policy will be denied transfer or additional credit.

To be eligible for guest credit, students must have:

1. Achieved a 2.0 GPA at Lawrence Tech;
2. Completed 24 credit hours or two semesters at Lawrence Tech;
3. Satisfied the prerequisites for the course(s) that they wish to take at another institution. If prerequisites are in progress for the requested course(s) at the time of submission of the Guest Credit Request form, a letter from the instructor(s) is required stating the student's grade in the course(s) as of that date and the instructor's opinion (at that point in time) of the student's capability to continue successfully in the requested course;
4. Completed the Guest Credit Request form (available in Enrollment Services/Office of the Registrar or at www.ltu.edu/registrars_office/forms_to_print.index.asp).

Students must submit the Guest Credit Approval form to Enrollment Services/Office of the Registrar at least one month before the desired course begins. The Credit Review Committee reviews each request individually; allow four to five weeks for processing. Enrollment Services will send the committee's decision to the student's LTU email account.

The student must receive at least a 2.0 in the approved course to have the credit transfer back to Lawrence Tech. It is the student's responsibility to have the official transcript sent to Enrollment Services/Office of the Registrar at Lawrence Tech. Until the official transcript arrives, the credit will not

be placed on the student's transcript. In addition, only the course will transfer to Lawrence Tech, not the grade. Approved guest credit courses may not be transferred back to Lawrence Tech to be used in GPA recomputation.

DEAN'S LIST

In recognition of students who achieve superior scholastic records, a Dean's List is published at the close of each semester, and an appropriate notation is made on students' academic records. This includes all undergraduate students who earned a GPA of 3.5 or higher. If students have selected confidentiality status, their names will not appear on published lists.

TRANSCRIPTS (RECORDS)

A permanent record of all credits earned at or transferred to the University is maintained for each student in Enrollment Services/Office of the Registrar. These transcripts are preserved indefinitely. All graduates are mailed an unofficial copy of their academic transcripts at Lawrence Tech as soon as possible after their degree is earned.

At all other times, students are charged a nominal fee for same-day processing of official copies of their Lawrence Tech transcripts. If selecting normal two business day processing, students are not charged for official copies of their Lawrence Tech transcripts. Copies of transcripts will not be released without the student's authorization in writing. Transcripts will not be issued unless all financial obligations from prior semesters have been settled.

ARCHITECTURAL DRAWINGS AND REPORTS

All two- and three-dimensional architectural drawings and models, as well as reports and other written studies submitted in satisfaction of any required or elective architectural courses, become the property of the University and may be kept or returned at the sole discretion of the dean of the College of Architecture and Design. When such work is kept, arrangements will be made for the students to receive suitable photographic copies as a record of their design work.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights are:

1. The right to inspect and review the student's education records within 45 days of the day the University receives a request for access. Students should submit to Enrollment Services/Office of the Registrar written requests that identify the record(s) they wish to inspect. The University Registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the Enrollment Services/Office of the Registrar, where the request was submitted, the University Registrar shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of any of the student's education records that the student believes are inaccurate or misleading. Students may ask the University to amend a record that they believe is inaccurate or misleading. They should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent to school officials with legitimate educational interests. A school official is defined as a person employed by the University in an administrative, supervisory, academic, or support staff position (including the law enforcement unit and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a person assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.
4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University to comply with the requirements of FERPA. The name and address of the office that administers FERPA is:

   Family Policy Compliance Office
   U.S. Department of Education
   400 Maryland Avenue, SW
   Washington, DC 20202-4605

At Lawrence Technological University the following information is considered Directory Information about a student: dates of attendance, major field of study, class level, degrees and awards received, anticipated degree date, and confirmation that the student is enrolled (enrollment status).

In accordance with the provisions of the Family Educational Rights and Privacy Act (FERPA), this Directory Information can be released to the general public and may be listed in the campus directory, if one is published. Students may withhold this information from being released by completing the Student Request for Non-Disclosure Form. By completing this form, students are requesting that information NOT be released to non-university personnel nor listed in the campus directory, if one is published, for one year. This request remains in effect until removed by the student. Please note that in compliance with federal regulations there are situations in which particular information may be released, upon presentation of official documents, to designated state, local, or government agencies.

Students should consider carefully the impact of their decision to request confidential status. This means that after submission of the form, requests for this information from non-university persons or organizations will be refused. Friends or relatives trying to reach a student will not be able to do so through the University; information that the student is enrolled at Lawrence Tech will be suppressed, so if a loan company, prospective employer, family member, etc., inquires about the student, they will be informed that there is no record of the student's attendance.

Lawrence Tech will honor the student's request to withhold this information but cannot assume responsibility for contacting the student for subsequent permission to release the Directory Information. Regardless of the effect upon the student, Lawrence Technological University assumes no liability as a result of honoring the student's instructions that this information be withheld.

Once a student has designated a confidential classification, it will remain until the student cancels it. If a student wishes the classification removed, the student should submit a signed authorization requesting that it be removed. This authorization form is available in Enrollment Services/Office of the Registrar (www.ltu.edu/registrars_office/forms_to_print.index.asp).

Policies, Procedures, and Regulations

ACADEMIC HONOR CODE

Downloadable copy available at www.ltu.edu/myltu/honor-code.asp

Academic integrity and honesty are basic core values of Lawrence Technological University. In carrying out its academic mission, Lawrence Technological University, like all universities, depends on the honesty and integrity of its faculty, staff, and students, and for this reason every member of the Lawrence Technological University community is charged with upholding the Academic Honor Code. Actions that breach the Code erode the trust of those who look to universities for honest evaluations of academic work arrived at through honest processes. Violations may also cause individual harm, in that reports of performance made to post-graduate schools, professional societies, and employers would inaccurately represent a student's progress.

Lawrence Technological University is committed to creating an academic community that values both individual and collaborative efforts that promote learning and discovery. Such a community expects honesty and integrity in the work of all its members. The Academic Honor Code speaks to the work of individual students within the community. It should not be construed as arguing against the important collaborations that also occur among students on campus. This document is intended to clarify the adjudication of issues regarding academic honesty and fair play for students. Instructors are encouraged to review the Violation Reporting Process Flowchart, which is available online, along with the Academic Honor Code and the Violation Reporting Form on the Office of the Dean of Students webpage.

Portions of this document have been adapted from (a) the 2002-03 University of North Carolina at Wilmington Academic Honor Code, (b) the 2002-03 Binghamton University Academic Honesty Code, (c) the 2011 Baylor University Academic Integrity and Honor Code, and (d) the 2011 University of Notre Dame Academic Code of Honor.

A. ACADEMIC INTEGRITY

Students, faculty, and staff are expected to follow established standards of academic integrity and honesty. Academic misconduct entails dishonesty or deception in fulfilling academic requirements and includes but is not limited to cheating, plagiarism, or the furnishing of false information to the University or a University affiliate in matters related to academics. An affiliate of the University is any person, organization, or company who works in conjunction with Lawrence Technological University for the purposes of assisting students in fulfilling their academic requirements. It is therefore this institution's stated policy that no form of dishonesty among its faculty or students will be tolerated. Although all members of the University community have an obligation to report occurrences of dishonesty, each individual is principally responsible for his or her own conduct.

B. ACADEMIC DISHONESTY OFFENSES

Violation of any of the following standards will subject any student to disciplinary action:

1. **Plagiarism**

   The term "PLAGIARISM" includes but is not limited to (a) the use, by paraphrase or direct quotation, of the published or unpublished work or creative and/or intellectual

property in print, product, or digital media of another person without full and clear acknowledgment; (b) the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers, reports, or other academic materials; or (c) the appropriating, buying, receiving as a gift, or obtaining by any other means another person's work and the unacknowledged submission or incorporation of it in one's own work. Plagiarism is unethical, since it deprives the true author of his/her rightful credit and then gives that credit to someone to whom it is not due. Examples include:

- Quoting, paraphrasing, or summarizing written material, even a few phrases, without acknowledgment.
- Failing to acknowledge the source of either a major idea or an ordering principle central to one's own paper.
- Relying on another person's data, evidence, or critical method without credit or permission.
- Submitting another person's work as one's own.
- Using unacknowledged research sources gathered by someone else.
- Copying portions or outcomes of two- or three-dimensional creative property of previously published work.
- Copying items from Internet websites without acknowledgment of the source.

2. **Bribery**
The term "BRIBERY" includes the offering, giving, receiving, or soliciting of any consideration in order to obtain a grade or other treatment not otherwise earned by the student through his/her own academic performance.

3. **Cheating**
The term "CHEATING" includes but is not limited to (a) use of or giving to others any unauthorized assistance in taking quizzes or examinations; (b) dependence upon aids beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (c) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff; or (d) the unauthorized use of any electronic or mechanical device during any program, course, quiz, or examination or in connection with laboratory reports or other materials related to academic performance.

4. **Misrepresentation**
The term "MISREPRESENTATION" includes any act or omission undertaken with intent to deceive an instructor for academic advantage. Examples include:

- Using a computer program generated by another and handing it in as one's own work unless expressly allowed by the instructor.
- Lying to an instructor to improve one's grade.
- Lying or misrepresenting facts when confronted with an allegation of academic dishonesty.

5. **Conspiracy**

The term "CONSPIRACY" means planning or acting with one or more persons to commit any form of academic dishonesty in order to gain academic advantage for oneself or another.

6. **Fabrication**
The term "FABRICATION" means the use of invented information or the falsification of research or other findings with the intent to deceive and thereby gain academic or professional advantage.

7. **Multiple Submissions**
The term "MULTIPLE SUBMISSIONS" means submitting substantial portions of the same work for credit more than once, unless there is prior explicit consent by the instructor(s) to whom the material is being or has been submitted.

8. **Unauthorized Collaboration**
The term "UNAUTHORIZED COLLABORATION" means collaborating on projects, papers, computer programs, lab reports, or other academic assignments where such collaboration has been prohibited by the instructor.

9. **Sabotage**
The term "SABOTAGE" means deliberately impairing, destroying, damaging, or stealing another's work or working material. Examples include:

- Destroying, stealing, or damaging another's lab experiment, computer program, term paper, exam, or project.
- Removing uncharged library materials with the effect that others cannot use them.
- Defacing or damaging library materials with the effect that others cannot use them.
- Hoarding or displacing materials within the library with the effect that others have undue difficulty using them.
- Interfering with the operation of a computer system so as to have an adverse effect on the academic performance of others.

C. JURISDICTION

All students enrolled at Lawrence Technological University are subject to the Academic Honor Code.

D. RESPONSIBILITY OF THE UNIVERSITY COMMUNITY

1. **General Responsibility**
It shall be the responsibility of every faculty member, student, administrator, and staff member of the University community to uphold and maintain the academic standards and integrity of Lawrence Technological University. Any member of the University community who has reasonable grounds to believe that an infraction of the Academic Honor Code has occurred has an obligation to report the alleged violation.

2. **Student Responsibility**

Each student shall abide by the Academic Honor Code at all times.

3. **Responsibility of Individual Instructors**
Instructors are encouraged to make their classes aware of the Academic Honor Code during the first week of each term. Instructors should include a reference to the Academic Honor Code in the course syllabus. The Academic Honor Code is understood to be in effect in every course regardless of whether or not the instructor makes explicit reference to it.

4. **Responsibility of the University Administration**
The Office of the Dean of Students is responsible for the publication and dissemination of the Academic Honor Code and any amendments or changes approved by the Deans Council with the recommendation of the Faculty Senate and the Faculty Councils of the colleges. All new University faculty, administrative staff, personnel, and students should be advised of the Academic Honor Code upon becoming members of the University community.

The dean of each college may establish additional steps for addressing violations of the Academic Honor Code that are consistent with the mission and academic programs offered by the college and the Academic Honor Code. Such additional steps must be endorsed by the dean of students, filed, and communicated to all faculty members and students within the college.

5. **Responsibility of the Office of the Registrar and the Office of the Dean of Students**
The Office of the Registrar and the Office of the Dean of Students shall receive and maintain comprehensive records of all matters relating to violations of the Academic Honor Code. The dean of students will receive a copy of the Academic Honor Code Violation Reporting Form completed by the instructor and/or Academic Honor Council, to be included in the student's academic record.

E. ACADEMIC HONOR COUNCIL

1. **Responsibilities**
   a. Determines through the process of a hearing whether an accused student has violated the Academic Honor Code;
   b. Recommends one or more sanction(s), such as rewriting of the assignment, failure of the assignment/exam, failure in the course, suspension, or expulsion (the last two sanctions are limited to second-time violators of the Academic Honor Code), for students who have been found in violation of the Academic Honor Code; and
   c. Assists in educating the University community about the Academic Honor Code.

2. **Composition**
The Academic Honor Council is composed of eight student members and eight faculty members. Each college is represented by two students and two faculty members. The student members shall be appointed annually by the dean of students with the advice of the dean of each college. The faculty members shall be appointed for three-year

terms by their respective deans. A chair and vice chair shall be appointed by the provost from among the faculty members appointed to the council. Each student member must have a current and cumulative grade point average of 3.0 or higher at the time of the appointment and must maintain a current and cumulative grade point average of 2.5 or higher during service.

3. **Jurisdiction**
The Academic Honor Council has exclusive jurisdiction over all academic matters involving dishonorable conduct that are not resolved between the student and the instructor in whose class the incident occurred. The Academic Honor Council automatically conducts a hearing for any incident where the student has been previously found in violation of the Academic Honor Code.

4. **Quorum**
A quorum for an Academic Honor Council hearing is three faculty and two student members. A quorum is not affected by a member of the Academic Honor Council disqualifying him- or herself after a hearing has begun.

In the event a quorum cannot be obtained for a pending matter, and the chair determines that a hearing must occur before a quorum can be obtained using regular Academic Honor Council members, students serving on the Student Discipline Committee may be used as substitutes, provided they otherwise meet the qualifications of Academic Honor Council members and have received similar training.

5. **Disqualification**
A member of the Academic Honor Council shall disqualify him- or herself if he or she feels that, in reaching a decision as to whether or not an accused student has violated the Academic Honor Code, he or she cannot act on the weight of the evidence without bias or prejudice. The Academic Honor Council may, by two-thirds vote, disqualify one of its members from sitting on a hearing, if that would best serve the interests of the Academic Honor Council and the University.

F. REPORTING AND ADJUDICATION PROCEDURES

1. **Reporting a Violation**
A suspected violation of the Academic Honor Code may be reported by any member of the University community who has knowledge of such infraction. The infraction should be reported to the instructor of the course in which it occurred, where applicable. If the course or instructor is unknown, the incident may be reported to the appropriate academic department chair or dean, or to the dean of students. Such an accusation should be made within seven (7) calendar days from the time of discovery, unless extenuating circumstances prevent reporting.

2. **Presumption of Non-Violation**
Any student charged with a violation under this Code shall be presumed not responsible until it is proven that the violation of the rule or regulation occurred. The burden of proof shall rest with those bringing the charges and is defined as a preponderance of the evidence.

3. **Responding to Reports of a Violation**
Upon receiving an accusation of a violation or having evidence of a violation, the instructor in charge of the course or materials in question may handle the matter directly with the student or refer it to the Academic Honor Council. In either situation, the instructor must report the alleged violation to the department chair or dean of the college and to the dean of students by email. The instructor is encouraged to discuss the matter with his or her department chair, dean of the college, or the dean of students. The dean of students will verify if the student has previously violated the Academic Honor Code. If the student has previously violated the Academic Honor Code, the alleged violation will be referred to the Academic Honor Council. In a situation where a student has not previously violated the Academic Honor Code, the instructor may choose to handle the matter directly with the student or refer the matter to the Academic Honor Council.

Course withdrawal does not ensure immunity against the consequences of an Academic Honor Code violation. Should a student successfully withdraw from a course after an alleged violation is reported, the class may be administratively reinstated to the student's schedule and the appropriate academic sanction imposed. In this situation, the student is not eligible for a refund of tuition and fees.

Additionally, a student is allowed to remain in a course and participate without prejudice until he or she has exhausted all appeals. The findings of an investigation shall not be shared with other students in the course. The instructor is expected to treat the student without prejudice during the investigation of a potential violation and after sanction if the student is allowed to remain in the course.

4. **Handling the Matter Directly with the Student for a First Violation**
   a. If the instructor handles the matter directly with the student, the issue must be addressed within seven (7) calendar days after discovering the violation. If the instructor would like additional time beyond the seven (7) days to resolve the matter with the accused student, the instructor may ask the dean of students and the department chair or dean of his or her college for an extension. The instructor must make the request for more time within the original seven (7)-day time period.

   b. The instructor will inform the student in writing (email) of the alleged violation, describe the evidence supporting the alleged violation, and request a written response from the student by a certain date. The instructor should copy the dean of students and his or her department chair on all correspondence with the student related to the alleged violation. If necessary, the instructor will conduct an interview with the student. The instructor will determine whether the student violated the Academic Honor Code. If the instructor finds the student guilty of violating the Academic Honor Code, the instructor must file the Academic Honor Code Violation Reporting Form with the dean of students. The report will describe the nature of the violation and the sanction (action taken).

If the student is found in violation, the instructor may choose from the following sanctions: rewriting of the assignment, failure of the assignment/exam, or failure in the course.

The dean of students will send a copy of the report to the student and retain the original report in the student's file. The Academic Honor Code Violation Reporting Form is available in the Office of the Dean of Students and online at www.ltu.edu/myltu/honor-code.asp.

c. If the faculty member finds the student **not** guilty of dishonorable conduct in connection with an alleged violation, the allegations are dismissed and the matter is closed. The faculty member is expected to document his or her findings and rationale for dismissing the allegation to his or her dean or department chair and the dean of students.

d. A student found in violation of the Academic Honor Code by an instructor may appeal the findings to the Academic Honor Council. The student must request a meeting with the dean of students to initiate the appeal process.

5. **Referring the Matter to the Academic Honor Council**
If an instructor believes a student may have violated the Academic Honor Code and chooses to refer the matter to the Academic Honor Council, the instructor must first report the alleged violation to his or her department chair or the dean of the college by email and provide the dean of students with the Academic Honor Code Violation Reporting Form. By providing the dean of students with the report, the instructor is indicating to the dean of students that he or she has chosen not to handle the investigation and instead is referring the case to the Academic Honor Council. The referral must be made within seven (7) calendar days after discovery of the violation.

G. HEARINGS

1. **Procedure**

a. **Notice to the Grievant and Accused**
Within five (5) calendar days after an alleged violation of the Academic Honor Code has been referred to the Academic Honor Council, the dean of students shall notify in writing the grievant and the accused student of the basis for the alleged violation of the Academic Honor Code; the date, time, and place the violation allegedly occurred; the nature of the evidence upon which the grievant will rely; and the date, time, and place at which the Academic Honor Council will meet to determine if a violation has occurred. The notice must inform both the grievant and the accused of their responsibilities at the hearing. If written evidence will be relied upon in whole or in part to establish a violation, the accused student shall be given an opportunity to examine such evidence prior to the time of the hearing. Ordinarily, such writings shall remain in the possession of the dean of students and subject to the control of the chair of the Academic Honor Council. The dean of students shall make necessary arrangements to afford the accused sufficient access to such writings to permit his or her preparation of an appropriate response to charges based in whole or in part upon such writings.

b. **Hearing Date**

The Academic Honor Council must meet to consider an alleged violation of the Academic Honor Code within ten (10) calendar days after the alleged violation is referred to the Academic Honor Council. However, the hearing should not take place until three (3) calendar days after the notification is sent to the student unless the student desires an expedited hearing and waives the three-day waiting requirement. If the hearing should fall during a University holiday, semester break, the summer months, or a time when a quorum of the Academic Honor Council is not available, the chair has the responsibility to schedule the hearing within the earliest reasonable time frame.

c. **Who May Attend**

Only members of the Academic Honor Council, the accused, the grievant, witnesses (while giving testimony), and the dean of students, or his or her designee, may attend a hearing. Lawyers representing the accused or the grievant and character witnesses are specifically excluded. The dean of students, or his or her designee, is present to assist with administrative matters and shall not vote.

d. **The Hearing**

The hearing is presided over by the chair of the Academic Honor Council, or in his or her absence, the vice chair. If the vice chair also is not present, the members of the Academic Honor Council may elect a temporary chair or postpone the hearing. The chair shall select a secretary for the hearing.

The chair is in charge of the hearing and has broad discretion. The chair shall exercise control over the conduct of all persons participating in the hearing and direct the initial questioning to the grievant and the accused and their witnesses. The chair shall act as a hearing examiner by developing the facts and evidence necessary to enable the Academic Honor Council to make a decision as to whether or not the Academic Honor Code has been violated. In so doing, the chair may exclude irrelevant, immaterial, and unduly repetitious evidence. The chair may, at his or her discretion, recess the hearing as often as necessary to ensure fairness to the grievant or the accused.

The hearing shall consist of two phases: (1) the presentation of evidence and (2) the deliberations of the Academic Honor Council. During the presentation of evidence phase, the grievant and the accused shall present to the Academic Honor Council facts and circumstances that will enable the Academic Honor Council to determine whether or not the accused has violated the Academic Honor Code. In presenting their positions, the grievant and the accused may ask others to present testimony or documentary evidence. In order to clarify issues, resolve inconsistencies or conflicts in testimony, or to ascertain facts, each member of the Academic Honor Council may ask questions of any person appearing at the hearing.

e. **Evidence**

The accused and the grievant may present to the Academic Honor Council any evidence, oral or written, that, in the discretion of the chair of the Academic Honor Council, is pertinent to the alleged Academic Honor Code violation or that might shed light on the facts and circumstances surrounding it. It is important for the grievant and the accused to offer all of their evidence at the time of the hearing. The presentation of evidence is audio recorded. Once the presentation of evidence is concluded, and the audio recorder is turned off, the Academic Honor Council may not consider additional evidence or testimony. Witnesses and evidence must be presented at the hearing if a party wants them to be considered by the Academic Honor Council.

It is essential that witnesses with first-hand knowledge of the facts and circumstances surrounding the alleged Academic Honor Code violation appear in person. A contention by a party appearing before the Academic Honor Council that he or she could get a witness to testify, if necessary, is not helpful to the Academic Honor Council. When a witness cannot be present at the hearing, the grievant or the accused may present to the Academic Honor Council a signed, notarized statement from the absent witness. Because the absent witness cannot be questioned by the other party or the members of the Academic Honor Council, this evidence may be given less weight than other first-hand testimony.

f. **Questioning**
In addition to members of the Academic Honor Council, the grievant and the accused may question one another or the witness(es) of either.

g. **Failure to Appear**
If the grievant or the accused fails to appear before the Academic Honor Council on the date and at the time and place specified in the notice, the Academic Honor Council may take the available testimony and evidence and reach a decision on the basis of that evidence. Failure of one party to appear and offer evidence may leave the Academic Honor Council little choice but to decide in favor of the party presenting the only evidence and testimony.

If either party is unable to appear before the Academic Honor Council on the date specified in the notice, he or she should notify the Academic Honor Council chair and explain why. If the Academic Honor Council chair determines that good cause exists for the party's non-appearance at the scheduled hearing time, he or she shall set a new date for the hearing.

2. **Standard of Proof**
The Academic Honor Council determination shall be made on the basis of whether it is more likely than not that the accused student violated the Academic Honor Code. If a majority of the Academic Honor Council votes that the evidence supports the allegation, the Academic Honor Council shall render a decision that the accused has violated the Academic Honor Code. In finding a student in violation of the Academic Honor Code, the Academic Honor Council has determined that the evidence supporting the violation was of greater weight or more convincing than the evidence

that was offered in opposition by the student. If the majority of the Academic Honor Council determines the evidence does not support the accusation, the student will be found not in violation of the Academic Honor Code.

3. **Decision of the Academic Honor Council**

After the presentation of evidence is concluded, the chair shall excuse the accused and the grievant from the Academic Honor Council meeting. The Academic Honor Council shall then discuss the evidence presented during the hearing, and when finished, the chair shall poll the members on whether or not they think the evidence supports the allegation that the accused violated the Academic Honor Code.

If a majority of the Academic Honor Council votes that a preponderance of the evidence supports the allegation, the Academic Honor Council shall render a decision that the accused has violated the Academic Honor Code. If less than a majority of the Academic Honor Council votes that the evidence supports the allegation, the Academic Honor Council shall render a decision that the allegation was not substantiated. A voting member of the Academic Honor Council who is not disqualified may not abstain from voting.

If the Academic Honor Council determines that the accused student has violated the Academic Honor Code, it shall also recommend the sanction(s) it believes should be imposed upon the student. The Academic Honor Council must give great weight to the sanction(s) recommended by the instructor, but it may also consider the materials and information presented at the hearing, and the student's academic and honor code records. Possible sanctions include, but are not limited to, failure of the assignment, failure of the course, probation, suspension, and/or expulsion. In the case of a second violation, the likely sanction is expulsion from the University.

4. **Summary Report and Record of Hearing**

a. The secretary of the Academic Honor Council shall prepare a summary report of the hearing, including the decision of the Academic Honor Council. The members of the Academic Honor Council shall review this summary; make necessary changes, if any; and indicate their approval of it by signing it.

b. The record of the hearing shall consist of the audio recording of the hearing and the tangible evidence presented at the hearing.

5. **Notification**

The chair of the Academic Honor Council shall report the Council's decision to the dean of students. In addition, if the decision is that the Academic Honor Code has been violated, the Academic Honor Council chair shall deliver to the dean of students the record of the hearing, along with the recommended sanction(s). The dean of students will implement the sanction(s) recommended by the Academic Honor Council. If the Academic Honor Council recommends expulsion, the dean of students will immediately initiate expulsion proceedings.

6. **Disposition of Summary Report and Record of Hearing**

a. If the Academic Honor Council decides that the Academic Honor Code was not violated, the chair shall destroy the record of the hearing. The dean of students will make a record of the decision without any identifying information and destroy all other information pertaining to the charge. The student may continue in the class without prejudice.

b. If a student is found by the Academic Honor Council to have violated the Academic Honor Code, the dean of students shall maintain the summary report and record of the hearing.

c. The dean of students shall notify the instructor, department chair, and the dean of the college in writing of the Academic Honor Council's decision.

H. APPEAL PROCESS

1. A decision reached, or a sanction imposed, by the Academic Honor Council may be appealed by the student(s) found to be in violation or the grievant(s) to the Discipline Appeals Committee within seven (7) calendar days of the decision. Such appeals shall be in writing and shall be delivered to the dean of students or designee.

2. The Discipline Appeals Committee is composed of three (3) members: the chair of the Faculty Senate; the associate provost; and the president of Student Government.

3. Except as required to explain the basis of new information, an appeal shall be limited to the review of the verbatim records of the Academic Honor Council hearing and supporting documents for one or more of the following purposes:

   a. To determine whether the Academic Honor Council hearing was conducted fairly in light of the charges and information presented, and in conformity with prescribed procedures, giving the complaining party a reasonable opportunity to prepare and present evidence that the Academic Honor Code was violated, and giving the other party a reasonable opportunity to prepare and to present a response to those allegations. Deviations from designated procedures will not be a basis for sustaining an appeal unless significant prejudice results.
   b. To determine whether the decision reached regarding the accused student was based on substantial information; that is, whether the facts in the case were sufficient to establish that a violation of the Academic Honor Code occurred.
   c. To determine whether the sanction(s) imposed were appropriate for the violation of the Academic Honor Code that the student was found to have committed.
   d. To consider new information sufficient to alter a decision or other relevant facts not brought out in the original hearing, because such information and/or facts were not known to the person appealing at the time of the original Academic Honor Council hearing.

4. If the Discipline Appeals Committee supports an appeal, the matter may be returned to the original Academic Honor Council for a reconsideration of the original determination and/or sanction(s).

a. In cases involving appeals by students accused of violating the Academic Honor Code, the Discipline Appeals Committee may, upon review of the case, reduce but not increase the sanctions imposed by the Academic Honor Council.
b. In cases involving appeals by persons other than the student(s) accused of violating the Academic Honor Code, the Discipline Appeals Committee may, upon review of the case, reduce or increase the sanctions imposed by the Academic Honor Council.

5. Following the appeal, the dean of students shall advise the accused student(s) in writing of the determination of the Discipline Appeals Committee and of the sanction(s) imposed, if any. A copy of the notification will be retained in the student's disciplinary record. Cases involving University suspension and expulsion will be filed in the student's academic record.

I. EXPULSION PROCEEDINGS

1. Expulsion proceedings will be initiated by the dean of students for students found in second violation of the Academic Honor Code. The student will be contacted by the office of the dean of students for a meeting to explain proceedings of expulsion.

2. Students being expelled will receive written notification from the dean of students indicating the sanction of expulsion and the process for appeal.

3. The sanction of expulsion may be appealed by the accused student to the provost within seven (7) calendar days of the decision. Such appeals shall be in writing and shall be delivered to the dean of students or designee.

4. Except as required to explain the basis of new information, an appeal shall be limited to a review of documents and notes of the Academic Honor Council, the accused student, and supporting documents for one or more of the following purposes:

   a. To determine whether the student received fundamental fairness in the investigative and decision-making processes.
   b. To determine whether the facts in the case were sufficient to establish that a violation of the Academic Honor Code occurred in both cases.
   c. To consider relevant and material new evidence.

5. Following the appeal, the provost shall advise the accused student in writing of the determination of the appeal, and of the sanctions imposed, if any. A copy of the notification will be retained in the student's academic record and the student's disciplinary record.

Student Pledges

In adopting this Academic Honor Code, students of Lawrence Technological University recognize that academic honesty and integrity are fundamental values of the University community. The quality of a Lawrence Technological University education is dependent upon the community acceptance and enforcement of the Academic Honor Code. Members of the Lawrence Technological University

community pledge to hold themselves and their peers to the highest standards of academic honesty and integrity. An individual who becomes aware of a violation of the Academic Honor Code has an obligation to report this violation.

Undergraduate Students
The following pledge is required on all academic work submitted by undergraduate students at Lawrence Technological University:

"I have neither given nor received unauthorized aid in completing this work, nor have I presented someone else's work as my own."

Graduate Students
All graduate students at Lawrence Technological University are required to sign the student pledge when they start graduate studies:

"I pledge that on all academic work that I submit, I will neither give nor receive unauthorized aid, nor will I present another person's work as my own."

STUDENT CODE OF CONDUCT
Lawrence Technological University is an institution that encourages the intellectual and personal growth of its students as scholars and citizens. Linking theory and practice with advanced learning technologies, Lawrence Technological University's mission is to provide superior undergraduate, graduate, and lifelong learning for leadership, professional achievement, and civic excellence. In this pursuit, the University recognizes that the transmission of knowledge, the pursuit of truth, and the development of individuals require the free exchange of ideas, self-expression, and the challenging of beliefs and customs. Academic freedom is essential to the achievement of these purposes.

Honesty, integrity, and caring are essential qualities of an educational institution, and the concern for values and ethics is important to the whole educational experience. The Student Code of Conduct outlines the rights and responsibilities and expected levels of conduct of students in the University community. Fundamental to the achievement of community among the members of the University is the recognition by all such members that each shares a responsibility to observe University regulations. This obligation, which is an extension of the citizen's responsibility to observe the law of the land, is an essential corollary to participation in the academic rights afforded to members of the University.

A student voluntarily joins the Lawrence Technological University community and thereby assumes the obligation of abiding by the standards prescribed in the Student Code of Conduct. Students are required to engage in responsible social conduct that reflects credit upon the University community and to model good citizenship in any community. The University, through the Office of the Dean of Students, maintains the exclusive authority to impose sanctions for behaviors that violate the Student Code of Conduct.

All students enrolled at Lawrence Technological University have access to the Student Code of Conduct. Printed copies are available through the Office of the Dean of Students and the Office of University Housing. The Student Code of Conduct, along with other helpful information, also may be accessed online at www.ltu.edu/myltu/code-conduct.asp.

A. Definitions

1. The term "UNIVERSITY" means Lawrence Technological University.

2. The term "STUDENT" includes all persons taking courses at the University either full-time or part-time, pursuing undergraduate, graduate, or professional studies. Persons who withdraw after allegedly violating the Student Code, who are not officially enrolled for a particular term but who have a continuing relationship with the University, or who have been notified of their acceptance for admission are considered "students," as are persons who are living in University residence halls, although not enrolled in this institution. This Student Code does apply at all locations of the University, including education centers in Wayne, Oakland, Macomb, and outlying counties in Michigan and centers in other states and foreign countries.

3. The term "FACULTY MEMBER" means any person hired by the University to conduct classroom or teaching activities or who is otherwise considered by the University to be a member of its faculty.

4. The term "UNIVERSITY OFFICIAL" includes any person employed by the University who is performing assigned administrative or professional responsibilities.

5. The term "MEMBER OF THE UNIVERSITY COMMUNITY" includes any person who is a student, faculty member, University official, or any other person employed by the University. A person's status in a particular situation shall be determined by the dean of students.

6. The term "UNIVERSITY PREMISES" includes all land, buildings, facilities, and other property in the possession of or owned, used, or controlled by the University, including adjacent streets and sidewalks.

7. The term "ORGANIZATION" means any number of persons who have complied with the formal requirements for University recognition.

8. The term "STUDENT DISCIPLINE COMMITTEE" means any person or persons authorized by the dean of students to determine whether a student has violated the Student Code and to recommend sanctions that may be imposed when a regulations violation has been committed.

9. The term "STUDENT CONDUCT OFFICER" means a University official authorized on a case-by-case basis by the dean of students to impose sanctions upon any student found to have violated the Student Code. The dean of students may, in certain circumstances, authorize a student conduct officer to serve simultaneously as a student conduct officer and as the sole member, or one of the members, of the Student Discipline Committee. The dean of students may authorize the same student conduct officer to impose sanctions in all cases.

10. The term "DISCIPLINE APPEALS COMMITTEE" means any person or persons authorized by the dean of students to consider an appeal from a Student Discipline Committee's determination as to whether a student has violated the Student Code.

11. The term "SHALL" is used in the imperative sense.

12. The term "MAY" is used in the permissive sense.

13. The term "POLICY" means the written regulations of the University as found in, but not limited to, the Student Code, the *Student Handbook*, the *Guidelines for University Living*, the University webpage and computer use policy, and *Undergraduate* or *Graduate Catalogs*.

14. "LEVEL I" violations of the Student Code are those for which the sanctions may be a warning, disciplinary probation, special restrictions or loss of privileges, fines, restitution, imposed reassignment of course section or housing assignment, or assignments of discretionary sanctions. Level I violations will generally be heard by a student conduct officer.

15. "LEVEL II" violations of the Code are those for which the sanctions may be, in addition to those listed in Level I, suspension from University Housing and/or from the University or expulsion from University Housing and/or from the University. Level II violations will generally be heard by the Student Discipline Committee.

16. The term "COMPLAINANT" means any person who submits a charge alleging that a student violated this Student Code. When a person believes that she/he has been a victim of another student's misconduct, the student who believes she/he has been a victim will have the same rights under this Student Code as are provided to the complainant, even if another member of the University community submitted the charge itself.

17. The term "ACCUSED STUDENT" means any student accused of violating this Student Code.

B. Student Code Authority

1. The dean of students shall determine the composition of the Student Discipline Committee and Discipline Appeals Committee and determine which Student Discipline Committee, student conduct officer, and Discipline Appeals Committee shall be authorized to hear each matter.

2. The dean of students is that person designated by the University president to be responsible for the administration of the Student Code. The dean of students shall develop policies for the administration of the student conduct system and procedural rules for the conduct of Student Discipline Committee hearings that are not inconsistent with provisions of the Student Code.

3. Decisions made by the Student Discipline Committee and/or student conduct officer designated by the dean of students shall be final, pending the normal appeal process.

4. The Student Discipline Committee may be designated as arbiter of disputes within the student community in cases that do not involve a violation of the Student Code. All parties must agree to arbitration and to be bound by the decision with no right of appeal.

C. Conduct – Rules and Regulations

Acts of academic dishonesty are regulated by procedures outlined in the *Academic Honor Code*. Any student found to have committed the following misconduct is subject to the disciplinary sanctions outlined in Section H:

1. Acts of dishonesty, including but not limited to the following: cheating, plagiarism, or other forms of academic dishonesty; furnishing false information to any University official, faculty

member, or office; forgery; alteration or misuse of any University document, record, or instrument of identification; helping or attempting to help another student commit an act of dishonesty; tampering with the election of any University-recognized student organization.

2. Disruption or obstruction of teaching, research, administration, disciplinary proceedings, or other University activities, including its public-service functions on or off campus or other authorized non-University activities, when the act occurs on University premises.

3. Physical abuse, verbal abuse, threats, intimidation, harassment, coercion, stalking, and hate crimes or acts that are racially motivated or due to one's sexual orientation, gender expression, and/or other conduct that threatens or endangers the health or safety of any person.

4. Sexual misconduct, the unauthorized form of any sexual contact with another person without the consent of that person. The Sexual Misconduct Policy can be found on http://www.ltu.edu/myltu/titleix.asp. Hard copies of the policy are available in the Office of the Dean of Students.

5. Attempted or actual theft of and/or damage to property of the University or property of a member of the University community or other personal or public property, on or off campus.

6. Hazing, defined as an act that endangers the mental or physical health or safety of a student, or which destroys or removes public or private property, for the purpose of initiation, admission into, affiliation with, or as a condition for continued membership in a group or organization. The express or implied consent of the victim will not be a defense. Apathy and/or acquiescence in the presence of hazing are not neutral acts; they are violations of this regulation.

7. Failure to comply with directions of University officials or law enforcement officers acting in performance of their duties and/or failure to identify oneself to these persons when requested to do so.

8. Unauthorized possession, duplication, or use of keys to any University premises or unauthorized entry to or use of University premises.

9. Violation of any University policy, rule, or regulation published in hard copy, posted on campus, or available electronically on the University website.

10. Violation of federal, state, or local law on University premises or at University-sponsored or supervised activities.

11. Use, possession, manufacturing, or distribution of marijuana, heroin, narcotics, or other controlled substances, except as expressly permitted by law; use or possession of drug paraphernalia. Although many states (Michigan included) have passed laws legalizing medical marijuana, all forms of marijuana continue to be illegal under federal law. Federal law supersedes state law, and as a result, institutions are not obligated to accommodate users of medical marijuana in residence halls, on campus, or otherwise. LTU does not allow the use or possession of any form of marijuana on campus.
12. Use, possession, manufacturing, or distribution of alcoholic beverages, except as expressly permitted by the law and University regulations, or public intoxication. Alcoholic beverages

may not, in any circumstances, be used by, possessed by, or distributed to any person under 21 years of age.

13. Possession of firearms (including BB, pellet, and air soft guns), ammunition, bows and arrows, explosives, any object that by its intended or actual use may be used to threaten or harm people or damage or destroy property, or other weapons or dangerous chemicals on University premises. Students risk severe University discipline and/or suspension if found with firearms or other dangerous weapons on campus.

14. Participation in an on-campus or off-campus demonstration, riot, or activity that disrupts the normal operations of the University and infringes on the rights of other members of the University community; leading or inciting others to disrupt scheduled and/or normal activities within any campus building or area; intentional obstruction that unreasonably interferes with freedom of movement, either pedestrian or vehicular, on campus.

15. Obstruction of the free flow of pedestrian or vehicular traffic on University premises or at University-sponsored or supervised functions, or violation of any regulations outlined in the Lawrence Tech *Campus Safety Guide*.

16. Conduct which is disorderly, lewd, indecent, or a breach of the peace; or aiding, abetting, or procuring another person to breach the peace on University premises or at functions sponsored, or participated in, by the University or members of the academic community. Disorderly conduct includes but is not limited to: any unauthorized use of electronic or other devices to make an audio or video recording of any person while on University premises without his/her knowledge, or without his/her effective consent when such recording is likely to cause injury or distress. This includes but is not limited to surreptitiously taking pictures of another person in a gym, locker room, or restroom.

17. Theft or other abuse of computer facilities and resources, including but not limited to: unauthorized entry into a file to use, read, change, or delete the contents or for any other purpose; unauthorized transfer of a file; use of another individual's identification and password; use of computing facilities to interfere with the work of another student, faculty member, or University official; use of computing facilities to send obscene or abusive messages; use of computing facilities to interfere with normal operation of the University computing system; use of computing facilities and resources in violation of copyright laws; any violation of the University's Computing and Network Policy.

18. Tampering with any telecommunications services, including but not limited to: telephone, cable television, and/or voicemail; providing unauthorized service to another room, suite, or apartment by any means through unauthorized installation of wiring jacks or extensions.

19. Abuse of the student conduct system, including but not limited to: failure to obey the summons of the Student Discipline Committee, Discipline Appeals Committee, student conduct officer, or University official to appear for a meeting or hearing as part of the student conduct system; falsification, distortion, or misrepresentation of information before a Student Discipline Committee, Discipline Appeals Committee, or student conduct officer; disruption or interference in bad faith with the orderly conduct of a proceeding; attempting to discourage an individual's proper participation in, or use of, the student conduct system; attempting to influence the impartiality of a member of a Student Discipline Committee or Discipline

Appeals Committee prior to, and/or during, and/or after a student conduct proceeding; harassment (verbal or physical) and/or intimidation of a member of the Student Discipline Committee or Discipline Appeals Committee prior to, and/or during, and/or after a student conduct proceeding; failure to comply with the sanction(s) imposed under the Student Code; influencing or attempting to influence another person to commit an abuse of the student conduct system.

20. Actions that endanger the student, the University or local community, or the academic process, or that cause harm to oneself or others.

D. Jurisdiction of the Lawrence Technological University Student Code

The Lawrence Technological University Student Code shall apply to conduct that occurs on University premises, at University-sponsored activities, and to off-campus conduct that adversely affects the University community and/or the pursuit of its objectives. Each student shall be responsible for his/her conduct from the time of application for admission through the actual awarding of a degree, even though conduct may occur before classes begin or after classes end, as well as during the academic year and during periods between terms of actual enrollment (and even if their conduct is not discovered until after a degree is awarded). The Student Code shall apply to a student's conduct even if the student withdraws from school while a disciplinary matter is pending. The dean of students shall decide whether the Student Code shall be applied to conduct occurring off campus, on a case-by-case basis, at his/her sole discretion.

The University reserves the right to review student conduct that occurs off campus when such behavior reflects upon the integrity of the University. Students are representatives of Lawrence Technological University. In cases of inappropriate off-campus behavior, the dean of students or designee will investigate and may refer students to the Student Conduct system. This provision is also applicable to students studying abroad.

LTU community members also are responsible for their guests' behavior should the guests violate any University policies. The University reserves the right to sanction its students for criminal or civil violations, or for a violation of University policy independent of or in addition to any actions taken by a criminal or civil court of law. Where Lawrence Technological University's interests as a community are clearly involved, however, the University president or designee may assert special authority in determining the future status of this member of the University community.

The residence halls have policies and procedures to which all students are subject. These policies and procedures are described in the *University Housing Guidelines*. Students are also subject to the policies, rules, and regulations of the colleges/schools in which they are enrolled or taking classes. All academic grievances are handled by the individual colleges/schools.

E. Violation of Law and University Discipline

1. University disciplinary proceedings may be instituted against a student charged with conduct that potentially violates both the criminal law and this Student Code (that is, if both possible violations result from the same factual situation) without regard to the pendency of civil or criminal litigation in court or criminal arrest and prosecution. Proceedings under this Student Code may be carried out prior to, simultaneously with, or following civil or criminal proceedings off campus at the discretion of the dean of students. Determinations made or sanctions imposed under this Student Code shall not be subject to change because criminal

charges arising out of the same facts that gave rise to violation of University rules or regulations were dismissed, reduced, or resolved in favor of or against the criminal law defendant.

2. When a student is charged by federal, state, or local authorities with a violation of law, the University will not request or agree to special consideration for that individual because of his or her status as a student. If the alleged offense is also being processed under the Student Code, the University may advise off-campus authorities of the existence of the Student Code and how such matters are typically handled within the University community. The University will attempt to cooperate with law enforcement or other agencies in the enforcement of criminal law on campus and in the conditions imposed by criminal courts for the rehabilitation of student violators (provided that the conditions do not conflict with campus rules, regulations, or sanctions). Individual students and other members of the University community, acting in their personal capacities, remain free to interact with governmental representatives as they deem appropriate.

3. If a student is charged with an off-campus violation of federal, state, or local laws, but not with any other violation of this Code, disciplinary action may be taken by the University and sanctions imposed for grave misconduct which demonstrates flagrant disregard for the University community. In such cases, no sanction may be imposed unless the student has been found guilty in a court of law or has declined to contest such charges, although not actually admitting guilt (e.g., "no contest" or "nolo contendere").

F. Student Code of Conduct Procedures

All suspected violations of the Student Code will be reviewed in accordance with the procedures outlined below.

1. Disciplinary Correspondence
   All disciplinary correspondence will be sent to the student's official mailing address as listed with Enrollment Services/Office of the Registrar. The University reserves the right to use other reasonable means to notify students.

2. Filing Complaints
   a. Any member of the University community may make a complaint and/or referral or offer information concerning such complaint and/or referral to the Office of the Dean of Students. A complaint or referral made against a student or students alleging violation(s) of the Student Code of Conduct shall be directed to the dean of students for review. Any complaint should be prepared in writing on a University incident report form and should be submitted as soon as possible after the event takes place, preferably within 48 hours.
   b. While action on a complaint of violating a University rule or regulation is pending, the status of the student shall not be altered except for reasons outlined in Section J.

3. Presumption of Non-Violation
   Any student charged with a violation under this Code shall be presumed not responsible until it is proven that, more likely than not, the violation of the rule or regulation occurred.
4. Preliminary Investigation

When the dean of students or designee receives information that a student has allegedly violated University rules or regulations, or local, state, or federal law, the dean or designee shall investigate the alleged violation and determine whether further action is necessary. After completing a preliminary investigation, the dean or designee may:

a. Find no basis for the complaint and dismiss the allegation as unfounded, or
b. Contact the student for a discussion and either:
    (1) Dismiss the allegation.
    (2) Identify that the alleged violation(s) equates to a Level I infraction and assign the case to a student conduct officer to conduct a student conduct meeting with the student(s).
    (3) Identify that the alleged violation(s) equates to a Level II infraction and schedule a hearing with the Student Discipline Committee.

5. Summoning a Student for a Student Conduct Meeting

A student conduct meeting is a meeting between a student(s) involved in an alleged violation of the Code and a student conduct officer and may include sanctions. In some cases, the meeting may resolve the matter.

a. The student conduct officer shall provide the student with:
    (1) Written notice of the charge(s) and an outline of rights.
    (2) Review of all available information, documents, exhibits, and a list of witnesses that may testify against the student.
b. Following receipt of the notice of charges, a student:
    (1) May elect not to contest the charges and to accept responsibility for them. If this election is made, the student must sign a waiver of the right to a hearing, and must accept the sanction imposed by the student conduct officer. The decision to waive a hearing and accept the sanction is final and not appealable.
    (2) May contest the charges and elect to proceed to a hearing. The hearing shall be scheduled not less than five (5) nor more than 15 calendar days from the student conduct meeting.

G. Hearing Process

Hearings provide the forum in which parties to an allegation are afforded the opportunity to present information for review by a Student Discipline Committee presided over by the chair of the Committee and moderated by the dean of students. The dean of students is an ex-officio member of the Committee. A time shall be set for a Student Discipline Committee hearing not less than five (5) nor more than 15 calendar days after the student has been notified. The maximum time limit for scheduling of hearings may be extended at the discretion of the dean of students or designee.

Hearings shall be conducted by the Student Discipline Committee according to the following guidelines, except as provided by article J below:

1. In cases in which the Student Discipline Committee has been authorized by the dean of students to conduct a hearing, the recommendations of the members of the Student Discipline Committee shall be considered in an advisory capacity by the dean of students in determining and imposing sanctions.

2. Composition: The Student Discipline Committee is composed of 15 members. Recommendations for membership on the Student Discipline Committee from the deans of each academic college, the faculty, the administration and staff of the University, and the executive committee of Student Government will be sought by the dean of students on an annual basis, or more frequently as needed. At the discretion of the dean of students, general solicitation of the student body for participation may be made. Based upon these recommendations and/or solicitations, candidates who meet eligibility requirements will be invited to apply and interview for participation on the Student Discipline Committee.

3. Term of service: Students shall serve for one academic year and may continue to serve at the discretion of the provost and the dean of students.

4. Student eligibility: All students, full- or part-time, shall be eligible for recommendation to the Student Discipline Committee provided they have maintained a 2.3 cumulative grade point average, are not currently on disciplinary probation, and have not been suspended from the residence halls or the University.

5. Training: All members of the Student Discipline Committee, upon receiving notice of appointment, shall be given all necessary information about their responsibilities and the means for carrying them out.

6. Five students from the Student Discipline Committee will be chosen by the dean of students to hear a proceeding.

7. Hearings normally shall be conducted in private.

8. The complainant, the accused student, and their advisors, if any, shall be allowed to attend the entire portion of the Student Discipline Committee hearing at which information is received (excluding deliberations). Admission of any other person to the hearing shall be at the discretion of the Student Discipline Committee and/or the dean of students or designee.

9. In the case of Student Discipline Committee hearings involving more than one accused student, the dean of students or designee, at his/her discretion, may permit the Student Discipline Committee hearings concerning each student to be conducted either separately or jointly.

10. The complainant and the accused student have the right to be assisted by any advisor they choose, at their own expense. The advisor may be an attorney. The complainant and/or the accused are responsible for presenting his or her own information and, therefore, advisors are not permitted to speak or to participate directly in any hearings before the Student Discipline Committee. A student should select as an advisor a person whose schedule allows attendance at the scheduled date and time for the Student Discipline Committee hearing because delays will not normally be allowed due to the scheduling conflicts of an advisor.

11. The complainant, the accused student, and the Student Discipline Committee may arrange for witnesses to present information to the Student Discipline Committee. The University will try to arrange the attendance of possible witnesses who are members of the University community, if reasonably possible, and who are identified by the complainant and/or accused student at least two (2) business days prior to the Student Discipline Committee hearing.

Witnesses will provide information to and answer questions from the Student Discipline Committee. Questions may be suggested by the accused student and/or complainant to be answered by each other or by other witnesses, with such questions directed to the chair, rather than to the witness directly. This method is used to preserve the educational tone of the hearing and to avoid creation of an adversarial environment. Questions of whether potential information will be received shall be resolved at the discretion of the chair of the Student Discipline Committee, in consultation with the dean of students or designee.

12. Pertinent records, exhibits, and written statements (including Student Impact Statements) may be accepted as information for consideration by the Student Discipline Committee, at the discretion of the dean of students.

13. All procedural questions are subject to the final decision of the dean of students.

14. After the portion of the Student Discipline Committee hearing concludes in which all pertinent information has been received, the Student Discipline Committee shall determine by majority vote whether the accused student has violated each section of the Student Code that the student is charged with violating.

15. The Student Discipline Committee's determination shall be made on the basis of whether it is more likely than not that the accused student violated the Student Code.

16. Formal rules of process, procedure, and/or technical rules of evidence, such as are applied in criminal or civil court, are not used in Student Code proceedings.

17. There shall be a single verbatim record, such as a transcription or tape recording, of all hearings before a Student Discipline Committee (not including deliberations). Deliberations shall not be recorded. Transcriptions and/or tapes made during Student Discipline Committee hearings shall be the property of the University. These materials are confidential. They are made available in case of appeal and, upon request, to the Discipline Appeals Committee hearing the appeal.

18. If the accused student, with notice, does not appear before a Student Discipline Committee hearing, the information in support of the charges shall be presented and considered even if the accused student is not present. If the accused student fails to attend the hearing, it shall be deemed that he or she denies all allegations. When appropriate, a sanction will be determined and the student will be notified in writing.

19. The Student Discipline Committee may accommodate concerns for the personal safety, well-being, and/or fears of confrontation of the complainant, accused student, or other witness during the hearing by providing separate facilities, by using a visual screen, and/or by permitting participation by telephone, videophone, closed circuit television, video conferencing, videotape, audio tape, written statement, or other means, where and as determined in the sole judgment of the dean of students to be appropriate.

H. Sanctions

1. The following sanctions may be imposed upon any student found to have violated the Student Code:

a. WARNING – A notice in writing to the student that the student is violating or has violated institutional regulations.
b. PROBATION – A written reprimand for violation of specified regulations. Probation is for a designated period of time and includes the probability of more severe disciplinary sanctions if the student is found to violate any institutional regulation(s) during the probationary period.
c. LOSS OF PRIVILEGES – Denial of specified privileges for a designated period of time.
d. LOSS OF ACADEMIC CREDIT – Failing grade assigned for the course due to academic dishonesty.
e. FINES – Published fines may be imposed.
f. RESTITUTION – Compensation for loss, damage, or injury. This may take the form of appropriate service and/or monetary or material replacement.
g. DISCRETIONARY SANCTIONS – Work assignments, essays, service to the University, or other related discretionary assignments. (Such assignments must have the approval of the dean of students.)
h. RESIDENCE HALL SUSPENSION – Separation of the student from the residence halls for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.
i. RESIDENCE HALL EXPULSION – Permanent separation of the student from the residence halls.
j. UNIVERSITY SUSPENSION – Separation of the student from the University for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.
k. UNIVERSITY EXPULSION – Permanent separation of the student from the University.
l. REVOCATION OF ADMISSION AND/OR DEGREE – Admission to, or a degree awarded from, the University may be revoked for fraud, misrepresentation, or other violation of University standards in obtaining the degree, or for other serious violation committed by a student prior to graduation.
m. WITHHOLDING DEGREE – The University may withhold awarding a degree otherwise earned until the completion of the process set forth in this Student Code of Conduct, including the completion of all sanctions imposed, if any.

2. More than one of the sanctions listed above may be imposed for any single violation.

3. Other than University suspension, expulsion, or revocation or withholding of a degree, disciplinary sanctions shall not be made part of the student's permanent academic record, but shall become part of the student's disciplinary record. Upon graduation, the student's confidential record may be expunged of disciplinary actions, other than residence hall expulsion, University suspension, University expulsion, or revocation or withholding of a degree, upon application to the dean of students. Cases involving the imposition of sanctions other than residence hall expulsion, University suspension, University expulsion, and revocation or withholding of a degree shall be expunged from the student's disciplinary record three (3) years after the student completes all requirements for graduation.

4. In situations involving both an accused student(s) (or group or organization) and a student(s) claiming to be the victim of another student's conduct, the records of the process and of the sanctions imposed, if any, shall be considered to be part of the education records of both the accused student(s) and the student(s) claiming to be the victim because the educational career and chances of success in the academic community of each may be impacted.

5. The following sanctions, in addition to those listed above, may be imposed upon groups or student organizations: loss of selected rights and privileges for a specified period of time, and/or deactivation/loss of all privileges, including University recognition, for a specified period of time.

6. In each case in which a student conduct officer determines that a student has violated the Student Code, the recommendation of the student conduct officer shall be considered by the dean of students in determining and imposing sanctions. In cases in which the Student Discipline Committee has been authorized to determine that a student has violated the Student Code, the recommendation of all members of the Student Discipline Committee shall be considered by the dean of students in determining and imposing sanctions. The dean of students is not limited to sanctions recommended by members of the Student Discipline Committee.

7. Following the Student Discipline Committee hearing, the dean of students shall advise the accused student(s), group, and/or organization (and complaining student who believes she/he was the victim of another student's conduct) in writing of the Committee's determination and of the sanction(s) imposed, if any. A copy of the notification will be retained in the student's disciplinary record. Cases involving suspension or expulsion will also be filed in the student's academic record.

I. Appeals

1. A decision reached, or a sanction imposed, by the Student Discipline Committee may be appealed by the accused student(s) or complainant(s) to the Discipline Appeals Committee within seven (7) school days of the decision. Such appeals shall be in writing and shall be delivered to the dean of students or designee.

2. Composition: The Discipline Appeals Committee is composed of three (3) members: (a) the chair of the Faculty Senate; (b) the assistant provost for enrollment management; (c) the president of Student Government.

3. Except as required to explain the basis of new information, an appeal shall be limited to review of the verbatim records of the Student Discipline Committee hearing and supporting documents for one or more of the following purposes:

    a. To determine whether the Student Discipline Committee hearing was conducted fairly in light of the charges and information presented, and in conformity with prescribed procedures, giving the complaining party a reasonable opportunity to prepare and present evidence that the Student Code was violated, and giving the accused student a reasonable opportunity to prepare and to present a response to those allegations. Deviations from designated procedures will not be a basis for sustaining an appeal unless significant prejudice results.
    b. To determine whether the decision reached regarding the accused student was based on substantial information; that is, whether the facts in the case, if believed by the fact finder, were sufficient to establish that a violation of the Student Code occurred.
    c. To determine whether the sanction(s) imposed was appropriate for the violation of the Student Code that the student was found to have committed.

   d. To consider new information sufficient to alter a decision or other relevant facts not brought out in the original hearing because such information and/or facts were not known to the person appealing at the time of the original Student Discipline Committee hearing.

4. If the Discipline Appeals Committee upholds an appeal, the matter may be returned to the original Student Discipline Committee for reopening of the Student Discipline Committee hearing to allow reconsideration of the original determination and/or sanction(s).
   a. In cases involving appeals by students accused of violating the Student Code, the Discipline Appeals Committee may, upon review of the case, reduce but not increase the sanctions imposed by the Student Discipline Committee.
   b. In cases involving appeals by persons other than the student(s) accused of violating the Student Code, the Discipline Appeals Committee may, upon review of the case, reduce or increase the sanctions imposed by the Student Discipline Committee.

5. Following the appeal, the dean of students shall advise the accused student(s) in writing of the determination of the Discipline Appeals Committee and of the sanction(s) imposed, if any. A copy of the notification will be retained in the student's disciplinary record. Cases involving University suspension, expulsion, or revocation or withholding of a degree will be filed in the student's academic record.

J. Exceptional Procedures

1. Interim Suspension
   In certain circumstances, the dean of students or designee may impose a University or residence hall suspension prior to the hearing before the Student Discipline Committee. Interim suspension is an action requiring that a student immediately leave the campus and University property.
   a. Interim suspension may be imposed only: (a) to ensure the safety and well-being of members of the University community or preservation of University property; (b) to ensure the student's own physical or emotional safety and well-being; or (c) if the student poses an ongoing threat of disruption of or interference with the normal operations of the University. During the interim suspension, the student shall be denied access to housing facilities and/or the campus (including classes) and/or all other University activities or privileges for which the student might otherwise be eligible, as the dean of students or designee may determine to be appropriate.
   b. Any student who is suspended on an interim basis and returns to the campus and University property during the suspension shall be subject to further disciplinary action and may be treated as a trespasser. Permission to be on campus for a specific purpose (e.g., to take an exam, to consult with the dean of students, or to participate in the disciplinary procedures) may be granted in writing by the dean of students or designee.

2. Suspension from the Housing Facilities
   The director of residence life or the dean of students or designee may, when charges are served, suspend an accused student(s) from the housing facilities pending the hearing and determination thereof, whenever the continued presence of such a student would constitute a danger to the student or to the safety of persons or property in the housing facilities, or would pose a threat of disruptive interference with the normal conduct of housing facility activities and functions, or the seriousness of the charges warrants such action. The dean of students or

designee shall grant an immediate review (by the end of the next business day after the suspension) on request of any student so suspended with respect to the basis for such a suspension, at which time the suspended student may have the right to present statements tending to show that the basis for the suspension from the housing facilities does not exist. Suspension may apply to all housing facilities, an individual residence hall/apartment, or any portion thereof.

3. Residence Hall/Temporary Reassignment and Restriction from Facilities
   The director of residence life or the dean of students or designee may temporarily reassign a resident to another facility and/or restrict a resident from specific campus facilities pending an investigation and/or hearing whenever the continued presence of a resident in a particular campus facility would constitute a danger to the student or to the safety of persons or property in the housing facilities and campus facilities, or the seriousness of the allegations warrants such action. The director of residence life shall grant an immediate review (by the end of the next business day after the temporary reassignment and/or restriction) on request of any resident so reassigned and/or restricted with respect to the basis for such a reassignment and/or restriction.

4. Temporary Restriction from Personal Contact
   The director of residence life or the dean of students or designee may temporarily restrict a student from any personal, verbal, written, telephone, electronic, and third-party contact with another person pending an investigation and/or hearing whenever the contact could constitute a danger to the person or to the safety of the person or property, or the seriousness of the allegations warrants such action. Any student so restricted may obtain an explanation of the basis for such restriction upon request.

5. Withdrawal Prior to Student Conduct Proceedings
   The student who withdraws or fails to return to the University while disciplinary action is pending will be ineligible for readmission until the outstanding matter is resolved. The University reserves the right to formally restrict individual(s) from the campus grounds while such action is pending. Any further readmission would require an appeal in writing to the dean of students or designee and approval by the dean of students or designee.

K. Interpretation and Review

1. Any question of interpretation regarding the Student Code shall be referred to the dean of students or his/her designee for final determination.
2. The Student Code will be reviewed every three (3) years under the responsibility of the dean of students with the input of an advisory team.

NON-DISCRIMINATORY POLICY

Lawrence Technological University adheres and conforms to all federal, state, and local civil rights regulations, statutes, and ordinances. No person, student, faculty, or staff member will knowingly be discriminated against relative to the above statutes. Lawrence Technological University is an equal opportunity employer. Direct inquiries regarding non-discriminatory policies should be directed to the Division of Student Affairs, 248.204.4100.

SEXUAL HARASSMENT POLICY

It is the policy of Lawrence Technological University to maintain an environment free of sexual harassment for students, faculty, staff, or any other constituency. Sexual harassment is contrary to the standards of the University community. It diminishes individual dignity and impedes equal employment, educational opportunities, and equal access to freedom of academic inquiry. It will not be tolerated at Lawrence Technological University.

What Is Sexual Harassment?
Harassment on the basis of sex is a violation of the Elliott-Larsen Civil Rights Act; Michigan Civil Service Commission Rules; the Office of Federal Contract Compliance regulations; and Title VII of the Civil Rights Act of 1964. According to guidelines issued by the Equal Employment Opportunity Commission in 1980,

> "Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature, even between people of the same sex constitutes sexual harassment when:
>
> 1. Submission to such conduct or communication is made either explicitly or implicitly a term or condition of an individual's employment, education, or participation in a University activity; or
> 2. Submission to, or rejection of, such conduct or communication by an individual is used as the basis for decisions affecting an individual's employment, education, or participation in a University activity; or
> 3. Such conduct or communication has the purpose or effect of unreasonably interfering with an individual's work or educational performance or of creating an intimidating, hostile, or offensive employment or education environment.
>
> "Sexual harassment can also exist when there has been no tangible job detriment (i.e., a significant change in employment status, such as hiring, firing, etc.). Courteous, respectful, pleasant, non-coercive mutual interactions between employees are not considered sexual harassment.
>
> "Personal (i.e., intimate) relationships that occur between persons who are in a supervisory-subordinate work relationship must be reported to the next level of management. In such situations, the department will take appropriate action." (According to the United States Supreme Court in Oncale v. Sundowner Offshore Services, Inc., No. 96-569, 1998.)

Although these guidelines, based on Title VII, apply specifically to sexual harassment in the workplace, they should be interpreted to apply to students as well under Title IX of the 1972 Education Amendments. As has been pointed out by the National Advisory Council on Women's Educational Programs (NACWEP), there is a serious problem "of harassment by gatekeepers – those who teach required courses or who have the authority to make critical decisions about a student's advancement. The extraordinary importance of such positions lends an exceptional degree of significance to every interaction with students, and makes sexual harassment of all types particularly harmful."

Common Types of Harassment
The NACWEP describes five classifications of harassment commonly reported by students and working women.

1. Generalized sexist remarks or behavior (e.g., "This is a man's job," "That's women's work," "Women/men are incompetent at/are better suited to..."). Leering or staring, crude sexual remarks, off-color jokes, suggestive stories, and other related behaviors are also grouped in this category.

"This type of behavior is close to racial harassment in appearance; the sentiments or actions involved are often fiercely anti-male or anti-female and are not intended to lead to sexual activity. They are directed to the (individual) because of gender and can often affect whole classrooms; the offense may be 'generalized' both by its nature and its audience. There can be an inherent sexual content in or underlying such remarks that establishes a tone which in its awkwardness is more damaging than many overt acts." (Frank J. Till, "Sexual Harassment: A Report on the Sexual Harassment of Students, the National Advisory Council on Women's Educational Programs, August 1980." Reprinted from *Sexual Harassment: Definition and Prevention,* State University of New York at Binghamton, 1988. Reprinted with permission.)

2. Inappropriate and offensive sexual advances (e.g., requests for social or sexual encounters, often accompanied by touching).

This type of harassment, while not necessarily threatening, usually makes the recipient uncomfortable. This discomfort may cause the recipient to avoid the perpetrator in the future, thus limiting his or her ability to function properly in the academic environment. Discomfort caused by harassment will almost certainly affect future professional and personal relationships.

3. Solicitation of sexual activity or other sex-related behavior by promise of rewards (e.g., grades, promotions, promises of greater opportunities, etc.).

"This category, in its extreme, literally amounts to an attempt to purchase sexual behavior. In its more blatant forms this type of behavior can be prosecuted as a criminal act ... even 'banter' along this vein may cause harm. Students may be mystified and confused by the interaction due to the power of the initiator. This is especially the case where the student propositioned is young or naive, and may fail to fully grasp the significance of the request." (Till, "Sexual Harassment," 16.)

4. Coercion of sexual activity by threat of punishment (e.g., refusal to comply with a sexual request or invitation results in a threat of failure, loss of job or promotion, or access to academic referrals).

"What is at stake is often more than one grade or a single recommendation – too frequently it is access to a discipline and so a career is jeopardized." (Till, "Sexual Harassment," 17.)

5. Sexual crimes and misdemeanors (e.g., criminal sexual assault [rape, indecent exposure, etc.]) across authority lines (faculty/student or employer/employee) or among colleagues and peers.

"This category refers to acts which, if reported to police authorities, would be considered crimes or misdemeanors." (Till, "Sexual Harassment," 22.)

Preventing Sexual Harassment
Although the ultimate burden for prevention of harassment rests with those in supervisory positions, others should be aware that their actions may be construed as harassment. Following are some suggestions to supervisors, staff, faculty, and students for preventing sexual harassment, regardless of who is the perpetrator and who is the recipient.

- Avoid sexist remarks, off-color stories, or lewd jokes.
- Keep doors open when possible.
- Ask someone to accompany you if you suspect that you may be harassed.
- Make it plain that your intentions are not sexual in nature.
- Make clear, through your behavior, conversation, and actions, that you find sexual harassment offensive and inappropriate.

Combating Sexual Harassment
Employees, students, or faculty who feel they are experiencing this form of discrimination should:

1. *Say No Clearly*. Inform the harasser that his or her attentions are unwanted. If the behavior persists, write a memo to the harasser asking him or her to stop; keep a copy.
2. *Document the Harassment*. Record the date, time, and place of each incident. Keep a copy of this record at home.
3. *Get Emotional Support*. Talk to your family and friends.
4. *Document Work Evaluations*. Keep copies of performance evaluations and memos that attest to the quality of your work.
5. *Identify Witnesses/Other Victims*. You are probably not the first person who has been mistreated by this individual. Ask around; you may find others who will support your charge. (Sexual Harassment: What Every Working Woman Needs to Know, cs.utk.edu/~bartley/other/pto5.html.)

The least effective way to deal with sexual harassment is to ignore it. Unless the recipient of unwanted sexual attention takes some kind of action (whether formal or informal), the harasser is very likely to continue or even escalate the harassing behavior.

The following suggestions for combating sexual harassment reflect a variety of options, ranging from informal methods to formal procedures.

Confidential Counseling
Students may obtain information about or assistance with sexual harassment issues from the Office of the Dean of Students. Staff, faculty, and administrators should seek help from the Office of Human Resources. University representatives can advise and support complainants and witnesses in a confidential setting. The complainant, alleged harasser, and any witness shall be informed that all records of complaints, statements, interviews, contents of meetings, results of investigations, and any other relevant materials will be kept confidential by the employer, except where disclosure is required by a grievance process or pursuant to a legal action.

Unless otherwise authorized by law, disclosure or publication by any person of the complaint, the facts, or the identity of involved parties or witnesses is prohibited and subject to disciplinary action. Discussions with representatives of the above-mentioned offices will not be considered official reports to the University and will not, without additional action by the complainant, result in intervention or

corrective action. When intervention and discipline result against the alleged harasser, appropriate reference will be made in his or her file to protect the privacy of the complainant and witnesses.

Informal Resolution Process
At the complainant's option, a sexual harassment report or complaint will be taken from staff by the Office of Human Resources and from students by the Office of the Dean of Students or any dean, director, department head, the director of residence life, and/or their designees. Each college or other University organization will designate both men and women to receive complaints.

The person who receives a sexual harassment report of complaint will advise the person who makes the complaint about the informal and formal resolution alternatives available. At the complainant's option, the person receiving the complaint can:

- provide information about sexual harassment;
- help the complainant deal directly with the alleged offender;
- assist with or mediate a resolution of the problem within the complainant's unit; and/or
- help the complainant prepare a written complaint and pursue formal action.

Informal resolution measures should address the particular circumstances. No action will be taken against the alleged offender if the resolution is kept informal. Any discussion with the accused individual should, unless the provost or director of human resources specifically decides otherwise, include the supervisor of accused staff, faculty, or administrator. Any discussion with an accused student will include a member of the Division of Student Affairs and the student's department chair.

Formal Resolution Process
Either subsequent to or instead of following the informal process, a complainant may elect to make a formal charge of sexual harassment. The University will investigate all formal charges of sexual harassment and take appropriate actions pursuant to the results of the findings.

There are several mechanisms available to pursue a formal charge, and their availability depends on the status of the complainant:

1. A student should notify the Office of the Dean of Students. If this is not possible, then the student may contact the Offices of the President or Provost.
2. A member of the staff, faculty, or administration may notify his or her supervisor, a department head or dean, the Offices of the President or Provost, the Office of Human Resources, or the Office of the Dean of Students. A student-employee may also notify any of these.
3. Contract employees should follow the same procedure followed by staff, faculty, and administrators.

Call the Office of Civil Rights at 216.522.4970 to make a sexual harassment complaint. Report all incidents of criminal sexual assault to the Department of Campus Safety at 248.204.3945 or the Southfield Police Department at 248.354.4720.

Counseling Can Help
Sexual harassment undermines the confidence of a student or employee and adversely affects his/her attitude and job or academic performance. All students and employees may talk, confidentially, to trained counselors in the Division of Student Affairs if they believe they have been sexually harassed.

Counselors can be an immediate source of help by:

- encouraging the victim to report the incident(s);
- acting as a liaison between the victim and management;
- helping the victim readjust to the work or school environment; and
- helping the victim regain confidence. (Reprinted from *Where Do You Draw the Line? Sexual Harassment in the Workplace*, American Counseling Association, 4. Reprinted with permission. No further reproduction authorized without written permission of American Counseling Association.)

Counselors can also help management develop a proactive approach to dealing with sexual harassment issues by incorporating discussions on the topic during workshops, seminars, and/or training sessions.

PARTICIPATION IN THE U.S. DRUG PREVENTION PROGRAM

Lawrence Technological University is committed to promoting and maintaining a work and academic environment that is free from illegal use of alcohol and drugs, in accordance with all federal, state, and local laws as well as the Drug Free Schools and Campus Safety Act. Lawrence Technological University is in compliance with all provisions of the U.S. Department of Education Drug Prevention Program, which is a condition of the University's eligibility to receive federal funds or any other form of federal financial assistance.

Applicable policies are provided in section 701 of the *Employee Handbook*, section 3.14 of the *Faculty Handbook*, and in the Policies, Procedures, and Regulations section of the *Student Handbook*. The University specifically prohibits the unlawful possession, use, or distribution of illicit drugs and alcohol by students and employees on its property or as a part of its activities (except at University functions at which alcohol use is approved). Use of alcoholic beverages at any University function requires the approval of the provost or designee.

Employees, students, and campus visitors age 21 years or older, who consume alcohol at University functions or while on University business where such use is approved, are expected to use alcohol responsibly and not engage in illegal, unprofessional, or disruptive behavior. Violators will be subject to penalties, which may include expulsion or separation from the University. Any employee or student found to be in violation of University policy regarding drugs or alcohol will be subject to disciplinary action up to and including dismissal or expulsion in accordance with applicable disciplinary procedures.

Possession, use, or distribution of illicit drugs, possession or consumption of alcoholic beverages by individuals under 21 years of age and distribution of alcohol without a license or permit issued by a competent legal authority are violations of local, state, and federal laws. It is the policy of the University to cooperate fully in any prosecution based on violation of these laws.

A variety of serious health risks are associated with the use of illicit drugs and the abuse of alcohol. These include permanent damage to the liver, brain, and other vital organs, heart damage or malfunction, including sudden death, and accidents caused by impaired judgment or abilities. Individuals who may have a drug dependency or alcohol abuse problem are advised to contact the Oakland County Drug and Substance Abuse Center, 248.858.5200.

LIABILITY DISCLAIMER

Lawrence Technological University shall not be liable for any injuries to, or property damage or loss suffered by, any student regardless of cause. This disclaimer of liability shall apply to, but not by way of limitation, the following:

- Any injury or damage incurred on property owned by or under the control of the University, or its subsidiaries, such as classrooms, apartments, or other housing, any other structures, all common areas and grounds, and vehicles;
- Any injury or damage incurred as a participant, spectator or otherwise, in any intramural or intercollegiate or other event or contest, athletic or otherwise, or while in transit thereto or therefrom;
- Any injury or damage suffered while engaged in or attending a classroom or related activity, whether required or elective, and regardless of cause;
- Any injury or damage suffered by reason of theft, fire, damage by the elements, or other casualty;
- Any injury or damage suffered by reason of any act or omission of any University trustee, officer, member of the faculty or staff, employee, contractor, or student.
- By applying for admission or readmission to the University, or by continuing their enrollment with the University for a subsequent semester, students accept the foregoing disclaimer and agree to be bound thereby. Emergency referrals are made to community agencies. Any expenses incurred are the responsibility of the student.

Degrees and Graduation

Lawrence Technological University offers curricula leading to the following degrees and certifications. (For information on graduate degrees, see the *Graduate Catalog* (www.ltu.edu/academicsandmajors/grad_cat.asp):

Associate of Arts
Radio and Television Broadcasting

Associate of Science
Chemical Technology
General Studies

Bachelor of Arts
Architectural Studies
English and Communication Arts

Bachelor of Fine Arts
Game Art
Graphic Design
Interaction Design

Bachelor of Interior Architecture

Bachelor of Science
Architecture
Audio Engineering Technology
Biomedical Engineering
Business Administration
Chemical Biology
Chemistry
Civil Engineering
Computer Engineering
Computer Science
Construction Engineering Technology and Management
Electrical Engineering
Embedded Software Engineering
Environmental Chemistry
Humanities
Industrial Design
Industrial Engineering
Information Technology
Mathematical Sciences
Mathematics and Computer Science
Mechanical and Manufacturing Engineering Technology
Mechanical Engineering
Media Communication
Molecular and Cell Biology

Nursing
Physics
Physics and Computer Science
Psychology
Robotics Engineering
Transportation Design

Pre-Professional Programs (non-degree)
Pre-Dental
Pre-Law
Pre-Medical

CERTIFICATES
Lawrence Tech also awards a variety of undergraduate certificates.

Audio Technology
Building Information Model and Computer Visualization (online only)
Computer Science
Electrical Power Systems
Embedded Systems
Entrepreneurial Engineering
Entrepreneurial Skills
Industrial/Organizational Psychology
Technical and Professional Communication
Television and Video Production

HONORS PROGRAM
High-achieving students are invited to participate in the Lawrence Tech Honors Program. Incoming first-year students with a 3.5 minimum high school GPA and a minimum 24 ACT composite (or SAT equivalent) qualify for the Honors Program. (Most transfer students are not eligible.) Lawrence Tech offers honors coursework in either stand-alone honors sections of courses or in traditional sections of courses with an "honors option." The Honors Program encompasses 20 credit hours of the core coursework required of all undergraduates and six credit hours of advanced coursework in the student's chosen major. The completion of honors coursework leads to the distinction of graduating from the Honors Program. This distinction is noted on the student's transcript and diploma.

The Honors Program aims to:

- Serve and challenge high-achieving students through rigorous coursework;
- Encourage students to enhance and diversify their college experience by completing courses and projects beyond the requirements of their majors;
- Enhance the intellectual and social climate for high-achieving students through participation in the University's Honors Society;
- Develop students' leadership potential through academic achievement and service to the University and the community; and
- Provide one-on-one advising through the Honors Program director to aid the student as he/she prepares to enter his/her professional field or graduate studies.

Interested students can apply online at www.ltu.edu/apply-honors.

SCHOLARS PROGRAM
Students committed to succeeding academically while building leadership skills are invited to apply to participate in the Lawrence Tech Scholars Program. Scholars motivate each other within a comprehensive network of academic, peer-driven support.

Scholars participate in a social, positive peer network focused on the transition from the classroom to internships.

Interested students can apply at www.ltu.edu/scholars/apply.asp.

DOUBLE MAJORS
Students who want to broaden and enhance their educations have the opportunity to earn majors in two areas in a reasonable time frame. In order to earn a double major, students simply complete all of the course requirements for both majors. Because of overlapping core course requirements and open electives in both majors, a double major can be earned, for example in mathematics and humanities, with as few as 135 credit hours. The number of credit hours required varies depending on the choice of majors.

Interested students are encouraged to consult the department chairs of the two majors being considered. Careful planning and course scheduling will facilitate the completion of both majors in the shortest time.

UNDECLARED MAJORS
The University welcomes students interested in exploring their educational options prior to declaring a major. While completing general education courses common to all degree programs, undeclared students may also select introductory courses in various disciplines during their first year as a way to learn more about these areas of study. Academic advisors and career services professionals are available to assist students in selecting the major best suited to their interests and abilities.

SIMULTANEOUS ENROLLMENT
Students may be simultaneously enrolled in appropriate associate and bachelor's degree programs. Typical combinations are:

AS in Chemical Technology/BS in Chemistry
AS in General Studies/BS in any discipline

THE LEADERSHIP PROGRAM
Lawrence Tech works to ensure that all undergraduate students develop their leadership skills, with an emphasis on ethics, professionalism, and teamwork. As part of their academic program, all LTU undergraduates are required to complete a track of leadership courses.
Starting in the fall 2017 academic semester, incoming (first year and transfer) LTU undergraduate students will begin a leadership-based curriculum housed within and administered by the four colleges at LTU (Engineering, Architecture and Design, Management, and Arts and Sciences). These college leadership offerings will be distinct to the specific colleges and their programs of study and will include the following:

College of Engineering
Fundamentals of Engineering Design Projects (EGE 1001)
Entrepreneurial Engineering Design Studio (EGE 2123)
Leadership and Professional Development for Engineers (EGE 3022)

Students will study and apply leadership, ethics, teamwork, and professional development relevant to engineering. EGE 3022 will build upon foundations and fundamentals practiced in EGE 1001 and EGE 2123 (or equivalent) which focus on mindset development and the engineering process. In addition, these courses will prepare students with the skills necessary for a successful senior capstone experience. In regards to leadership, the courses will introduce frameworks for various leadership concepts and practical approaches in personal, professional, and organizational settings. Students will develop a personal leadership philosophy by linking skills with experience, self-reflection, and self- and peer assessment of teamwork and problem-solving.

College of Architecture and Design
Art and Design Awareness (DES 1012)
Design Leadership and Entrepreneurship (DES 4112)

Students will study design as a multidisciplinary process, often involving distributed entrepreneurial activities, globalized business strategies, and professional practices – many of which are positioned between online and onsite models of engagement. Correspondingly, CoAD students will routinely engage with peers within different design disciplines through curricular, co-curricular, and extracurricular activities, including the very first class taken within CoAD: DES 1012. DES 4112 is a culminating act in this sequence of experiences, within which students will study the entrepreneurial skills and multidisciplinary approaches needed to thrive within the rapidly evolving professional landscape of design.

College of Management
Principles of Management (MGT 2203)
Strategic Management and Business Policy (MGT 4213)
Information Technology Capstone Course (INT 4303)

In MGT 2203, students are introduced to leadership, ethics, teamwork, and management development. This course also covers essential capabilities required of effective leaders: planning, communications, dealing with change, decision-making, conflict resolution, diversity, motivation, and progressive discipline with weekly experiential learning activities and problem-based learning to create solutions. Students complete a series of application essays on leadership concepts that apply to personal and professional development and a cumulative self-reflective learning paper. Throughout their remaining coursework, faculty continue to emphasize the importance of working in teams, communicating effectively, and understanding the professional ethics component as it relates to accounting, finance, human resource management, information technology, and marketing. Ethical dimensions may include ethical analysis, principles, codes of conduct, and ethical dilemmas. Students will take a capstone course (MGT 4213 or INT 4303) in which they integrate and apply the knowledge and skills acquired from their coursework with real-world situations through case studies and a team capstone project and a service learning component.

College of Arts and Sciences
Pathways to Research Careers (COM 1001)

Pathways Capstone Lab (COM 4001)

The College of Arts and Sciences' Pathways to Research Careers Program introduces students in their first semester to advanced research across a range of disciplines. Through collaborative projects with their peers, advanced students, and faculty, students develop leadership and teamwork skills, and consider the socio-cultural dimensions of technological innovation. By the conclusion of the program in their final year, students will have developed a career pathway that incorporates market and social-impact considerations.

Students who entered LTU prior to fall 2017 will complete the original Leadership Program that was in place when they entered the University. The four-part Leadership Program includes:

Freshman Year (0–29 credit hours) – University Seminar (COM 1001)
Sophomore Year (30– 59 credit hours) – Leadership Models and Practices (LDR 2001)
Junior Year (60–89 credit hours) – Leadership Seminar Series (LDR 3000)
Senior Year (90 credit hours or more) – Leadership Capstone (LDR 4000)

The director of leadership will continue to oversee the successful completion of the original Leadership Program and coordinate with academic programs to promote leadership development and practice in and out of the classroom environment. The director will also coordinate co-curricular and extracurricular activities promoting leadership and service learning opportunities in the Detroit metropolitan community.

For information about the original Leadership Program, contact the director of the Leadership Program, Brian J. Craigo (bcraigo@ltu.edu).

THE CORE CURRICULUM

The distinctive Lawrence Tech Core Curriculum provides a comprehensive, interactive engagement with writing, speaking, literature, history, philosophy, mathematics, science, and the arts. The Core is structured to give students an intellectual experience in common with fellow students through shared reading, directed discussion, group presentations, and problem-solving teamwork. Unlike general education requirements selected "cafeteria-style," the carefully designed content and distinctive delivery of Lawrence Tech's Core Curriculum ensure engagement at the highest level with the ideas and texts that have shaped human civilization. Instead of listening to lectures, students learn actively through lively discussion and engagement with their peers.

The Core learning community, shared with students from all majors, is built on:

- Four courses in humanities, based on reading the great books and experiencing the great art of the world's civilizations:
  - Foundations of the American Experience
  - Development of the American Experience
  - World Masterpieces 1
  - World Masterpieces 2
- Two courses in communication, written, oral, and visual:
  - English Composition
  - Technical and Professional Communication
- Two courses in mathematics, where what is studied depends on the major selected

- Two courses in the natural sciences, including laboratory experience
- One upper-division elective in the humanities or social sciences, to add depth to the educational experience

In face-to-face contact with experienced, notable scholars, students gain:

- The ability to read and analyze challenging texts
- The poise to articulate ideas orally and in writing
- The capacity to evaluate conflicting ideas
- The savvy to seek alternative solutions to problems in many fields
- The stamina to succeed in difficult projects
- The experience of working in, and leading, teams
- An understanding of the past and the role of a citizen in a free society
- The competency to simplify complex problems through the manipulation of symbols
- The discipline to apply scientific principles to improve understanding
- The confidence to be creative

Designed to promote excellence, the Core Curriculum seeks to prepare students to take a leadership role in the diverse world in which they will learn, build their careers, and contribute to their communities. The Core's blend of deep knowledge, broad understanding, and analytical thinking seeks to provide the confidence that will help students determine their life's course, make meaningful contributions to the lives of others, and achieve success in their professional fields.

The development of the scientific method is one of the hallmarks of Western thought. The Natural Sciences Core exposes students to a full year of rigorous training in one or more of the natural sciences, including at least one laboratory course. The value of this exposure is not limited to the technical skills acquired. No matter what major is selected, the goal is to understand more fully scientific thinking, its limitations, and its implication for other disciplines.

In the Humanities Core, students read many of the best books written in science, literature, philosophy, and politics. They discuss those original texts, defend their interpretations of them, and analyze and evaluate the ideas under discussion. They are expected to write clear, well-reasoned papers about what they've read and discussed. Students will learn the value of editing and perfecting what they write, working in teams, and presenting ideas orally.

In the Mathematics Core, students work to develop both mastery of skills and an understanding of the impact of mathematics on Western culture. Beyond being able to perform basic arithmetical operations, students will be expected to understand the use of symbols to represent numbers, manipulate those symbols, and use those skills to solve complex problems. The goal is to understand relationships within data through equations, inequalities, and graphs. Students are exposed to higher-level abstraction through the concept of functions and their manipulation, and to calculus, including its impact on the development of science and Western thought.

REQUIREMENTS FOR GRADUATION

The University reserves the right to modify its graduation and other academic requirements as may seem necessary from time to time. It is obligated only during the academic year of the student's registration by requirements published in the *Undergraduate Catalog* for that year.

Core Requirements
Lawrence Technological University is a focused, technologically oriented university which places emphasis on preparing students for careers in architecture and design, communication, computer science, engineering, the humanities, management, mathematics, science, and technology. Underlying specific program objectives is the principle that all graduates of the University, regardless of their major area, should receive a liberal education that prepares them to contribute as citizens and enlightened professionals.

The undergraduate Core requirements ensure that students interact with students and faculty in program categories other than their major and obtain both breadth and depth in the humanities, social sciences, mathematics and analysis, and the natural sciences, consistent with the basic educational philosophy of the University.

These requirements are summarized by six basic statements that apply to all baccalaureate curricula:

1. All graduates must be literate and skilled in communication, including basic English composition and specialized communication appropriate to their individual major programs;
2. All graduates must be aware of the diverse origins of our culture and must demonstrate both breadth and depth in an area of the arts and humanities;
3. All graduates must be aware of the foundations of our society and the development of social issues;
4. All graduates must be aware of the scientific understanding of the natural world, including laboratory experience;
5. All graduates must have analytical skills consistent with the technological focus of the University, including mathematics and the use of computers in their major fields;
6. All graduates must have a cohesive major program that integrates their basic education with both theory and practical applications in an area of interest to the University faculty.

Curriculum Requirements
Students who enter the University as freshmen (less than 30 hours of transfer credit) seeking a baccalaureate degree must satisfy the Core requirements through completion of the following course sequences. (Students who transfer to Lawrence Tech with more than 30 semester hours should follow the transfer procedures outlined in the Admission to the University section of this *Catalog*.) The credits shown are the minimum required to satisfy requirements in a category.

Communication

English Composition	3 credits
Technical and Professional Communication	3 credits

Humanities and Social Sciences

Foundations of the American Experience and Development of the American Experience	6 credits
World Masterpieces 1 and 2	6 credits
Additional social science elective or course specified for a major	3 credits
Junior- or senior-level elective	3 credits

Minimum Communication, Humanities,

and Social Sciences TOTAL	24 credits

Mathematics and Analysis

BS majors: Mathematics through basic calculus	7 credits
Non-BS majors: Mathematics appropriate to the major	4 credits

Natural Sciences

Two Natural Science courses	6 credits
Science laboratory	1 credit
Minimum Natural Sciences and Mathematics TOTAL	11 –14 credits
Minimum Core Requirements TOTAL	38 credits

Degrees are awarded to candidates who have fulfilled the following requirements:

- Satisfactory completion of all requirements in one of the degree programs as set forth in the *Catalog*. Any student required to take Basic Studies courses (course level zero) will receive credit hours and grade points for such courses, but the credit hours earned for these Basic Studies courses will not be included in the total hours required for graduation;
- Minimum GPA of 2.0 in the major;
- Minimum GPA of 2.0 in all credit hours earned at Lawrence Tech;
- Completion at Lawrence Tech of the last credit hours of coursework for a degree, as follows:
  For associate degrees, this is a minimum of 24 credit hours, including 12 hours in the specialty courses of the chosen curriculum;
  For bachelor's degrees, this is a minimum of 30 credit hours, including 14 hours in the student's major;
- Submission of a Petition to Graduate approximately one year preceding the date of expected graduation. Contact Enrollment Services/Office of the Registrar for specific graduation petition due dates. A new petition must be submitted in the event requirements for graduation are not completed within one academic year of the submission of the petition.
- Full payment of all financial obligations to the University;
- Successful completion of the writing proficiency examination.

Degree/Diploma Honors

Diploma honors for undergraduate students will be granted to degree recipients on the basis of the student's record for all undergraduate coursework (5000 level and below) in the degree program at Lawrence Tech. Only courses taken at the University qualify for honor point credits.

For associate degrees, transfer students must have completed a minimum of 30 semester hours at Lawrence Tech and meet the GPA criteria below to be eligible for diploma honors.

For bachelor's degrees, a transfer student must have completed a minimum of 60 semester hours at Lawrence Tech and meet the GPA criteria below to be eligible for diploma honors.

The words *Cum Laude* will be inscribed on the diploma if the graduate has earned a GPA of at least 3.25.

The words *Magna Cum Laude* will be inscribed on the diploma if the graduate has earned a GPA of at least 3.5.

The words *Summa Cum Laude* will be inscribed on the diploma if the graduate has earned a GPA of at least 3.75.

Certificates/Minors/Concentrations
A minimum GPA of 2.0 is required in certificate, minor, and concentration courses. No honors are awarded for certificates.

COURSE NUMBER AND LEVEL
Each course is identified by an alphanumeric course number. The alphabetic prefix represents the subject area.

College of Architecture and Design

Architectural Engineering	EAE
Architecture and Design	ARC
Design	DES
Fine Arts	ART
Game Art	GAM
Industrial Design	IDD
Interior Architecture/Design	ARI
Transportation Design	ATD
Urban Design	URB

College of Arts and Sciences

Biology	BIO
Chemistry	CHM
Communication	COM
Creative Writing	CRW
English as a Second Language	ESL
Forensic Science	FSC
Geology	GLG
Language and Literature	LLT
Leadership	LDR
Master of Education Technology	MET
Mathematics and Computer Science/Math Co-op	MCS
Media Communication	MCO
Nursing	NUR
Physical Science	PSC
Physics	PHY
Psychology	PSY
Science Education	SCE
Social Science	SSC
Study Abroad	SAP

College of Engineering

Architectural Engineering	EAE
Biomedical Engineering	BME
Civil Engineering	ECE
Construction Engineering Technology	TCE
Doctoral	DIS
Electrical and Computer Engineering	EEE
Electrical Engineering Technology	TEE
Engineering Co-Op	ECO
Engineering, General	EGE
Engineering Management	EEM
Engineering Tech Co-Op	TCO
Industrial Engineering	EIE
Industrial Engineering Technology	TIE
Industrial/Operations Engineering	IOE
Manufacturing Systems	EMS
Mechanical Engineering	EME
Mechanical Engineering Technology	TME
Mechatronics Engineering	MSE
Robotics Engineering	ERE
Technology Audio Systems	TAS

College of Management

Accounting	ACC
Dissertation	DIS
Doctor of Business Administration	DBA
Economics	ECN
Finance	FIN
Human Resource Management	HRM
Information Technology	INT
Management	MGT
Management Information Systems	MIS
Marketing	MKT
Master of Business Administration	MBA
Military Sciences and Leadership	MSL
Research	RES

The first number following the alphabetic prefix indicates the academic level of the course:
0 = Basic Studies
1 = Freshman
2 = Sophomore
3 = Junior
4 = Senior
5 = Senior/Grad
6 and above = graduate level

Basic Studies courses (course level zero) do not provide degree credit. The last of the four numbers normally indicates the semester hours of credit assigned to the course. For example, ARC 4653 carries three hours credit.

REQUIREMENTS FOR GRADUATION/GRADUATION DEADLINE
Petitions to Graduate for each semester have specific due dates:

Expected date of graduation	Petition to Graduate due date
May	December 15
July	December 15 *(if attending Commencement)* or April 15 *(if NOT attending Commencement)*
December	July 15

It is the student's responsibility to be aware of these dates and adhere to them. Petition to Graduate forms can be downloaded at www.ltu.edu/registrars_office/graduation_petition.asp. Students may submit their forms to the DTE Energy One-Stop Center in the A. Alfred Taubman Student Services Center or fax them to 248.204.2228.

Processing Petitions to Graduate after their due date, if approved by Enrollment Services/Office of the Registrar, requires that an additional processing fee be assessed to the student. Further, availability of caps, gowns, and diplomas in time for Commencement cannot be guaranteed.

Students must also pay a graduation fee, which is non-refundable after one academic year. If students do not complete their graduation requirements as planned within one academic year, a new Petition to Graduate and graduation fee must be submitted.

The University reserves the right to modify its graduation and other academic requirements as may be deemed necessary. It will be obligated only during the academic year of the student's registration by requirements published in the *Undergraduate Catalog* for that year.

CATALOG OF ENTRY – LIMITATIONS
Although graduation requirements of the University may change while a student is enrolled, students are normally expected to meet the graduation requirements outlined in the *Catalog* that is in effect at the time they matriculate, as long as the courses are still offered by the University. Substitutions may be made for required courses that may no longer be available. However, if the new graduation requirements may be adapted to a student's current course of study without increasing his or her credit hour requirements or existing prerequisites, the new requirements shall prevail.

Students interrupting their studies for three calendar years or more must reapply for admission (see the Admission to the University section, Transfers within the University/Interruption of Studies, in this *Catalog*). If readmitted, the *Catalog* in effect at the time of readmission is used to determine graduation requirements.

College of Architecture and Design

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Ashraf Ragheb
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Scott Shall
James Stevens

Assistant Professors
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Steven Coy
Lilian Crum
Deirdre Hennebury
Aaron Jones
Ayodh Kamath

Senior Lecturers
Keith Phillips
Gretchen Rudy

College Professors
Andy Hanzel
Keith Nagara
Charles O'Geen
Karen Swanson

Professors of Practice
Aaron Blendowski

Kristen Smith
Eric Ward

Professors Emeriti
James Abernethy
William Allen

UNDERGRADUATE DEGREE PROGRAMS IN ARCHITECTURE AND DESIGN

The College of Architecture and Design at Lawrence Technological University was created in 1989, having evolved from the School of Architecture, which was established in 1962. The mission of the college is to provide aspiring design professionals with a comprehensive education and preparation for careers in design. Lawrence Tech's design programs emphasize investigation and collaboration through courses that address relationships among the disciplines and approaches including design, technology, the sciences, and the humanities.

The college seeks to develop graduates committed to articulate and socially relevant design, creative inquiry in all disciplines, critical thinking as the basis for design insight, clear communication as a design objective, and professional leadership. Students are encouraged to maintain high standards of excellence: many win significant design competitions and are highly respected by employers. LTU alumni practice and teach throughout the world and hold positions of responsibility in their practices.

To earn a degree, students must complete all courses and satisfy all other University requirements pertaining to the degree program in which they are enrolled and which was in force at the time of their admission to the program. Students are required to fulfill all pre-requisite requirements so as to complete courses in the mandated sequence. A master plan for a student's studies may be formulated in consultation with the student's academic advisor or with the administrator of student services.

College policies and procedures are addressed in *The Student Companion*, which may be found on the College of Architecture and Design website at www.ltu.edu/architecture_and_design, where additional information about the college, its faculty, students, and staff can be found.

PROGRAM ACCREDITATION

The college's degree programs are accredited, as appropriate, by the National Architectural Accrediting Board (NAAB), the National Association of Schools of Art and Design (NASAD), and the Council for Interior Design Accreditation (CIDA). The college is a member of the Association of Collegiate Schools of Architecture (ACSA) and the National Institute for Architectural Education.

The Bachelor of Interior Architecture program is accredited by CIDA and NASAD. The Bachelor of Fine Arts in Graphic Design and the Bachelor of Fine Arts in Interaction Design are also accredited by NASAD.

The Bachelor of Science in Architecture program is a component of the Master of Architecture professional degree program, which is accredited by NAAB. NAAB requires that accredited programs include this statement in their catalogs:

> *In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.*
>
> *Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited*

professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

DEGREE PROGRAMS

Degree programs in the College of Architecture and Design seek to integrate the sciences, humanities, and technologies into design education. Ideas common to all design disciplines are explored in the first year through foundation courses required of students in all disciplines and generally taken in cross-discipline course sections.

Bachelor of Arts in Architectural Studies

Architecture involves the design and production of buildings and spaces that are inspiring, functional, sustainable, and responsive to their places in the world and to the people they serve. Accordingly, students in the Bachelor of Arts in Architectural Studies program seek to reach an understanding of the world from the perspective of the built environment. The program focuses on the inherent interdisciplinary nature of architecture in a complex world. Graduates possess an educational foundation that enables them to pursue a number of career options and opportunities for advanced degrees and also to assume active roles within the cultural environment.

Bachelor of Fine Arts in Game Art

The Bachelor of Fine Arts in Game Art program is intense, studio-oriented, interdisciplinary, and far-reaching. The program consists of 125 credit hours and is designed to develop a body of knowledge, skills, and experience in game art with a focus on game design, game mechanics, art asset creation, and game scripting and programming. The program is taught in tandem with the Bachelor of Science in Computer Science's concentration in Game Software Development.

The Bachelor of Fine Arts in Game Art provides a comprehensive overview of the emerging field of game art that ranges from animation and art asset creation to the latest innovations in electronic multimedia and the time-based media of video and sound. Students gain experience in the fundamental skills, history, and theory of game design. Critical thinking and creativity – important to the development of the person as well as the professional – are stressed throughout the curriculum. Emphasis will be placed on students developing a distinctive point-of-view for their creative activities. Studies in literature, the sciences, philosophy, math, and history all contribute to the vision of the game arts professional.

Theory and practice, Lawrence Tech's underlying teaching philosophy, are essential to an effective and marketable designer. All students are required to complete a 150-hour internship program in which they apply their theoretical knowledge to real-life situations and receive mentoring from practicing professionals.

Bachelor of Fine Arts in Graphic Design

The Bachelor of Fine Arts in Graphic Design program provides a comprehensive overview of the ever-changing field of graphic design, which ranges from traditional print media to the latest innovations in electronic multimedia and the time-based media of video and sound. Design is commercial, social, public, and political. Students gain experience in the fundamental skills, history, and theory of graphic design. Critical thinking and creativity – important to the development of the person as well as the professional – are stressed throughout the curriculum. Emphasis will be placed on students developing a distinctive point-of-view for their creative activities. Studies in literature, the sciences, philosophy, math, and history all contribute to the vision of the graphic design professional.

Theory and practice, Lawrence Tech's underlying teaching philosophy, are essential to an effective and marketable designer. All students are required to complete a 150-hour internship program in which they apply their theoretical knowledge to real-life situations and receive mentoring from practicing professionals.

Bachelor of Fine Arts in Interaction Design
The Bachelor of Fine Arts in Interaction Design program is based on a broad foundation in the fine arts and visual communication with the application of a variety of media and techniques to achieve creative solutions to fine arts and design problems. The primary goal of this degree is to enable students to creatively apply the design process in the development of hand drawing, Internet designs, photography, motion graphics, and other emerging technologies to meet the needs of corporate and private enterprises. Elective courses are available within the College of Architecture and Design so students have an opportunity to explore other creative disciplines. Elective courses are also available within the University in programs such as business, computer science, or engineering. This four-year program prepares students for entry into the Master of Arts in Environmental Graphic Design program.

Bachelor of Interior Architecture
The Bachelor of Interior Architecture program prepares students for careers in interior architecture and design through placing value and emphasis on technical, social, psychological, cultural, environmental, economical, spiritual, and physical factors to comprehensively respond to human needs. The program is integrated with the undergraduate program in architecture, providing students the opportunity to experience the interrelationships among disciplines as they are exposed to a variety of design theories and philosophies. Critical thinking and creativity are important in the development of the person as well as the professional and are emphasized throughout the curriculum. This four-year program also prepares students for entry into the Master of Interior Design program.

Bachelor of Science in Architecture
Master of Architecture Direct Entry
The Bachelor of Science in Architecture (BS Arch) program is the pre-professional degree that prepares students to participate in the practice of architecture as intern architects, for entry into the accredited professional Master of Architecture (MArch, 36 credit hours) program, and for eventual practice as licensed architects.

The Bachelor of Science in Architecture program at Lawrence Tech is the undergraduate component of the Master of Architecture Direct Entry (MArch DE) program. This arrangement formally acknowledges the fact that a license to practice architecture in Michigan and most of the United States requires completion of the accredited degree, as noted above. At Lawrence Tech the accredited degree is the Master of Architecture. Freshman and undergraduate transfer students are therefore considered MArch DE students. Some students may decide to complete the Bachelor of Science (133 credit hours) and then work in the profession, seek admission to a graduate program of their choice, or continue into Lawrence Tech's MArch program, a 36-credit-hour curriculum. Students with a minimum 3.0 grade point average at the completion of the BS Arch program may advance into LTU's graduate programs.

The BS Arch program is designed to provide a broad foundation for the development of architectural design skills and insights, a sense of social responsibility, environmental awareness, problem-solving abilities, and professional competence. It constitutes an excellent, broad education and preparation for work in a range of essential fields in and beyond design. The program specifically prepares students to pursue the Master of Architecture or Master of Urban Design (MUD) at Lawrence Tech. The college also offers a dual degree, the Master of Architecture and Master of Urban Design. Additional dual degree programs are available and are described below.

The BS Arch program welcomes students who intend to become practicing architects and who wish to pursue the Master of Architecture degree, as well as those who seek advanced degrees and careers in research and teaching in architecture and urban design. The curriculum represents the professional practice orientation of the school with a curriculum of design coursework around which the other subject areas are positioned. Design education is supported by an intense and integrated, parallel educational experience in the requisite technical subject areas, including structural design, acoustics, lighting, mechanical systems, and sustainable energy strategies. The pre-professional curriculum is completed with courses in the history and ideas behind architecture and design. Finally, LTU's required Core Curriculum includes mathematics, physics, English, the arts and culture, and political and historical issues. General education and architectural elective courses are also available in the BS Arch program.

Bachelor of Science in Industrial Design
Industrial design is problem solving that balances the interface between technology and esthetics to meet human needs. Industrial designers create concepts, specifications, and products that are responsible, functional, and sustainable.

Industrial designers develop these concepts, specifications, and products through research, analysis, and the synthesis of data guided by the special requirements of the client or manufacturer. They are trained to prepare clear and concise recommendations through drawings, models, and presentations.

The Bachelor of Science in Industrial Design shares fundamental building blocks with the architecture program and is a sibling of the transportation design program. The Bachelor of Science in Industrial Design program focuses on the innovative integration of professional practice to include business case assessment, entrepreneurship, leadership, product psychology, customer journey experience, marketing, sustainability, packaging, and cultural geography.

Bachelor of Science in Transportation Design
The Bachelor of Science in Transportation Design program aims to prepare students for careers in the fields of transportation and industrial design by combining a rigorous design education with engineering and technology principles. The curriculum is unique in that it simulates a corporate design studio by integrating industry scenarios and seminars given by visiting professionals into the daily classroom experience. In addition to core studios based on transportation products, students have the flexibility to tailor the program to their particular interests in industrial design, including animation, storyboarding, conceptual gaming design, product, apparel, graphics, and color and trim.

Certificate in Building Information Modeling and Computer Visualization (BIM)
Building information modeling and computer visualization play an increasingly important role in architecture, specifically building design, construction, and operation. Building information modeling and computer visualization integrate 3D modeling techniques with building components: properties,

location, geometry, spatial relationships, and specifications. The ability to visualize, design, and represent the project with BIM software increases productivity and improves communication between architects, engineers, contractors, and other key team members, making the project more efficient and economical.

Minor in Game Art
The Minor in Game Art provides a technical and creative skillset to students who wish to incorporate game art into their major coursework or to pursue further study in design-related fields. Lecture and studio courses introduce students to the history, theory, and practice of the discipline. Coursework includes the creation of 2D and 3D game assets, conceptual art for environments, characters and props, game prototypes, and full-fledged games for release in various marketplaces.

Minor in Graphic Design
The Minor in Graphic Design provides a technical and creative skillset to students who wish to incorporate graphic design into their major coursework or to pursue further study in design-related fields. Lecture and studio courses introduce students to the history, theory, and practice of the discipline. Coursework includes brand design, typography, layout, motion graphics, and design thinking and action.

Minor in Interaction Design
The Minor in Interaction Design provides a technical and creative skillset to students who wish to incorporate interaction design into their major coursework or to pursue further study in design-related fields. Lecture and studio courses introduce students to the history, theory, and practice of the discipline. Students will consider the relationship between human behavior and interactive technologies, products, and systems, and will be introduced to UI, UX, coding, and visual communication.

PROGRAM COURSEWORK
The required courses and credit hours for each degree program are shown below.

BACHELOR OF ARTS IN ARCHITECTURAL STUDIES
Studio Arts Concentration
Total Semester Credit Hours: 120
Architectural Studies Advisors:
Martin Schwartz 248.204.2879 mschwartz@ltu.edu office A115
Jane McBride 248.204.2822 jmcbride@ltu.edu office A116

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
ARC 1012	Art and Design Awareness	2
ARC 1213	Visual Communication 1	3
ART 1113	Basic Design 1	3
SSC 2413	Foundations of the Amer. Experience	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*

COM 2103	Technical and Prof. Communication	3
MCS 1414 or	Calculus 1 or	
MCS 1254	Geometry in Art	4
SSC 2423	Development of the Amer. Experience	3
ARC 1223	Visual Communication 2	3
ART 1133	Basic Design 2	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
ARC 3613	History of the Designed Environ. 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ARC 2813	Visual Communication 3	3
LLT	1000-4000 level Literature elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
ARC 3623	History of the Designed Environ. 2	3
PHY/CHM/BIO/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
SSC 2303	Economics	3
LLT	1000-4000 level Literature elective	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ART 2523	Graphic Design 1	3
ART 3023	Photography	3
ARC/ART/ARI/GAM/IDD/ATD	1000-4000 level CoAD elective	3
ARC/ART/ARI/GAM/IDD/ATD	1000-4000 level CoAD elective	3
ART 3633	Traditions of Art 1	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 3733	Aesthetics	3
ART 3213	Sculpture	3
LLT 3613	Literature and Art	3
SSC 3723	Ethics	3
ART 2113	Life Drawing	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior elective	3
ARC 4183	20th-Century Architecture	3

ARC 4113	Great Books of Architecture	3
ARC/ART/ARI/GAM/IDD/ATD	1000-4000 level CoAD elective	3
DES 4112	Design Leadership	2
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ART 3643	Traditions of Art 2	3
ARC/ART/ARI/GAM/IDD/ATD	1000-4000 level CoAD elective	3
SSC 3253	Golden Age of Greece	3
SSC 3713	Topics in Philosophy	3
SSC 4643	World Religions	3
	TOTAL	15

BACHELOR OF FINE ARTS IN GAME ART

Total Semester Credit Hours: 125

Game Art Advisors:

Mars Ashton 248.204.2846 mashton@ltu.edu office A214

Steve Rost 248.204.2862 srost@ltu.edu office A129

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
PSY 1213	Introductory Psychology	3
ART 1113	Basic Design 1	3
ARC 1012	Art and Design Awareness	2
MCS 1643	Introduction to Games and Animation	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ART 2813	Electronic Methods for Imaging	3
GAM 2133	3D Animation 1	3
SSC 2413	Foundations of the Amer. Experience	3
ART 1133	Basic Design 2	3
MCS 1254	Geometry in Art	4
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
ART 3633	Traditions of Art 1	3
ART 2113	Life Drawing	3
GAM 2123	2D Animation	3
MCS 3563	Game Design	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3

LLT 1223	World Masterpieces 2	3
ART 3643	Traditions of Art 2	3
GAM 2313	Integrated Game Studio 1	3
GAM 3143	3D Animation 2	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of the Amer. Experience	3
MCS 2193	Scripting for Game Design	3
CRW 2513	Creative Writing	3
GAM 2213	History of Game Design	3
COM 3000	Writing Proficiency Exam	0
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. Lecture	3
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MGT/MKT/INT/ACC/HRM	2XX3 or 3XX3 elective	3
ART 3323	Portfolio Design	3
ART 3343	New Media	3
GAM 3313	Integrated Game Studio 2	3
ART 2623	Imaging Studio 1	3
GAM 3413	Game Mechanics	3
	TOTAL	18

SUMMER	Co-op	0

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior elective	3
DES 4112	Design Leadership	2
ART/GAM/ARC/ARI/ATD/IDD	2000-4000 level history elective	3
GAM 4514	Game Art: Senior Project 1	4
ART 4612	Senior Seminar 1	2
ART 4922	Internship Studies	2
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
GAM/ART/ARC/ARI/IDD/ATD	1000-4000 level elective	3
GAM 4524	Game Art: Senior Project 2	4
ART 4622	Senior Seminar 2	2
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. Lecture	3
1000-4000 Level	Open (University-wide) elective	3
	TOTAL	15

BACHELOR OF FINE ARTS IN GRAPHIC DESIGN

Total Semester Credit Hours: 125

Graphic Design Advisors:

Lillian Crum 248.204.2869 lcrum@ltu.edu office A218
Steve Rost 248.204.2862 srost@ltu.edu office A129
Steve Coy 248.204.2835 scoy@ltu.edu office A215

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
SSC 2413	Foundations of the Amer. Experience	3
ART 1113	Basic Design 1	3
ART 2113	Life Drawing	3
ARC 1012	Art and Design Awareness	2
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ART 2813	Electronic Methods for Imaging	3
SSC 2423	Development of the Amer. Experience	3
ART 2413	Typography	3
MCS 1254	Geometry in Art	4
ART 1133	Basic Design 2	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
ART 3413	Typography 2	3
ART 3633	Traditions of Art 1	3
ART 2523	Graphic Design 1	3
PSY 1213	Introductory Psychology	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
COM 2103	Technical and Prof. Communication	3
ART 3643	Traditions of Art 2	3
ART 3513	Graphic Design 2	3
ART 2623	Imaging Studio 1	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 Nat. Sci. Lab	1
ART 3523	Graphic Design 3	3
ART 3563	History of Graphic Design	3

ART 3213	Sculpture	3
ART 3023	Photography	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MGT/MKT/INT/ACC/HRM	2XX3 or 3XX3 elective	3
ART 3323	Portfolio Design	3
ART 4513	Graphic Design 4	3
ART 3033	Digital Photography	3
ART 3043	Video Imaging	3
ART 3343	New Media	3
	TOTAL	18

SUMMER	Co-op	0

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
DES 4112	Design Leadership	2
ART 4514	Graphic Design Thesis 1	4
ART 4612	Senior Seminar 1	2
ART 4922	Internship Studies	2
ART/GAM/ARC/ARI/ATD/IDD	2000-4000 level History elective	3
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior. elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
ART 4524	Graphic Design Thesis 2	4
GAM/ART/ARC/ARI/IDD/ATD	1000-4000 level elective	3
ART 4622	Senior Seminar 2	2
1000-4000 Level	Open (University-wide) elective	3
	TOTAL	15

BACHELOR OF FINE ARTS IN INTERACTION DESIGN

Total Semester Credit Hours: 125

Interaction Design Advisors:

Lillian Crum 248.204.2869 lcrum@ltu.edu office A218
Steve Rost 248.204.2862 srost@ltu.edu office A129
Steve Coy 248.204.2835 scoy@ltu.edu office A215

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
SSC 2413	Foundations of the Amer. Experience	3

ART 2113	Life Drawing	3
ART 1113	Basic Design 1	3
ARC 1012	Art and Design Awareness	2
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
ART 2813	Electronic Methods for Imaging	3
SSC 2423	Development of the Amer. Experience	3
MCS 1254	Geometry in Art	4
ART 1133	Basic Design 2	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
ART 3633	Traditions of Art 1	3
ART 2053	Interaction Studio 1	3
ART 2523	Graphic Design 1	3
PSY 1213	Introductory Psychology	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
ART 3643	Traditions of Art 2	3
ART 3343	New Media	3
ART 2253	Interaction Studio 2	3
ART 2623	Imaging Studio 1	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ART 3053	Interaction Studio 3	3
ART 3533	History of Interaction Design	3
ART 4343	New Media 2	3
ARC 3213	Sculpture	3
ART 3023	Photography	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
GAM/ART/ARC/ARI/IDD/ATD	1000-4000 level elective	3
ART 3323	Portfolio Design	3
ART 3033	Digital Photography	3
ART 3043	Video Imaging	3
MGT/MKT/INT/ACC/HRM	2XX3 or 3XX3 elective	3
	TOTAL	18

SUMMER	Co-op	0

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior elective	3
DES 4112	Design Leadership	2
ART/GAM/ARC/ARI/ATD/IDD	2000-4000 level History elective	3
ART 4614	Imaging Thesis 1	4
ART 4922	Internship Studies	2
ART 4612	Senior Seminar	2
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. lab	1
ART 4624	Imaging Thesis 2	4
ART/ARC/ARI/GAM/IDD/ATD	1000-4000 level CoAD elective	3
ART 4622	Senior Seminar	2
1000-4000 Level	Open (University-Wide) elective	3
	TOTAL	16

BACHELOR OF INTERIOR ARCHITECTURE

Total Semester Credit Hours: 130

Interior Architecture Advisor:

Karen Swanson 248.204.2874 kswanson@ltu.edu office A158

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
SSC 2413	Foundations of the Amer. Experience	3
ARC 1012	Art and Design Awareness	2
ART 1113	Basic Design 1	3
ARC 1213	Visual Communication 1	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
SSC 2423	Development of the Amer. Experience	3
MCS 1254	Geometry in Art	4
ART 1133	Basic Design 2	3
ARC 1223	Visual Communication 2	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*

LLT 1213	World Masterpieces 1	3
ARC 3613	History of the Designed Environ 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ARI 3114	Interior Architecture 1	4
ARC 2813	Visual Communication 3	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
ARC 3623	History of the Designed Environ 2	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
ARC 2126	Integrated Design Studio 2	6
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ARI 4113	History of Interiors	3
ART 2523	Graphic Design 1	3
ARC 2313	Construction Systems 1	3
ARC 3116	Integrated Design 3	6
COM 3000	Writing Proficiency Exam	0
ARI 3113	Furniture and Millwork	3
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ARI 4123	Environmental Psychology	3
ARC 4443	Acoustics, Electrical and Illum. Sys.	3
ARI 3124	Interior Architecture 2	4
ARI 3123	Interior Materials and Textiles	3
ARC 2513	Basic Structures	3
	TOTAL	16

SUMMER	Co-op	0

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ARC 4234	Allied Design: Interior Arch.	4
ARI 4223	Interior Design Practice	3
ART/GAM/ARC/ARI/ATD/IDD	2XX3-4XX3 CoAD History elective	3
ARI 4922	Internship Studies	2
ARI 4143	Advanced Lighting Design	3
DES 4112	Design Leadership	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS/SSC/LLT/PSY/COM	1XX3-4XX3 elective	3
ARI 4134	Interior Architecture 3	4
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior elective	3
ART/ARC/ARI/GAM/IDD/ATD	1000-4000 level CoAD elective	3
ARC 3423	HVAC and Water Systems	3
		TOTAL 16

BACHELOR OF SCIENCE IN ARCHITECTURE
Total Semester Credit Hours: 133
Architecture Advisors:
Jim Stevens 248.204.2854 jstevens@ltu.edu office A129
Martin Schwartz 248.204.2879 mschwartz@ltu.edu office A115
Jane McBride 248.204.2822 jmcbride@ltu.edu office A116

Note: The Bachelor of Science in Architecture is the undergraduate component of the Master of Architecture Direct Entry program. For information on the complete undergraduate and graduate curriculum, including the 36 credit hours of graduate courses, please refer to the Master of Architecture Direct Entry curriculum, below.

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
ARC 1012	Art and Design Awareness	2
ART 1113	Basic Design 1	3
ARC 1213	Visual Communication 1	3
MCS 1XX4*	Mathematics 1	4
	TOTAL	15

***Math 1 & 2 Sequence Options Based on Placement Scores:**

A] MCS 1074 Pre-calculus followed by MCS 2124 Statistics
B] MCS 1074 Pre-calculus followed by MCS 1224 Survey of Calculus
C] MCS 1074 Pre-calculus followed by MCS 1414 Calculus 1
D] MCS 1224 Survey of Calculus followed by MCS 2124 Statistics
E] MCS 1414 Calculus 1 followed by MCS 2124 Statistics
F] MCS 1414 Calculus 1 followed by MCS 1424 Calculus 2

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ART 1133	Basic Design 2	3
ARC 1223	Visual Communication 2	3
LLT 1213	World Masterpieces 1	3
COM 2103	Technical and Prof. Communication	3
MCS 1XX4*	Mathematics 2	4
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of the Amer. Experience	3
ARC 2116	Integrated Design 1	6
ARC 2813	Visual Communication 3	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ARC 2126	Integrated Design 2	6
ARC 3823	Visual Communication 4	3
ARC 3613	History of the Designed Environ 1	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
SSC 2423	Development of the Amer. Experience	3
ARC 3623	History of the Designed Environ 2	3
ARC 3116	Integrated Design 3	6
ARC 2313	Construction Systems 1	3
ARC/ARI/ART/GAM/IDD/ATD	CoAD elective	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
ARC 3126	Integrated Design 4	6
ARC 4183	20th-Century Architecture	3
ARC 2323	Construction Systems 2	3
ARC 2513	Basic Structures	3
	TOTAL	18

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior elective	3
DES 4112	Design Leadership	2
ARC 4116	Integrated Design 5	6
ARC 3423	HVAC and Water Systems	3
ARC 3513	Intermediate Structures	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ARC 4126	Comprehensive Design	6
ARC 4443	Acoustics, Electrical, and Illumination	3
ARC 4543	Advanced Structures	3

ARC/ARI/ART/GAM/IDD/ATD	CoAD elective	3
ARC/ARI/ART/GAM/IDD/ATD	CoAD elective	3
	TOTAL	18

BACHELOR OF SCIENCE IN INDUSTRIAL DESIGN
Total Semester Credit Hours: 128
Industrial Design Advisor:
Andy Hanzel 248.204.2866 ahanzel@ltu.edu office A154

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
ARC 1012	Art and Design Awareness	2
IDD 1113	Product Design Method 1	3
IDD 1114	Industrial Design Studio 1	4
MCS 1XX4*	Mathematics 1	4
	TOTAL	16

***Math 1 & 2 Sequence Options Based on Placement Scores:**

A] MCS 1074 Pre-calculus followed by MCS 2124 Statistics
B] MCS 1074 Pre-calculus followed by MCS 1224 Survey of Calculus
C] MCS 1074 Pre-calculus followed by MCS 1414 Calculus 1
D] MCS 1224 Survey of Calculus followed by MCS 2124 Statistics
E] MCS 1414 Calculus 1 followed by MCS 2124 Statistics
F] MCS 1414 Calculus 1 followed by MCS 1424 Calculus 2

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
LLT 1213	World Masterpieces 1	3
IDD 1223	Product Design Method 2	3
IDD 1124	Industrial Design Studio 2	4
MCS 1XX4*	Mathematics 2	4
	TOTAL	17

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
IDD 2213	Visual Virtualization 1	3
IDD 2216	Industrial Design Studio 3	6
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of the Amer. Experience	3

IDD 2223	Visual Virtualization 2	3
IDD 2226	Industrial Design Studio 4	6
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. lab	1
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
SSC 2423	Development of the Amer. Experience	3
IDD 3316	Industrial Design Studio 5	6
ATD 3616	Integrated Con. Design A	6
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ATD 3723	Transportation History	3
IDD 3326	Industrial Design Studio 6	6
ATD 3626	Integrated Con. Design B	6
ATD 2832	Practicum	2
	TOTAL	17

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
DES 4112	Design Leadership	2
ATD 4513	Professional Practice	3
ATD 4414	Rapid Technology	4
ATD 4516	Transportation Design Studio 7T	6
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ATD 4524	Manufacturing Process	4
ATD 4526	Transportation Design Studio 8	6
ARC/ARI/ART/GAM/IDD/ATD	CoAD elective	3
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior. elective	3
	TOTAL	16

BACHELOR OF SCIENCE IN TRANSPORTATION DESIGN

Total Semester Credit Hours: 128

Transportation Design Advisor:

Keith Nagara 248.204.2813 knagara@ltu.edu office D208

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
ARC 1012	Art and Design Awareness	2
IDD 1113	Product Design Method 1	3
ATD 1914	Transportation Design Studio 1C	4

MCS 1XX4*	Mathematics 1	4
	TOTAL	16

***Math 1 & 2 Sequence Options Based on Placement Scores:**

A] MCS 1074 Pre-calculus followed by MCS 2124 Statistics

B] MCS 1074 Pre-calculus followed by MCS 1224 Survey of Calculus

C] MCS 1074 Pre-calculus followed by MCS 1414 Calculus 1

D] MCS 1224 Survey of Calculus followed by MCS 2124 Statistics

E] MCS 1414 Calculus 1 followed by MCS 2124 Statistics

F] MCS 1414 Calculus 1 followed by MCS 1424 Calculus 2

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
LLT 1213	World Masterpieces 1	3
IDD 1223	Product Design Method 2	3
ATD 1924	Transportation Design Studio 2C	4
MCS 1XX4*	Mathematics 2	4
	TOTAL	17

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
ATD 2813	Digital Tech. Surface 1	3
ATD 2816	Transportation Design Studio 3E	6
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of the Amer. Experience	3
ATD 2823	Digital Tech. Surface 2	3
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. elective	3
BIO/PHY/CHM/GLG/FSC/PSC	1000-4000 level Nat. Sci. lab	1
ATD 2826	Transportation Design Studio 4E	6
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
SSC 2423	Development of the Amer. Experience	3
ATD 3716	Transportation Design Studio 5I	6
ATD 3616	Integrated Con. Design A	6
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ATD 3723	Transportation History	3
ATD 3726	Transportation Design Studio 6I	6

ATD 3626	Integrated Con. Design B	6
ATD 2832	Practicum	2
	TOTAL	17

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
DES 4112	Design Leadership	2
ATD 4513	Professional Practice	3
ATD 4414	Rapid Technology	4
ATD 4516	Transportation Design Studio 7T	6
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ATD 4524	Manufacturing Process	4
ATD 4526	Transportation Design Studio 8T	6
ARC/ARI/ART/GAM/IDD/ATD	CoAD elective	3
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior elective	3
	TOTAL	16

Certificate in Building Information Modeling and Computer Visualization (BIM)

Total Semester Credit Hours: 12

BIM Advisors:

Jim Stevens 248.204.2854 jstevens@ltu.edu office A129
Jane McBride 248.204.2822 jmcbride@ltu.edu office A116

Course Number	*Subject*	*Cr. Hrs.*
ARC 2843	BIM Fundamentals	3
ARC 3843	BIM for Building Systems	3
ARC 4813	BIM for Energy and Ecology	3
ARC 4843	BIM Programming and Prototyping	3
	TOTAL	12

Minor in Game Art

Total Semester Credit Hours: 24

Game Art Advisors:

Mars Ashton 248.204.2846 mashton@ltu.edu office A214
Steve Rost 248.204.2862 srost@ltu.edu office A129

Course Number	*Subject*	*Cr. Hrs.*
ART 1113	Basic Design 1	3
ART 1133	Basic Design 2	3
GAM 2213	History of Game Design	3
GAM 2133	3D Animation 1	3
GAM 2123	2D Animation	3
GAM 3143	3D Animation 2	3
GAM 2313	Integrated Game Studio 1	3
GAM 3313	Integrated Game Studio 2	3
	TOTAL	24

Minor in Graphic Design
Total Semester Credit Hours: 24
Graphic Design Advisors:
Lillian Crum 248.204.2869 lcrum@ltu.edu office A218
Steve Rost 248.204.2862 srost@ltu.edu office A129

Course Number	*Subject*	*Cr. Hrs.*
ART 1113	Basic Design 1	3
ART 1133	Basic Design 2	3
ART 2813	EMI	3
ART 3563	History of Graphic Design	3
ART 2423	Graphic Design 1	3
ART 3513	Graphic Design 2	3
ART 2623 **or**	Imaging Studio 1 **or**	
ART 3523	Graphic Design	3
ART 2413	Typography	3
		TOTAL 24

Minor in Interaction Design
Total Semester Credit Hours: 24
Interaction Design Advisors:
Lillian Crum 248.204.2869 lcrum@ltu.edu office A218
Steve Rost 248.204.2862 srost@ltu.edu office A129

Course Number	*Subject*	*Cr. Hrs.*
ART 1113	Basic Design 1	3
ART 1133	Basic Design 2	3
ART 3063	History of Interaction Design	3
ART 2423	Graphic Design 1	3
ART 3343	New Media 1	3
ART 4343	New Media 2	3
ART 2053	Interaction Design Studio 1	3
ART 2253	Interaction Design Studio 2	3
		TOTAL 24

MASTER OF ARCHITECTURE DIRECT-ENTRY
Total Semester Credit Hours: 169
Architecture Advisors:
Jim Stevens 248.204.2854 jstevens@ltu.edu office A129
Martin Schwartz 248.204.2879 mschwartz@ltu.edu office A115
Jane McBride 248.204.2822 jmcbride@ltu.edu office A116

Note: The Bachelor of Science in Architecture is the undergraduate component of the Master of Architecture Direct-Entry program. The curriculum shown below represents both components, the 133 credit-hour Bachelor of Science and the 36 credit-hour graduate-level Master of Architecture courses for a total of 169 credit hours.

First Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
ARC 1012	Art and Design Awareness	2
ART 1113	Basic Design 1	3
ARC 1213	Visual Communication 1	3
MCS 1XX4*	Mathematics 1	4
	TOTAL	15

***Math 1 & 2 Sequence Options Based on Placement Scores:**

A] MCS 1074 Pre-calculus followed by MCS 2124 Statistics

B] MCS 1074 Pre-calculus followed by MCS 1224 Survey of Calculus

C] MCS 1074 Pre-calculus followed by MCS 1414 Calculus 1

D] MCS 1224 Survey of Calculus followed by MCS 2124 Statistics

E] MCS 1414 Calculus 1 followed by MCS 2124 Statistics

F] MCS 1414 Calculus 1 followed by MCS 1424 Calculus 2

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ART 1133	Basic Design 2	3
ARC 1223	Visual Communication 2	3
LLT 1213	World Masterpieces 1	3
COM 2103	Technical and Prof. Communication	3
MCS 1XX4*	Mathematics 2	4
	TOTAL	16

Second Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of the Amer. Experience	3
ARC 2116	Integrated Design 1	6
ARC 2813	Visual Communication 3	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ARC 2126	Integrated Design 2	6
ARC 3823	Visual Comm. 4	3
ARC 3613	History of the Designed Environ 1	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
	TOTAL	16

Third Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*

COM 3000	Writing Proficiency Exam	0
SSC 2423	Development of the Amer. Experience	3
ARC 3116	Integrated Design 3	6
ARC 3623	History of the Designed Environ 2	3
ARC 2313	Construction Systems 1	3
ARC/ARI/ART/GAM/IDD/ATD	CoAD elective	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
ARC 3126	Integrated Design 4	6
ARC 4183	20th-Century Architecture	3
ARC 2323	Construction Systems 2	3
ARC 2513	Basic Structures	3
	TOTAL	18

Fourth Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY 3XX3 or 4XX3	Junior/Senior elective	3
DES 4112	Design Leadership	2
ARC 4116	Integrated Design 5	6
ARC 3423	HVAC and Water Systems	3
ARC 3513	Intermediate Structures	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ARC/ARI/ART/GAM/IDD/ATD	CoAD elective	3
ARC 4126	Comprehensive Design	6
ARC 4443	Acoustics, Electrical, and Illumination	3
ARC 4543	Advanced Structures	3
ARC/ARI/ART/GAM/IDD/ATD	CoAD elective	3
	TOTAL	18

Graduate Courses

Graduate coursework may be completed in as little as 15 months:-four semesters , including two summer semesters. Please refer to the LTU Graduate Catalog *for additional information about the graduate program.*

Course Number	*Subject*	*Cr. Hrs.*
ARC 5804	Critical Practice Studio	4
ARC 5423	Ecological Issues	3
ARC 5013	Research Methods	3
ARC 5643	Design Theory	3
ARC 5814	Adv. Design Studio 1 (or Thesis 1)*	4
ARC 5824	Adv. Design Studio 2 (or Thesis 2)*	4
ARC 5913	Professional Practice	3
ARC 6833	Practice Portfolio	3
CoAD (ARC/ART/ARI/URB)	5000 or 6000 level electives	6
Non-CoAD 5XX3 or 6XX3	elective	3

TOTAL 36

* Students interested in preparing a thesis should contact the Department of Architecture for guidelines that outline the qualification procedure for thesis candidacy.

DUAL DEGREES

Students may earn two degrees simultaneously by carefully preplanning their coursework. Students desiring dual degrees in architecture and interior architecture, architecture and civil engineering, architecture and graphic design, architecture and interaction design, architecture and media communication, or architecture and construction engineering technology and management must consult with an advisor in the freshman year for assistance in properly sequencing their coursework.

To be an official dual degree candidate, students must file a Change of Curriculum form with Enrollment Services/Office of the Registrar (www.ltu.edu/registrars_office/forms-to-print.asp).

College of Arts and Sciences

Dean
Hsiao-Ping H. Moore
S101, 248.204.3500

Associate Dean
Glen A. Bauer
S101, 248.204.3500

ABOUT THE COLLEGE OF ARTS AND SCIENCES

The goal of Lawrence Tech's College of Arts and Sciences is to develop in all students the ability to think critically, to solve problems creatively, and to make imaginative and rational decisions. The college prepares students for success at the University and for active, responsible, and creative lives. It cultivates the desire to excel in professional and personal endeavors and the ability to understand and work with people of various cultures.

In Arts and Sciences, teaching excellence comes first. Through its Core Curriculum, students share a common experience encompassing the wide varieties of human thought. Instructors employ new learning technologies to teach the best in classical and contemporary thought and practice. The college is guided in all of its endeavors by its motto: "A Classic Education for a Technological World."

The college is committed to the enhancement of learning for people of all backgrounds and ages. It works for expanded educational and career opportunities for women and minorities. It offers programs for elementary and secondary school children and their teachers. It offers a range of programs that serve the professional community.

In all of its activities, the college is driven by its commitment to the primary value of free, informed choice as the basis for responsible action. Complementing this goal, the College of Arts and Sciences strives to foster civility in social relations – a civility that grows out of respect for the worth of all individuals.

CORE CURRICULUM

The College of Arts and Sciences seeks to prepare students to grow intellectually and carry out fully their responsibility to those around them, whether in their families or in their public and professional lives.

The Core Curriculum provides a well-rounded educational experience for all Lawrence Tech students. Students encounter the greatest literary and philosophical works that humankind has produced, and they discuss them with professors in small classes. They explore the sciences in hands-on laboratory environments and gain a solid foundation in mathematics. Composition and communications courses develop a high level of accomplishment in speaking and writing.

QUEST: OPENED MINDS OPEN DOORS

The Quest program is an innovative learning experience open to College of Arts and Sciences majors that allows students to pursue a project over and above the requirements of a course with mentoring from a faculty, staff, alumni, community, or industry "guide." Students can complete one Quest project per year over a three-year period. Participation in the Quest program can begin as early as the

freshman year. The Quest program offers students the opportunity to conduct projects that could lead to different career paths and/or explore interests beyond their majors.

Projects
Quest projects must meet the following three criteria:

1. They enhance the experience of learning at Lawrence Tech through performance, presentation, display, publication, demonstration, or instruction.
2. They have both theoretical and practical components and require original problem-solving skills.
3. They require two public presentations and the submission of a portfolio that documents the rationale, development, and outcomes of the project, as well as the impact of the project on the student's career goals.

Categories
Students may choose a project from one of the following three categories:

Arts – Projects that stretch students beyond their majors, relate their majors to the creative arts, or relate the arts to a career path. Possibilities include:

- Participation in a project involving *Prism*, the Society of Dramatic Arts, the Musician's Society, or Artist's Guild
- Video/multimedia development, dance, photography, fine arts, or game development
- Projects of an interdisciplinary nature that combine math or computer science and art, or the natural sciences and art

Leadership – Projects that explore a career path, are team-oriented, bridge international and traditional student populations, promote Lawrence Tech community building, foster mentoring among students, provide solutions to issues of local and/or national concern, or stimulate peace and prosperity locally and globally. Areas of focus might include:

- Professional development
- Entrepreneurialism
- Service
- Global awareness

Research – Projects that explore career paths in research and prepare students for graduate school or further professional education. Quest research projects typically involve:

- Conducting original research in the natural sciences, math and computer science, humanities, or the social sciences
- The dissemination of research project results through presentations at conferences and/or publication in journals or books

Recognition
Students who complete a Quest project, including the required portfolio and presentation criteria, receive special recognition at graduation.

Funding
Funding for projects is available through competitive grants from the Quest program. For more information on the Quest program, visit www.ltu.edu/arts_sciences/quest.asp or contact the Quest program director, Shannon Timmons at 248.204.3618 or stimmons@ltu.edu.

DEGREE PROGRAMS

The college provides undergraduate degree programs in chemical biology, chemical technology, chemistry, computer science, English and communication arts, environmental chemistry, general studies, humanities, mathematics, mathematics and computer science, media communication, molecular and cell biology, physics, physics and computer science, psychology, and radio and television broadcasting. Pre-medical and pre-dental programs are arranged through the Department of Natural Sciences and pre-law through the Department of Humanities, Social Sciences, and Communication. The undeclared program provides special services and support for students not yet ready to enter specific majors. In addition, the college offers minors and dual majors (see descriptions included in individual program curriculum guides).

The college continually develops courses and programs in response to social, economic, and technological changes. With a strong undergraduate education, Arts and Sciences graduates can prepare for immediate entry to professional life and for graduate or professional school.

Associate of Arts in Radio and Television Broadcasting

A partnership between Lawrence Tech and the Specs Howard School of Media Arts makes it possible for students to earn their Associate of Arts in Radio and Television Broadcasting by combining the extensive practical knowledge gained at Specs Howard with courses from Lawrence Tech's core liberal arts curriculum and the University's Media Communication program. The goal of the Associate of Arts in Radio and Television Broadcasting program is to help students develop the skills needed for a successful career, including:

- highly developed written and oral communication skills;
- a thorough understanding of rhetorical and ethical considerations that play a key role in broadcasting and news presentations; and
- courses in literature, history, philosophy, mathematics, science, and the arts, providing a comprehensive, interactive engagement with the ideas and texts that have shaped human civilization.

Associate of Science in Chemical Technology

Students in the Associate of Science in Chemical Technology program have available to them the same facilities and experiences as students in the four-year chemistry program. This degree is designed to be completed in only two years and will qualify students to work as skilled technicians alongside professional chemists and chemical engineers.

Associate of Science in General Studies

The Associate of Science in General Studies is designed for students seeking a high-quality two-year liberal arts degree or a stepping-stone into a four-year program. This program also serves as an ideal dual major component for students needing to establish financial aid eligibility for the Michigan Tuition Incentive Program.

Students in general studies benefit from Lawrence Tech's outstanding faculty, small class sizes, the structured Core Curriculum, state-of-the-art technology, and impressive laboratory facilities. In addition, students receive personal guidance from academic advisors genuinely interested in their needs and educational goals.

The general studies program at Lawrence Tech offers:

- carefully designed courses that help the student develop proficiency in key subject areas, such as mathematics, science, and communication;
- core courses, common to all Lawrence Tech degree programs, in which students develop the ability to think both critically and creatively;
- diverse opportunities to complete selected courses in areas such as engineering, computer science, architecture and design, science, business, and others in preparation for pursuing a four-year degree;
- comprehensive tutoring and support services from the Academic Achievement Center;
- student access to Lawrence Tech's state-of-the-art computer and laboratory facilities.

Bachelor of Arts in English and Communication Arts
The Bachelor of Arts in English and Communication Arts embraces Lawrence Tech's philosophy of theory and practice by combining the study of literature with creative writing and experience in technical and professional communication. The English and Communication Arts program prepares students for professional careers in written, oral, and computer-based communication. The degree also provides excellent preparation for law school and graduate programs in the humanities. Students:

- learn from outstanding faculty who are experts and practitioners in their fields;
- participate in small classes that enhance team-building and problem-solving skills;
- develop their creativity through projects using state-of-the-art technology;
- gain experience as interns in business, industry, and publishing-related fields.

Certificate in Technical and Professional Communication
A Certificate in Technical and Professional Communication, consisting of 15 semester hours of study, is available to Lawrence Tech degree candidates or to students enrolling specifically for the certificate. Students interested in proceeding beyond the certificate level can complete additional coursework to earn a minor in technical and professional communication. Requirements for the minor include the courses required for the certificate, plus one additional communication course at the 2000 level or higher.

Bachelor of Science in Chemical Biology
Molecules large and small play a crucial role in the functioning of larger organisms. Recent advances in the life sciences and in biotechnology have created industries with a deep need for scientists and technicians who are well versed in both biology and chemistry. This dual knowledge – chemical biology – constitutes an emerging discipline that lies at the very core of the biotechnology industry. Lawrence Tech's Bachelor of Science in Chemical Biology was the first such program in the Midwest. Graduates of this unique interdisciplinary program are positioned to pursue careers in the pharmaceutical and biotechnology industries and forensic science laboratories, as well as graduate work in chemistry, biochemistry, molecular biology, chemical biology, and nanotechnology. The degree is certified by the American Chemical Society. This curriculum also satisfies the requirements for admission to medical, dental, or veterinary schools.

Bachelor of Science in Chemistry
Bachelor of Science in Environmental Chemistry
Lawrence Tech's programs in chemistry and environmental chemistry place a strong emphasis on laboratory experience. There are several options within the chemistry program at Lawrence Tech.

Students who choose any of the four-year degree options earn a degree certified by the American Chemical Society and are broadly prepared to find employment in chemistry laboratories and in the fields of research, industry, medicine, biochemistry, government, and education. Students are also well positioned for subsequent graduate work in chemistry, biochemistry, materials science, nanotechnology, or forensic science laboratories.

Students who select the Engineering Chemistry concentration receive preparation in both chemistry and engineering and may pursue positions in traditional chemistry fields, as well as many of those normally filled by chemical engineers. It is an attractive option for students who wish to pursue dual majors in chemistry and in engineering.

The bachelor's program in environmental chemistry offers preparation for careers in green chemistry; hazardous waste management; chemical health and safety; environmental analysis, inspection and compliance; and the synthesis of biodegradable and photodegradable materials. It also allows students to enter graduate programs in environmental engineering and hazardous waste management.

In all of these programs, students can:

- design a program to meet their career objectives;
- qualify to become skilled chemical laboratory professionals immediately following graduation;
- work with equipment and instrumentation offering preparation for real-world employment;
- acquire the computer and communication skills needed for success in chemistry and the life sciences;
- participate in small classes that foster interaction with teachers and fellow students; and
- join an award-winning American Chemical Society student chapter.

Bachelor of Science in Computer Science
Computer science is associated with the development and analysis of computer software, algorithms, and technologies. Most information-age technologies are the end result of years of work by computer scientists. The Bachelor of Science in Computer Science at Lawrence Tech offers students a sound foundation in computer science, complemented by a broad core of courses in the sciences and liberal arts. A well-developed foundation in mathematics enables students to contribute to scientific applications or continue with graduate work in computer science.

Software development is a major emphasis of the program, and depending on their personal goals, students may choose from among four concentrations: Business Software Development, Game Software Development, Scientific Software Development, or Software Engineering.

Computer science majors can focus on data science, data mining, game development, virtual environments, Web application development, networks, computer security, intelligent systems, autonomous robots – just to name a few subject areas. Career opportunities occur in a wide variety of settings, such as large or small software or computer service companies, and in various other fields, including industry, government, banking, and health care.

Certificate in Computer Science
A Certificate in Computer Science, consisting of 30 credit hours, is available. Students must earn a 2.0 GPA in all courses to earn the certificate.

Bachelor of Science in Humanities
The humanities attempt to make sense of our human experience. They explore, for example, what makes a society just or the advantages of a free society. They tell us about our history and about our imagination, as expressed in painting, film, or literature. They explore how we can best communicate and how to think about the social and philosophical implications of other disciplines, such as science and technology.

The Bachelor of Science in Humanities emphasizes a solid liberal arts education while encouraging creativity:

- It provides a solid foundation in the humanities and allied social sciences. Humanities students take challenging courses in philosophy, literature, history, communication, psychology, and economics.
- Most of our humanities courses follow the Great Books method, which requires that students read classic texts and discuss them in small classes under the guidance of a highly qualified instructor. In contrast to lectures, this method sharpens the student's reading, writing, and critical thinking skills.
- In addition to the more traditional areas, the Department of Humanities, Social Sciences, and Communication offers a great variety of courses in such fields as creative writing and media communication (including radio, television, and film). Humanities students also gain experience in internships and individual or small-group research under the supervision of a faculty member (e.g., the Quest program).
- To encourage intellectual exploration, the Bachelor of Science in Humanities offers a large number of open electives. This feature makes it easy for humanities majors to become double majors. It also makes the major quite suitable for pre-law and pre-med students, as well as for those who plan to enroll in an MBA program or devote themselves to public service.
- The greatest strength of the Bachelor of Science in Humanities program is the opportunity students have to develop their creative intellects in areas of their own choosing. Under the tutelage of their thesis advisor, students design a series of no less than four related courses that gives them the background to write a senior thesis or carry out a senior project. A student may, for example, take courses in oral storytelling, creative writing, and playwriting and cap this training with a play as a senior project. The project might include a production of the play by Lawrence Tech's Society of Dramatic Arts. Or the student may take classes in art, aesthetics, and neuropsychology, culminating in a senior thesis on the neuropsychology of art. The possibilities to mature as a creative thinker are endless.

The humanities curriculum will help develop students' ability to solve problems creatively and to make imaginative and rational decisions – giving them an edge to succeed in the workplace as well as to prosper in the competitive global economy of the 21st century.

Bachelor of Science in Mathematical Sciences
The influence of mathematics is increasing in a large number of disciplines. Recent advances in physics, chemistry, and astronomy rely heavily on mathematical ideas, and the biological sciences often use mathematical models. Mathematics is used with increasing frequency in the social sciences,

particularly in economics and psychology. The Lawrence Tech Bachelor of Science in Mathematical Sciences focuses on helping students master both mathematical theories and their practical applications, offering them a competitive edge in any career.

In addition to finding employment in the fields already mentioned, mathematics majors are sought after by almost every bureau and branch of the federal government. A degree in mathematical sciences also provides excellent preparation for graduate study in such areas as engineering, biomedical, accounting, economics, computer science, and, of course, mathematics. LTU offers two concentrations in the Mathematical Sciences program:

The Applied Science concentration is an excellent choice for high performers who wish to pursue graduate degrees, including the PhD; seek employment at some of the U.S.'s top corporations as an analyst, modeler, or problem solver; or go to work in the financial industry as an actuarial scientist.

The Pre-Medical concentration is especially designed for high achievers who wish to enter medical school upon graduation. A rigorous program in mathematics and the natural sciences is an excellent way to capture the attention of medical school admissions decision-makers.

Bachelor of Science in Mathematics and Computer Science
Mathematics and computer science are closely related fields. Problems in computer science are often formalized and solved with mathematical methods; in fact, the computer industry employs more mathematicians than any other single field. As society becomes increasingly dependent on computers and other means of information processing, the need for people trained in mathematics and computer science is expected to grow exponentially. Because computer technology is embedded in so many products, services, and systems, jobs requiring math and computer science can be found in virtually every industry.

The Bachelor of Science in Mathematics and Computer Science at Lawrence Tech is a broad and intensive program that enables students to pursue a wide variety of career paths and offers them the opportunity to develop a deeper understanding of the foundations of mathematics and the relation of mathematical tenets to problem solving in the arena of computer science. Compared with a degree in mathematics or computer science alone, it provides the most rigorous preparation for higher-level problem solving and for graduate school.

As undergraduates, students participate in research projects and have opportunities to engage in team-oriented activities, including state and national competitions, designed to prepare them to take part in, and lead, project teams on the job. Students will gain experience using advanced mathematical and computing tools to solve real-world problems and will receive the background necessary for graduate work in either computer science or applied mathematics.

Within the computer industry, individuals with mathematical and computer science expertise are employed by Internet service providers, Web search portals, and data processing, hosting, and related services firms. Others work for government, manufacturers of computer and electronic products, insurance companies, financial institutions, and universities and in the areas of artificial intelligence, biomedical information systems, computer design and engineering, computer networking, gaming systems, information technology, search engines, systems and software engineering, and computerized package distribution systems.

Bachelor of Science in Media Communication
Lawrence Tech's Bachelor of Science in Media Communication program aims to prepare students for careers in the news and entertainment fields. Courses cover topics including cinematography, screenwriting, broadcast television production, film and video editing, writing for electronic and print media, web design, audio production, digital graphics, and social media. The curriculum gives students the opportunity to develop analytical and communications skills and a hands-on understanding of media technology. The cornerstone of this distinctive program is a strong emphasis on civic and social responsibility as well as ethics. Internships provide real-world experience in film/video production, broadcast and/or corporate environments and opportunities to expand the students' base of expertise.

The Bachelor of Science in Media Communication provides a concentration in Film, Television, and Video Production. The concentration's hands-on approach encompasses not only essential technical training but also one-on-one mentoring. The highly specialized curriculum continually evolves to reflect the ever-changing demands of the broadcast industry.

The Film, Television, and Video Production concentration aims to prepare students to:

- enter their field with a superior theoretical, technical, creative, and ethical foundation that distinguishes them from other media specialists;
- think critically based on an impressive background in communication and writing that will serve them not only in their careers, but in their lives;
- become leading-edge producers, writers, reporters, editors, technicians, or related communication professionals who can work independently or in teams; and
- showcase their creative and technical ability in an electronic resume that represents the best of their original productions.

The Media Communication program at Lawrence Tech also offers a concentration in Architectural Studies. This concentration provides an understanding of the history, theories and practices of architecture and the built environment. Students gain the skills necessary to be expert communicators and commentators on the issues of architecture, the built environment, ecology, sustainability, and urbanity. With this concentration, students can leverage their interest in architecture, cities, and the general built environment with marketable media skills.

Certificate in Television and Video Production
The Television and Video Production certificate is a unique 15-credit-hour sampling of camera technique, editing, writing, and communication, which takes advantage of the latest technology**.**

Bachelor of Science in Molecular and Cell Biology
The first undergraduate degree of its kind in southeastern Michigan, Lawrence Tech's Bachelor of Science in Molecular and Cell Biology is a comprehensive degree with an emphasis on the role of individual cells and molecules in influencing the biology of organisms, populations, and communities. Its focus is on the interaction of cells and molecules that gives the cells their functionality and ultimately the properties of life. An integrative program encompassing the breadth of biological disciplines, the molecular and cell biology curriculum prepares students for any of the multiple paths they may follow in the life sciences, including medical school and other professional schools, graduate research, nanotechnology, and work in biotechnology laboratories.

Bachelor of Science in Nursing (BSN)
The BSN program's mission is to develop innovative professional nursing leaders who are compassionate and caring healers dedicated to transforming healthcare through the art of nursing, research, theory, practice, technology, and community engagement. LTU has joined with Saint John Providence in an academic practice partnership carefully designed to prepare students for the changing landscape of healthcare. Innovative project-based, problem-based, and active collaborative learning strategies permeate the pedagogy for teaching and learning. Relationship-based care serves as the conceptual framework for the nursing curriculum at LTU and is the framework operationalized in St. John Providence's six partner hospitals and over 100 clinics.

BSN program objectives:

- Integrate knowledge from the humanities and sciences within the context of nursing science.
- Implement the principles of relationship-based care into patient-centered, individualized care imparted within a caring and healing environment.
- Demonstrate health promotion and disease prevention strategies across diverse settings, lifespans, and vulnerable populations to address health disparities and population health.
- Formulate plans of care designed within the frameworks of clinical reasoning, quality improvement, and evidence-based practice.
- Utilize information management and technology to ensure safe, effective, and high quality care.
- Employ interprofessional collaboration and leadership strategies to improve outcomes for individuals, communities, and systems.
- Value professional nursing practice reflective of the scope and standards of nursing practice and the code of ethics.
- Examine the impact of policy, finance, and regulatory environments on healthcare.

Bachelor of Science in Physics
Bachelor of Science in Physics and Computer Science
The physics degree programs at Lawrence Tech place a strong emphasis on laboratory experience and the use of computers to prepare students for scientific study, research and development, and graduate school. The programs also provide useful skills in preparation for immediate career opportunities. The Bachelor of Science in Physics has several electives that enable students to design their degrees to match their career goals and interests, including lasers and holography, nuclear physics, biomedical engineering, geophysics, health physics and nuclear medicine, science education, patent law, astronomy, and nanotechnology.

The Bachelor of Science in Physics is designed for those who wish to work in research and development in industry and in interdisciplinary research. This degree can readily be pursued as a dual major with one of the engineering disciplines. Three concentrations are offered: Biophysics, Applied Physics, and Chemical Physics.

The Bachelor of Science in Physics and Computer Science prepares students to apply computers and sensor technology to the solving of practical problems.

In each of these physics programs, students can:

- gain computer skills that allow analysis of data gathered with interfaced sensors;
- design a program to meet career objectives;

- engage in a field leading to the exciting research that drives the technological revolution, from radio astronomy to lasers, medical imaging, and supercomputers;
- join the many Lawrence Tech physics students who have gone on to the nation's top graduate programs in physics or related fields;
- participate in small classes where they interact closely with teachers and students;
- find opportunities to participate as an undergraduate in special programs at national facilities, such as Oak Ridge, Argonne, Fermilab, and Los Alamos; and
- acquire the communication skills necessary for a successful career.

Bachelor of Science in Psychology
Psychology is the study of behavior and mental processes.

The Bachelor of Science in Psychology at Lawrence Tech is characterized by a strong emphasis on empirical research. The curriculum combines psychological knowledge with hands-on, lab-based activity. Motivated students are strongly encouraged, starting in their freshman year, to design experiments, be involved with international research projects, make presentations at conferences, and publish scientific papers. The program culminates in a senior research project where students develop their own original ideas. The interdisciplinary nature of the Psychology program gives students the opportunity to collaborate with engineers, architects, game designers, computer scientists, and more.

Psychology is among the fastest growing professional areas, and Lawrence Tech offers students four concentrations that represent four different career pathways: Clinical Psychology, General and Applied Psychology, Industrial/Organizational Psychology, or Pre-Med/Biobehavioral Psychology.

Clinical Psychology – This area focuses on normal and pathological mind states. Students will be familiarized with diagnosis and treatment of mental disorders, learn about the old masters, such as Pavlov and Freud, as well as the most recent breakthroughs in neuropsychology and cognitive behavioral therapy.

General/Applied Psychology – Students learn how the brain and the mind work and how psychology can be applied to many different aspects of daily life, for example, human sexuality and sports activities. There is an emphasis on hands-on lab experience, including designing, testing, and analyzing experiments involving perception, memory, attention, and much more.

Industrial/Organizational Psychology – This concentration prepares students for a psychology career in industry and business. Students explore leadership, decision making, motivation, organizational behavior management, and job performance in both psychology and business administration courses.

Pre-Med/Biobehavioral Psychology – This area prepares students for medical school and a career in the exciting fields of neuroscience, psychiatry, and a variety of medical specialties. It provides not only a solid foundation in science, mathematics, computers, and the humanities but also an integrated academic and technical background in psychopharmacology and the behavioral sciences. This option fulfills the requirements for Lawrence Tech's pre-medical program.

Undeclared
The College of Arts and Sciences welcomes students interested in exploring their educational options prior to declaring a major. While completing general education courses common to all degree programs, undeclared students may also select from introductory courses in architecture, business,

communication, computers, engineering, mathematics, science, or any other discipline offered at the University as a way to learn more about these areas of study. A network of academic advisors and career services professionals is available to assist students in selecting the major best suited to their interests and abilities. As coursework is completed and GPA standards are attained, students may apply for admission to their desired baccalaureate programs at the University.

NATURAL SCIENCES REQUIREMENT

Some majors at Lawrence Tech specify Natural Sciences 1, Natural Sciences 2, and Natural Sciences Lab as required courses. To satisfy the natural sciences lecture course requirement for these majors, *any two* of the courses listed below may be taken. All prerequisites and co-requisites must be satisfied. Well-prepared students may substitute higher-level science courses for those listed below. Students who have specified Undeclared as their major should consult with an advisor to determine which courses best fit their academic and career plans.

Course Number	*Subject*	*Prerequisite or Co-requisite*
BIO 1153	Intro. to Biological Principles	None
BIO 1213*	Biology 1*	BIO 1153 or placement
BIO 1223*	Biology 2*	BIO 1153 or placement
BIO 2313	Microbiology	BIO 1213
CHM 1154*	Intro. to Chemical Principles	MCS 0054 (co-requisite) or higher
CHM 1213	University Chemistry 1	MCS 1074 (co-requisite) or higher, plus CHM 1154 or chem placement
CHM 1223	University Chemistry 2	CHM 1213
CHM 2313	Organic Chemistry 1	CHM 1213 + CHM 1221
FSC 1214**	Forensic Science	None
GLG 1103	Geology	None
PHY 1154**	Intro. to Physical Principles	MCS 1074, MCS 1254, or higher
PHY 1213	Introductory Astronomy	MCS 0054 (co-requisite) or higher
PHY 2213	College Physics 1	MCS 1074, MCS 1254, or higher, plus PHY 1154 or physics placement
PHY 2223	College Physics 2	PHY 2213
PHY 2413	University Physics 1	MCS 1424 (co-requisite), plus PHY 1154 or physics placement
PHY 2423	University Physics 2	PHY 2413 and MCS 2414(co-requisite)
PSC 1143	Environ. Science and Sustainability	None

*BIO 1213 and BIO 1223 are independent. Neither is prerequisite to the other.
**CHM 1154, FSC 1214, and PHY 1154 have integrated laboratory components that satisfy the requirement for a laboratory course as well as a natural sciences lecture course.

To satisfy the natural science laboratory requirement, *any one* of the courses listed below may be taken. All prerequisites and co-requisites must be satisfied.

Course Number	*Subject*	*Co-requisite Lecture*
BIO 1221	Biology 1 Laboratory	BIO 1213 or BIO 1153
BIO 1231	Biology 2 Laboratory	BIO 1223
CHM 1154*	Introduction to Chemical Principles	None
CHM 1221	University Chemistry 1 Laboratory	CHM 1213

FSC 1214*	Forensic Science	None
PHY 1154*	Introduction to Physical Principles	None
PHY 1221	Astronomy Laboratory	PHY 1213
PHY 2221	College Physics 1 Laboratory	PHY 2213
PHY 2231	College Physics 2 Laboratory	PHY 2223
PHY 2421	University Physics 1 Laboratory	PHY 2413
PHY 2431	University Physics 2 Laboratory	PHY 2423

*CHM 1154, FSC 1214, and PHY 1154 have integrated laboratory components that satisfy the requirement for a laboratory course as well as a natural sciences lecture course.

ENGLISH AS A SECOND LANGUAGE (ESL)

LTU's ESL Institute is an accredited language-instruction program conferring certificates in English proficiency. The Institute offers quality academic and cultural programs to the diverse international community on LTU's campus and the broader Metro Detroit area. For more than a decade, the Institute's international staff and instructors have supported students from over 50 countries to achieve their personal, academic, and career goals. Full-time ESL students meet for 24 hours of intensive instruction per week. Courses are taught at four levels of proficiency, encompassing six literacy skills: grammar, reading, listening, conversation, writing, and integrated skills. Voice and articulation, an online English eLab, and TOEFL-preparation courses are also offered. The Institute's Bridge Program permits advanced students, admitted to an LTU degree program, to take a hybrid schedule of ESL and program courses.

ASSOCIATE OF ARTS IN RADIO AND TELEVISION BROADCASTING

TOTAL SEMESTER CREDIT HOURS: 60

Students receive 24 credit hours (awarded as transfer credits) upon completion of an eight-month curriculum at the Specs Howard School of Media Arts. The following 36 credit hours must be taken at Lawrence Tech.

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
COM 2103	Technical and Prof. Communication	3
COM 2443	Introduction to Rhetoric/Logic	3
MCO 2543	Writing for Electronic/Print Media	3
MCO XXX3	Media Communication Elective	3
LLT 1213	World Masterpieces 1	3
LLT 1223	World Masterpieces 2	3
SSC 2413	Foundations of American Experience	3
SSC 2423	Development of American Experience	3
MCS 1254	Geometry in Art	4
	Natural Science	3
	Natural Science Lab	1

For more information or to speak with an advisor, contact the Department of Humanities, Social Sciences, and Communication at 248.204.3520, email humchair@ltu.edu, or visit room S225 in the Science Building.

ASSOCIATE OF SCIENCE IN CHEMICAL TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 62/63

First Semester

Course Number	*Subject*	*Cr. Hrs.*
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1074*	Precalculus*	4
SSC 2413	Foundations of American Experience	3
	TOTAL	15

Second Semester

Course Number	*Subject*	*Cr. Hrs.*
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1224*	Survey of Calculus*	4
COM 2103	Tech and Prof Communication	3
	TOTAL	15

Third Semester

Course Number	*Subject*	*Cr. Hrs.*
CHM 2313	Organic Chemistry 1	3
CHM 2342	Analytical Chemistry	2
CHM 2352	Analytical Chemistry Lab	2
MCS 2124**	Statistics**	4
MCS 1142	Intro. to C	2
SSC 2423	Development of American Experience	3
	TOTAL	16

Fourth Semester

Course Number	*Subject*	*Cr. Hrs.*
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry Lab	2
CHM 2631	Instrumental Lab	1
LLT 1223	World Masterpieces 2	3
PHY 1154	Intro. to Physical Principles	4
LLT/SSC/PSY XXX3	Elective	3
	TOTAL	16

*Qualified students wishing to continue on to the Bachelor of Science in Chemistry, Environmental Chemistry, or Chemical Biology should follow the calculus-based mathematics sequence for those degrees (MCS 1414 Calculus 1, MCS 1424 Calculus 2, etc.).
**May be replaced by MCS 3403 Probability and Statistics (Calculus 3 prerequisite) for students taking higher-level calculus.

For more information, contact the Department of Natural Sciences at 248.204.3600, email nschair@ltu.edu, or visit room S322 in the Science Building.

ASSOCIATE OF SCIENCE IN GENERAL STUDIES

TOTAL SEMESTER CREDIT HOURS: 60/61

First Semester

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
SSC 2413	Foundations of the American Experience	3
MCS 1XX3 (or 1XX4)	Mathematics 1	3 (or 4)
	Open Electives	6
	TOTAL	15

Second Semester

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
COM 2103	Technical and Professional Communication	3
MCS 1XX4	Mathematics 2	4
	Open Electives	6
	TOTAL	16

Third Semester

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of the American Experience	3
	Natural Sciences 1	3
	Open Electives	6
	TOTAL	15

Fourth Semester

Course Number	*Subject*	*Cr. Hrs.*
	Natural Sciences 2	3
	Natural Sciences Lab	1
	Open Electives	10
	TOTAL	14

While enrolled in the general studies program, students preparing to enter Lawrence Tech's four-year degree programs will complete courses that fulfill the general education requirements common to all curricula. In most cases, students will also have the opportunity to complete foundational courses specific to their intended majors, provided that the applicable course prerequisites have been satisfied. Initial course selections will be determined on the basis of students' placement assessment results.

To be eligible to transfer into a four-year major, students must have achieved satisfactory performance in a minimum of 12 credit hours of coursework, including specific courses applicable to their programs of choice. Students must see their academic advisors for additional information on course prerequisites, appropriate choices for elective courses, transfer eligibility requirements, and further information specific to their degree programs. Students participating in the Michigan Tuition Incentive Program (TIP) must complete the General Studies degree to be eligible for Phase II benefits.

For more information or to speak with an advisor, contact the College of Arts and Sciences at 248.204.3500, email scidean@ltu.edu, or visit room S101 in the Science Building.

BACHELOR OF ARTS IN ENGLISH AND COMMUNICATION ARTS
TOTAL SEMESTER CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
PSY 1213	Introductory Psychology	3
MCS 1203	Logic	3
	Open Elective	3
	TOTAL	13

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of American Experience	3
MCS 1XX4	Mathematics Elective	4
	Natural Sciences 1	3
	Natural Sciences Lab	1
	Open Elective	3
	TOTAL	17

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CRW 2513	Creative Writing	3
COM 2103	Technical and Prof. Communication	3
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of American Experience	3
	Natural Sciences 2	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2113	Speech	3
COM 2443	Intro. to Rhetoric and Logic	3
LLT 3413	British Lit.: Self and Society	3
LLT 3443	American Lit.: Contact to the Civil War	3
LLT 2003	Sophomore Internship/Project	3
	TOTAL	15

Junior Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 3423	British Lit.: Reason and Revolution	3
LLT 3453	Amer. Lit.: Reconstruction to Present	3
COM 3553	Interpersonal and Nonverb. Comm.	3
LLT 3613 **or**	Literature and Art **or**	
LLT 3623	Literature and Science	3

SSC 3733	Aesthetics	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 3433	British Lit.: Victorian and Modern	3
LLT 3463	Amer. Lit.: Race, Ethnicity, Identity	3
CRW 3113	Special Topics in Creative Writing	3
LLT 4533	Criticism, Theory, Cultural Studies	3
	Open Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 4213	Shakespeare in Production	3
LLT 4513	Seminar in Literature	3
COM 3543	Technical Editing	3
CRW 4113	Adv. Creative Writing	3
COM 4001	Pathways Capstone Lab	1
	Open Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 4223	Senior Internship	3
LLT 4903	Senior Thesis	3
SSC 4513	Seminar in Social Science	3
	Open Electives	6
	TOTAL	15

CERTIFICATE IN TECHNICAL AND PROFESSIONAL COMMUNICATION

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
COM 2113	Speech	3
COM 3553 **or**	Interpersonal and Nonverb. Comm. **or**	
COM 3563	Collaborative Comm. for Leaders	3
Two additional Communication electives at 2000 level or higher		6
	TOTAL	15

For more information or to speak with an advisor, contact the Department of Humanities, Social Sciences, and Communication at 248.204.3520, humchair@ltu.edu, or visit room S225 in the Science Building.

BACHELOR OF SCIENCE IN CHEMICAL BIOLOGY

TOTAL SEMESTER CREDIT HOURS: 124

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 1213	Biology 1	3

BIO 1221	Biology 1 Lab	1
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 L Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2313	Organic Chemistry 1	3
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
SSC 2413	Foundations of American Experience	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 3203	Anatomy and Physiology A	3
BIO 3201	Anatomy and Physiology Lab	1
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
SSC 2413	Development of American Experience	3
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2342	Analytical Chemistry	2
CHM 2352	Analytical Chemistry Lab	2
CHM 3452	Intermed. Inorganic Chemistry*	2
BIO 3303	Anatomy and Physiology B	3
MCS XXX3	Adv. Math Elective	3
COM 2103	Technical and Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 3423	Physical Chemistry 1	3
CHM 3431	Physical Chemistry 1 Lab	1
CHM 2631*	Instrumental Lab*	1
CHM 4723*	Adv. Organic Chemistry*	3
PSC 3001	Intro. to Projects in Science	1
BIO 2323	Molecular Genetics	3
SSC/PSY XXX3	Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
CHM/BIO XXX3	Technical Elective	3
CHM 4912	Senior Project 1	2
LLT 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	Open Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 4813	Cell Biology	3
BIO 4812	Cell Biology Lab	2
CHM 4403*	Advanced Biochemistry*	3
CHM 4922	Senior Project 2	2
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	13

*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information, contact the Department of Natural Sciences at 248.204.3600, nschair@ltu.edu, or visit room S322 in the Science Building.

BACHELOR OF SCIENCE IN CHEMISTRY

TOTAL SEMESTER CREDIT HOURS: 125

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3

	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
SSC 2423	Development of American Experience	3
	TOTAL	15

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2313	Organic Chemistry 1	3
CHM 2342	Analytical Chemistry	2
CHM 2352	Analytical Chemistry Lab	2
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
LLT 1223	World Masterpieces 2	3
MCS 3403 **or**	Probability and Statistics **or**	
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 3434	Physical Chemistry 2	4
CHM 3441	Physical Chemistry 2 Lab	1
CHM 3452	Intermed. Inorganic Chemistry*	2
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
CHM 3001	Computational Chemistry 1	1
COM 2103	Technical and Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 3423	Physical Chemistry 1	3
CHM 3431	Physical Chemistry 1 Lab	1
CHM 4632*	Instrumental Analysis Lab*	2
CHM 4643*	Advanced Inorganic Chemistry*	3
PSC 3001	Intro. to Projects in Science	1

SSC/PSY XXX3	Elective	3
	Open Elective	3
	TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 3463*	Advanced Synthesis Lab*	3
CHM 4001	Computational Chemistry 2	1
CHM XXX3	Elective	3
CHM 4912	Senior Project 1	2
LLT 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	Open Electives	4
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 4522*	Advanced Spectroscopy*	2
CHM 4541*	Advanced Spectroscopy Lab*	1
CHM 4723*	Advanced Organic Chemistry*	3
CHM 4922	Senior Project 2	2
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Electives	6
	TOTAL	17

*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information contact the Department of Natural Sciences at 248.204.3600, nschair@ltu.edu, or visit room 322 in the Science Building.

Engineering Chemistry Concentration

TOTAL SEMESTER CREDIT HOURS: 128

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
	TOTAL	15

SECOND SEMESTER

CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4

SSC 2423	Development of American Experience	3
	TOTAL	15

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2313	Organic Chemistry 1	3
EXX XXX2	Engr. Computer Applications	2
LLT 1223	World Masterpieces 2	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
EGE 1023	Engineering Materials	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	TOTAL	15

Junior/Senior Years (Engineering Chemistry Concentration)

Because of its highly flexible nature, there is no standard curricular pattern for the Engineering Chemistry concentration in the junior and senior years. A detailed plan of work leading to the degree will be established in collaboration with the student's advisor by the fall term of the junior year. Unlike other chemistry degrees at Lawrence Tech, the specified curriculum for the Engineering Chemistry concentration does not automatically lead to certification of the degree by the American Chemical Society (ACS). With an appropriate selection of electives (especially laboratory electives), ACS certification can be awarded on a case-by-case basis. Students wishing to obtain ACS certification within the Engineering Chemistry concentration should consult with their advisors as early as possible to ensure that a suitable mix of electives is chosen.

The following courses are required to complete the BS in Chemistry with a concentration in Engineering Chemistry

Course Number	*Subject*	*Cr. Hrs.*
CHM 3423	Physical Chemistry 1	3
CHM 3431	Physical Chemistry 1 Lab	1
CHM 3434	Physical Chemistry 2	4
CHM 3441	Physical Chemistry 2 Lab	1
CHM 3452	Intermed. Inorganic Chemistry	2
CHM 4912	Senior Project 1*	2
CHM 4922	Senior Project 2*	2
CHM XXXX	Chemistry Electives**	9
COM 2103	Technical and Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
COM 4001	Pathways Capstone Lab	1

EEE 2123	Circuits and Electronics	3
EME 2011	Engr. Materials Lab	1
EME 3013	Mechanics of Materials	3
EME 3043	Dynamics	3
EME 3024	Fluid Mechanics	4
EME 4013	Heat Transfer	3
EME 3033	Engr. Numerical Methods	3
	Engineering Electives	6
LLT 3XX3/4XX3	Junior/Senior Elective	3
PSC 3001	Intro. to Projects in Science	1
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
SSC/PSY XXX3	Elective	3
	Open Elective	3

*Dual majors may substitute the corresponding engineering course, providing the project topic is approved in writing by both departments.
**A list of currently approved courses can be obtained from the department website or in room S322 in the Science Building.

For more information contact the Department of Natural Sciences at 248.204.3600, nschair@ltu.edu, or visit room 322 in the Science Building.

BACHELOR OF SCIENCE IN ENVIRONMENTAL CHEMISTRY
TOTAL SEMESTER CREDIT HOURS: 123

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2313	Organic Chemistry 1	3

CHM 2342	Analytical Chemistry	2
CHM 2352	Analytical Chemistry Lab	2
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of American Experience	3
	TOTAL	15

Junior Year (Example)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 3434	Physical Chemistry 2	4
CHM 3441	Physical Chemistry 2 Lab	1
CHM 3452	Intermed. Inorganic Chemistry*	2
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
CHM 3001	Computational Chemistry 1	1
COM 2103	Technical and Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 3423	Physical Chemistry 1	3
CHM 3431	Physical Chemistry 1 Lab	1
CHM 4632*	Instrumental Analysis Lab*	2
MCS 3XX3/4XX3	Junior/Senior Math Elective	3
PSC 3001	Intro. to Projects in Science	1
GLG 1103	Geology	3
SSC/PSY XXX3	Elective	3
	TOTAL	16

Senior Year (Example)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 3463*	Advanced Synthesis Lab*	3
CHM 4001	Computational Chemistry 2	1
CHM 3383*	Environmental Chemistry*	3
CHM 4912	Senior Project 1	2
COM 4001	Pathways Capstone Lab	1
LLT 3XX3/4XX3	Junior/Senior Elective	3
	Open Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 4522*	Advanced Spectroscopy*	2
CHM 4541*	Advanced Spectroscopy Lab*	1
CHM 3392*	Environmental Sampling Methods*	2
CHM 3592*	Environmental Chemistry 2*	2
CHM 4922	Senior Project 2	2
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Elective	3
	TOTAL	15

*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information contact the Department of Natural Sciences at 248.204.3600, nschair@ltu.edu, or visit room 322 in the Science Building.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Business Software Development Concentration

TOTAL SEMESTER CREDIT HOURS: 123

The Business Software Development concentration for the Bachelor of Science in Computer Science is designed for the student interested in non-scientific applications. It prepares the student for database careers, web application, development network support, mobile device programming, cloud computing, and client-server and middleware architectures.

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1524*	Intro. to Discrete Math*	4
MCS 1142	Intro. to C	2
MCS 1074*	Precalculus*	4
SSC 2413	Foundations of American Experience	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2423	Development of American Experience	3
MCS 1224*	Survey of Calculus*	4
MCS 1514	Computer Science 1	4
	TOTAL	14

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Math	3

SSC/PSY XXX3	Elective	3
	Natural Sciences 1*	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
MCS 2534	Data Structures	4
MCS 2513	Software Engineering 1	3
	Natural Sciences 2*	3
	Natural Sciences Lab*	1
	TOTAL	14

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 2124*	Statistics*	4
MSC 3543	Intro. to Database Systems	3
MCS 3663	Computer Architecture and Assembly	3
MCS 3603	Java	3
MCS XXX3	Computer Science Elective	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4663	Operating Systems	3
MCS 3633	Functional Programming	3
MCS XXX3	Computer Science Electives (2)	6
	Open Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4613	Computer Networks	3
MCS 4833	Senior Project	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	Open Electives	6
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 3XX3/4XX3	Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS 4653	Theory of Computation	3
MCS 5013	Web Server Programming	3
MCS 4843	Senior Project 2	3
	TOTAL	15

**May substitute MCS1414 Calculus 1, MCS1424 Calculus 2, MCS2414 Calculus 3, MCS3403 Probability and Statistics, PHY 2413 University Physics 1, PHY 2421 University Physics 1 Lab, PHY 2423 University Physics 2, and PHY 2431 University Physics 2 Lab.*

Game Software Development Concentration

TOTAL SEMESTER CREDIT HOURS: 129

The Game Software Development concentration for the Bachelor of Science in Computer Science is an exciting option for students interested in preparing for a career in the rapidly expanding game development industry.

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
PSY 1213	Introductory Psychology	3
MCS 1142	Intro. to C	2
MCS 1414	Calculus 1	4
MCS 1643	Intro. to Games and Animation	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
MCS 1653	Game Genre Development	3
	TOTAL	17

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
GAM 2213	History of Game Design	3
MCS 3563	Game Design	3
MCS 2414	Calculus 3	4
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Math	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
LLT 1223	World Masterpieces 2	3
MCS 2534	Data Structures	4
GAM 2313	Integrated Game Studio 1	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
MCS 3863	Linear Algebra	3
MCS 3663	Computer Architecture and Assembly	3
CRW 2513	Creative Writing	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
COM 3000	Writing Proficiency Exam	0
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3543	Intro. to Database Systems	3
GAM 3313	Integrated Game Studio 2	3
MCS 3633	Functional Programming	3
MCS 3503	Computer Graphics Programming	3
MCS 4633	Artificial Intelligence	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4613	Computer Networks	3
MCS 4833	Senior Project	3
MCS 4653	Theory of Computation	3
MCS 3683	Principles of Animation	3
MCS 4663	Operating Systems	3
COM 4001	Pathways Capstone Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 3XX3/4XX3	Junior/Senior Elective	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS 2513	Software Engineering 1	3
MCS 4843	Senior Project 2	3
	TOTAL	15

Scientific Software Development Concentration

TOTAL SEMESTER CREDIT HOURS: 123

The Scientific Software Development concentration for the Bachelor of Science in Computer Science is the best selection for the greatest flexibility. It prepares the student for graduate work in computer science as well as professional software development in any application.

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3

MCS 1142	Intro. to C	2
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
	TOTAL	13

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
SSC 2423	Development of American Experience	3
SSC/PSY XXX3	Elective	3
	TOTAL	17

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Math	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
MCS 2534	Data Structures	4
MCS 2513	Software Engineering 1	3
MCS 3633	Functional Programming	3
MCS XXX3	Computer Science Elective	3
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3543	Intro. to Database Systems	3
MCS 3663	Computer Architecture and Assembly	3
MCS 2423 **or**	Differential Equations **or**	
MCS 3403 **or**	Probability and Statistics **or**	
MCS 3863	Linear Algebra	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS XXX3	Computer Science Elective	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4663	Operating Systems	3
MCS XXX3	Computer Science Elective	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	Open Electives	6

		TOTAL 16

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4613	Computer Networks	3
MCS 4833	Senior Project	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	Open Electives (2)	6
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 3XX3/4XX3	Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS 4653	Theory/Computation	3
MCS 4843	Senior Project 2	3
	Open Elective	3
	TOTAL	15

Software Engineering Concentration

TOTAL SEMESTER CREDIT HOURS: 123

The Software Engineering concentration for the Bachelor of Science in Computer Science is designed to meet the sky-rocketing demand for software engineers throughout the world. Software engineers develop and apply innovative ideas, processes, methodologies, frameworks, and tools to improve the development processes, quality, performance, and reliability of computer software systems. Through hands-on software project development and management experiences coupled with testing, verification, and validation techniques, graduates of this concentration have the expertise to satisfy the most exacting customer requirements and achieve optimum efficiency in software design, reduced production and maintenance costs, improved system reliability, and enhanced system security.

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1524	Intro. to Discrete Math	4
MCS 1142	Intro. to C	2
MCS 1074*	Precalculus*	4
SSC 2413	Foundations of American Experience	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2423	Development of American Experience	3
MCS 1224*	Survey of Calculus*	4
MCS 1514	Computer Science 1	4

	TOTAL	14

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 2124	Statistics	4
MCS 2513	Software Engineering 1	3
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Math	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
MCS 2534	Data Structures	4
MCS 2613	Software Engineering 2	3
MCS XXX3	Computer Science Elective	3
	Natural Sciences 1	3
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
MCS 3603	Java	3
MCS 3663	Computer Architecture and Assembly	3
SSC/PSY XXX3	Elective	3
	Natural Sciences 2	3
	Natural Sciences Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3513	Software Architecture	3
MSC 3543	Intro. to Database Systems	3
MCS 4663	Operating Systems	3
MCS XXX3	Computer Science Electives (2)	6
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 4001	Pathways Capstone Lab	1
LLT 3XX3/4XX3	Junior/Senior Elective	3
MCS 4503	Software Quality and Testing	3
MCS 4613	Computer Networks	3
MCS 4653	Theory of Computation	3
MCS 4833	Senior Project	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4513	Software Project Management	3

MCS 4643	Comparative Prog. Languages	3
MCS 4843	Senior Project 2	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Electives	3
	TOTAL	15

**May replace MCS1074 and MCS1224 with MCS1414 and MCS1424 (Calculus 1 and Calculus 2).*

For more information or to speak with an advisor, contact the Department of Mathematics and Computer Science at 248.204.3560, mcschair@ltu.edu, or visit room S120 in the Science Building.

DUAL MAJOR IN COMPUTER SCIENCE
Students can earn a dual major in computer science and another discipline by completing the degree requirements of both programs.

CERTIFICATE IN COMPUTER SCIENCE
The Certificate in Computer Science requires a grade point average of 2.0 or better in the following courses:

Course Number	*Subject*	*Cr. Hrs.*
MCS 1514	Computer Science 1	4
MCS 2514	Computer Science 2	4
MCS 2513	Software Engineering 1	3
MCS 2523	Discrete Math	3
MCS 2534	Data Structures	4
MCS 3543	Intro. to Database Systems	3
MCS 3663	Computer Architecture and Assembly	3
MCS 4653	Theory of Computation	3
MCS 4663	Operating Systems	3
	TOTAL	30

All but MCS 1514 and MCS 2514 must be taken at Lawrence Tech.

For more information or to speak with an advisor, contact the Department of Mathematics and Computer Science at 248.204.3560, email mcschair@ltu.edu, or visit room S120 in the Science Building.

BACHELOR OF SCIENCE IN HUMANITIES
TOTAL SEMESTER CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1003	Intro. to Computer Applications	3
MCS 1203	Logic	3
PSY 1213	Introductory Psychology	3
	Natural Sciences 1	3

	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of American Experience	3
MCS 1254	Geometry in Art	4
	Natural Sciences 2	3
	Natural Sciences Lab	1
	TOTAL	14

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of American Experience	3
	Humanities Elective	3
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2113	Speech	3
SSC 2303	Principles of Economics	3
COM 2443	Intro. to Rhetoric/Logic	3
COM 3000	Writing Proficiency Exam	0
	Humanities Electives	3
	Open Elective	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3563/MCO 3633	Collaborative Comm. or Social Media	3
SSC 3723	Ethics	3
LLT/CRW 3XX3/4XX3	Jr./Sr. Lit./Creative Writing Elective	3
	Thesis Concentration Elective	3
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/CRW 3XX3/4XX3	Jr./Sr. Lit./Creative Writing Elective	3
	Thesis Concentration Elective	3
SSC/PSY 3XX3/4XX3	Jr./Sr. Social Science Elective	3
MCO/PSY 3XX3/4XX3	Jr./Sr. Media/Psychology Elective	3
NatSci/MCS XXX3	Natural Science/Mathematics Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 4001	Pathways Capstone Lab	1

COM 3453	Research Principles	3
SSC 3XX3/4XX3	Jr./Sr. Social Science Elective	3
	Thesis Concentration Electives	9
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3543	Technical Editing	3
	Senior Thesis or Project	3
	Thesis Concentration Elective	3
	Open Electives	6
	TOTAL	15

Note: Social Sciences, Communication, and open electives must be taken at the 3000 or 4000 level. A minimum of 60 credits of junior/senior coursework is required.

For more information, contact the Department of Humanities, Social Sciences, and Communication at 248.204.3520, humchair@ltu.edu, or visit room S225 in the Science Building.

BACHELOR OF SCIENCE IN MATHEMATICAL SCIENCES
Applied Science Concentration
TOTAL SEMESTER CREDIT HOURS: 122

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1514	Computer Science 1	4
MCS 1414	Calculus 1	4
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of American Experience	3
MCS 1424	Calculus 2	4
MCS 2514	Computer Science 2	4
MCS 2124	Statistics	4
	TOTAL	18

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
MCS 2523	Discrete Math	3
PHY 2413	University Physics 1	3

PHY 2421	University Physics 1 Lab	1
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
MCS 2111	Mathematics Research Topics	1
MCS 2423	Differential Equations	3
MCS 3863	Linear Algebra	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	TOTAL	14

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3723	Advanced Calculus	3
MCS 3403	Probability and Statistics	3
COM 2103	Technical and Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
	Major Elective	3
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3111	Mathematics Seminar	1
MCS 3523	Math Modeling	3
MCS 3733	Partial Differential Equations	3
SSC/PSY XXX3	Elective	3
	Open Elective	3
	TOTAL	13

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4833	Senior Project	3
MCS 4813	Numerical Analysis 1	3
	Major Electives (2)	6
LLT 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4111	Mathematics Journal Club	1
MCS 4843	Senior Project 2	3
	Major Electives (2)	6
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Elective	3
	TOTAL	16

Pre-Medical Concentration
TOTAL SEMESTER CREDIT HOURS: 124

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1414	Calculus 1	4
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
	TOTAL	17

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
MCS 2124	Statistics	4
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2423	Development of American Experience	3
MCS 2111	Mathematics Research Topics	1
MCS 2423	Differential Equations	3
MCS 3863	Linear Algebra	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3403	Probability and Statistics	3

LLT 1223	World Masterpieces 2	3
COM 2103	Technical and Prof. Communication	3
	Major Elective	3
CHM 2313	Organic Chemistry 1	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3111	Mathematics Seminar	1
MCS 3523	Math Modeling	3
SSC/PSY XXX3	Elective	3
	Major Elective	3
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry Lab	2
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4833	Senior Project	3
MCS XXX3	Math Elective	3
	Major Electives (2)	6
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4111	Mathematics Journal Club	1
MCS 4843	Senior Project 2	3
LLT 3XX3/4XX3	Junior/Senior Elective	3
MCS XXX3	Math Elective	3
	Major Elective	3
	TOTAL	13

DUAL MAJOR IN MATHEMATICAL SCIENCES

Students can earn a dual major in mathematics and another discipline by completing the degree requirements of both programs.

For more information or to speak with an advisor, contact the Department of Mathematics and Computer Science at 248.204.3560, mcschair@ltu.edu, or visit room S120 in the Science Building.

BACHELOR OF SCIENCE IN MATHEMATICS AND COMPUTER SCIENCE

TOTAL SEMESTER CREDIT HOURS: 123

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3

CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1514	Computer Science 1	4
MCS 1414	Calculus 1	4
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
MCS 1424	Calculus 2	4
MCS 2514	Computer Science 2	4
MCS 2124	Statistics	4
	TOTAL	15

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
MCS 2414	Calculus 3	4
MCS 2523	Discrete Math	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 2111	Mathematics Research Topics	1
MCS 2423	Differential Equations	3
MCS 2534	Data Structures	4
SSC 2423	Development of American Experience	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3723	Advanced Calculus	3
MCS 3543	Database Systems	3
MCS 3403	Probability and Statistics	3
COM 2103	Technical and Prof. Communication	3
LLT 1223	World Masterpieces 2	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3863	Linear Algebra	3
MCS 3523	Math Modeling	3
MCS 3733	Partial Differential Equations	3
MCS 3111	Mathematics Seminar	1
SSC/PSY XXX3	Elective	3

	Open Elective	3
	TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4833	Senior Project	3
MCS 4813	Numerical Analysis 1	3
MCS 3663	Comp. Arch. and Assembly Prog.	3
LLT 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	Open Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 4663	Operating Systems	3
MCS 4653	Theory of Computation	3
MCS 4843	Senior Project 2	3
MCS 4111	Mathematics Journal Club	1
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Major Elective	3
	TOTAL	16

For more information or to speak with an advisor, contact the Department of Mathematics and Computer Science at 248.204.3560, mcschair@ltu.edu, or visit room S120 in the Science Building.

BACHELOR OF SCIENCE IN MEDIA COMMUNICATION
Film, Television and Video Production Concentration
TOTAL SEMESTER CREDIT HOURS: 121

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCO 2003	Intro. to Video Production	3
PSY 1213	Introductory Psychology	3
MCO 1003	Media, Comm., and Society	3
MCS 1203	Logic	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 1254	Geometry in Art	4
COM 2113	Speech	3
LLT 1213	World Masterpieces 1	3
MCO 1013	Audio for TV and Video Production	3
	Open Elective	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 2563	Intro. to Broadcast Studio	3
MCO 2543	Writing for Electronic/Print Media	3
MCO 3303	Video Editing	3
LLT 1223	World Masterpieces 2	3
COM 2103	Technical and Prof. Communication	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 3203	Camera for Broadcast	3
SSC 2413	Foundations of American Experience	3
COM 2443	Intro. to Rhetoric	3
	Natural Sciences 1	3
	Natural Sciences 1 Lab	1
	Open Elective	3
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 3633	Social Media	3
SSC 2423	Development of American Experience	3
COM 3XX3/4XX3	Communication Elective	3
	Natural Sciences 2	3
COM 3000	Writing Proficiency Exam	0
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 3613	Broadcast Studio Techniques	3
MCO 3913	Media Comm. Internship	3
MCO 3713	Adv. Writing for Media	3
COM/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
LLT 3XX3/4XX3	Literature Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MKT 2013	Principles of Marketing	3
COM 4001	Pathways Capstone Lab	1
SSC/PSY 3XX3/4XX3	Social Science Elective	3
MCO 3XX3/4XX3	Junior/Senior Electives (2)	6
	Open Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 4933	Senior Prod. Practicum	3

MCO 3XX3/4XX3	Junior/Senior Electives (2)	6
	Open Electives	3
	TOTAL	12

BACHELOR OF SCIENCE IN MEDIA COMMUNICATION
Architectural Studies Concentration
TOTAL SEMESTER CREDIT HOURS: 121 min.

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
MCS 1203 **or**	Logic **or**	
MCS 1074	Precalculus	3 (or 4)
ARC 1012	Art and Design Awareness	2
ART 1113	Basic Design 1	3
ART/ARC/ATD XXX3	First Year Studio 1	3
COM 1103	College Composition	3
	TOTAL	15 (or 16)

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 1254 **or**	Geometry in Art **or**	
MCS 1224	Survey of Calculus	4
MCO 1003	Media, Com, and Society	3
ART 1133	Basic Design 2	3
ART/ARC/ATD XXX3	First Year Studio 2	3
SSC 2413	Foundations of American Experience	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 2003	Intro. to Video Production	3
COM 2113	Speech	3
ARC 3613	History of Designed Environ. 1	3
LLT 1213	World Masterpieces 1	3
SSC 2423	Development of American Experience	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 3203	Camera for Broadcast	3
ARC 3623	History of Designed Environ. 2	3
COM 2103	Technical and Prof. Communication	3
LLT 1223	World Masterpieces 2	3
	Natural Science 1	3
	Natural Science Lab	1
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 3303	Video Editing	3
MCO 2543	Writing for Elect. and Print Media	3
ART 3633	Traditions of Art 1	3
COM 2443	Intro. to Rhetoric	3
MKT 2013	Principles of Marketing	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 3713	Adv. Writing for Media	3
ART 3643	Traditions of Art 2	3
ART/ARC/ATD XXX3	Elective	3
COM/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Natural Science 2	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 3633	Social Media	3
COM 4001	Pathways Capstone Lab	1
MCO 3XX3/4XX3	Elective	3
ART/ARC/ATD XXX3	Elective	3
COM/MCO 3XX3/4XX3	Elective	3
LLT 3XX3/4XX3	Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCO 3XX3/4XX3	Electives (2)	6
ART/ARC/ATD	Elective(s)	4 (min.)
SSC/PSY 3XX3/4XX3	Elective	3
	TOTAL	13 (min.)

CERTIFICATE IN TELEVISION AND VIDEO PRODUCTION

Course Number	*Subject*	*Cr. Hrs.*
MCO 2003	Intro. to Video Production	3
MCO 2543	Writing for Electronic/Print Media	3
MCO 3203	Camera for Broadcast	3
MCO 3303	Video Editing	3
MCO XXX3	Elective	3
	TOTAL	15

A **dual major in Architecture and Media Communication** is also available. Contact the Media Communication program director for details.

For more information or to speak with an advisor, contact the Department of Humanities, Social Sciences, and Communication at 248.204.3520, humchair@ltu.edu, or visit room S225 in the Science Building.

BACHELOR OF SCIENCE IN MOLECULAR AND CELL BIOLOGY
TOTAL SEMESTER CREDIT HOURS: 123

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414 **or**	Calculus 1 **or**	
MCS 1224	Survey of Calculus	4
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 2124	Statistics	4
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2313	Organic Chemistry 1	3
LLT 1223	World Masterpieces 2	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
SSC 2413	Foundations of American Experience	3
	TOTAL	13

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 3203	Anatomy and Physiology A	3
BIO 3201	Anatomy and Physiology Lab	1
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
SSC 2423	Development of American Experience	3
	TOTAL	16

Junior Year (Example)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 3303	Anatomy and Physiology B	3
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
COM 2103	Technical and Prof. Communication	3
	Open Electives	6
COM 3000	Writing Proficiency Exam	0
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 2323*	Molecular Genetics*	3
SSC/PSY XXX3	Elective	3
BIO XXX3	Special Topics	3
PSC 3001	Intro. to Projects in Science	1
	Open Elective	4
	TOTAL	14

Senior Year (Example)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 4103*	Evolution*	3
BIO 2313	Microbiology	3
BIO 2321	Microbiology Lab	1
BIO 4912	Senior Project 1	2
LLT 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	Open Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 4813	Cell Biology	3
BIO 4812	In-Depth Cell Biology Lab	2
BIO 4922	Senior Project 2	2
CHM/BIO XXX3	Technical Elective	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Elective	3
	TOTAL	16

*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information or to speak with an advisor, contact the Department of Natural Sciences at 248.204.3600, nschair@ltu.edu, or visit room S322 in the Science Building.

BACHELOR OF SCIENCE IN NURSING
TOTAL SEMESTER CREDIT HOURS: 126

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
NUR 1102	Introduction to Nursing and Social Justice	2
MCS 1074	Precalculus	4
BIO 1213	Biology 1	3
COM 1103	College Composition	3
COM 1001	Pathways to Research Careers	1
	TOTAL	13

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
NUR 1202	Health Promotion and Clinical Prevention	2
CHEM 1213	University Chemistry 1	3
PSY 1213	Introductory Psychology	3
LLT 1213	World Masterpieces 1	3
BIO 2313	Microbiology	3
BIO 2321	Microbiology Lab	1
	TOTAL	15

THIRD SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
LLT 1223	World Masterpieces 2	3
	TOTAL	6

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 3303	Anatomy and Physiology B	3
SSC 2413	Foundations of the American Experience	3
CHM 2103	General Organic and Biochemistry	3
NUR 2102	Holistic Nursing: Complementary Therapies	2
PSY 2623	Social Psychology	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 3203	Anatomy and Physiology A	3
SSC 2423	Development of the American Experience	3
MCS 2124	Statistics	4
NUR 2203	Health Care Policy, Ethics, and Advocacy	3
	TOTAL	13

THIRD SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
NUR 2313	Pathophysiology/Pharmacology I	3
NUR 2323	Assessment Across the Lifespan	3
	TOTAL	6

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
NUR 3103	Foundations of Professional Nursing Practice	3
NUR 3102	Foundations of Interprofessional Collaboration	2
NUR 3113	Scholarship as Applied to Evidence Based Practice	3
NUR 3123	Pathophysiology/Pharmacology II	3
BIO 3133	Nutrition	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
NUR 3204	Nursing Care of the Adult with Acute and Chronic Illness	4
NUR 3214	Mental Health and Illness Across the Lifespan	4
NUR 3202	Informatics for Professional Nurses	2
Junior/Senior Elective	LLT or PSY or SSC	3
	TOTAL	13

THIRD SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
NUR 3303	Nursing Care of the Childbearing Family	3
NUR 3313	Nursing Care of Children and Their Families	3
	TOTAL	6

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
NUR 4105	Population Health and Epidemiology	5
NUR 4103	Nursing Leadership for Quality Healthcare	3
NUR 4102	Special Population: Geriatric Theory	2
NUR 4104	Nursing Care of the Elder Adult with Acute and Chronic Illness	4
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
NUR 4206	Immersion	6
NUR 4202	Capstone Project	2
NUR 4203	Nursing Care of Patients with Complex Needs	3
NUR 4201	Transitions Into Practice	1
	TOTAL	12

BACHELOR OF SCIENCE IN PHYSICS

TOTAL SEMESTER CREDIT HOURS: 125

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3

CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
SSC 2413	Foundations of American Experience	3
PSC 1161	Physical Science Seminar	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
PHY 1213	Astronomy	3
PHY 1221	Astronomy Lab	1
MCS 1424	Calculus 2	4
SSC 2423	Development of American Experience	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4
COM 2103	Technical and Prof. Communication	3
MCS 1142	Intro. to C	2
LLT 1213	World Masterpieces 1	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 2423	University Physics 2	3
PHY 2421	University Physics 2 Lab	1
MCS 2423	Differential Equations	3
MCS 3863	Linear Algebra	3
LLT 1223	World Masterpieces 2	3
SSC/PSY XXX3	Elective	3
	TOTAL	16

Junior Year (Example)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 3414*	Analytical Mechanics*	4
PHY 3653	Contemporary Physics	3
PHY 3661	Contemporary Physics Lab	1
MCS 3403	Probability and Statistics	3
MCS 3413 **or**	Advanced Engineering Mathematics **or**	
MCS 3723	Advanced Calculus	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 3574 (EEE 3414)	Electricity and Magnetism	4
PHY 4724*	Quantum Mechanics*	4

PHY 3613 (EEE 2123)	Circuits and Electronics	3
PHY 3611 (EEE 2111)	Circuits Lab	1
PSC 3001	Intro. to Projects in Science	1
LLT 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	16

Senior Year (Example)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 4763*	Thermal Physics*	3
PHY 4912	Senior Project 1	2
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	Open Electives	7
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 4843*	Condensed Matter Physics*	3
PHY 4743*	Optics, Lasers, and Microscopy*	3
PHY 4781*	Optics, Lasers, and Microscopy Lab*	1
PHY 4922	Senior Project 2	2
	Open Electives	6
	TOTAL	15

*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information or to speak with an advisor, contact the Department of Natural Sciences at 248.204.3600, email nschair@ltu.edu, or visit room S322 in the Science Building.

BACHELOR OF SCIENCE IN PHYSICS AND COMPUTER SCIENCE

TOTAL SEMESTER CREDIT HOURS: 127

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
MCS 1514	Computer Science 1	4
PSC 1161	Physical Science Seminar	1
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2

PHY 1213	Astronomy	3
PHY 1221	Astronomy Lab	1
MCS 1424	Calculus 2	4
MCS 2514	Computer Science 2	4
	TOTAL	17

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4
MCS 2523	Discrete Math	3
SSC 2413	Foundations of American Experience	3
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 2423	University Physics 2	3
PHY 2421	University Physics 2 Lab	1
MCS 2423	Differential Equations	3
MCS 2534	Data Structures	4
LLT 1213	World Masterpieces 1	3
SSC 2423	Development of American Experience	3
	TOTAL	17

Junior Year (Example)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 3653	Contemporary Physics	3
PHY 3661	Contemporary Physics Lab	1
MCS 3723	Advanced Calculus	3
MCS 3863	Linear Algebra	3
LLT 1223	World Masterpieces 2	3
COM 2103	Technical and Prof. Communication	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 3574 (EEE 3414)	Electricity and Magnetism	4
PHY 4724*	Quantum Mechanics*	4
PSC 3001	Intro. to Projects in Science	1
MCS 3403	Probability and Statistics	3
SSC/PSY XXX3	Elective	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

Senior Year (Example)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 3414*	Analytical Mechanics*	4
PHY 4912	Senior Project 1	2
MCS 4813	Numerical Analysis 1	3

MCS 3XX3/4XX3	Junior/Senior Elective	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
COM 4001	Pathways Capstone Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 4843*	Condensed Matter Physics*	3
PHY 4743*	Optics, Lasers, and Microscopy*	3
PHY 4781*	Optics, Lasers, and Microscopy Lab*	1
PHY 4922	Senior Project 2	2
MCS 3523	Math Modeling	3
LLT 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	15

*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor

For more information or to speak with an advisor, contact the Natural Sciences Department at 248.204.3600, nschair@ltu.edu, or visit room S322 in the Science Building.

BACHELOR OF SCIENCE IN PSYCHOLOGY
Clinical Psychology Concentration
TOTAL SEMESTER CREDIT HOURS: 124

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1074 **or**	Precalculus **or**	
MCS 1224	Survey of Calculus	4
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
PSY 1213	Introductory Psychology	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
COM 2103	Technical and Prof. Communication	3
COM 2113	Speech	3
PSY 1003	World of the Mind	3
PSY 2343	Human Sexuality	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
LLT 1213	World Masterpieces 1	3

MCS 2124	Statistics	4
PSY 2613	Developmental Psychology	3
PSY 2113	Research Methods	3
		TOTAL 16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of American Experience	3
PSY 3223	Experimental Psychology Lab	3
PSY 2XX3/3XX3	Psychology Elective	3
	Open Elective	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 3XX3/4XX3	Junior/Senior Elective	3
PSY 3623	Social Psychology	3
PSY 3XX3/4XX3	Psychology Elective	3
COM 3000	Writing Proficiency Exam	0
	Open Electives (2)	6
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PSY 3213	Cognitive Psychology	3
PSY 3633	Abnormal Psychology	3
PSY 4113	Psychology Internship	3
PSY 3XX3/4XX3	Psychology Electives (2)	6
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PSY 4633	Clinical Psychology	3
PSY 4213	Behavioral Neuroscience	3
PSY 4912	Senior Research Project 1	2
PSY 3XX3/4XX3	Psychology Elective	3
COM 4001	Pathways Capstone Lab	1
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 3313 **or**	History and Philosophy of Science **or**	
SSC 3613	Philosophy of Mind	3
PSY 4922	Senior Research Project 2	2
PSY 4313	Drugs and Behavior	3
PSY 3XX3/4XX3	Psychology Elective	3
	Open Electives (2)	6
	TOTAL	17

General/Applied Psychology Concentration

TOTAL SEMESTER CREDIT HOURS: 124

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1074 **or**	Precalculus **or**	
MCS 1224	Survey of Calculus	4
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
PSY 1213	Introductory Psychology	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
COM 2103	Technical and Prof. Communication	3
COM 2113	Speech	3
PSY 1003	World of the Mind	3
PSY 2343	Human Sexuality	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
LLT 1213	World Masterpieces 1	3
MCS 2124	Statistics	4
PSY 2613	Developmental Psychology	3
PSY 2113	Research Methods	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of American Experience	3
PSY 3223	Experimental Psychology Lab	3
	Open Elective	3
PSY 2XX3/3XX3	Psychology Elective	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PSY 3XX3/4XX3	Psychology Elective	3
PSY 3413	Sensation and Perception	3
PSY 3623	Social Psychology	3
PSY 2393	Sport Psychology	3
COM 3000	Writing Proficiency Exam	0
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PSY 3213	Cognitive Psychology	3
LLT 3XX3/4XX3	Junior/Senior Elective	3
PSY 4113	Psychology Internship	3
PSY 3XX3/4XX3	Psychology Elective	3
	Open Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PSY 4313	Drugs and Behavior	3
PSY 4213	Behavioral Neuroscience	3
PSY 4912	Senior Research Project 1	2
PSY 4513	Animal Behavior	3
COM 4001	Pathways Capstone Lab	1
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 3313 **or**	History and Philosophy of Science **or**	
SSC 3613	Philosophy of Mind	3
PSY 4922	Senior Research Project 2	2
PSY 3XX3/4XX3	Psychology Electives (2)	6
	Open Electives (2)	6
	TOTAL	17

Industrial/Organizational Psychology Concentration

TOTAL SEMESTER CREDIT HOURS: 124

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1074 **or**	Precalculus **or**	
MCS 1224	Survey of Calculus	4
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
PSY 1213	Introductory Psychology	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
PSY 1003	World of the Mind	3
PSY 2343	Human Sexuality	3
COM 2103	Technical and Prof. Communication	3
COM 2113	Speech	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of American Experience	3
MCS 2124	Statistics	4
PSY 2113	Research Methods	3
PSY 2613	Development Psychology	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of American Experience	3
MGT 2203	Principles of Management	3
PSY 3223	Experimental Psychology Lab	3
PSY 2XX3/3XX3	Psychology Elective	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
PSY 3313	Industrial Psychology	3
PSY 3623	Social Psychology	3
PSY 3XX3/4XX3	Psychology Elective	3
HRM 3023	Human Resource Management	3
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PSY 3213	Cognitive Psychology	3
PSY 3323	Organizational Psychology	3
LLT 3XX3/4XX3	Junior/Senior Elective	3
PSY 4113	Psychology Internship	3
PSY 3XX3/4XX3	Psychology Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 4001	Pathways Capstone Lab	1
PSY 4213	Behavioral Neuroscience	3
PSY 4912	Senior Research Project 1	2
PSY 3XX3/4XX3	Psychology Elective	3
	Open Electives (2)	6
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PSY 4922	Senior Research Project 2	2
HRM 4013	Labor Relations	3

SSC 3313 **or**	History and Philosophy of Science **or**	
SSC 3613	Philosophy of Mind	3
PSY 3XX3/4XX3	Psychology Elective	3
	Open Electives (2)	6
		TOTAL 17

Pre-Med/Biobehavioral Psychology Concentration
TOTAL SEMESTER CREDIT HOURS: 123

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1001	Pathways to Research Careers	1
COM 1103	College Composition	3
MCS 1414*	Calculus 1	4
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
PSY 1213	Introduction to Psychology	3
		TOTAL 15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
MCS 1424*	Calculus 2	4
COM 2103	Technical and Prof. Communication	3
PSY 1003	World of the Mind	3
PSY 2343	Human Sexuality	3
		TOTAL 17

*MCS 1074 (Precalculus) plus MCS 1224 (Survey of Calculus) may be taken in place of MCS 1414 (Calculus 1) and MCS 1424 (Calculus 2).

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 2124	Statistics	4
LLT 1213	World Masterpieces 1	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
PSY 2113	Research Methods	3
		TOTAL 14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PSY 3223	Experimental Psychology Lab	3
SSC 2413	Foundations of American Experience	3
LLT 1223	World Masterpieces 2	3
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
		TOTAL 14

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
PSY 2613	Developmental Psychology	3
CHM 2313	Organic Chemistry 1	3
BIO 2323	Genetics	3
COM 2113	Speech	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry Lab	2
PSY 3213	Cognitive Psychology	3
LLT 3XX3/4XX3	Junior/Senior Elective	3
PSY 4113	Psychology Internship	3
PSY 3XX3/4XX3	Psychology Elective	3
	TOTAL	17

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 2213**	College Physics 1	3
PHY 2221**	College Physics 1 Lab	1
CHM 3403	Biochemistry	3
PSY 4213	Behavioral Neuroscience	3
PSY 3623	Social Psychology	3
PSY 4912	Senior Research Project 1	2
COM 4001	Pathways Capstone Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
PHY 2223**	College Physics 2	3
PHY 2231**	College Physics 2 Lab	1
PSY 4922	Senior Research Project 2	2
SSC 3313 **or**	History and Philosophy of Science **or**	
SSC 3613	Philosophy of Mind	3
PSY 3XX3/4XX3	Psychology Elective	3
	Open Elective	3
	TOTAL	15

**If Calculus 3 (MCS 2414) is taken as an open elective then College Physics (PHY 2213, 2221, 2223, and 2231) may be replaced with University Physics (PHY 2413, 2421, 2423, and 2431).

CERTIFICATE IN INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

Two of the following three courses:

Course Number	*Subject*	*Cr. Hrs.*
HRM 3023	Human Resource Management	3
HRM 4013	Labor Relations	3
HRM 3XX3/4XX3	Human Resources elective	3

and the following:

Course Number	*Subject*	*Cr. Hrs.*
PSY 3213	Cognitive Psychology	3
PSY 3313	Industrial Psychology	3
PSY 3323	Organizational Psychology	3
		TOTAL 15

For more information or to speak with an advisor, contact the Department of Humanities, Social Sciences, and Communication at 248.204.3520, humchair@ltu.edu ,or psych@ltu.edu, or visit room S225 in the Science Building.

FOUNDATION STUDIES AND SPECIAL PROGRAMS

Pre-Medical and Pre-Dental Sequences

The following courses are recommended for medical school admission. Students should contact their medical schools of interest for specific details about their admission policies.

Biology	***Cr. Hrs.***	***Courses***
One year of general biology with laboratories	8	BIO 1213, BIO 1221, BIO 1223, BIO 1231
One upper-level course from the following (recommended):		
Molecular Genetics	3	BIO 2323
Anatomy and Physiology A & B and laboratory	7	BIO 3203, BIO 3303, BIO 3201
Cell Biology and laboratory	4	BIO 4813, BIO 4821

Chemistry	***Cr. Hrs.***	***Courses***
One year of general chemistry with laboratories	9	CHM 1213, CHM 1221, CHM 1223, and CHM 1232 or CHM 1231
One year of organic chemistry and laboratory	8	CHM 2313, CHM 2323, CHM 2332
One biochemistry course (recommended)	3	CHM 3403

Psychology	***Cr. Hrs.***	***Courses***
General Psychology	3	PSY 1213
Behavioral Neuroscience	3	PSY 4213
Abnormal Psychology	3	PSY 3633

Other Mathematics and Science	***Cr. Hrs.***	***Courses***
One year of physics and laboratory	8	University or College Physics 1&2 plus Labs
One year of math with calculus	8	MCS 1414 and MCS 1424 *or* MCS 1074 and MCS 1224
Statistics	3–4	MCS 2124 or MCS 3403

These courses can most easily be incorporated into a BS in Chemistry, Psychology, Chemical Biology, Molecular and Cell Biology, Physics, or Biomedical Engineering, but they can also be satisfied in other majors with the appropriate choices of electives and/or additional courses.

Pre-Law

An advantage of the University's Core Curriculum is that it develops the skills of critical and logical thinking that are central to admission to, and success in, law school. In addition, students planning to attend law school should place the greatest emphasis on acquiring skill in both oral and written communication. Both the BS in Humanities and the BA in English and Communication Arts provide a thorough education in communication and critical thinking, skills essential to the study of law. The humanities degree, especially, provides excellent preparation by offering knowledge of the context and development of the U.S. system of law and government. Additional courses in four categories may be particularly valuable to pre-law students:

Business Administration

Course Number	*Subject*	*Cr. Hrs.*
ACC 2013	Intro. to Financial Accounting	3
ACC 2023	Intro. to Managerial Accounting	3
FIN 3103	Financial Management	3
MGT 2203	Principles of Management	3

Communication

Course Number	*Subject*	*Cr. Hrs.*
COM 2113	Speech	3
COM 2443	Introduction to Rhetoric and Logic	3
COM 3463	Collaborative Communication	3
COM 3553	Interpersonal and Nonverbal Comm.	3

History, Philosophy, and Political Science

Course Number	*Subject*	*Cr. Hrs.*
SSC 3153	American History to 1877	3
SSC 3163	American History since 1877	3
SSC 3173	American Political Tradition	3
SSC 3723	Ethics	3
SSC 4133	Problems in International Politics	3

Law

Course Number	*Subject*	*Cr. Hrs.*
MGT 2113	Introduction to Business Law	3
SSC 4143	Constitutional Law: Individual Rights	3

Contact Person: Karen Evans, pre-law advisor, 248.204.3089, kevans@ltu.edu

Note: Completion of the Lawrence Tech requirements in the pre-professional programs does not assure the student of admission to medical, dental, law, or graduate school. However, completion of the requirements and of other courses leading to a bachelor's degree does qualify a student for consideration by most professional and graduate schools.

MINOR IN BIOLOGY

Not available to students majoring in molecular and cell biology or in chemical biology.

Required courses (8 credit hours)

Course Number	*Subject*	*Cr. Hrs.*
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1

Electives (minimum of 12 credit hours)
Selected from biology courses numbered 2000 or higher 12
TOTAL 20

For more information, contact nschair@ltu.edu

MINOR IN CHEMISTRY

Because of extensive curriculum overlap this minor is not available to students majoring in chemistry, environmental chemistry, or chemical biology, students who graduate under the chemical physics concentration in physics, or students who have been awarded the Associate of Science in Chemical Technology.

Required Courses (8 to 9 credit hours)

Course Number	*Subject*	*Cr. Hrs.*
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1231 **or**	Chemistry 2 Lab **or**	
CHM 1232	University Chemistry 2 Lab	1 or 2

Chemistry Electives (minimum of 11 credit hours)
selected from chemistry courses numbered
2000 or higher (except CHM 3144) 11
TOTAL 19 or 20

For more information, contact nschair@ltu.edu

MINOR IN COMPUTER SCIENCE

Computer Science Core (19 credit hours)

Course Number	*Subject*	*Cr. Hrs.*
MCS 1514	Computer Science 1	4
MCS 2514	Computer Science 2	4
MCS 2534	Data Structures	4
MCS 3543	Database Systems	4
Plus at least one of the following:		
MCS 2523 **or**	Discrete Math **or**	
MCS 3633 **or**	Functional Programming **or**	
MCS 2513	Software Engineering 1	3

TOTAL 19

Minor Completion: Chose one of the following three options: (6 or 9 credits)

Option 1
Two upper division classes (MSC 3XXX or MCS 4XXX) approved by a computer science advisor

Option 2
One upper division class (MSC 3XXX or MCS 4XXX) approved by a computer science advisor, plus both of the following:

Course Number	*Subject*	*Cr. Hrs.*
MCS 1643	Intro. to Games and Animation	3
MCS 1653	Game Genre Development	3

Option 3
Completion of MCS 4833 Senior Project plus one additional upper division class as follows:

Course Number	*Subject*	*Cr. Hrs.*
MCS 4843 **or**	Senior Project 2 **or**	
MCS 3XXX/4XXX	an advisor-approved MCS elective	3

Transfer students must take at least their last three computer science courses at LTU to be eligible for the computer science minor.

For more information, contact mcschair@ltu.edu

MINOR IN ECONOMICS

Course Number	*Subject*	*Cr. Hrs.*
MCS 12244 **or**	Survey of Calculus **or**	
MCS 1414 **or**	Calculus 1 **or**	
MCS 2124	Statistics	4
SSC 2303	Principles of Economics	3
SSC 2403	Principles of Economics 2	3
Three upper-division courses in economics (advisor approval required)		9
	TOTAL	19

Note: SSC 3523 (Money and Banking) is an economics course.

For more information, contact humchair@ltu.edu

MINOR IN ENGLISH

Five upper-division courses in literature (consult HSSC advisor) (not including prerequisites) 15

Prerequisites:

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
LLT 1223	World Masterpieces 2	3
	TOTAL	21 (including prerequisites)

For more information, contact humchair@ltu.edu

MINOR IN GENERAL SCIENCES

Because of extensive overlap with the curriculum of the primary degree this minor is not available to students majoring in any program in the Department of Natural Sciences or in Biomedical Engineering.

Course Number	*Subject*	*Cr. Hrs.*
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1231 **or**	Chemistry 2 Lab **or**	
CHM 1232	University Chemistry 2 Lab	1 or 2

One of the following physics sequences is required:

Course Number	*Subject*	*Cr. Hrs.*
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
or	**or**	
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
	TOTAL	24 or 25

All prerequisites and co-requisites must be satisfied for these required courses. Those who wish to receive a certificate for this minor must apply to the Department of Natural Sciences, in room S322.

For more information, contact nschair@ltu.edu

MINOR IN HISTORY

Five upper-division courses in history (consult HSSC advisor) 15
(not including prerequisites)

Prerequisites:

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
SSC 2423	Development of American Experience	3
	TOTAL	21 (including prerequisites)

For more information, contact humchair@ltu.edu

MINOR IN MATHEMATICS

Pre-requisites (12 credit hours)

Course Number	*Subject*	*Cr. Hrs.*
MCS 1414	Calculus 1	4
MCS 1424	Calculus 2	4
MCS 2414	Calculus 3	4

The Minor in Mathematics consists of 5 courses from the following three lists. A minimum of 15 credit hours must be taken beyond the prerequisite courses:

Second Year Courses (must take **at least one** of the courses listed):

Course Number	*Subject*	*Cr. Hrs.*
MCS 2423	Differential Equations	3
MCS 2523	Discrete Math	3
MCS 2124	Statistics	4

Third Year Courses (must take **at least two** of the courses listed):

Course Number	*Subject*	*Cr. Hrs.*
MCS 3403	Probability and Statistics	3
MCS 3723	Advanced Calculus	3
MCS 3863	Linear Algebra	3

Additional Upper Division Courses (must take **at least two** of the courses listed):

Course Number	*Subject*	*Cr. Hrs.*
MCS 3413	Advanced Engineering Mathematics	3
MCS 3523	Mathematical Modeling	3
MCS 3733	Partial Differential Equations	3
MCS 3743	Complex Variables	3
MCS 4813	Numerical Analysis 1	3
MCS 4823	Numerical Analysis 2	3
MCS 4863	Modern Algebra	3
MCS 4993	Topics in Applied Math	3
	TOTAL	27 (including prerequisites)

An average grade point of 2.0 or higher must be maintained for mathematics courses applied toward the minor. For more information, contact mcschair@ltu.edu

MINOR IN MEDIA COMMUNICATION

Course Number	*Subject*	*Cr. Hrs.*
MCO 2003	Intro. to Video Production	3
MCO 2543	Writing for Electronic Print/Media	3
MCO 3203	Camera for Broadcast News	3
MCO 2643	Discovery News and Radio Reporting	3
MCO 3303	Video Editing	3
MCO 3843 **or**	Broadcast News Writing and Reporting	**or**
MCO 3713	Advanced Writing for Media	3
		TOTAL 18

For more information, contact humchair@ltu.edu

MINOR IN PHILOSOPHY

Five upper-division courses in philosophy (consult HSSC advisor) 15
(not including prerequisites)

Note: SSC 3723 (Ethics) and SSC 3733 (Aesthetics) are philosophy courses. MCS 1203 (Logic) may also be taken in place of one of these classes.

Prerequisites:

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
SSC 2423	Development of American Experience	3
	TOTAL	21 (including prerequisites)

For more information, contact humchair@ltu.edu

MINOR IN PHYSICS

Course Number	*Subject*	*Cr. Hrs.*
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
PHY 3653	Contemporary Physics	3
PHY 3661	Contemporary Physics Lab	1

Electives (8 more credit hours) chosen from the following:

Course Number	*Subject*	*Cr. Hrs.*
PHY 1213	Astronomy	3
PHY 1231	Astronomy Lab	1
PHY 3414	Analytical Mechanics	4
PHY 4724	Quantum Mechanics	4
PHY 4743	Optics, Lasers, and Microscopy	3
PHY 4781	Optics, Lasers, and Microscopy Lab	1
PHY 4763	Thermal Physics	3
PHY 4843	Condensed Matter Physics	3
PHY 4991/2/3	Directed Study in Physics	1/2/3
	TOTAL	20

For more information, contact nschair@ltu.edu

MINOR IN PSYCHOLOGY

Course Number	*Subject*	*Cr. Hrs.*
PSY 1213	Introduction to Psychology	3
MCS 2124	Statistics	4
PSY 3113	Research Methods for the Behavioral Scientist	3
Plus four (4) upper-division courses in psychology at the 3000-level or above		12

TOTAL 22

For more information, contact humchair@ltu.edu

MINOR IN TECHNICAL AND PROFESSIONAL COMMUNICATION

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
COM 2113	Speech	3
COM 3553 **or** COM 3563	Interpersonal and Nonverb. Comm. **or** Collaborative Communication for Leaders	3
Plus three (3) additional Technical and Professional Communication electives at the 2000 level or above		9
	TOTAL	18

For more information, contact humchair@ltu.edu

DUAL MAJORS

Dual majors are available in various combinations, including:
Chemistry with Engineering or Physics
Physics with Engineering or Chemistry
Computer Science with Engineering or Chemistry
Mathematics with Engineering

For further information about dual majors or minors, please see the individual major program descriptions or contact the advisor listed for the major program.

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Adjunct Faculty
Additional lecturers are assigned to selected courses and sections based on their particular specialties and expertise and are listed in the faculty roster.

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ABOUT THE COLLEGE OF ENGINEERING

Engineering is a profession in which principles of science, mathematics, and economics are applied, using the engineering method to cause changes that benefit society. Engineers endeavor to understand problems, design plans to solve problems, carry out these plans, and follow up to check the results obtained. Engineers must be both analytical and creative and must exercise leadership to accomplish goals. Because their actions can influence many lives, engineers must have a strong sense of ethics and an understanding of the society and environment in which they live.

Lawrence Technological University's College of Engineering places high priority on preparing students to enter the profession in industry, government, or private practice or to pursue advanced degrees.

The curricula provide a strong background in the fundamentals of engineering, as well as more specialized topics, while emphasizing the core of knowledge and experience common to all the engineering disciplines. Program areas have been selected to provide students with the greatest flexibility and mobility in their career choices and to avoid overspecialization.

Mission
To graduate highly skilled engineers equipped with the knowledge and mindset to embrace and be stewards of a changing world.

Vision
To be a preeminent engineering college recognized for leading-edge programs and the use of sustainable advanced technologies.

Lawrence Tech's engineering, engineering technology, and management programs include both theoretical and practical dimensions consistent with the University's motto, "theory and practice." The faculty consists of engineers and managers distinguished by both strong academic and professional credentials as well as significant industrial experience. Many engineering faculty are concurrently working within the industry, which ensures that the program reflects a strong real-world orientation. Lawrence Tech's undergraduate programs in biomedical, civil, computer, electrical, and mechanical engineering are accredited by the Engineering Accreditation Commission (EAC) Accreditation Commission of ABET, www.abet.org. The integrated bachelor's-master's architectural engineering program began the initial accreditation process in the 2016 –17 academic year.

DEGREE PROGRAMS
The college provides undergraduate degree programs in biomedical engineering, civil engineering, computer engineering, construction management, electrical engineering, engineering technology, industrial operations engineering, and mechanical engineering, and a combined bachelor's and master's degree in architectural engineering.

Bachelor of Science in Biomedical Engineering
Lawrence Technological University's biomedical engineering program combines intensive coursework in engineering with a strong background in biology, chemistry, physiology, and other subjects pertinent to the medical field. Its goal is to provide students with the skills needed for industry positions or graduate work in biomedical engineering. The program also provides excellent preparation for those who wish to go on to medical school or for working professionals who, for a variety of reasons, require expertise in biomedical engineering. The Bachelor of Science in Biomedical Engineering degree program is accredited by the EAC Accreditation Commission of ABET, www.abet.org.

The Bachelor of Science in Biomedical Engineering (BSBME) degree requires a total of 132 credit hours.

Educational Objectives
In consultation with program constituencies, the Life Science Advisory Board, alumni, employers, and current students, the faculty established educational objectives for the biomedical engineering program. They are:

1. Graduates of the BSBME program apply science and engineering principles in order to lead cross-functional teams. The focus of such teams may include the creation, development,

design, implementation, verification and communication of medical technologies and services.
2. Graduates of the BSBME program conduct translational BME research while adhering to government compliance requirements and regulatory protocols.
3. Graduates of the BSBME program exhibit and demand the highest safety standards and are ethically engaged in their research and professional practice.
4. Graduates of the BSBME program are contributing members of the profession and society, and stay informed of current research and professional developments through life-long education, which may include graduate studies.

Student Outcomes
To enable graduates to achieve the accomplishments described by the aforementioned educational objectives, the program cultivates specific skills, knowledge, and behaviors. In particular, upon graduation, students must have obtained the following outcomes:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to, engage in lifelong learning;
- a knowledge of contemporary issues;
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice;
- an ability to apply principles of engineering, biology, human physiology, chemistry, calculus-based physics, mathematics (through differential equations), and statistics;
- an ability to solve bio/biomedical engineering problems, including those associated with the interaction between living and non-living systems;
- an ability to analyze, model, design, and realize bio/biomedical engineering devices, systems, components, or processes
- an ability to make measurements on and interpret data from living systems

Bachelor of Science in Civil Engineering
The Department of Civil and Architectural Engineering offers a civil engineering program that is committed to providing its students with the highest quality education, as demonstrated by its mission statement:

> The Mission of the Department of Civil and Architectural Engineering is to offer a Civil Engineering program focusing on a broad, high-quality and contemporary educational experience in civil engineering, in parallel with Lawrence Technological University's guiding principle of "Leadership through Theory and Practice."

Civil engineering has a long and distinguished history among the engineering disciplines. Although the term "civil engineer" may not have been used in ancient times, it was certainly civil engineers who designed and constructed the pyramids, the Roman aqueducts and the Great Wall of China. Today, civil engineers are involved in the design, construction and maintenance of the infrastructure that surrounds us as well as the clean-up and preservation of our natural and manmade environment. As our nation's infrastructure continues to age and deteriorate, and our environment becomes more vulnerable, civil engineers will be expected to create innovative methods to repair and replace the infrastructure and to preserve our environment for future generations. To accomplish this, civil engineers must combine a strong technical background in math and science with excellent communication skills to educate and interact with decision makers, the construction industry, and the general public.

Not only is civil engineering steeped in history and tradition, it is also one of the broadest and most diverse engineering disciplines. Civil engineering encompasses construction engineering and management, environmental engineering, geotechnical engineering, hydraulics and hydrological engineering, structural engineering, transportation engineering, and surveying/land measurement.

Employment opportunities for civil engineers exist at all levels of government and with a variety of consulting engineering firms, architectural and planning organizations, and in private practice. The demand for civil engineers will continue to be strong for the foreseeable future, as many new engineering tasks and responsibilities are assigned to a civil engineer.

The Department of Civil and Architectural Engineering at Lawrence Technological University provides civil engineering students with the necessary skills to immediately contribute to the improvement of the nation's infrastructure and environment and the overall quality of life. At the undergraduate level, students can earn a traditional bachelor's degree in civil engineering, with an option to earn a Certificate in Entrepreneurial Engineering or a dual degree in architecture and civil engineering.

The civil engineering program at Lawrence Tech is accredited by the EAC Accreditation Commission of ABET, www.abet.org. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

According to ABET, "program educational objectives are broad statements which describe the career and professional accomplishments that the program is preparing graduates to achieve." LTU's Department of Civil and Architectural Engineering offers a civil engineering program in which students acquire the education and skill set so that, as alumni, they may achieve the following **professional objectives**:

1. Identify, develop, and analyze realistic options for solving complex engineering challenges to create sustainable solutions
2. Serve as leaders and contributing members in collaborative work environments.
3. Enhance the civil engineering profession by practicing in an ethical and responsible manner, engaging in lifelong learning, and earning professional licensure
4. Engage stakeholders, such as public and private clients, government agencies, other design professionals, and the general public, by effectively communicating engineering perspectives and solutions

Industry leaders have high expectations for graduating civil engineering students. The American Society of Civil Engineers created the *Civil Engineering Body of Knowledge, Second Edition*, which describes its vision for the skills and abilities the next generation of civil engineers must possess, by the year 2025, in order to be competent practitioners. The department adopted the *Body of Knowledge* outlined below as the basis for its program outcomes.

Outcome Number and Title	To graduate with a BS degree in Civil Engineering from Lawrence Technological University and enter the practice of civil engineering, an individual must demonstrate competence in each of 24 Program Outcomes.
Foundational Outcomes	
1 Mathematics	***Solve*** problems in mathematics through differential equations and ***apply*** this knowledge to the solution of engineering problems.
2 Natural Sciences	***Solve*** problems in calculus-based physics, chemistry, and geology and ***apply*** this knowledge to the solution of engineering problems.
3 Humanities	***Demonstrate*** the importance of the humanities in the professional practice of engineering.
4 Social Sciences	***Demonstrate*** the incorporation of social sciences knowledge into the professional practice of engineering.
Technical Outcomes	
5 Materials Science	***Use*** knowledge of materials science to ***solve*** problems appropriate to civil engineering.
6 Mechanics	***Analyze*** and solve problems in solid and fluid mechanics.
7 Experiments	***Specify*** and ***design*** an experiment to meet a specified need; conduct the experiment, and analyze, interpret, and ***explain*** the resulting data.
8 Problem Recognition and Solving	***Develop*** problem statements and solve both well-defined and open-ended civil engineering problems by ***selecting*** and applying appropriate techniques and tools.
9 Design	***Design*** a system or process to meet desired needs within such realistic constraints as economic, environmental, social, political, ethical, health and safety, constructability, and sustainability.
10 Sustainability	***Apply*** the principles of sustainability to the design of traditional and emergent engineering systems and ***explain*** how civil engineers should strive to comply with the principles of sustainable development in the performance of their professional duties.
11 Contemporary Issues and Historical Perspectives	***Explain*** the impact of historical and contemporary issues on the identification and formulation of solutions to engineering problems and ***explain*** the impact of engineering solutions on the economy, environment, political landscape, and society.

12 Risk and Uncertainty	***Apply*** the principles of probability and statistics and ***solve*** problems containing uncertainty.
13 Project Management	***Analyze*** a proposed project and ***formulate*** documents for incorporation into the project management plan.
14 Breadth in Civil Engineering Areas	***Analyze*** and ***solve*** well-defined engineering problems in at least four technical areas appropriate to civil engineering.
15 Technical Specialization	***Apply*** specialized tools or technologies to ***solve*** problems in traditional or emerging specialized technical areas of civil engineering.
Professional Outcomes	
16 Communication	***Plan, compose,*** and ***integrate*** the verbal, written, virtual, and graphical communication of a project to technical and non-technical audiences.
17 Public Policy	***Discuss*** and ***explain*** key concepts and processes involved in public policy.
18 Business and Public Administration	***Explain*** key concepts and processes used in business and public administration.
19 Globalization	***Explain*** global issues related to professional practice, infrastructure, environment, and service populations as such issues arise across cultures and countries.
20 Leadership	***Explain*** leadership principles and attitudes and ***apply*** those principles and attitudes when making decisions and directing the efforts of a small group.
21 Teamwork	***Function*** effectively as a member of an intra-disciplinary team and ***evaluate*** the performance of the team and individual team members.
22 Attitudes	***Explain*** attitudes supportive of the professional practice of civil engineering.
23 Lifelong Learning	***Demonstrate*** the ability for self-directed learning and ***identify*** additional knowledge, skills, and attitudes appropriate for continued professional practice.
24 Professional and Ethical Responsibility	***Explain*** the many aspects of professionalism and what it means to be a member of the civil engineering profession; ***analyze*** a situation involving multiple conflicting professional and ethical interests to determine an appropriate course of action.

At the graduate level, the Department of Civil and Architectural Engineering offers a Master of Architectural Engineering, Master of Science in Civil Engineering, Master of Science in Fire Engineering, Master of Construction Engineering Management, Doctor of Philosophy in Civil Engineering, Graduate Certificate in Fire Engineering, and a Graduate Certificate in Integrated Project Delivery.

Bachelor of Science in Computer Engineering
Bachelor of Science in Electrical Engineering
Bachelor of Science in Embedded Software Engineering

Three degrees are offered in the Department of Electrical and Computer Engineering, a Bachelor of Science in Electrical Engineering, a Bachelor of Science in Computer Engineering, and a Bachelor of Science in Embedded Software Engineering. The decision as to which degree to pursue should be based on a careful consideration of the student's goals and objectives. Faculty are eager to discuss this and other issues with students. All students should see their academic advisor at least once per semester.

The electrical, computer, and embedded software engineering programs integrate design experiences throughout the curricula. This process starts with the freshman-level courses, Introduction to Electrical and Computer Engineering and Fundamentals of Engineering Design Process. The design experience continues through the sophomore, junior, and senior years, using open-ended design exercises to emphasize basic design principles. This process culminates in a two-semester senior design project in which design skills, analysis techniques, teamwork, and oral and written communication skills all come together in a unified culminating design experience. The senior design project provides the student with an opportunity to demonstrate how good an engineer they have become.

Bachelor of Science in Computer Engineering

The world is in the midst of a technological revolution that is being fueled by continuous improvements in the speed and capabilities of computers. Computer engineers are concerned with the design, development, and implementation of new and challenging computer technologies in a myriad of consumer, industrial, commercial, and military applications. For example, every major automotive subsystem (engine, traction, brakes, suspension, climate control, instrument cluster, etc.) on a modern automobile is computer controlled. Working in these areas requires expertise in all aspects of computer hardware and software and requires the engineer to be able to make hardware/software tradeoffs in developing an optimum system design.

The Bachelor of Science in Computer Engineering program at Lawrence Tech is specifically designed with these goals in mind – to give graduating computer engineers the skills necessary to be proficient in both hardware design and computer programming and to be able to integrate these two areas into a single computer-oriented design.

Students receive a strong background in the principles of electrical and computer engineering from the Department of Electrical and Computer Engineering and in those of computer science from the Department of Mathematics and Computer Science. Several courses deal specifically with the challenge of incorporating both hardware and programming designs into a single integrated product design. The program includes a core of electrical engineering and computer science courses, two technical electives, and one laboratory elective . A list of acceptable elective courses can be obtained from the Department of Electrical and Computer Engineering office, room E217.

The computer engineering program at Lawrence Tech is accredited by the EAC Accreditation Commission of ABET, www.abet.org. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

The Department of Electrical and Computer Engineering offers a computer engineering program in which students acquire the education and skill set so that, as alumni, they may achieve the following professional objectives:

1. apply problem solving and critical judgment skills to benefit an increasingly technological society;
2. be a contributing member of engineering project team;
3. grow in professional capability and responsibility;
4. succeed in graduate studies.

According to ABET, "student outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program." The outcomes formulated for the Lawrence Tech computer engineering program are as follows.

Student Outcomes
All computer engineering graduates must have the following, as they apply to the field of computer engineering:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a robotic system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues; and
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Bachelor of Science in Electrical Engineering
Electrical engineers apply electrical, electronic, and magnetic theory to obtain solutions for problems related to the development, design, and operation of electronic and electrical hardware and software, control systems, electrical machines, and communications systems. Besides development, design, operations, and research, electrical engineers may be involved in the manufacture, installation, and sale of electrical and electronic equipment; they are employed by a wide variety of organizations that produce, use, or service this equipment.

The program includes a core of electrical engineering courses, five electrical engineering course electives, and two electrical engineering laboratory electives. A list of acceptable elective courses can be obtained from the Department of Electrical and Computer Engineering office, room E217.

The electrical engineering program at Lawrence Tech is accredited by the EAC Accreditation Commission of ABET, http://www.abet.org. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

The Department of Electrical and Computer Engineering offers an Electrical Engineering program where students acquire the education and skill set so that, as alumni, they achieve the following

professional objectives:

1. apply problem solving and critical judgment skills to benefit an increasingly technological society;
2. be a contributing member of engineering project team;
3. grow in professional capability and responsibility;
4. succeed in graduate studies.

According to ABET, "student outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program." The educational outcomes formulated for the Lawrence Tech electrical engineering program are as follows.

Student Outcomes
All electrical engineering graduates must have the following, as they apply to the field of electrical engineering:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a robotic system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues; and
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Bachelor of Science in Embedded Software Engineering
Embedded software engineering combines software engineering and embedded computer engineering. Many current devices and products, from cars to toaster ovens, have computers buried within them. Embedded software engineering addresses the design issues associated with designing these devices.

The Bachelor of Science in Embedded Software Engineering at Lawrence Tech is the first of its kind in the country. This new and innovative curriculum is designed to give its graduates the skills necessary to be proficient in the software, circuits, sensors, and other areas needed for the successful design of complex systems that involve multiple embedded computers, sub-systems, and other interacting components.

Students will receive a strong background in electrical engineering, software engineering, computer engineering, and computer science. A sequence of embedded software engineer labs that begins in the sophomore year and continues through the senior design course provides the hands-on experience that is the trademark of the Lawrence Tech "theory and practice" approach.

The embedded software engineering program at Lawrence Tech will seek accreditation by the EAC Accreditation Commission of ABET, www.abet.org, as soon as possible (which is right after it graduates its first student). As a program that aspires to ABET accreditation, embedded software engineering must define and consistently work toward a full set of objectives and outcomes.

The Department of Electrical and Computer Engineering offers an Embedded Software Engineering program where students acquire the education and skill set so that, as alumni, they achieve the following professional objectives:

1. Apply problem solving and critical judgment skills to benefit an increasingly technological society;
2. Be a contributing member of an engineering project team;
3. Grow in professional capability and responsibility;
4. Succeed in graduate studies.

According to ABET, "student outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program." The educational outcomes formulated for the Lawrence Tech embedded software engineering program are as follows.

Student Outcomes
All embedded software engineering graduates must have the following, as they apply to the field of embedded software engineering:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a robotic system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues; and
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Regardless of major, all undergraduate curricula in the Department of Electrical and Computer Engineering culminate in a major design experience (referred to as Senior Design, Senior Project, or Capstone Design) that builds on the corresponding curriculum. This two- embedded software engineering semester sequence must be taken in consecutive long semesters and finish in the semester in which the student finishes their program of study.

Bachelor of Science in Industrial Engineering
The mission of the Bachelor of Science in Industrial Engineering program is to prepare individuals for careers in industrial engineering, to provide industry and the profession with well-educated graduates and to generate solutions to industrial problems through applied research.

The department's vision is to be the institution of choice for industrial engineering education because of an accessible and effective program focused on industry needs and the development of strong professional relationships among students, faculty, and alumni.

Educational Objectives
The educational objectives of the industrial engineering program are to graduate students who have the ability to:

1. lead teams to proficiently address multidisciplinary technical problems in a global work environment
2. use ethical judgment, critical thinking, business acumen, and effective communication skills in a team setting to create and implement innovative engineering solutions that meet customer needs
3. engage in lifelong learning and contribute to the engineering profession in order to address contemporary engineering and societal challenges

Industrial engineers apply their knowledge of machine, human, and financial interaction to solve problems related to the global engineering infrastructure. Industrial engineering knowledge can be applied to diverse areas such as manufacturing, insurance, health care, banking and finance, and computer networks.

Bachelor of Science in Mechanical Engineering
The mission of the Department of Mechanical Engineering is to prepare students to be leaders in mechanical engineering careers, capable of producing innovative solutions.

The vision of the Department of Mechanical Engineering is to be the institution of choice for mechanical engineering education, encompassing technical leadership, innovation, and service.

The mechanical engineering program at Lawrence Tech is accredited by the EAC Accreditation Commission of ABET, www.abet.org. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

According to ABET, "program educational objectives are broad statements which describe the career and professional accomplishments that the program is preparing graduates to achieve." The mechanical engineering program's educational objectives, formulated by the faculty in consultation with the Mechanical Engineering Advisory Board and other important program constituencies, are listed below.

Educational Objectives
The educational objectives of the mechanical engineering program are to graduate students who have the ability to:

1. lead teams to proficiently address multidisciplinary technical problems in a global work environment
2. use ethical judgment, critical thinking, business acumen, and effective communication skills in a team setting to create and implement innovative engineering solutions that meet customer needs
3. engage in lifelong learning and contribute to the engineering profession in order to address contemporary engineering and societal challenges

Mechanical engineers apply their knowledge of the physical world to solve problems related to the development of consumer products. Their interests cover such diverse topics as automotive engineering, acoustics, machine design, heating and air conditioning, manufacturing engineering, fluids and hydraulics, stress analysis, computer-aided design/engineering, and energy and power production, among many others.

Mechanical engineering is a very versatile degree; graduates may work in such areas as design, analysis, testing, manufacturing, technical sales, and engineering management. Mechanical engineers are employed by a full spectrum of organizations including manufacturers, aerospace, biomedical, government, consulting firms, and research and development organizations.

All mechanical engineering students study the same core curriculum, which includes courses in three broad technical areas: manufacturing, mechanical systems, and thermal science. Manufacturing courses cover how products are made. Mechanical systems courses cover the study of mechanisms and structures. Thermal science courses cover heat transfer, fluid mechanics, and energy conversion. Since many new consumer products are electro-mechanical in nature, the core curriculum also includes an introductory course in mechatronics engineering.

As seniors, mechanical engineering students are required to take four technical electives. These technical elective courses can be chosen from the following areas: manufacturing, solid mechanics, thermal-fluids, automotive, and alternative energy. Students may concentrate in a particular area by taking at least three of their four electives courses from one of the above areas. A list of acceptable elective courses in each area is available from the Department of Mechanical Engineering office.

The mechanical engineering program integrates the design experience throughout its curriculum. This experience starts with the freshman-level Fundamentals of Engineering Design Projects and Engineering Computer Applications Lab and continues to the capstone senior projects courses. In lower-level courses, primarily open-ended design exercises are utilized to teach various aspects of design. Senior projects provide an extensive, structured design experience with a strong emphasis on teamwork and oral and written communications.

According to ABET, "student outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program." The educational outcomes formulated for the mechanical engineering program are given below.

Student Outcomes
The student outcomes for the mechanical engineering program are:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a robotic system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;

- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues; and
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Lawrence Tech also offers graduate programs through the Department of Mechanical Engineering: Master of Science in Automotive Engineering, Master of Science in Industrial Engineering, Master of Science in Mechanical Engineering, Master of Engineering Management, Master of Science in Mechatronic Systems Engineering, and Doctor of Engineering in Mechanical Engineering. These programs are described in the *Graduate Catalog*.

Bachelor of Science in Robotics Engineering
The mission of the Bachelor of Science in Robotics Engineering program is to prepare individuals to design and maintain robots, develop new applications for robots and provide industry with well-educated graduates capable of generating solutions to industrial robotics problems.

The department's vision is to be the institution of choice for robotics engineering education because of an accessible and effective program focused on industry needs and the development of strong professional relationships among students, faculty, and alumni.

Educational Objectives
The educational objectives of the robotics engineering program are to graduate students who have the ability to:

1. lead teams to proficiently address multidisciplinary technical problems in a global work environment
2. use ethical judgment, critical thinking, business acumen, and effective communication skills in a team setting to create and implement innovative engineering solutions that meet customer needs
3. engage in lifelong learning and contribute to the engineering profession in order to address contemporary engineering and societal challenges

Student Outcomes
The student outcomes for the robotics engineering program are:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a robotic system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues; and

- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Students in the Robotics Engineering program will be exposed to various types of robots, including industrial robots, which are typically designed to perform a routine task with little or no human interaction, and service robots (or personal robots), which are designed to work and perform activities for their users and are therefore designed to have significant human interaction. Robotics engineers can apply their engineering skills and knowledge of robots to a variety of applications in numerous industries, including agriculture, aeronautical, aerospace, automotive, chemical, defense, energy, food and beverage, pharmaceutical, and medical.

Master of Science in Architectural Engineering
(Integrated Bachelor's and Master's Program)
Lawrence Technological University's architectural engineering program is a five-year, direct entry, integrated bachelor's-master's degree with breadth and depth coursework in math, science, engineering, and building design. Students progress through a rigorous undergraduate engineering core, culminating in advanced engineering and design analysis courses in the graduate fifth year. Students develop excellent integrated building design and engineering skills, complemented with communication, leadership, and ethics education, to become highly sought-after graduates for the thriving built environment.

The Master of Science in Architectural Engineering requires a total of 164 credit hours, which includes courses in the four primary discipline areas, including building mechanical systems, building electrical systems, building structural systems, and construction.

Students are required to maintain a 3.0 GPA in order to obtain the terminal master's degree. Graduates have consistently enjoyed 100 percent placement well before graduation and engage in meaningful internship experiences in line with the University's motto of Theory and Practice. The architectural engineering program's educational objectives and outcomes are formulated by the faculty in consultation with the Architectural Engineering Industrial Advisory Board as the primary constituents.

MSArE Educational Objectives
The MSArE is designed to help students develop advanced knowledge, skills, and experience in the growing fields of sustainable building design and systems engineering and integration. According to ABET, "program educational objectives are broad statements which describe the career and professional accomplishments that the program is preparing graduates to achieve." LTU's Department of Civil and Architectural Engineering offers the architectural engineering program in which students acquire the education and skill set so that, upon graduation, they are prepared to achieve the following educational objectives:

1. Acquire the written, visual, and oral communication skills to integrate building design and aesthetics with the mechanical, electrical, and structural systems of the built environment.
2. Employ problem-solving skills and awareness of emerging green technologies to create a collaborative culture in which the design process, building systems integration and constructability, and leadership in energy efficiency can flourish and support the worldwide need for skilled building designers and detailers.

3. Lead design and construction teams in the process and development of conceptual designs, design drawings, construction drawings and specifications, and construction contract administration for building sustainability in a global market.

MSArE Student Outcomes
All architectural engineering graduates must acquire:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues;
- an ability to use the techniques, skills, and modem engineering tools necessary for engineering practice; and
- an ability to integrate building engineering and architectural systems through collaboration and tools to create high-performing solutions.

Architectural Engineering Advisor/Director
All students should have an advisor/director-approved Plan of Work. Contact Filza Walters, director of architectural engineering, at 248.204.2610 or fwalters@ltu.edu, to set up an appointment. Students are required to maintain an overall and program GPA of 3.0. Students meeting this GPA requirement will be automatically admitted into the graduate portion of the program upon completion of 131 credit hours. Students falling below the required 3.0 GPA threshold, at any time during their studies, must retake courses in order to raise their GPA and must have a proven record of academic progress before being eligible to continue taking coursework specific to the MSArE degree.

FE EXAM
Candidates for degrees in civil, electrical, mechanical, and architectural engineering are strongly encouraged to complete the Fundamentals of Engineering (FE) Examination administered by the National Council of Examiners for Engineering and Surveying (NCEES).

ENGINEERING TECHNOLOGY
The Department of Engineering Technology in the College of Engineering offers degrees for a rewarding career in engineering technology as well as business and industry. Three bachelor's degree programs are offered: Audio Engineering Technology, Construction Engineering Technology and Management, and Mechanical and Manufacturing Engineering Technology. One Undergraduate Certificate program is offered: Audio Technology.

Working with engineers and scientists, engineering technologists are employed in a wide variety of private businesses and government organizations involved in manufacturing, development, design,

quality and testing, computer applications, electronics, the media industry, construction, regulation, and sales, to name just a few examples.

Bachelor's degree programs in the Department of Engineering Technology are application-oriented degrees using engineering math and science, engineering design, and laboratory experience. Focus is on the application of the various technologies assembled into a product or process.

Mission
To prepare students for leading careers capable of producing creative and practical solutions in various technologies.

The Program Educational Objectives (PEOs) are:

- Employ theory and practice learned through their curriculum to propose and analyze engineering alternatives and perform leading tasks in their field
- Become effective team collaborators and innovators, supporting efforts to address social, technical, and business challenges
- Assume management, entrepreneurial, and leadership roles in the technology industry
- Engage in life-long learning and professional development through graduate and professional studies in engineering and business

Student Outcomes
Graduates from the Department of Engineering Technology at Lawrence Technological University will have the following learned capabilities:

- an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
- an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
- an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments, and to apply experimental results to improve processes;
- an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
- an ability to function effectively as a member or leader on a technical team.
- an ability to identify, analyze, and solve broadly-defined engineering technology problems;
- an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- an understanding of the need for and an ability to engage in self-directed continuing professional development;
- an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
- a knowledge of the impact of engineering technology solutions in a societal, and global context; and
- a commitment to quality, timeliness, and continuous improvement.

Bachelor of Science in Audio Engineering Technology

The Bachelor of Science in Audio Engineering Technology program prepares students for careers in the application of audio technology. Graduates are expected to be competent in audio technology and related disciplines and demonstrate expertise in one or more of the following: analog audio systems, digital audio systems, audio mixing and production, sound cancelation and noise reduction techniques, and other audio applications. Graduates find employment with broadcast networks, multimedia firms, automotive companies, and in the arts and entertainment industry using modern technology in the recording, processing, and creation of sound.

Plymouth Rock Productions, affiliated with Lawrence Tech, provides students with an off-campus working-studio environment. The audio program lab courses delivered at the studio emphasize the practical side of Lawrence Tech's motto.

The Bachelor of Science in Audio Engineering Technology stresses the fundamentals of electronics, music theory, and sound technology using modern filter techniques, digital compression, and sound spectrum analysis. Overall, the program covers three disciplines: electronics, acoustics, and the musical principles of sound, including tuning and pitch. Students may elect courses in radio, television, and management for additional expertise.

The curriculum encompasses the fundamentals of digital audio technologies, enabling the students to conduct experiments on digital audio workstations. Students are exposed to musical instrument digital interface applications; sound-mixing techniques using different recording media hardware; advanced recording using digital and analog routing and storage technologies; and the adaptation of classical vacuum tube design and applications. Also included are the latest in audio transmission hardware, fiber, and wireless technologies; microprocessor-based techniques in Class C amplifier design; and the synthesis of audio sound technology using digital signal processors and digital filters in a laboratory environment.

Bachelor of Science in Construction Engineering Technology and Management
The Bachelor of Science in Construction Engineering Technology and Management program provides a strong concentration in construction science and construction engineering technology. Construction managers play a crucial role in the overall building process. Whether they work for companies or as independent consultants, construction managers plan, direct, and coordinate a wide variety of projects, including the building of all types of residential, commercial, and industrial structures; roads; bridges; wastewater treatment plants; schools; and hospitals. They are responsible for overseeing the entire project, which includes scheduling and coordinating all design and construction processes, as well as the selection, hiring, and supervision of specialty trade contractors.

The Bachelor of Science in Construction Engineering Technology and Management is designed for working professionals with experience in the construction industry and those interested in entering the field. This practical program is set up for full- and part-time students and consists of a well-rounded core of management classes, along with a strong concentration in construction science and construction engineering. Small class sizes and strong faculty with industrial experience make this program highly responsive to students' individual needs.

Bachelor of Science in Mechanical and Manufacturing Engineering Technology
The Bachelor of Science in Mechanical and Manufacturing Engineering Technology **provides a strong foundation in mechanical, manufacturing, and electrical engineering technologies. It is a unique program that has three clusters of courses:** Engineering Technology (includes

manufacturing processes, engineering mechanics, transducers and instrumentation); Manufacturing Quality (include Six Sigma, lean manufacturing); and Technical Management (includes technology project management, operations management).

Engineering technologists often work with engineers and scientists, especially in research and product development, building or testing equipment, preparing and conducting experiments, analyzing results, or making prototype versions of newly designed products or equipment. Others work in quality control – inspecting products and processes, performing tests, and collecting data. In manufacturing, they may assist in product design, development, or production. In many cases, it is the engineering technologist who takes ideas and turns them into reality.

The Bachelor of Science in Mechanical and Manufacturing Engineering Technology is designed for individuals starting fresh in the program, or who have an associate degree in engineering technology and wish to continue their education, as well as those who have transfer credits. Students can attend full-time or part-time; all technical courses are taught on weekday evenings and other courses are also available during the day.

The College of Engineering also offers an Undergraduate Certificate in Audio Technology.

LEAR ENTREPRENEURIAL ENGINEERING PROGRAM

The Lear Entrepreneurial Engineering Program at Lawrence Technological University offers students from various disciplines the opportunity to work in a business-model setting to solve real-world engineering problems. Students enrolled in this program can earn a certificate in entrepreneurial skills while pursuing an engineering degree with no additional semester credit hour requirement. Within the College of Engineering, the Certificate in Entrepreneurial Engineering is offered in the Departments of Mechanical Engineering and Civil Engineering.

The entrepreneurial program addresses entrepreneurial management in start-up ventures and new business development in existing companies. The program provides a vehicle for sharpening skills in business process and teamwork as well as industry-specific technical skills. Gaining these skills is desirable for students intending to start their own companies, work in small businesses, or initiate jobs in larger companies.

The certificate program consists of courses, conferences, internships and student-run enterprises, which are designed to provide entrepreneurship education in which inquiry, creativity, and innovation are the norm, and theory and practice go hand-in-hand.

COOPERATIVE EDUCATION

A co-op program is offered for qualified students in various majors who are in good academic standing. A minimum cumulative GPA of 2.25 is required. Transfer students must have completed at least one semester at Lawrence Tech prior to the first work assignment.

Co-op students alternate between periods of study in school and periods of employment in industry. Both types of learning experiences are planned and supervised to contribute to the students' education and employability.

The work assignment provided by the employer is approved by the co-op director in association with an engineering faculty member. Co-op companies are expected to provide workplace experience related to the student's major.

Co-op students are paid by their employers. Interested students can obtain complete information, including limitations and requirements, by contacting the Office of Career Services.

Co-op placement depends on the availability of appropriate jobs in industry. The employer makes the final selection of candidates. Consequently, Lawrence Tech cannot guarantee that applicants, otherwise qualified, will be placed in a co-op position.

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING

TOTAL SEMESTER CREDIT HOURS: 132

Students seeking the Bachelor of Science in Biomedical Engineering degree must complete all courses in the core curriculum. This includes six (6) approved technical elective credits and six (6) BME elective credits.

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
MCS 1414	Calculus 1	4
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
EGE 1001	Fund. of Engr. Design Projects	1
BME 1202	Computer Applications Lab	2
BME 1201	Computer Graphics Lab	1
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
BME 1002	Intro. to Biomedical Engr.	2
	TOTAL	17

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
COM 2103	Technical and Prof. Communication	3
MCS 2414	Calculus 3	4
BME 2103	Biochemistry for Engineers	3
BME 2101	Biochemistry for Engineers Lab	1
EGE 2123	Entrepreneurial Engr. Design Studio	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
BME 2203	Anatomy and Physiology	3
BME 2201	Anatomy and Physiology Lab	1
EGE 2013	Statics	3
	TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
MCS 3403	Probability and Statistics	3
EGE 3022	Ldrshp. and Prof. Dev. for Engrs.	2
EEE 2123	Circuits and Electronics	3
BME 3703	Biotransport	3
BME 3303	Intro. to Biomechanics	3
BME 3301	Biomechanics Lab	1
BME 3113 or BME 4113	Wearable Tech or Medical Devices	3
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
	Technical Elective	3
EGE 3012	Engineering Cost Analysis	2
BME 3002	Biomedical Best Practices	2*
BME 3103	Bioinstrumentation	3
BME 3101	Bioinstrumentation Lab	1
BME 3213	Biomaterials	3
	TOTAL	17

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/ PSY 3XX3/4XX3	Junior/Senior Humanities Elective	3
	Technical Elective	3
BME 3 cr.	BME Elective	3
BME 4013	BME Projects 1	3**
BME 4803	Tissue Engineering	3
BME 4801	Tissue Engineering Lab	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
	BME Elective	3
BME 4022	BME Projects 2	2***
BME 4313	Tissue Mechanics	3
BME 4203	Intro. to MEMS	3

BME 4201	Intro. to MEMS Lab	1
BME 4103	Foundations of Medical Imaging	3
	TOTAL	15

* Sophomore standing required
**Senior standing required and minimum of 12 credits from BME 3XXX courses
***Must be enrolled/have completed all BME 3XXX courses

A list of eligible technical elective courses is available from the biomedical engineering program.

Dual majors will be permitted a number of substitutions as approved by the program director consistent with accreditation requirements.

Biomedical Engineering Advisors
All students should have an advisor-approved Plan of Work. Students should contact the Biomedical Engineering Program, 248.204.2600, room E98, for their assigned faculty advisor**.**

BACHELOR OF SCIENCE IN CIVIL ENGINEERING
TOTAL SEMESTER CREDIT HOURS: 132

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
ECE 1101	CE Computer Graphics Lab	1
MCS 1414	Calculus 1	4
GLG 1103	Geology	3
ECE 1013	Surveying and Land Measurement	3
ECE 1011	Civil Engineering Perspectives	1
EGE 1001	Fund. of Engr. Design Projects	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
ECE 1102	CE Computer Applications Lab	2
ECE 1413	Civil Engineering Materials	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
EGE 2123	Entrepreneurial Engr. Design Studio	3
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3

PHY 2421	University Physics 1 Lab	1
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
EGE 2013	Statics	3
ECE 2103	CAD Infrastructure Planning	3
EGE 3012	Engineering Cost Analysis	2
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	TOTAL	18

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
MCS 3403	Probability and Statistics	3
ECE 3523	Hydromechanics	3
ECE 3013	Mechanics of Materials	3
EGE 3022	Leadership and Prof. Dev. for Engr.	2
	Engr. Science Elective*	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 3213	Construction Engineering	3
ECE 3324	Environmental Engineering 1	4
ECE 3424	Soil Mechanics	4
ECE 3723	Theory of Structures	3
ECE 3823	Transportation Engineering	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	17

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 4022	CE Design Project 1	2
ECE 4051	Ethics and Professional Issues	1
ECE 4544	Hydraulic Engineering	4
ECE 4743	Concrete Design	3
	Civil Engineering Electives**	6
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 4032	CE Design Project 2	2
ECE 4761	Structural Design/Testing Lab	1
LLT/SSC 3XX3/4XX3	Junior/Senior Elective	3
ECE 4243	Construction Project Management	3
	Civil Engineering Electives**	6
	TOTAL	15

CERTIFICATE IN ENTREPRENEURIAL SKILLS

TOTAL SEMESTER CREDIT HOURS: 133

Students wishing to fulfill the requirements for the Certificate in Entrepreneurial Engineering should pursue the curriculum outlined above for their freshman year, then proceed as follows:

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EGE 2123	Entrepreneurial Engr. Design Studio	3
SSC 2413	Foundations of American Experience	3
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
EGE 2013	Statics	3
SSC 2423	Development of American Exp.	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EGE 3012	Engineering Cost Analysis	2
	TOTAL	18

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3403	Probability and Statistics	3
ECE 3523	Hydromechanics	3
ECE 3013	Mechanics of Materials	3
	Engineering Science Elective*	3
COM 3000	Writing Proficiency Exam	0
EGE 3022	Leadership & Prof Dev for Engr	2
EGE 2233	Entrepreneurial Mindset for Engr.	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 3213	Construction Engineering	3
ECE 3324	Environ. Engineering 1	4
ECE 3424	Soil Mechanics	4
ECE 3723	Theory of Structures	3
ECE 3823	Transportation Engineering	3
EGE 3361	Business Plan. Dev.	1
	TOTAL	18

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 4022	CE Design Project 1	2
ECE 4051	Ethics and Prof. Issues	1
ECE 4544	Hydraulic Engineering	4
ECE 4743	Concrete Design	3
	Civil Engineering Electives**	6
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 4032	CE Design Project 2	2
ECE 4761	Structural Design/Testing Lab	1
LLT/SSC 3XX3/4XX3	Junior/Senior Elective	3
ECE 4243	Construction Project Management	3
	Civil Engineering Electives**	6
	TOTAL	15

*Engineering Science Elective (3 credits)
One course to be selected from the following:

Course Number	*Subject*	*Cr. Hrs.*
EGE 3003	Thermodynamics	3
EME 3043	Dynamics	3
EME 4613	Intro. to Thermal Sys. (non-ME)	3

**Civil Engineering Technical Electives (12 credits)
A total of 12 technical elective credits to be chosen from the following list of courses so that the total number of Design Credits*** equals or exceeds seven (7):

Course Number	*Subject*	*Cr. Hrs.*	*Design Credits****
ECE 4011	Design for CE Competition 1	1	0
ECE 4012	Design for CE Competition 2	2	0
ECE 4263	Cost Estimating, Bidding and Contracting	3	0
ECE 4343	Environmental Engineering 2	3	1
ECE 4563	Hydrology	3	1
ECE 4733	Advanced Structural Analysis	3	1
ECE 4363	Environmental Design	3	3
ECE 4443	Foundation Engineering	3	3
ECE 4753	Steel Design	3	3
ECE 4843	Highway Engineering	3	3

Up to six (6) credits of civil engineering graduate-level courses may also be used to fulfill technical electives subject to approval by the department.

See your academic advisor for elective requirements and further specific information on your degree program.

Dual majors will be permitted a number of substitutions as approved by the department chair consistent with accreditation requirements.

Civil Engineering Advisors
All students should have an advisor-approved Plan of Work. Students should contact the Department of Civil and Architectural Engineering, 248.204.2545, room E023, for their assigned faculty advisor.

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING
TOTAL SEMESTER CREDIT HOURS: 132

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
EGE 1001	Fund. of Engr. Design Projects	1
EEE 1001	Intro. to ECE	1
MCS 1414	Calculus 1	4
SSC 2303	Principles of Economics	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
EGE 1102	Engr. Computer Applications Lab	2
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
LLT 1213	World Masterpieces 1	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EGE 3012	Engineering Cost Analysis	2
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
MCS 2514	Computer Science 2	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 2114	Circuits 1	4
EEE 2111	Circuits 1 Lab	1
MCS 2423	Differential Equations	3
MCS 2523	Discrete Math	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
SSC 2413	Foundations of American Experience	3

	TOTAL	18

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
EEE 3124	Circuits 2	4
EEE 2214	Digital Electronics and Lab	4
MCS 2534	Data Structures	4
MCS 3403	Probability and Statistics	3
SSC 2423	Development of American Experience	3
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 3233	Microprocessors	3
EEE 3231	Microprocessors Lab	1
EEE 3314	Electronics	4
EEE 3311	Electronics Lab	1
EEE 3223	Advanced Digital Electronics	3
EEE 3221	Advanced Digital Electronics Lab	1
EGE 2231	Project Management	1
EGE 3022	Leadership and Prof Dev for Eng	2
	TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 3011	Intro. to ECE Projects	1
EEE 4243	Embedded Systems	3
EEE 4253	Computer Architecture 1	3
EEE 4514	Control Systems and Lab	4
EEE 4831	Computer Engr. Projects 1	1
MCS 2523	Software Engineering 1	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 4XX3*	EE Technical Elective*	3
EEE/MCS 4XX3**	EE or Comp. Sci. Technical Elective**	3
EEE 3/4XX1	EE Lab	1
EEE 4273	Real Time Systems	3
EEE 4842	Computer Engr. Projects 2	2
EGE 3361	Business Plans	1
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	16

*A list of electrical and computer engineering technical electives is available from the Department of Electrical and Computer Engineering, room E217.

**All 4000 or 5000 level MCS lecture courses are permitted. Please visit the course catalog to review course-specific prerequisite requirements or consult with the Department of Mathematics and Computer Science.

Dual majors will be permitted a number of substitutions as approved by the department chair consistent with accreditation requirements.

Electrical and Computer Engineering Advisors
All students should have an advisor-approved Plan of Work. Students should contact the Department of Electrical and Computer Engineering, room E217, for their assigned faculty advisor.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING
TOTAL SEMESTER CREDIT HOURS: 132

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 1001	Intro. to ECE	1
EGE 1001	Fund. of Engr. Design Projects	1
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1142	Intro. to C	2
MCS 1414	Calculus 1	4
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
SSC 2303	Principles of Economics	3
	TOTAL	17

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 2214	Digital Electronics and Lab	4
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
SSC 2413	Foundations of American Experience	3
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 2114	Circuits 1	4
EEE 2111	Circuits 1 Lab	1

EME 4603	Intro. to Mechanical Systems	3
EME 4613	Intro. to Thermal Systems	3
MCS 2423	Differential Equations	3
SSC 2423	Development of American Experience	3
	TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
EEE 3233	Microprocessors	3
EEE 3231	Microprocessors Lab	1
EEE 3124	Circuits 2	4
EEE 3121	Circuits 2 Lab	1
EGE 3022	Leadership and Prof Dev for Eng	2
MCS 3403	Probability and Statistics	3
MCS 3413	Advanced Engineering Math	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 3314	Electronics	4
EEE 3311	Electronics Lab	1
EEE 3414	Electromagnetic Fields	4
EEE XXX3	Concentration Course #1*	3
EEE XXX1	EE Lab	1
EGE 2231	Project Management	1
EGE 3012	Engr. Cost Analysis	2
	TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 3011	Intro. to ECE Projects	1
EEE 3423	Signals and Systems	3
EEE 4514	Control Systems and Lab	4
EEE 4811	EE Projects 1	1
EEE 4XX3	Concentration Course #2*	3
EEE 4XX3	EE Technical Elective**	3
EGE 3361	Business Plans	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 4424	Communication Systems	4
EEE 4822	EE Projects 2	2
EEE 4XX3	Concentration Course #3*	3
EEE 4XX3	EE Technical Elective**	3
EEE 4XX1	EE Lab	1
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	16

*The Bachelor of Science in Electrical Engineering offers three optional areas of technical concentration:
1. Computer Engineering
2. Electronics Engineering
3. Power Engineering

An intention to complete one of these concentrations should be officially declared upon reaching junior status; the required application form can be obtained from the LTU's One-Stop Center. Please consult your assigned academic advisor for further information.

** A list of electrical and computer engineering technical electives is available from the Department of Electrical and Computer Engineering, room E217.

Dual majors will be permitted a number of substitutions as approved by the Department of Electrical and Computer Engineering consistent with accreditation requirements.

Electrical and Computer Engineering Advisors
All students should have an advisor-approved Plan of Work. Students should contact the Department of Electrical and Computer Engineering, room E217, for their assigned faculty advisor.

BACHELOR OF SCIENCE IN EMBEDDED SOFTWARE ENGINEERING
TOTAL SEMESTER CREDIT HOURS: 132

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
EGE 1001	Fund. of Engr. Design Projects	1
SSC 2303	Principles of Economics	3
MCS 1414	Calculus 1	4
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
MCS 1414	Computer Science 1	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	18

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 1001	Intro. to ECE	1
EEE 2214	Digital Electronics and Lab	4

ESE 2001	Embedded Software Eng Lab 1	1
MCS 2414	Calculus 3	4
MCS 2514	Computer Science 2	4
MCS 2513	Software Engineering 1	1
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ESE 3001	Embedded Software Eng Lab 2	1
LLT 1223	World Masterpieces 2	3
MCS 2523	Discrete Mathematics	3
MCS 2613	Software Engineering 2	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
SSC 2413	Foundations of American Experience	3
	TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
EEE 2133	Circuits and Electronics	3
EEE 3233	Microprocessors	3
EEE 3231	Microprocessor Lab	1
MCS 2423	Differential Equations	3
MCS 3513	Software Architecture	3
SSC 2423	Development of American Experience	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE/MCS 3XX3/4XX3	Technical Elective*	3
EGE 3022	Leadership and Prof Dev.	2
ESE 3011	Embedded Software Eng Lab 3	1
MCS 2534	Data Structures	4
MCS 3403	Probability and Statistics	3
MCS 3543	Database Systems	3
	TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 4243	Embedded Systems	3
EEE 4241	Embedded Systems Lab	1
EEE/MCS 4XX3	Technical Elective	3
ESE 4812	ESE Senior Design Projects 1	2
MCS 4513	Software Project Management	3
MCS 4503	Software Quality Testing	3
LLT/SSC/ PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*

EEE 4273	Real Time Systems	3
EEE 4263	Computer Networking	3
EEE 4663	Operating Systems	3
ESE 4822	ESE Senior Design Projects 2	2
EEE 4914	Directed Study in EE – Adv. Embedded Systems Lab	4
	TOTAL	15

* A list of electrical and computer engineering technical electives is available from the Department of Electrical and Computer Engineering. Please contact the Department of Mathematics and Computer Science for the list of approved courses.

Dual majors will be permitted a number of substitutions as approved by the department chair consistent with accreditation requirements.

Embedded Software Engineering Advisors
All students should have an advisor-approved Plan of Work. Students should contact the Department of Electrical and Computer Engineering, room E217, for their assigned faculty advisor.

CERTIFICATE IN ELECTRICAL POWER SYSTEMS
TOTAL SEMESTER CREDIT HOURS: 16

Course Number	*Subject*	*Cr. Hrs.*
EEE 3513	Introduction to Electrical Systems	3
EEE 3511	Introduction to Electrical Systems Lab	1
EEE 4133	Electrical Machinery	3
EEE 4131	Electrical Machinery Lab	1
EEE 5144	Power Distribution Systems Analysis	4
EEE 5314	Power Electronics	4
	TOTAL	16

CERTIFICATE IN EMBEDDED SYSTEMS
TOTAL SEMESTER CREDIT HOURS: 17

Prerequisite Requirements
Either an academic or a working knowledge of analog electronics, digital electronics, and microprocessors is required. Some familiarity with C++ is also required. If specific knowledge in any of these areas is missing, students who wish to receive the certificate must take one or more of the following prerequisite courses:

Course Number	*Subject*	*Cr. Hrs.*
EEE 2123	Circuits and Electronics	3
EEE 3233	Microprocessors	3
MCS 1142	Intro to C Programming	2

Certificate Requirements
The Certificate in Embedded Systems requires 17 credit hours of coursework.

The following courses are required (11 hours):

Course Number	*Subject*	*Cr. Hrs.*
EEE 3223	Advanced Digital Electronics	3
EEE 3221	Advanced Digital Electronics Lab	1
EEE 4243	Embedded Systems	3
EEE 4241	Embedded Systems Lab	1
EEE 4273	Real Time Systems	3

Elective courses must be selected from the following list (6 credit hours):

Course Number	*Subject*	*Cr. Hrs.*
EEE 4263	Computer Networking	3
EEE 4333	Automotive Electronics	3
EEE 4583	Instrumentation and Sensor Tech.	3
EEE 5523	Digital Control Systems	3
EEE 5653	Digital Signal Processing	3
EEE 4XX3	Digital Communications	3

Transfer Credits

A maximum of eight credit hours can be transferred from other institutions, providing the courses being transferred have not been used to satisfy other degree requirements. Of the eight credit hours, up to six are allowed for recitation courses, and up to two are allowed for lab courses.

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

TOTAL SEMESTER CREDIT HOURS: 131

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
MCS 1414	Calculus 1	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
EGE 1001	Fund. of Engr. Design Projects	1
SSC 2303	Principles of Economics	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of American Experience	3
MCS 1424	Calculus 2	4
EGE 1023	Engineering Materials	3
EGE 1102	Engr. Computer Applications Lab	2
EIE 1011	Foundations of Industrial Engr.	1
EIE 2012	Engineering Graphics	2
	TOTAL	18

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
EIE 3023	Industrial Mfg. Processes	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EGE 2013	Statics	3
EME 2011	Materials Lab	1
MCS 3403	Probability and Statistics	3
	TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 2123	Circuits and Electronics	3
EGE 3003	Thermodynamics	3
EIE 3043	Production, Planning and Control	3
EIE 3453	Statistical Methods for Process. Imp.	3
MCS 3863	Linear Algebra	3
COM 3000	Writing Proficiency Exam	0
EGE 3022	Leadership and Prof. Develop. for Eng.	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EIE 3011	Intro. to Indus. Engineering Projects	1
EIE 3753	Simulation in System Design	3
EIE 3123	Plant Layout	3
EIE 3653	Stochastic Modeling	3
EIE 3353	Intro. to Operations Research	3
EIE 3033	Eng. Numerical Methods	3
	TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EIE 4212	Industrial Engineering Projects 1	2
EIE 4453	Industrial Operations Research	3
EIE 4653	Industrial and Engineering Finance	3
EIE 4013	Work Design and Measurement	3
EIE 4XX3/5XX3*	Technical Elective*	3
EIE 4XX3/5XX3*	Technical Elective*	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EIE 4222	Industrial Engineering Projects 2	2
EIE 4553	Occupational Ergonomics	3
EIE 4XX3/5XX3*	Technical Elective*	3
EIE 4XX3/5XX3*	Technical Elective*	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	14

* A list of approved electives is available in the Department of Mechanical Engineering.

Students should consult their academic advisor for program and elective requirements and further specific information on their degree program.

Industrial Engineering Advisor
All students should have an advisor-approved Plan of Work. Students should contact Ahad Ali, aali@ltu.edu, 248.204.2531, room E37, for advising.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
TOTAL SEMESTER CREDIT HOURS: 132

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
MCS 1414	Calculus 1	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
EGE 1001	Fundamentals of Engr. Design Projects	1
EME 2012	Mechanical Engineering Graphics	2
	TOTAL	14

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of American Experience	3
MCS 1424	Calculus 2	4
EGE 1023	Engineering Materials	3
EME 1011	Foundations of Mechanical Engr.	1
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	18

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EGE 2013	Statics	3

EGE 2123	Entrepreneurial Engr. Design Studio	3
EME 2011	Engineering Materials Lab	1
MCS 2414	Calculus 3	4
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
MCS 2423	Differential Equations	3
EGE 2233	Entrepreneurial Mindset for Engr.	3
EGE 1102	Engr. Computer Applications Lab	2
LLT 1223	World Masterpieces 2	3
EME 3043	Dynamics	3
	TOTAL	17

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3403	Probability and Statistics	3
EGE 3003	Thermodynamics	3
EME 3013	Mechanics of Materials	3
MCS 3863	Linear Algebra	3
EME 3023	Manufacturing Processes	3
COM 3000	Writing Proficiency Exam	0
EGE 3022	Leadership and Prof. Develop. for Eng.	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 3112	Intro. to Projects	2
EEE 2123	Circuits and Electronics	3
EME 3123	Fluid Mechanics	3
EME 3133	Kinematics and Dynamics of Machines	3
EME 4003	Design of Machine Elements	3
EME 3033	Engineering Numerical Methods	3
EGE 3012	Engineering Cost Analysis	2
	TOTAL	19

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 4212	Competition Projects 1	2
EME 4402	Mechanics Lab	2
EME 4013	Heat Transfer	3
EME 3214	Mechatronics	4
EME 4XX3/5XX3*	Technical Elective*	3
EME 4XX3/5XX3*	Technical Elective*	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 4221	Competition Projects 2	1
EME 4412	Thermal Science Lab	2

EME 4XX3/5XX3*	Technical Elective*	3
EME 4XX3/5XX3*	Technical Elective*	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	12

CERTIFICATE IN ENTREPRENEURIAL ENGINEERING

Students wishing to fulfill the requirements for the Certificate in Entrepreneurial Engineering should pursue the curriculum outlined above for their freshman and sophomore years, then proceed as follows:

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3403	Probability and Statistics	3
EGE 3003	Thermodynamics	3
EME 3013	Mechanics of Materials	3
MCS 3863	Linear Algebra	3
EME 3023	Manufacturing Processes	3
COM 3000	Writing Proficiency Exam	0
EGE 3022	Leadership and Prof. Develop. for Eng.	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 3112	Intro. to Projects	2
EEE 2123	Circuits and Electronics	3
EME 3123	Fluid Mechanics	3
EME 3133	Kinematics and Dynamics of Machines	3
EME 4003	Design of Machine Elements	3
EME 3033	Engineering Numerical Methods	3
EGE 3012	Engineering Cost Analysis	2
	TOTAL	19

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 4212	Competition Projects 1	2
EME 4402	Mechanics Lab	2
EME 4013	Heat Transfer	3
EME 3214	Mechatronics	4
EGE 4XX1*	Entrepreneurial Elective*	1
EME 4XX3/5XX3*	Technical Elective*	3
EGE 3361	Business Plan Development	1
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 4221	Competition Projects 2	1
EME 4412	Thermal Science Lab	2
EME 4XX3/5XX3*	Technical Elective*	3
EME 4XX3/5XX3*	Technical Elective*	3

EGE 4XX1*	Entrepreneurial Elective*	1
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	13

* A list of approved elective courses is available in the Department of Mechanical Engineering or at the department website.

Mechanical Engineering Advisor
All students should have an advisor-approved Plan of Work. Students should contact the Department of Mechanical Engineering, room E29, ext. 2550, for their assigned faculty advisor.

BACHELOR OF SCIENCE IN ROBOTICS ENGINEERING
TOTAL SEMESTER CREDIT HOURS: 136

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
MCS 1414	Calculus 1	4
MCS 1514	Computer Science 1	4
EGE 1001	Fund. of Engr. Design Projects	1
SSC 2413	Foundations of American Experience	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
MCS 2514	Computer Science 2	4
EME 1011	Foundations of Mechanical Engr.	1
EME 2012	Mechanical Engineering Graphics	2
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	18

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 2414	Calculus 3	4
SSC 2423	Development of American Experience	3
COM 2103	Technical and Prof. Communication	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EGE 2013	Statics	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 2423	Differential Equations	3
MCS 3863	Linear Algebra	3
ERE 2024	Unified Robotics I	4

MCS 2523	Discrete Mathematics	3
EME 3043	Dynamics	3
EGE 3012	Engineering Cost Analysis	2
	TOTAL	18

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EEE 2214	Digital Electronics and Lab	4
EEE 2123	Circuits and Electronics	3
EME 3013	Mechanics of Materials	3
ERE 3114	System Modeling and Control	4
ERE 3014	Unified Robotics II	4
COM 3000	Writing Proficiency Exam	0
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 3011	Intro. to Engineering Projects	1
EEE 3233	Microprocessors	3
ERE 3024	Unified Robotics III	4
LLT 1223	World Masterpieces 2	3
MCS 2534	Data Structures	4
EGE 3022	Leadership and Prof. Develop. for Eng.	2
	TOTAL	17

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 4252	Senior Project Fundamentals	2
EEE 4243	Embedded Systems	3
ERE 4113	Discrete Control	3
ERE 4014	Unified Robotics IV	4
EME 4613	Intro to Thermal Systems	3
MCS 3403	Probability and Statistics	3
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
EME 4253	Senior Capstone Project	3
EME/EEE/MCS 4XX3/5XX3*	Technical Elective*	3
EME/EEE/MCS 4XX3/5XX3*	Technical Elective*	3
EME/EEE/MCS 4XX3/5XX3*	Technical Elective*	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	15

* A list of approved elective courses is available in the Department of Mechanical Engineering.

Robotics Engineering Advisor
All students should have an advisor-approved Plan of Work. Students should contact Giscard Kfoury, gkfoury@ltu.edu, 248.204.2579, room J133, for advising.

MASTER OF SCIENCE IN ARCHITECTURAL ENGINEERING
(INTEGRATED BACHELOR'S AND MASTER'S PROGRAM)
TOTAL DEGREE SEMESTER CREDIT HOURS: 164

All students should have an advisor-approved Plan of Work and should consult their academic advisors or Architectural Engineering Director Prof. Filza H. Walters at fwalters@ltu.edu, 248.204.2610, or in room E25 for further information. A flow chart is available for a graphic visualization of the program and includes the following courses:

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
EGE 1001	Fundamentals of Engineering Design Projects	1
EAE 1081	Intro to Architectural Engineering	1
ARC 1213	Visual Communication 1	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 1424	Calculus 2	4
EAE 1093	Architectural Engineering History	3
ARC 1223	Visual Communication 2	3
	TOTAL	17

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
COM 2103	Tech and Prof Communication	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
MCS 2414	Calculus 3	4
ARC 2843	BIM Fundamentals	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
EGE 2013	Statics	3
EEE 2123	Circuits and Electronics	3
MCS 2423	Differential Equations	3
EAE 1091	Directed Study	1
ARC 3843	BIM for Energy & Ecology/BIM for Building Systems	3
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
ECE 3013	Mechanics of Materials for CE	3
EAE 3113	Electrical Systems I	3
EGE 3003	Thermodynamics	3
MCS 3403	Probability and Statistics	3
EGE 3022	Leadership & Prof. Development for Eng	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Written Proficiency Exam	0
ECE 3723	Theory of Structures	3
EAE 3613	Mechanical Systems I	3
EME 3123	Fluid Mechanics	3
EAE 3016	Arch. Eng. Integrated Des. Studio 1	6
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY	Jr./Sr. Elective	3
ECE 4743	Concrete Design	3
EAE 4113	Electrical Systems II	3
ECE 4243	Construction Project Management	3
EAE 4016	Arch. Eng. Integrated Des. Studio 2	6
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 4753	Steel Design	3
EAE 4613	Mechanical Systems II	3
EAE 4623	Architectural Acoustics	3
EAE 4026	Arch. Eng. Integrated Des. Studio 3	6
	TOTAL	15

Fifth Year (Graduate Coursework)

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 5283	Conceptual Estimating	3
EME 5373	Building Integrated Renewable Energy Sys	3
EME 5983	Advanced Mechanical Systems	3
EAE 5113	Advanced Day/Lighting Systems	3
EAE 5016	Arch. Eng. Integrated Des. Studio 4	6
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ECE 5703	Design of Timber Structures	3
EAE 5623	Building Controls & Instrumentation	3

EAE 5123	Advanced Electrical Systems	3
EAE 5026	Arch. Eng. Integrated Des. Studio 5	6
	TOTAL	15

BACHELOR OF SCIENCE IN AUDIO ENGINEERING TECHNOLOGY
TOTAL SEMESTER HOURS: 126

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 1142	Intro. to C	2
MCS 1113	Technical Math 1	3
COM 1103	College Composition	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
TAS 1013	Music for Audio Tech. 1	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 1123	Technical Math 2	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
LLT 1213	World Masterpieces 1	3
TAS 1033	Music for Audio Tech. 2	3
SSC 2303	Principles of Economics	3
	TOTAL	16

Sophomore Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
MCS 2313	Technical Calculus	3
LLT 1223	World Masterpieces 2	3
TEE 3103	DC/AC Circuits	3
TAS 3033	Audio Principles 1	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
TAS 3043	Audio Principles 2	3
CHM 3114 or equivalent	Fundamentals of Chemistry	4
TEE 2033	Electronics 1	3
TAS 3034	Audio Acoustics	4
SSC 2413	Foundations of American Experience	3
	TOTAL	17

Junior Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of Amer Experience	3
TAS 3013	Adv. Audio Principles 1	3

TIE 3163	Engr. Economic Analysis	3
TEE 2053	Electronics 2	3
TME 3333	Six Sigma 1	3
EGE 3022	Leadership & Prof. Develop. For Eng.	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
TEE 2093	Electronics 3	3
TAS 3053	Adv. Audio Principles 2	3
TME 3113	Engr. Mechanics	3
TIE 3203	Technology Project Management	3
GEN XXX3	General Elective	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
TAS 4103	Audio Senior Project	3
TAS 4133	Audio System Integration	3
TEE 4224	Transducers and Instrumentation	4
TKL 3XX3/4XX3	Junior/Senior Tech. Elective	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
TAS 4142	State of Art Sound Appl. Seminar	2
TEE 4214	Embedded Processors	4
TIE 4115	Senior Project	5
MCS 3324	Applied Differential Equations	4
	TOTAL	15

BACHELOR OF SCIENCE IN CONSTRUCTION ENGINEERING TECHNOLOGY AND MANAGEMENT

TOTAL SEMESTER CREDIT HOURS: 127

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
MCS 1113	Technical Math 1	3
CHM 3144 or equivalent	Fundamentals of Chemistry	4
TCE 1023	Architectural Graphics	3
	TOTAL	13

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
MCS 1123	Technical Math 2	3
SSC 2303	Principles of Economics	3
LLT 1213	World Masterpieces 1	3

PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2413	Foundations of American Experience	3
MCS 2313	Technical Calculus	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
TCE 2143	Specifications and Regulations	3
LLT 1223	World Masterpieces 2	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Writing Proficiency Exam	0
MGT 2203	Management and Supervision	3
TME 3333	Six Sigma 1	3
SSC 2423	Development of American Experience	3
MGT 2113	Intro. to Business Law	3
TCE 2073	Surveying	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
HRM 3013	Organizational Behavior	3
TCE 3093	Steel and Wood Structures	3
TIE 3203	Technology Project Management	3
TIE 3163	Engr. Economic Analysis	3
TME 3113	Engineering Mechanics	3
EGE 3022	Leadership & Prof. Develop. For Eng.	2
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
TCE 3013	Construction Techniques	3
TCE 3033	Soil and Foundations	3
TCE 3053	Electrical/Mechanical Systems	3
MGT 3113	Operations Management	3
TCE 3123	Const. Estimating and Scheduling	3
	TOTAL	18

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
TCE 4013	Const. Practicum **or** Tech Elective	3
TCE 4113	Construction Safety	3
TME 4113	Computer Design Graphics	3
HRM 4013	Employee/Mgmt. Relations	3

TME 4103	Engr. Materials	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
TKL XXX3	Tech. Elective	3
TCE 4093	Green Building Technology	3
TIE 4115	Senior Project	5
TCE 4133	Const. Engineering Mgmt.	3
TCE 4213	Const. Contracts and Legalities	3
	TOTAL	17

BACHELOR OF SCIENCE IN MECHANICAL AND MANUFACTURING ENGINEERING TECHNOLOGY
TOTAL SEMESTER CREDIT HOURS: 127

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
MCS 1113	Technical Math 1	3
MCS 1142	Intro. to C	2
SSC 2303	Principles of Economics	3
CHM 3144 or equivalent	Fundamentals of Chemistry	4
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 2103	Technical and Prof. Communication	3
LLT 1213	World Masterpieces 1	3
MCS 1123	Technical Math 2	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
TKL XXX3	Technical Elective	3
	TOTAL	16

Sophomore Year
First SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
SSC 2413	Foundations of American Experience	3
MCS 2313	Technical Calculus	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
	TOTAL	13

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 3000	Written Prof. Exam	0
SSC 2423	Development of American Experience	3
TME 3333	Six Sigma 1	3
TME 3113	Engr Mechanics	3
TKL XXX3	Technical Elective	3

GEN XXX3	General Elective	3
	TOTAL	15

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 3324	Applied Calculus and Differential Eq.	4
MGT 2203	Principles of Management	3
TIE 3203	Technology Project Management	3
TIE 3063	Manufacturing Engr. Processes	3
TKL XXX3	Technical Elective	3
EGE 3022	Leadership & Prof. Develop. For Eng.	2
	TOTAL	18

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
HUM XXX3	Junior/Senior Elect. (LLT/SSC/PSY)	3
TEE 3103	DC/AC Circuits	3
TME 3204	Appl. Thermo-Fluids	4
TKL XXX3	Technical Elective	3
TME 4343	Six Sigma 2	3
	TOTAL	16

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
HRM 3023	Human Resource Management	3
TIE 3163	Engr. Economic Analysis	3
MGT 3113	Operations Management	3
TME 4103	Engr. Materials	3
TEE 4224	Transducers and Instr.	4
TKL XXX3	Technical Elective	3
	TOTAL	19

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
TIE 4115	Senior Project	5
TME 4113	Computer Design Graphics	3
TME 4413	Lean Manufacturing	3
TEE 4214	Embedded Processors	4
	TOTAL	15

CERTIFICATE IN AUDIO TECHNOLOGY

TOTAL CREDIT HOURS 15

Course Number	*Subject*	*Cr. Hrs.*
TAS1013	Music for Audio Eng. Tech. 1	3
TAS1033	Music for Audio Eng. Tech. 2	3
TAS3033	Audio Principles 1	3
TAS3043	Audio Principles 2	3
TAS4103	Audio Senior Project	3
	TOTAL	15

Engineering Technology Advisors
Jerry Cuper, jcuper@ltu.edu, Dr. Sabah Abro, sabro@ltu.edu, or Ken Cook, kcook@ltu.edu, 248.204.2060, room E179.

College of Management

Dean
Bahman Mirshab
M331, 248.204.3050

ABOUT THE COLLEGE OF MANAGEMENT

Using a model of theory and practice, the College of Management prepares our students for opportunities in the global economy through interdisciplinary educational programs that emphasize the business, ethical, social, and technological dimensions of leadership and management.

The College of Management is the ideal academic institution for students seeking to prepare for the challenges and opportunities they will encounter as tomorrow's leaders in global organizations in the private, public, nonprofit, or government sectors.

Students gain the knowledge and leadership skills necessary to be effective in leading and managing in global organizations through an intensive program of interdisciplinary coursework, workshops, seminars, and directed research. Students learn how to apply their knowledge and skills to the practice of management in a global environment.

The College of Management's academic programs are accredited by both the Association of Collegiate Business Schools and Programs (ACBSP) and the International Assembly of Collegiate Business Education (IACBE), one of only three institutions in the state of Michigan to be accredited by both organizations. Lawrence Tech is a member of the Association to Advance Collegiate Schools of Business (AACSB), and the College of Management has applied to be eligible for the AACSB accreditation process. Since 1998, the College has consistently received top scores in a nationwide student satisfaction survey.

DEGREE PROGRAMS

Lawrence Tech's College of Management offers these programs:

Bachelor's Programs and Minor

Bachelor of Science in Business Administration
Bachelor of Science in Information Technology
Minor in Business Administration

Master's Programs

Master of Business Administration
Master of Science in Information Technology

Dual Degree Programs

Master of Business Administration/Master of Science in Information Technology
Master of Business Administration/Master of Engineering Management
Master of Business Administration/Master of Architecture

Graduate Certificate Programs

Graduate Certificate in Project Management
Graduate Certificate in Cybersecurity

Bachelor of Science in Business Administration
Whether you have your sights set on becoming the next CEO of a global firm, flexing your creative muscles to execute award-winning marketing campaigns, or running your own business, the Bachelor of Science in Business Administration will prepare you to lead in a changing world. The Business Administration degree provides a strong foundation in business and a broad liberal arts education emphasizing the communication and critical thinking skills employers demand.

Majors in Business Administration include:

- Accounting
- Finance
- General Business
- Information Technology
- Marketing

In the Business Administration program, students can:

- get real business experience in and out of the classroom through consulting projects and participation in on-campus activities such as the Collegiate Entrepreneurs Organization, case competition, and internships;
- earn early admission to the MBA program;
- learn from an outstanding faculty with extensive industry and academic experience;
- participate in small classes that encourage team building and personal interaction with their instructors and peers;
- gain expert advising from a faculty member in their program, maximizing opportunities at Lawrence Tech and creating a path for success after graduation;
- take advantage of paid internships; and
- participate in a network of links to professional organizations and industrial partners, such as Collegiate DECA, Delta Mu Delta, the Economic Club of Detroit, Financial Executives International, Young Leadership Program, OESA Program, and Model United Nations.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION
TOTAL SEMESTER CREDIT HOURS: 121

Freshman Year
FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ACC 2013	Intro. to Financial Accounting	3
COM 1103	College Composition	3
MCS 1074	Precalculus	4
MGT 2203	Principles of Management (Required)	3
	TOTAL	13

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
ACC 2023	Intro. to Managerial Accounting	3
MCS 1224	Survey of Calculus	4
COM 2103	Technical and Prof. Communication	3
SSC 2413	Foundations of American Experience	3
MKT 2013	Marketing	3
	TOTAL	16

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MCS 2124	Statistics	4
SSC 2303	Principles of Economics	3
LLT 1213	World Masterpieces 1	3
FIN 3103	Financial Management	3
	Natural Science 1	3
	TOTAL	16

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
SSC 2403	Principles of Economics 2	3
INT 2103	Info. Tech. Management	3
	Natural Science 2*	3
	Natural Science Lab*	1
	Focused Elective	3
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of the American Express	3
COM 2113	Speech	3
MGT 2113	Intro. to Business Law	3
	Focused Elective	3
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MGT 3053	Business Internship	3
MGT 3033	International Trade	3
MGT 3103	Project Management	3
HRM 3023	Human Resources Management	3
COM 3000	Writing Proficiency Exam	0
	Focused Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MGT 3113	Operations Management	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
MGT 4023	Simulation and Management Science	3
	Focused Electives	3
	Open Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
MGT 4213	Strategic Mgmt. and Business Policy	3

MGT 4113	Applied Decision Analysis	3
COM 3xx3/COM4xx3	Communication Junior/Senior Elective	3
	Focused Elective	3
	Open Elective	3
	TOTAL	15

*Students can also take certain four-credit science courses that have a laboratory component to satisfy Natural Science 2 and Natural Science Lab requirements.

MAJORS IN BUSINESS ADMINISTRATION

MAJOR IN ACCOUNTING

Course Number	*Subject*	*Cr. Hrs.*
ACC 3023	Intermediate Accounting 1: Assets	3
ACC 3033	Intermediate Accounting 2: Equities	3
ACC 3053	Individual Income Tax	3
ACC 4013	Accounting Information Systems	3
ACC 4033	Principles of Auditing	3
	TOTAL	15

MAJOR IN FINANCE

Course Number	*Subject*	*Cr. Hrs.*
FIN 3203	Corporate Finance	3
FIN 3113	Investment Management	3
FIN 3303	International Financial Management	3
FIN 4013	Financial Institutions & Markets	3
FIN 4023	Risk Management	3
	TOTAL	15

MAJOR IN GENERAL BUSINESS

Students may receive a major in General Business by completing a combination of the courses listed within the other majors (15 credit hours in total)

MAJOR IN INFORMATION TECHNOLOGY

Course Number	*Subject*	*Cr. Hrs.*
INT 2143	Database Systems I	3
INT 3203	Computer Networks I	3
INT 3603	Human Computer Interaction	3
INT 4203	Systems Analysis & Design	3
INT 4423	Data Science for Business	3
	TOTAL	15

MAJOR IN MARKETING

Course Number	*Subject*	*Cr. Hrs.*
MKT 3213	Marketing Research	3
MKT 3063	Intergrated Marketing Comm.	3
MKT 4013	Consumer Behavior	3
MKT 4023	Digital Marketing	3

MKT 4033	Entrepreneurship	3
		TOTAL 15

Consult with your advisor to determine the best way to coordinate these majors with the requirements of your core curriculum.

Bachelor of Science in Information Technology

The Bachelor of Science in Information Technology combines fundamental business concepts with current technologies. Students learn to solve complex business problems by applying the technology learned through their coursework. Students develop and/or enhance existing skills for careers in such fields as network administration, systems analysis, business analysis, systems programming, application support, and Internet-related technologies.

The Bachelor of Science in Information Technology is designed with four goals in mind:

1. To provide students with the theoretical concepts necessary for success in industry.
2. To give students hands-on experience using current technologies.
3. To provide students with an employable skill set.
4. To provide industry with highly trained and competent information technology professionals.

The Bachelor of Science in Information Technology is especially well suited to transfer students or to students with associate degrees, who are often able to complete their bachelor's degree with as few as 60 additional credit hours at Lawrence Tech. Freshman students are also welcomed into the program. Courses transferred from other institutions or taken at Lawrence Tech will be evaluated as electives or Lawrence Tech equivalents. Qualified students can apply for early admission to the MBA or MSIT programs.

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 120

Freshman Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
COM 1103	College Composition	3
MCS 1074	Precalculus	4
INT 2103	Info Tech Management (Required)	3
MGT 2203	Principles of Management (Required)	3
	TOTAL	13

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1213	World Masterpieces 1	3
MCS 1224	Survey of Calculus	4
COM 2103	Technical and Prof. Communication	3
INT 2114	Fund. of Programming for Business	4
	Natural Sciences 1	3
	TOTAL	17

Sophomore Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
LLT 1223	World Masterpieces 2	3
MCS 2124	Statistics	4

INT 2134	Intro. to Business Programming Java	4
INT 3203	Computer Networks I	3
	Open Elective	3
	TOTAL	17

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
INT 2143	Database Systems I	3
INT 2123	Web Design	3
SSC 2413	Foundations of American Experience	3
	Natural Sciences 2*	3
	Natural Sciences Lab*	1
	Open Elective	3
	TOTAL	16

Junior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
SSC 2423	Development of American Experience	3
INT 3603	Human Computer Interaction	3
INT 3803	Database Systems II	3
	Open Elective	3
	Focused Elective	3
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
INT 3703	Enterprise Resource Planning Sys.	3
INT 4013	Computer Networks II	3
INT 4023	Cyber Security	3
COM 3000	Writing Proficiency Exam	0
	Open Elective	3
	Focused Elective	3
	TOTAL	15

Senior Year

FIRST SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
INT 4203	Systems Analysis/Design	3
MGT 3103	Project Management	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Focused Electives (2)	6
	TOTAL	15

SECOND SEMESTER

Course Number	*Subject*	*Cr. Hrs.*
INT 4303	IT Capstone	3
COM XXX3	Junior/Senior Elective	3
	Focused Electives (2)	6
	TOTAL	12

*Students can also take certain four-credit science courses that have a laboratory component to satisfy Natural Science 2 and Natural Science Lab requirements

Professional Certification Option (9 credit hours)
Students in the BSIT program can complete an industry certification of their choice. The following list represents the most desirable certifications in the field:

Cisco Certified Network Professional
Cisco Certified Professional
CompTIA A+, Network+, IT Project+, and Linux+ (pick three)
CompTIA Master CIW Certification
CompTIA Master CIW Enterprise Developer
Microsoft Certified Application Developer
Microsoft Certified Database Administrator
Microsoft Certified Solution Developer
Microsoft Certified Systems Administrator
Microsoft Certified Systems Engineer
Novell Certified Netware Engineer
Oracle Certified Professional
Security Certified Program Network Professional

Additional certification tracks will be evaluated at the student's request.

MINOR IN BUSINESS ADMINISTRATION
Any job you take can be traced back to some entrepreneur who started the company or the agency or the shop. A minor in business shows you the world of the enterprise, the organizational creation which brings people together in a new group with a new mission. This minor equips you with technical skills, but even more with an appreciation of what it takes to make an enterprise grow and succeed. You will gain a new sense of how motivating and leading people is the key to good management, and also of the world of risk-taking - scary, absorbing, and ultimately rewarding. All employers value workers who can see the big picture and the context of each individual job, and can find ways to make each part more effective. Your management minor can let them know you're ready to join a team.

Curriculum

Course Number	*Subject*	*Cr. Hrs.*
MGT 2113	Introduction to Business Law	3
MGT 2203	Principles of Management	3
MKT 2013	Principles of Marketing	3
ACC 2013	Introduction to Financial Accounting	3
SSC 2303	Principles of Economics I	3
HRM 3023	Human Resource Management	3
	TOTAL	18

Consult with your advisor to determine the best way to coordinate this minor with the requirements of your major curriculum.

For more information on the College of Management Undergraduate programs, contact Mina Jena, director of business programs, at 248.204.3050 or ump@ltu.edu.

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Faculty Committees

Academic Standing
The Academic Standing Committee consists of the dean of students, the director of admissions, and representatives from the four colleges. Members are appointed by the provost upon recommendation of the deans, and the group is chaired by the dean of students. The committee acts on petitions of students who have been suspended from the University for academic reasons.

Additional Credit Review
The Additional Credit Review Committee is chaired by the registrar and has a faculty representative from each of the four colleges. It reviews all applications from students for additional transfer credit and for guest credit.

Benefits
The Benefits Committee is made up of an appointee from the Faculty Senate, an academic administrator, an administrative manager, and a staff member and is chaired by the director of human resources. It reviews and recommends changes to the University benefit package to the vice president of finance and administration.

Conflict Resolution
The Conflict Resolution Committee is comprised of 15 members from faculty, staff, and administration who support the Conflict Resolution Policy by addressing work-related concerns brought before the committee that have not been resolved at the department/college level.

Council of Academic Deans
The Council of Academic Deans consists of the four college deans, the dean of students, and the dean of graduate programs. The council provides the principal advice to the provost on academic and administrative affairs.

Faculty Academic Misconduct
The Faculty Academic Misconduct Committee is a standing committee to advise the provost on issues and situations involving faculty academic misconduct. The committee is comprised of four members. All four colleges are represented by one tenured faculty member.

Faculty Councils
Organized to meet its own structural requirements, each college has a Faculty Council that advises the dean on academic and other matters. The councils are independent of administrative channels and may consider any issues they believe appropriate but are particularly involved with faculty personnel and curricular concerns within their colleges. Membership of the Faculty Councils consists of full-time college faculty. Advice of Faculty Councils is not binding on academic deans, but it is considered significant to administrative decision making.

Faculty Senate
The Faculty Senate is the entity officially constituted to represent and promote University-wide faculty aims for the purpose of furthering academic excellence and contributing to the long-term success of the University. Membership of the Faculty Senate consists of regular full-time faculty on annual contracts.

Graduate Council
The Graduate Council consists of faculty with program experience or interests at the graduate level, and of observers from academic-service functions. All members are appointed by the provost upon the recommendation of the college deans. This group reviews and recommends graduate policies and programs. The dean of graduate programs is an ex-officio member.

Library
The Library Committee acts as an advisory board for the director of the library on service and policy issues. It consists of six faculty members, one each from architecture, engineering, humanities, management, natural sciences, and technology, one of whom serves as chairperson. Members are appointed by the deans. The director of the library is an ex-officio member.

Research Support Services
The Research Support Services Committee is made up of the assistant provost, a representative of the vice president for finance and administration, a representative of the office of corporate and community partnerships, and four full-time faculty members appointed by the dean of each college. This committee functions to identify and recommend improvements and support for Lawrence Tech faculty and students initiating and conducting research.

Standing Committee on Tenure Removal
A panel of the Standing Committee on Tenure Removal, selected in accordance with Section 2 of the Faculty Handbook, hears all cases brought under section 2.10.7 for removal of tenure from a tenured faculty member.

University Assessment
The Committee on University Assessment coordinates policy and procedures related to both college and University assessment programs. The committee's principal responsibility is to promote improvements in learning through implementation of the University's plan for academic assessment. The committee is advisory to the Council of Academic Deans, and its members are appointed by the dean of each college. The chairperson is appointed by the provost.